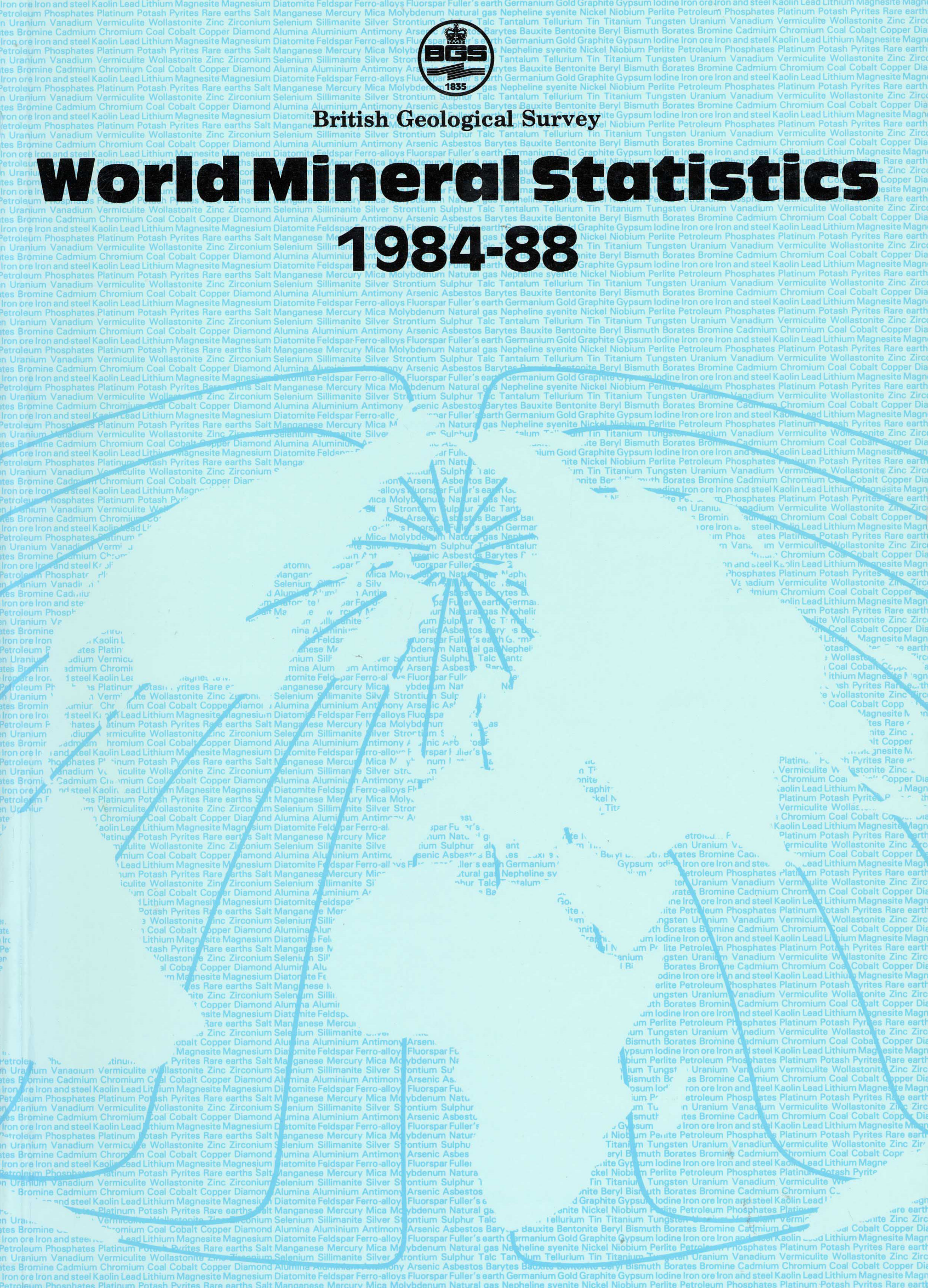




British Geological Survey

# World Mineral Statistics 1984-88





BRITISH GEOLOGICAL SURVEY

# WORLD MINERAL STATISTICS 1984-88

**Production: Exports: Imports**

Compiled by G J Lofty, J A Hillier, E M Burton, S A Cooke, H M Glaves, and  
K A Linley

Research and Graphics by C D G Black

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*The British Geological Survey carries out the geological survey of Great Britain and Northern Ireland (the latter as an agency service for the government of Northern Ireland), and of the surrounding continental shelf, as well as its basic research projects. It also undertakes programmes of British technical aid in geology in developing countries as arranged by the Overseas Development Administration.*

*The British Geological Survey is a component body of the Natural Environment Research Council.*

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## PREFACE

This volume is the thirteenth in the series *World Mineral Statistics*.

The first volume in this series was published in 1978 but publication by the British Geological Survey and its precursors of descriptive statistics encompassing the world-wide mineral industry dates back to 1913 in the well-known *Statistical Summary of the Mineral Industry*. The current volume is therefore the latest in a continuous series encompassing seventy five years.

The recovery in mineral industry production which was noted last year was sustained throughout 1988. Production of most minerals and metals continued to increase with the notable exceptions of antimony, graphite, mercury, mica and rare earth minerals. Mine production of copper, lead and zinc showed slight decreases. After the decline which occurred between 1974 and 1980, mine production of copper re-established a positive trend of approximately 3.5% p.a. The graph of zinc production shows similar trends. This volume includes a production-price graph for chromium ore in addition to graphs for the twenty three commodities previously featured. The gold, tin and chrome prices have been indexed to a base year of 1985, the indexation of the others remaining on a constant 1980 basis. A provisional deflator has been used for the final year of the price series. A recovery in commodity prices is also discernible. Eighteen of the twenty four commodities illustrated show price rises in 1988/89, but recovery may be short-lived, at least in base metals.

Compilation of accurate figures on trade for some major trading countries has been made difficult due to absence of data. Where appropriate a reconstruction of either the imports or exports is carried out by searching the official publications of their world-wide trading partners. A high proportion of trade data in particular commodities can often thus be traced without breaching confidentiality. In this volume the Appendix devoted to trade reconstructions deals with the countries of Eastern Europe and it is hoped that the reader will find this of particular interest in view of recent developments in that area. The Appendix is printed on a coloured background to remind the reader that the figures are derived indirectly from a number of sources. It should also be borne in mind that the reconstructed figures are incorporated into the main body of the work where they are shown as estimates.

The change-over by many trading nations in 1988 to the Harmonised System commodity descriptions and related Combined Nomenclature coding has complicated the task of collecting and compiling world trade data. The new system which is fully integrated with the third revision of the United Nation's Standard International Trade Classification is welcomed for the degree of standardisation it will bring, but it will take time to remove anomalies which have inevitably arisen at the change-over.

Utilising the electronic data-base system which is now in place to handle the world mineral statistics we were able, for the second year running, to offer a supplementary volume to our subscribers in October, that is six months before the appearance of the present volume which carries the revised production data for 1988. Our appraisal of the market for 'early' statistics has been confirmed by the demand for the supplement and we hope to continue the practice in 1990.

The reader should be aware that this publication is compiled from a more comprehensive data set maintained by the staff of the Mineral Intelligence Programme of the British Geological Survey. Additional data, such as those for value of minerals produced, for country breakdown of trade, and for trade in other minerals are available on enquiry. Although data on consumption is not compiled the reader should be aware that it is possible to calculate approximate apparent consumption of many commodities from the published data although stock changes have to be ignored unless such information is obtainable elsewhere.

In each new volume account is taken of revisions and information received after the publication of the previous issue, so that data for every year are as up-to-date as is practicable. The objective remains to present the latest official information from primary sources, that is from the individual producing and trading countries, rather than to reproduce data from compilations made by other organisations working in the same field of world mineral statistics. However, such secondary sources have been fully consulted and the co-operation afforded to the British Geological Survey by numerous national and international organisations, in particular the International Consultative Group on Non-Ferrous Metal Statistics, is gratefully acknowledged.

A recent study on the accuracy of economic observations has confirmed our impression that for some years now the quality of statistical records, particularly in trade, has been decreasing. There has also been a regrettable tendency in some quarters to substitute timeliness for quality. While there is an undoubted demand by some sectors of industry and government for up-to-the-minute estimates these must be underpinned by definitive data if useful econometric analysis is to be undertaken. If quality and integrity in recording statistics is allowed to slip the resulting data is at best uninformative, and at worst misleading. For very many years it has been the established aim of the Mineral Statistics section of the BGS to present to the customer a reliable and comprehensible set of data within a reasonable time-frame. It is our view that such a time series should enable informed discussion amongst those who are concerned with the economics of the mineral industry and minerals policy.

Criticisms and suggestions that might help us to meet changing needs would be welcome.

Peter J Cook  
*Director*

British Geological Survey  
Keyworth  
Nottingham NG12 5GG  
England

2 April 1990

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## EXPLANATORY NOTES

### Coverage

*World Mineral Statistics* covers the majority of economically important, and internationally traded, mineral commodities; with few exceptions its range is the same as that in the *Statistical Summary of the Mineral Industry*, the predecessor of this series, which was discontinued in 1971. For each commodity constant efforts are made to ensure that as many producing and trading countries as possible are reported and that trade data cover all major traded forms. For some commodities, where statistics on production and trade are not publicly available, estimates are made. Users of this compilation are advised that more statistical information than can be included in a publication of this nature is in the Mineral Intelligence Programme files and is available for consultation.

### Arrangement of countries

After the United Kingdom, if listed, countries are ordered alphabetically in geographical groupings as follows:

- European Economic Community (EEC)
- Europe other than EEC; including the Soviet Union
- Africa
- North and Central America, including the Caribbean
- South America
- Asia
- Australasia, including the Pacific Islands

So far as possible the nomenclature follows the London Diplomatic List and United Nations usage.

### Production

**Metals** Mine production of many metals is expressed in terms of metal content. This is clearly indicated at the head of the table, adjacent to the unit used. For aluminium, cobalt, copper, iron, lead, nickel, tin and zinc, mine production and metal production are shown in separate tables. Unless otherwise specified, metal production statistics relate to metal recovered from both domestic or imported materials, whether primary or secondary, but excludes remelted material.

**Canada** Production of Canadian minerals is shown throughout by the official figures for 'sales and shipments'.

### Trade

**Federal Republic of Germany** Data include shipments to, and purchases from, the German Democratic Republic.

**South Africa** Import data are taken from the trade statistics of the common customs area, which includes Botswana, Lesotho, South Africa, Namibia and Swaziland, and relate to this area as a whole. Where separate data are available for any of these countries they have also been shown even though this may result in some double counting.

Export data are taken from returns furnished by producers to the Department of Mineral and Energy Affairs, and may be shipments rather than actual exports.

Estimates for other South African exports, based on reconstruction from importing countries, may include material originating in any of the countries of the common customs area and so involve some double counting on tables where these are listed separately.

**USA** US trade statistics show trade between the US customs territory and foreign countries, but exclude trade between the US and Puerto Rico, and between the US and Guam, American Samoa and other US possessions. Also excluded is trade between any of these outlying areas, shipments from US possessions to foreign countries, and shipments for the use of the US Government in foreign countries.

**General** Although every effort has been made to provide comprehensive coverage of trade statistics the resulting trade compilations depend on the nature of the data available. The

fact that a country is not shown as trading in a particular commodity does not necessarily imply that there is no trade in that item. The commodity may not be separately identified in the available trade statistics or may not be traded in significant quantities.

Where an estimate for a trade statistic has been reconstructed from the imports/exports of other countries, the resulting figure may be conservative, as complete coverage of world trade is seldom available.

In general, export statistics include re-exports. The distinction is only made when re-exports are recorded separately in the relevant national trade account and are deemed to be significant.

Tables showing trade in metals covered by Standard International Trade Classification (Revision 3) 689.1, 8 & 9, and 699.8 & 9 (Antimony, Bismuth, Cadmium, Chromium, Cobalt, Manganese, Molybdenum, Tantalum-Niobium, Titanium, Tungsten, Vanadium and Zirconium) include under the term 'metal', unwrought and wrought forms, powder, alloys, waste and scrap, unless these are separately shown. Trade tables of other metals include only unwrought forms under the term 'metal'.

#### *Commodity production—price graphs*

These have been inserted adjacent to the relevant production tables. They are computer-generated plots of total annual world production against time. On the same horizontal time axis a specific price for the commodity has been plotted with reference to the right-hand vertical axis. Details of the price used are annotated below each plot. The production data have been taken from the current series of *World Mineral Statistics* and, pre-1970, from its predecessor, the *Statistical Summary of the Mineral Industry*. It should be noted that although mine production and commodity prices are shown on the same plot, any inference about the relationship between the two curves is a matter for the reader.

Indexed prices, around the base year 1980 (and in some cases 1985), have been derived by applying the relevant price indices to the actual price. The CPI for the US dollar is quoted in the *International Financial Statistics Yearbook* published by the IMF. For the pound sterling the CPI is available from the same source and, since 1967, the RPI can be obtained from the *Annual Abstract of Statistics* published by HMSO. Some price series (indicated in the captions), have been indexed pre-1980 by the Manufacturing Unit Value (MUV) index used by the World Bank. Permission to use these data is gratefully acknowledged.

The initial graphics and trend line analyses of the data were carried out using the MINITAB package. The plots were generated using in-house software modified by Graeme Atkinson of the NERC Computer Services and run on the NCS VAX 8600 computer at BGS, Keyworth.

#### *Trade reconstruction: appendix*

In the course of compilation of this publication it has been found necessary to reconstruct data for nations which do not publish trade statistics on all the mineral commodities covered. By extracting the information on imports or exports which is published by trading partners it is possible to reconstruct fairly comprehensive, though possibly conservative, trade data for most of these commodities. These reconstructions are maintained in the files of the Mineral Statistics section.

#### *Acknowledgements*

Compilation of this volume of mineral statistics has been possible only by obtaining information from a very large number of organisations throughout the world, chiefly home and overseas government departments and specialist national or international authorities concerned with particular sectors of the minerals or metals industries. To all these bodies the British Geological Survey expresses its grateful acknowledgement for the information made available, whether in published form or provided by direct correspondence.

Among the numerous overseas government agencies which have provided valuable information, particular acknowledgement is made to the United States Bureau of Mines; the

Department of Energy, Mines and Resources of Canada; the Bureau of Mineral Resources, Geology and Geophysics of Australia; the Department of Mineral and Energy Affairs of South Africa; the Indian Bureau of Mines; and the Mines Departments of other countries whose regular statements, yearbooks and other reports are worthy of direct consultation by readers in search of detail.

Specialist commodity organisations which have kindly allowed information to be reproduced include the British Sulphur Corporation, the International Lead and Zinc Study Group, the UK Iron and Steel Statistics Bureau, IFA Ltd, the UN Food and Agriculture Organization, and the UNCTAD. In a few instances, information on specific commodities has been obtained directly from company sources.

Supplementary information is also obtained from publications dealing with a wider range of commodities such as American Bureau of Metal Statistics, *Non-ferrous Metal Data*; Observatoire des Matières Premières, *Annales des Mines*; International Mining, *Yearbook*; Metaleurop, *Annuaire Statistique*; Metallgesellschaft AG, *Metallstatistik*; Mining Journal, *Mining Annual Review*; Samim, *Metalli Non Ferrosi*; World Bureau of Metal Statistics, *World Metal Statistics*; and publications of the United Nations and its agencies.

#### *Units*

The statistics shown in this volume are expressed in metric units. The following factors are given for converting to non-metric units:

tonnes  $\times$  0.9842 = long tons

tonnes  $\times$  1.1023 = short tons

kilograms  $\times$  2.2046 = pounds

kilograms  $\times$  32.1507 = troy ounces

cubic metres  $\times$  35.3147 = cubic feet

1 tonne of crude petroleum equals on average 7 barrels of crude petroleum.

1 metric ton unit = 10 kilograms

1 flask mercury = 34.5 kilograms

Conversion of national currencies to pounds sterling has been made using the annual period average factors shown for each country in *International Financial Statistics* published by the International Monetary Fund.

#### *Symbols*

... figures not available

0 quantity less than half unit shown

— nil

\* estimated

BGS British Geological Survey

S.I.T.C. Standard International Trade Classification





## **STATISTICAL TABLES**

**Production of Bauxite**

tonnes

Country	1984	1985	1986	1987	1988
France	1 607 000	1 530 000	1 379 000	1 271 000	977 700
Greece	2 286 145	2 341 070	2 314 962	2 466 500	2 533 100
Italy	—	—	—	16 557	17 100
Spain	7 273	2 427	3 000	1 050	3 000*
Hungary	2 993 629	2 814 791	3 022 297	3 101 000	2 906 000
Romania	460 000	460 000	500 000	480 000	500 000*
Soviet Union (a)	6 200 000*	6 400 000*	6 275 000*	5 700 000*	5 900 000*
Turkey	131 573	213 752	280 401	259 075	269 015
Yugoslavia	3 347 462	3 249 794	3 458 917	3 394 000	3 033 794
Ghana	48 500	169 500	204 000	195 000	287 300
Guinea	12 969 100	11 750 000	12 439 000	16 282 000	16 834 000
Mozambique	—	5 037	4 247	5 114	6 548
Sierra Leone	1 041 200	1 184 500	1 242 000	1 391 000	1 379 000
Zimbabwe	22 726	20 877	24 284	—	—
Dominican Republic	—	—	—	186 671	167 800
Jamaica	8 605 000	6 218 900	6 953 000	7 702 000	7 316 000
USA (b)	856 000	674 000	510 000	576 000	588 000
Brazil (c)	5 902 577	5 304 697	5 418 259	6 376 650	7 727 600
Guyana	3 035 648	2 153 186	2 073 918	2 351 496	2 154 847
Suriname	3 375 000	3 738 000	3 731 000	2 522 000	3 434 000
Venezuela	—	—	1 275	233 820	521 505
China	2 500 000*	2 800 000*	2 900 000*	3 200 000*	3 500 000*
India	2 035 646	2 267 777	2 662 200	2 778 678	3 402 000
Indonesia	1 033 087	830 471	649 881	635 309	505 804
Malaysia	680 434	491 904	566 170	482 125	360 798
Australia	31 536 913	31 838 898	32 383 773	34 101 721	36 192 000
World total	90 700 000	86 500 000	89 000 000	95 700 000	100 500 000

## Notes

(1) In addition to the countries listed, Pakistan produces small amounts of bauxite

- (a) Including nepheline concentrates and alunite
- (b) Dried bauxite equivalent
- (c) Including beneficiated and direct shipping ore

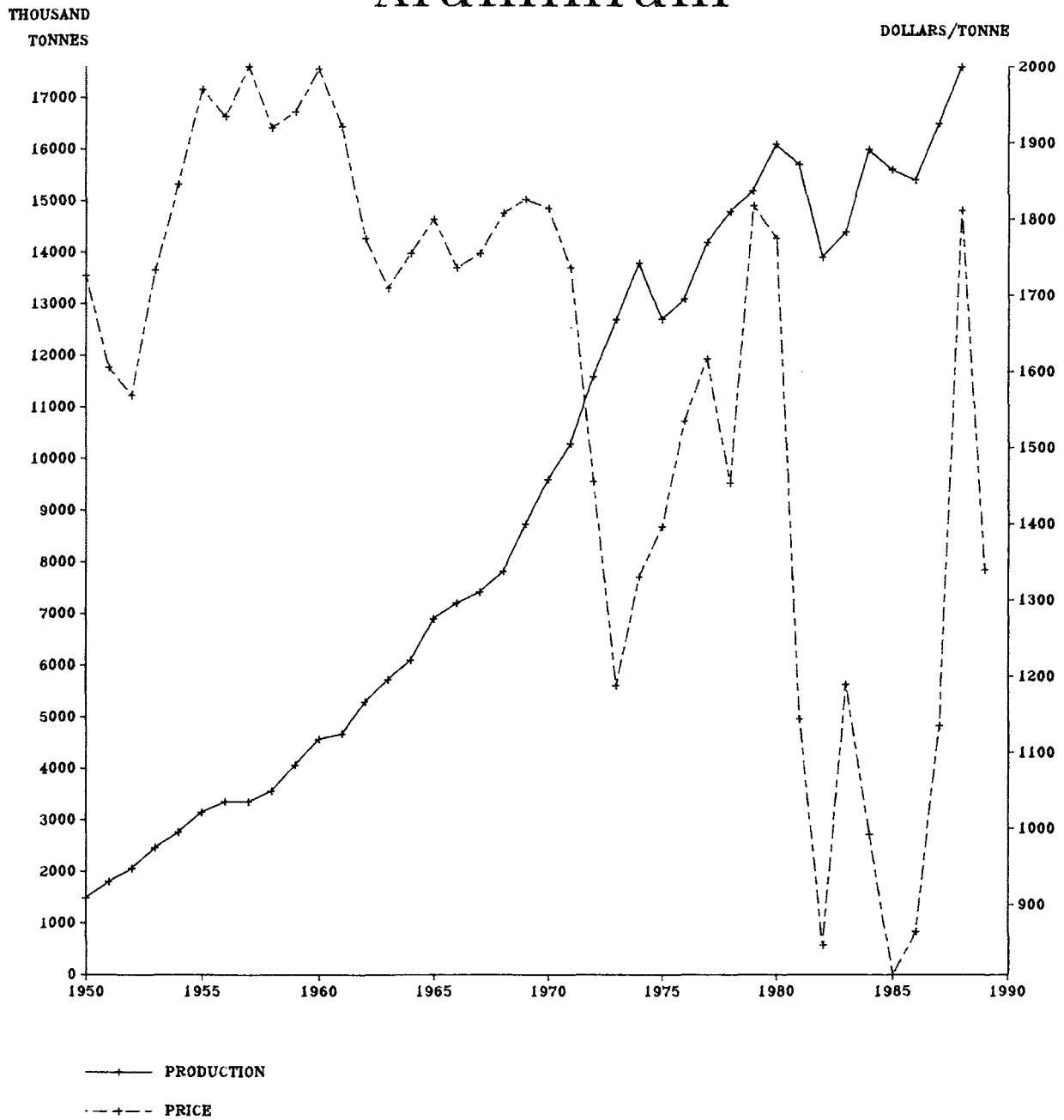
**Production of Alumina**

Country	1984	1985	1986	1987	1988
United Kingdom	105 000	109 700	109 940	109 800	114 000
France	900 000	734 200	740 000	712 000	551 000
Germany, Federal Republic of	1 700 622	1 656 579	1 559 804	1 312 828	1 162 786
Greece	317 246	248 366	307 190	518 415	514 650
Irish Republic	675 000	555 400	685 490	777 974	842 800
Italy	408 500	363 000	404 200	457 600	460 500
Spain	485 000	476 000	489 000	524 000	576 000
Czechoslovakia	150 000*	150 000*	153 345	149 917	182 651
German Democratic Republic	43 239	46 695	46 350	50 880	64 000
Hungary	811 000	798 000	856 333	857 612	873 232
Romania	552 000	548 000	555 000	584 000	580 000*
Soviet Union	3 300 000*	3 500 000*	3 500 000*	3 500 000*	3 500 000*
Turkey	75 120	113 304	144 396	95 232	181 670
Yugoslavia	1 134 923	1 138 026	1 116 716	1 113 000	1 060 041
Guinea	537 000	565 000	555 400	530 000	593 000
Canada	1 125 644	1 019 000	1 015 000	952 690	992 576
Jamaica	1 751 000	1 511 800	1 578 000	1 622 000	1 520 000
USA	4 545 000*	3 465 000*	3 105 000*	4 150 000*	4 650 000*
Brazil	882 000	1 095 900	1 196 800	1 365 000	1 487 850
Suriname	1 237 000	1 242 000	1 471 000	1 363 000	1 632 200
Venezuela	1 142 000	1 110 000	1 268 745	1 360 012	1 284 036
China	1 200 000*	1 300 000*	1 400 000*	1 450 000*	1 530 000*
India	372 000	373 000	383 000	425 000	776 000
Japan	973 000	873 000	644 000	465 000	508 000
Australia	8 780 702	8 791 501	9 423 220	10 109 290	10 510 514
World total	33 200 000	31 800 000	32 700 000	34 600 000	36 100 000

## Notes

(1) Where possible figures in this table show the alumina equivalent ( $Al_2O_3$ ) of total hydrate produced, whether or not calcined

# Aluminium



**Figure 1** World production of primary aluminium compared with the yearly average producer price (to 1978) of unalloyed aluminium ingot on the New York Market, and from 1979–89, the LME price, expressed in constant 1980 US dollars.

Trend-line analysis of the production data indicates a growth rate of approximately 6.5% per annum.

Constant commodity prices (to 1980) taken from *Commodity Trade and Price Trends* published by the Johns Hopkins University Press for the World Bank.

## Production of Primary Aluminium

Country	1984	1985	1986	1987	1988
United Kingdom	287 875	275 373	275 876	294 382	300 166
France	341 604	293 196	321 793	322 500	327 700
Germany, Federal Republic of	777 165	745 373	552 218	792 628	752 927
Greece	138 750	125 222	126 000	126 751	150 801
Italy	230 207	224 120	242 632	232 600	226 300
Netherlands	249 170	250 603	265 768	275 939	278 198
Spain	380 800	370 100	354 700	341 000	293 900
Austria	95 833	94 106	92 453	93 414	95 494
Czechoslovakia	31 635	31 725	33 078	32 366	31 435
German Democratic Republic	58 000*	60 000*	61 000*	62 000*	61 000*
Hungary	74 202	73 859	73 877	73 500	74 700
Iceland	80 359	73 403	75 929	83 485	82 034
Norway (a)	765 083	742 686	725 813	853 213	864 190
Poland	46 000	47 000	47 500	47 500	47 700
Romania	244 000	247 000	253 000	260 000	250 000*
Soviet Union	2 300 000*	2 300 000*	2 350 000*	2 370 000*	2 440 000*
Sweden	79 625	82 783	77 882	79 462	98 600
Switzerland	79 173	72 742	80 259	73 169	71 816
Turkey	36 839	54 150	60 017	41 685	56 500
Yugoslavia	292 306	306 346	309 206	280 633	312 652
Cameroon	74 154	81 600	81 100	71 500	80 000
Egypt	172 201	174 666	176 760	179 200	173 460
Ghana	—	48 500	124 600	150 300	163 500
South Africa	167 400	164 600	169 600	170 600	170 400
Canada	1 221 985	1 282 316	1 355 161	1 540 439	1 534 499
Mexico	43 988	42 744	39 946	63 260	68 337
USA	4 099 000	3 500 000	3 037 000	3 343 000	3 944 000
Argentina	137 839	139 861	150 642	155 107	157 407
Brazil	454 999	549 400	757 375	843 500	871 400
Suriname	22 992	28 785	28 715	1 913	9 800
Venezuela	385 875	403 503	420 660	430 230	443 305
Bahrain	177 300	174 800	178 194	180 344	182 800
China	450 000*	500 000*	570 000*	640 000*	713 000*
Dubai	155 400	153 200	154 838	155 876	162 500
India	267 902	266 496	257 096	253 372	334 500
Indonesia	198 960	216 820	218 772	201 402	185 112
Iran	42 400	43 000	40 000	45 000	40 000
Japan	286 728	226 547	140 187	40 691	35 347
Korea, Dem. P.R. of	10 000*	10 000*	10 000*	10 000*	10 000*
Korea, Republic of	18 252	17 695	18 643	16 800	16 100
Australia	757 798	851 286	881 910	1 003 947	1 149 000
New Zealand	242 851	240 835	236 332	252 000	265 700
World total	16 000 000	15 600 000	15 400 000	16 500 000	17 500 000

(a) May include some super purity aluminium

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Bauxite	2 556	2 286	1 221	2 148	4 120
Alumina	11 756	7 546	8 793	8 031	7 453
Alumina hydrate	32 219	37 575	38 213	34 335	41 695
Unwrought	59 371	65 342	50 409	69 108	79 378
Unwrought alloys	68 189	63 782	66 348	64 447	75 672
Scrap	88 523	90 803	89 886	87 372	114 286
<b>Belgium-Luxembourg</b>					
Bauxite	1 702	1 992	2 873	2 416	3 648
Alumina	732	1 353	1 237	1 102	1 202
Unwrought	4 834	8 942	9 134	8 278	4 996
Unwrought alloys	5 443	14 094	15 727	19 277	27 922
Scrap	51 395	46 950	51 888	60 186	77 770
<b>Denmark</b>					
Bauxite	3 089	2 042	—	1	8
Unwrought	45	37	10	73	309
Unwrought alloys	9 688	12 094	10 213	12 581	10 665
Scrap	15 747	16 659	20 545	25 186	26 645
<b>France</b>					
Bauxite	245 208	200 733	116 060	187 433	13 486
Alumina	157 999	200 445	113 046	93 276	84 087
Alumina hydrate	73 794	97 304	81 280	101 992	127 990
Unwrought	68 008	38 838	59 515	41 028	36 700
Unwrought alloys	78 396	76 531	83 760	78 254	76 431
Scrap	88 858	90 938	99 522	109 206	160 778
<b>Germany, Federal Republic of</b>					
Bauxite	44 633	42 212	25 979	33 385	57 050
Alumina	443 836	435 349	324 858	312 760	330 355
Alumina hydrate	260 485	233 705	248 489	252 435	270 136
Unwrought	69 381	66 050	71 378	91 826	68 866
Unwrought alloys	224 808	215 644	230 370	241 764	254 938
Scrap	88 175	89 691	104 453	134 983	141 019
<b>Greece</b>					
Bauxite	1 238 428	1 332 536	1 133 487	1 205 490	416 811
Alumina	208 500	187 400	135 565	348 700	178 762
Unwrought (a)	48 451	43 198	45 855	71 843	51 415
Scrap	1 254	1 115	317	1 361	785
<b>Irish Republic</b>					
Alumina	654 077	571 986	669 362	741 487	901 093
Unwrought (a)	1 099	585	1 478	1 475	1 902
Scrap	4 123	5 190	8 093	8 468	11 147
<b>Italy</b>					
Bauxite	12 287	7 273	4 502	21 141	14 333
Alumina	300 468	265 282	308 006	561 315	388 535
Alumina hydrate	24 657	18 139	30 354	29 509	14 078
Unwrought	8 379	17 013	9 611	11 298	5 047
Unwrought alloys	23 842	26 783	24 696	40 338	33 341
Scrap	3 871	5 816	4 240	6 049	8 061
<b>Netherlands</b>					
Bauxite	5 509	5 063	3 983	9 283	17 913
Alumina	64 974	59 124	46 404	61 934	87 557
Alumina hydrate	65	51	89	105	1 497
Unwrought	136 920	149 398	144 277	156 306	90 836
Unwrought alloys	142 100	147 369	156 983	158 083	238 950
Scrap	93 258	87 062	96 045	105 385	138 871
<b>Portugal</b>					
Scrap	5 158	3 970	3 899	5 705	...
<b>Spain</b>					
Alumina	20 725	16 525	42 743	159 787	310 226
Unwrought	152 772	135 623	86 118	34 436	90 057
Unwrought alloys	78 470	72 760	60 268	72 043	58 381
<b>Austria</b>					
Unwrought (a)	28 817	31 072	31 317	39 447	44 894
Scrap	29 843	33 248	43 387	63 587	46 911
<b>Bulgaria</b>					
Unwrought (a) (f)	5 000*	4 000*	4 100*	3 600*	2 700*
Scrap (f)	2 800*	3 100*	5 100*	4 900*	5 400*

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1984	1985	1986	1987	1988
Czechoslovakia					
Unwrought (a) (f)	18 200*	21 100*	15 300*	11 200*	14 800*
Finland					
Unwrought (a)	13 575	16 171	16 974	24 286	25 291
German Democratic Republic					
Unwrought (a) (f)	30 400*	23 000*	28 400*	30 700*	28 500*
Scrap (f)	6 600*	9 200*	7 400*	6 000*	7 800*
Hungary					
Bauxite	430 587	382 335	461 473	437 987	378 533
Alumina	643 993	593 758	664 845	665 226	715 214
Alumina hydrate	6 928	5 594	4 200	2 729	1 513
Unwrought	71 294	50 528	61 200	63 354	59 135
Scrap	8 226	6 928	7 002	8 748	9 868
Iceland					
Unwrought (a)	79 928	70 600	77 490	89 081	81 071
Norway					
Alumina	220	915	12 642	17 764	16 241
Unwrought	322 038	307 311	298 122	326 307	241 612
Unwrought alloys	316 637	336 479	348 417	431 308	513 051
Scrap	27 138	28 725	31 126	38 156	50 536
Poland					
Unwrought (a)	3 166	2 980	3 023	2 595	2 647
Romania					
Unwrought	122 400	139 100	(f)98 000*	(f)113 700*	(f)116 400*
Soviet Union					
Unwrought (a) (f)	488 600*	459 500*	481 600*	444 600*	548 800*
Scrap (f)	15 900*	21 500*	43 300*	57 600*	43 500*
Sweden					
Alumina	310	513	8 226	676	356
Unwrought	1 901	1 452	4 345	8 056	25 654
Unwrought alloys	36 297	40 635	35 008	35 509	34 233
Scrap	3 171	8 758	13 459	11 259	11 069
Switzerland					
Alumina	288	1 445	423	459	1 313
Unwrought & scrap	53 895	49 570	54 583	60 991	68 648
Turkey					
Bauxite	46 845	22 675	57 325	104 525	...
Alumina	16 846	22 648	23 900	17 746	...
Yugoslavia					
Bauxite	651 893	795 476	765 127	584 714	639 528
Alumina	402 588	414 521	561 153	389 531	165 866
Alumina hydrate	17 048	26 118	21 137	29 231	58 966
Unwrought	135 727	128 828	121 516	128 610	129 110
Unwrought alloys	6 311	13 871	20 711	28 613	23 851
Scrap	295	265	1 420	1 702	1 594
Cameroon					
Unwrought & scrap	52 739	50 834	39 040	39 336	63 100
Ghana					
Bauxite	44 169	124 453	226 000	229 415	299 939
Unwrought (a)	44 200	19 877	104 400	140 000	125 700
Guinea					
Bauxite	11 600 000	8 600 000	11 600 000	(f)13 200 000*	(f)14 000 000*
Alumina	500 000	500 000	500 000	600 000	600 000
Sierra Leone					
Bauxite	998 306	718 797	1 550 608	...	...
South Africa					
Unwrought (a)	83 032	92 621	94 695	94 000	68 000
Scrap (f)	4 200*	8 800*	7 700*	2 600*	2 500*
Canada					
Alumina	(b)51 362	(b)52 794	(b)45 434	(b)45 624	138 527
Unwrought	833 028	1 051 007	1 163 875	1 171 887	1 154 641
Scrap	106 575	114 674	125 018	127 181	164 453
Cuba					
Scrap (e)	4 085	4 551	4 100	3 778	2 498

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1984	1985	1986	1987	1988
Dominican Republic					
Bauxite	—	—	—	(h)328 046	(h)199 933
Jamaica					
Bauxite	4 559 013	2 325 359	2 939 593	3 711 396	3 494 440
Alumina	1 720 660	1 620 338	1 580 462	1 557 008	1 561 349
Mexico					
Unwrought & scrap	4 513	4 979	12 116	9 649	...
USA					
Bauxite	113 113	74 246	99 161	203 711	68 252
of which: Re-exports	30 879	18 152	30 056	2 214	5 321
Alumina	635 909	299 911	475 360	1 108 975	1 021 372
Alumina hydrate	20 244	25 890	18 925	29 004	24 160
Unwrought	225 523	306 893	158 964	249 563	362 559
Unwrought alloys	34 505	40 982	52 125	35 345	40 111
Scrap	258 725	376 136	347 946	369 745	487 714
Argentina					
Unwrought	53 052	98 065	74 000	73 009	89 225
Brazil					
Bauxite	4 246 914	3 317 341	3 059 736	2 813 587	4 660 509
Alumina	43 213	94 214	41 994	52 903	70 429
Unwrought (a)	147 923	179 130	323 703	426 893	514 898
Guyana					
Bauxite, dried	1 114 940	...	...	...	...
Bauxite, calcined	543 685	...	...	...	...
Suriname					
Bauxite	1 031 000	1 132 000	897 000	340 900	...
Alumina	1 072 000	1 265 000	1 343 000	1 342 100	1 600 000
Unwrought	29 000	28 000	29 000	3 200	7 600
Venezuela					
Alumina	371 372	454 881	508 971	516 969	363 115
Unwrought	224 800	382 921	277 877	302 515	269 753
Bahrain					
Unwrought (a)	156 548	126 773	182 342	122 551	77 000
China					
Bauxite (f)	579 800*	629 200*	629 500*	716 300*	912 200*
Alumina (f)	13 900*	12 500*	3 200*	8 400*	10 600*
Unwrought (a) (f)	700*	5 400*	500*	56 200*	157 500*
Dubai					
Unwrought (a)	140 403	148 650	148 841	...	...
Scrap	9 986	3 168	3 635	...	...
Hong Kong					
Bauxite (g)	17 748	16 566	19 987	25 971	15 010
Alumina (g)	500	61 572	678	788	20 077
Alumina hydrate (g)	113	2 589	3	405	60
Unwrought (g)	22 648	48 903	26 085	36 181	77 616
Scrap	19 447	18 423	22 081	27 656	31 929
India (c)					
Bauxite	61 547	36 436	85 148	...	...
Alumina	49 915	42 788	42 079	...	...
Indonesia					
Bauxite	944 332	631 763	525 811	583 900	466 517
Unwrought	135 017	238 708	174 048	163 337	125 628
Japan					
Alumina	488 032	372 317	282 714	101 057	126 353
Alumina hydrate	85 040	109 219	101 759	96 789	71 917
Unwrought	646	528	971	854	665
Unwrought alloys	1 637	1 711	1 050	1 073	2 768
Scrap	2 259	2 317	1 914	8 707	7 334
Jordan					
Scrap	4 304	3 245	3 240	3 133	...
Korea, Dem. P.R. of					
Unwrought (a) (f)	200*	8 700*	11 400*	7 000*	5 800*
Korea, Republic of					
Unwrought (a)	181	680	782	2 850	7 643
Malaysia					
Bauxite	522 049	362 100	412 400	199 000	222 115
Scrap	6 366	7 115	...	6 548	...



## Exports of Bauxite, Alumina and Aluminium

Country	1984	1985	1986	1987	1988
Saudi Arabia					
Scrap	18 439	22 828	20 603	27 552	52 266
Singapore					
Alumina	1 216	17 665	119 180	31 102	32 414
of which: Re-exports	1 211	17 650	118 947	30 090	32 297
Unwrought	7 078	7 634	6 444	13 107	106 582
of which: Re-exports	5 300	6 274	5 886	11 193	104 842
Scrap	9 963	10 707	12 434	15 770	20 386
Taiwan					
Alumina	3 564	4 734	6 384	3 721	562
Unwrought	3 128	5 830	12 504	17 254	(a)34 753
Scrap	1 195	2 661	3 096	7 969	5 211
Australia					
Bauxite	4 900 000*	4 800 000*	4 260 000*	4 500 000*	...
Alumina	6 905 001	7 169 102	7 687 099	8 299 277	8 558 000
Unwrought (a)	419 063	563 716	579 528	710 425	815 000
Scrap	12 715	18 320	45 700	42 583	42 121
New Zealand (d)					
Unwrought (a)	211 191	228 044	207 761	211 521	231 400
Scrap	3 264	2 963	3 681	5 659	...

## Notes

- (1) Except where alumina hydrate is separately specified, national trade figures for alumina can be considered as inclusive of hydrate
- (2) In this table the term 'unwrought' aluminium corresponds to item 684.1 of the Standard International Trade Classification (Revision 3) and comprises ingots, blocks, unwrought bars, etc.
- (3) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) Including alloys
- (b) Officially described as 'Aluminium ores and concentrates' but believed to be mostly alumina
- (c) Years ended 31 March following that stated
- (d) Years ended 30 June of that stated
- (e) Imports into the Netherlands
- (f) BGS estimates, based on known imports into certain countries
- (g) Re-exports
- (h) Some material believed to come from stocks

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Bauxite, uncalcined	298 486	174 778	185 719	292 340	330 572
Bauxite, calcined	126 886	156 255	170 511	137 050	160 908
Alumina	653 026	563 359	546 330	609 630	601 850
Alumina hydrate	8 928	9 434	12 714	19 549	17 646
Unwrought	64 690	48 783	62 435	65 257	119 757
Unwrought alloys	107 453	98 332	119 731	110 566	115 263
Scrap	6 749	4 818	7 811	12 621	18 664
<b>Belgium-Luxembourg</b>					
Bauxite	40 536	36 650	29 130	26 534	37 841
Alumina	9 757	8 769	8 824	8 029	9 032
Alumina hydrate	18 432	19 129	20 066	28 842	23 858
Unwrought	220 564	223 568	231 442	238 168	208 265
Unwrought alloys	91 033	84 300	75 979	77 346	146 873
Scrap	57 981	62 708	71 291	90 872	112 805
<b>Denmark</b>					
Bauxite	18	723	554	1 024	1 414
Alumina	773	737	411	1 606	686
Alumina hydrate	3 512	3 666	4 173	3 350	4 866
Unwrought	610	732	1 172	872	914
Unwrought alloys	29 112	27 644	33 108	26 961	29 236
Scrap	4 302	9 234	5 321	7 162	8 790
<b>France</b>					
Bauxite	981 080	1 002 750	909 241	894 330	1 069 102
Alumina	30 957	118 012	103 056	121 762	230 644
Alumina hydrate	19 042	20 913	21 592	24 030	36 426
Unwrought	224 499	222 789	217 803	186 105	203 837
Unwrought alloys	140 458	172 920	210 252	221 015	257 932
Scrap	66 541	53 273	58 818	70 185	96 990
<b>Germany, Federal Republic of</b>					
Bauxite	4 055 547	4 033 965	3 658 891	2 879 377	2 576 992
Alumina	698 385	661 435	717 930	857 845	851 658
Alumina hydrate	3 482	3 303	3 768	7 201	106 588
Unwrought	447 685	460 651	492 912	448 670	467 538
Unwrought alloys	275 088	260 967	290 751	285 363	339 184
Scrap	208 892	202 881	215 152	205 285	283 217
<b>Greece</b>					
Bauxite	5 689	1 406	102	5 616	—
Alumina	362	149	300	179	141
Alumina hydrate	136	182	205	80	94
Unwrought (a)	6 473	3 644	7 180	13 499	5 500
<b>Irish Republic</b>					
Bauxite	1 126 985	1 322 262	1 079 908	1 440 106	1 746 828
Alumina	3 148	4 684	4 414	4 234	4 355
Unwrought (a)	3 065	2 597	3 789	2 252	2 812
<b>Italy</b>					
Bauxite	1 281 290	1 277 110	1 395 994	1 380 836	1 406 757
Alumina	199 595	224 977	298 607	266 522	239 987
Alumina hydrate	72 223	66 368	78 294	69 951	90 125
Unwrought	177 123	196 627	214 678	215 962	270 193
Unwrought alloys	114 697	123 249	133 012	160 962	147 720
Scrap	133 257	148 473	182 088	159 707	184 201
<b>Netherlands</b>					
Bauxite	130 784	162 384	162 760	141 702	160 273
Alumina	565 750	557 748	600 988	612 071	642 945
Alumina hydrate	32 355	31 368	40 597	35 066	44 301
Unwrought	93 184	98 604	105 830	97 818	105 308
Unwrought alloys	39 801	36 606	45 301	47 718	62 423
Scrap	57 473	67 179	76 325	81 662	105 655
<b>Portugal</b>					
Bauxite	1 400	8 374	2 282	1 793	...
Alumina	6 372	6 280	8 195	8 562	...
Unwrought	5 697	12 220	13 664	5 825	(a)45 000
Unwrought alloys	20 413	21 878	26 239	38 225	...

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1984	1985	1986	1987	1988
<b>Spain</b>					
Bauxite	1 812 156	1 589 476	1 431 284	1 663 191	1 389 690
Alumina	23 037	25 222	22 296	27 295	31 115
Unwrought	8 710	7 138	14 410	5 623	44 137
Unwrought alloys	1 872	3 518	7 363	7 772	10 690
Scrap	6 036	9 133	19 129	16 103	16 230
<b>Austria</b>					
Bauxite	39 174	46 342	36 889	32 661	49 223
Alumina	242 993	295 374	275 911	282 983	298 833
Alumina hydrate	7 673	8 141	7 483	8 227	8 139
Unwrought (a)	74 677	78 148	93 413	81 133	108 266
Scrap	47 516	53 109	61 863	54 621	56 043
<b>Bulgaria</b>					
Unwrought (a) (f)	17 900*	20 800*	14 800*	14 400*	29 600*
<b>Czechoslovakia</b>					
Bauxite	349 000	356 000	399 000	453 000	445 000
Alumina (f)	28 100*	24 800*	25 400*	30 500*	11 700*
Unwrought (a)	90 000	80 000	78 000	76 000	108 000
<b>Finland</b>					
Bauxite	2 564	3 368	1 687	5 633	2 043
Alumina	868	1 173	1 285	1 372	1 447
Alumina hydrate	26 500	28 244	28 863	32 186	26 207
Unwrought	18 307	16 814	18 564	18 825	18 127
Unwrought alloys	2 414	3 524	3 037	4 697	5 452
Scrap	16 289	33 317	46 177	57 677	69 811
<b>German Democratic Republic</b>					
Bauxite	170 600	208 400	178 100	141 600	148 300
Alumina (f)	103 800*	97 400*	100 200*	100 900*	82 700*
Unwrought (a) (f)	55 000*	42 600*	34 000*	30 500*	29 100*
<b>Hungary</b>					
Unwrought	163 320	165 294	205 007	189 961	197 577
<b>Iceland</b>					
Alumina	147 508	197 129	138 028	142 335	140 525
<b>Norway</b>					
Bauxite	5 420	5 590	5 871	5 792	14 746
Alumina	1 448 516	1 445 268	1 458 718	1 604 669	1 287 319
Alumina hydrate	43 055	33 788	36 931	40 467	277 169
Unwrought	4 162	6 902	3 374	19 444	71 541
Unwrought alloys	27 349	27 780	31 743	37 702	18 654
Scrap	2 874	2 127	3 211	1 417	2 085
<b>Poland</b>					
Bauxite	31 011	37 862	49 311	52 248	51 891
Alumina	226 221	206 591	225 216	221 042	193 457
Unwrought	91 481	86 391	88 207	88 631	88 755
<b>Romania</b>					
Bauxite (f)	669 200*	685 200*	627 300*	482 900*	463 300*
Alumina (f)	20 500*	41 200*	42 200*	72 100*	16 800*
<b>Soviet Union</b>					
Bauxite (f)	4 433 600*	4 827 600*	5 008 600*	4 820 500*	4 759 000*
Alumina (f)	806 200*	752 900*	1 142 800*	987 900*	778 700*
<b>Sweden</b>					
Bauxite	61 749	48 280	50 056	46 425	51 108
Alumina	174 059	180 328	127 453	184 283	189 820
Alumina hydrate	77 114	62 405	60 130	86 615	63 896
Unwrought	24 553	26 557	33 639	21 725	28 191
Unwrought alloys	23 990	19 729	20 652	21 399	30 628
Scrap	2 081	1 515	1 621	2 526	3 592
<b>Switzerland</b>					
Bauxite	2 370	44	512	2 625	3 852
Alumina	162 234	146 751	160 374	156 382	140 614
Unwrought & scrap	63 189	78 745	88 274	90 239	98 868
<b>Turkey</b>					
Bauxite	7 676	19 408	43 366	40 461	...
Alumina	210	628	1 004	1 499	5 196
Unwrought (a)	68 493	59 154	38 355	89 638	60 497

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1984	1985	1986	1987	1988
<b>Yugoslavia</b>					
Bauxite	185 797	162 968	184 697	132 797	364 761
Alumina	113 226	118 366	151 460	118 165	128 230
Unwrought	33 624	38 561	31 486	32 478	17 250
Unwrought alloys	434	755	492	119	2 407
<b>Algeria</b>					
Alumina	789	372	795	186	...
Unwrought (a)	6 810	5 797	6 636	7 665	...
<b>Cameroon</b>					
Alumina	151 640	149 601	150 744	161 945	...
<b>Ghana</b>					
Alumina	460	65 396	...	...	...
<b>Kenya</b>					
Alumina	2 756	2 445	2 943	1 984	...
<b>Morocco</b>					
Bauxite	3 200	3 220	4 000	4 575	5 118
Alumina	2 036	2 149	2 081	2 885	...
Unwrought (a)	1 081	1 017	1 645	1 139	1 717
<b>Nigeria</b>					
Unwrought (a)	2 933	6 557	1 234	11 306	...
<b>South Africa</b>					
Bauxite	20 038	21 068	10 804	21 765	...
Alumina	313 863	350 615	307 253	322 058	...
Scrap	657	766	490	536	...
<b>Tanzania</b>					
Unwrought (a)	994	—	254	3 909	...
<b>Tunisia</b>					
Alumina	24 138	20 642	26 859	21 285	28 707
<b>Canada</b>					
Bauxite	2 451 499	2 074 171	2 112 874	2 019 119	2 351 595
Alumina	1 349 191	1 543 980	1 724 569	2 068 390	1 875 546
Unwrought	44 566	59 739	64 459	53 479	59 315
Scrap	61 782	53 376	69 945	56 959	62 161
<b>Costa Rica</b>					
Unwrought (a)	2 513	2 005	1 544	...	...
<b>Mexico</b>					
Bauxite	54 313	46 708	35 086	40 264	53 034
Alumina	155 295	165 714	70 139	137 192	...
Alumina hydrate	32 763	31 943	39 860	27 668	...
Unwrought & scrap (a)	66 769	99 285	48 410	38 065	48 143
<b>Panama</b>					
Unwrought (a)	934	1 308	1 366	1 989	546
<b>USA</b>					
Bauxite, crude dried	10 436 104	7 257 819	6 854 063	9 819 080	10 502 783
Bauxite, calcined	232 127	340 590	303 783	338 589	393 699
Alumina	4 295 151	3 834 490	3 613 263	4 078 048	4 647 390
Unwrought	453 315	432 690	766 220	706 200	514 037
Unwrought alloys	427 693	435 940	580 110	539 385	512 787
Scrap	137 673	127 473	162 276	188 614	200 497
<b>Argentina</b>					
Bauxite	25 187	23 665	25 739	31 325	...
Alumina	312 663	296 763	345 794	226 437	...
Alumina hydrate	9 930	6 528	11 044	12 787	...
<b>Brazil</b>					
Bauxite	11 159	8 801	1 020	2 998	2 028
Alumina	183 724	136 637	285 470	393 438	378 243
Unwrought	1 248	200	106	118	33
Unwrought alloys	3 335	2 418	1 308	2 191	67
Scrap	210	684	3 119	4 931	759
<b>Colombia</b>					
Bauxite	3 537	8 090	5 071	4 500*	...
Alumina	4 957	4 103	4 151	2 500*	...
Unwrought (a)	17 977	11 641	21 290	17 900	...
<b>Ecuador</b>					
Unwrought	3 420	5 023	5 144	4 773	...

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1984	1985	1986	1987	1988
Peru					
Bauxite	5 923	900	283	1 874	2 504
Alumina	1 765	1 862	1 302	1 636	2 301
Unwrought	3 356	2 941	5 290	5 082	4 190
Uruguay					
Bauxite	3 350	4 170	3 951	8 455	4 071
Alumina	1 291	617	1 202	1 102	1 120
Unwrought	1 494	1 614	1 991	2 693	2 306
Venezuela					
Bauxite	2 522 214	2 404 199	2 855 125	3 023 945	...
Alumina	6 424	6 478	5 068	6 832	...
Alumina hydrate	1 182	964	1 290	2 249	...
Unwrought	149	114	3 725	1 816	...
Abu Dhabi					
Scrap	2 533	2 099	2 418	5 017	9 197
Bahrain					
Alumina	363 599	335 006	332 417	346 191	...
China					
Alumina	(f)70 000*	(f)81 000*	(f)107 800*	322 149	159 534*
Unwrought (a)	252 736	487 862	266 241	148 130	75 381
Dubai					
Alumina	283 630	326 904	294 626	...	...
Hong Kong					
Bauxite	23 630	18 773	20 526	25 815	16 471
Alumina	167	31 022	—	474	84 000
Alumina hydrate	184	1 796	57	469	29
Unwrought	35 565	76 071	46 950	70 480	111 187
Scrap	1 107	888	1 301	3 072	5 512
India (c)					
Unwrought (a)	61 794	41 651	81 227	65 400	3 500
Indonesia					
Alumina	22 427	118 320	251 225	226 509	287 585
Alumina hydrate	376 396	107 544	52 271	36 499	44 590
Unwrought	17 183	11 987	9 551	12 086	6 818
Iran (e)					
Alumina	102 313	959	81 532	26 980	...
Unwrought	38 417	1 383	13 600	9 500	11 500
Israel					
Alumina (f)	1 500*	1 400*	1 700*	1 800*	1 100*
Unwrought (b)	12 841	13 848	15 899	18 180	...
Japan					
Bauxite	3 861 875	3 518 991	2 307 459	1 872 020	2 148 590
Alumina	141 583	41 732	63 489	26 984	44 092
Alumina hydrate	1 268	2 273	2 564	14 791	27 956
Unwrought	1 058 938	1 273 187	1 076 353	1 435 037	1 716 070
Unwrought alloys	288 879	302 315	289 662	400 253	575 926
Scrap	243 250	361 053	358 813	430 642	399 154
Jordan					
Alumina	9 148	4 536	455	11 529	...
Unwrought	2 658	5 330	4 536	5 319	...
Korea, Dem. P.R. of					
Alumina (f)	24 100*	28 200*	11 500*	7 600*	12 400*
Unwrought (a) (f)	600*	1 600*	3 300*	150*	200*
Korea, Republic of					
Bauxite	9 305	9 177	15 571	30 359	24 733
Alumina	37 273	34 923	36 008	38 603	43 242
Alumina hydrate	40 466	42 564	57 119	68 406	75 233
Unwrought	112 599	124 457	159 860	480 535	217 744
Unwrought alloys	30 629	75 932	24 652	32 955	48 831
Scrap	5 069	5 563	8 799	43 240	27 840
Malaysia					
Alumina	7 074	5 438	12 300	12 030	...
Unwrought	13 922	8 759	10 576	11 724	...
Unwrought alloys	17 773	12 994	15 873	19 812	...
Scrap	618	1 272	1 339	849	...
Pakistan (d)					
Alumina	1 454	1 853	2 586	2 487	2 500
Unwrought	1 691	6 674	5 250	8 921	14 471
Scrap	14 276	13 388	16 421	26 688	26 451

**Imports of Bauxite, Alumina and Aluminium**

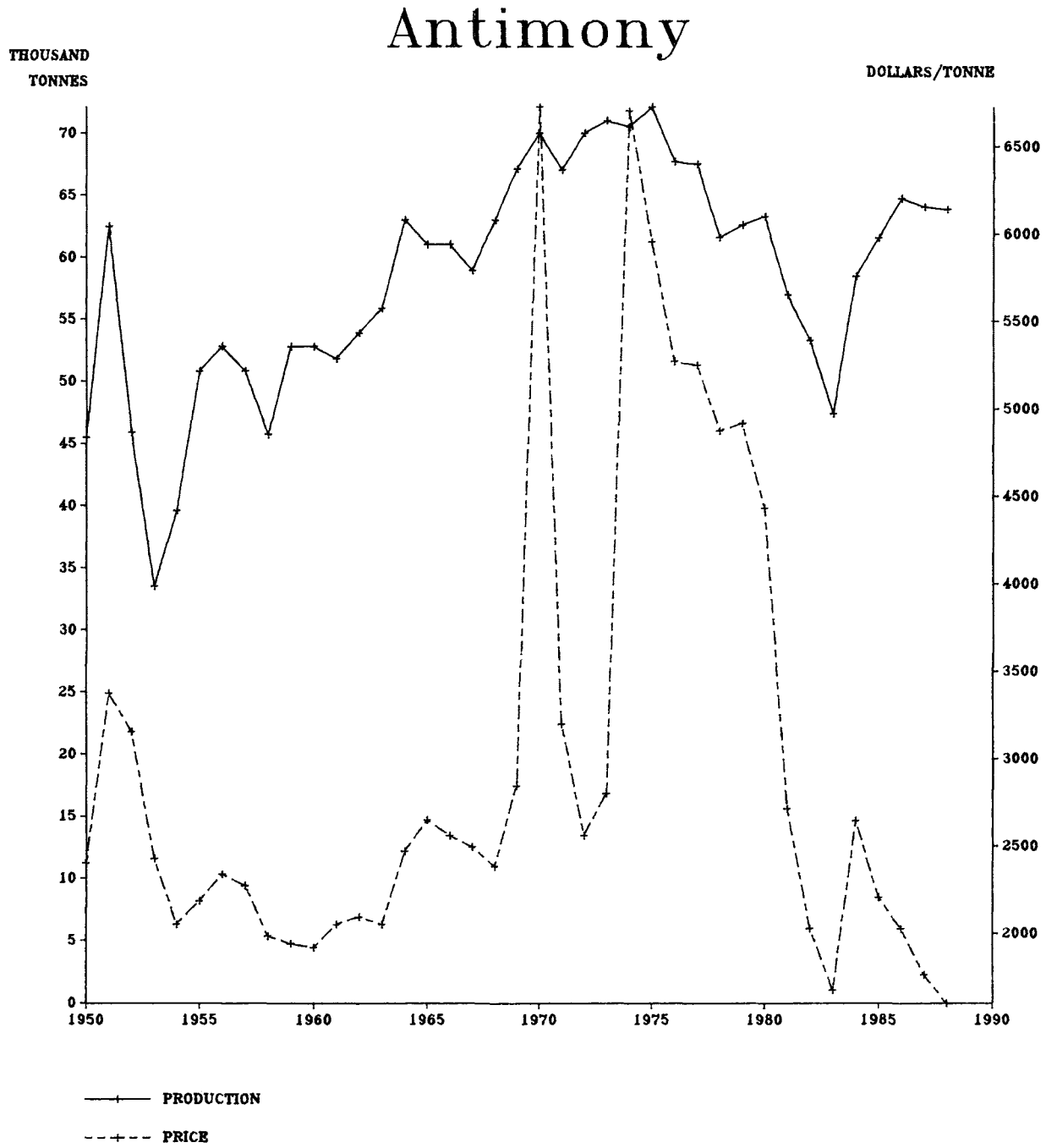
tonnes

Country	1984	1985	1986	1987	1988
Philippines					
Bauxite	3 953	5 005	5 379	933	4 637
Alumina	2 766	3 532	5 380	8 257	5 775
Unwrought (a)	6 614	4 881	6 271	10 808	10 222
Saudi Arabia					
Bauxite	163 647	244 096	162 837	77 602	147 531
Unwrought	13 818	9 316	14 300	18 625	14 405
Singapore					
Alumina	921	38 403	52 877	12 093	1 215
Alumina hydrate	8 418	10 299	50 260	63 131	84 780
Unwrought	10 767	14 435	15 653	40 628	125 646
Scrap	796	771	845	1 525	3 101
Syria					
Unwrought & scrap	2 522	3 747	1 077	537	...
Taiwan					
Bauxite	55 241	19 518	47 261	36 235	39 635
Alumina	5 268	5 744	2 219	4 888	9 097
Alumina hydrate	1 921	1 936	3 506	7 215	11 685
Unwrought	99 923	147 204	155 956	195 095	(a)193 404
Scrap	6 483	6 237	13 055	23 211	64 115
Thailand					
Bauxite	11 652	7 506	11 491	21 714	30 426
Alumina	1 473	2 051	3 258	7 842	6 151
Alumina hydrate	9 251	11 296	14 347	12 117	19 592
Unwrought	43 825	39 972	42 206	43 804	1 036 106
Unwrought alloys	5 415	4 666	5 606	9 932	26 601
Australia					
Bauxite	1 423	6 128	3 800	10 107	21 429
Alumina	4 730	5 050	4 966	5 639	10 939
Unwrought (a)	709	1 079	754	1 060	3 000
Scrap	2 646	3 105	1 931	1 587	2 264
New Zealand (d)					
Alumina	505 892	463 273	475 486	472 601	...
Unwrought (a)	5 202	719	534	1 565	7 500

## Notes

- (1) Except where alumina hydrate is separately specified, national trade figures for alumina can be considered as inclusive of hydrate
  - (2) In this table the term 'unwrought' aluminium corresponds to item 684.1 of the Standard International Trade Classification (Revision 3) and comprises ingots, blocks, unwrought bars, etc.
  - (3) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) Including alloys
  - (b) Figures may be incomplete as value only given in Israeli trade return for imports from some countries
  - (c) Years ended 31 March following that stated
  - (d) Years ended 30 June of that stated
  - (e) Years ended 20 March following that stated
  - (f) BGS estimates, based on known exports from certain countries





**Figure 2** World mine production of antimony compared with the annual average New York price of antimony expressed in constant 1980 US dollars (from 1981, NY dealer price).  
*Constant commodity prices derived from those quoted by American Metal Market and Metals Week.*



## Mine Production of Antimony

Antimony  
tonnes (metal content)

Country	1984	1985	1986	1987	1988
Italy	234	495	286	91	119
Spain	583	248	45	20	20
Austria	565	550	558	399	270
Czechoslovakia	1 000*	782	782	931	947*
Romania	350*	600*	600*	600*	600*
Soviet Union	6 500*	6 500*	6 000*	6 000*	6 000*
Turkey	1 729	1 909	2 752	2 344	2 300*
Yugoslavia	945	1 088	859	834	725
Morocco	941	735	584	440	228
South Africa	7 440	7 390	6 816	6 301	5 917
Zimbabwe	256	194	175	153	164
Canada	554	1 075	3 805	3 706	3 171
Guatemala	70	1 102	1 469	1 696	846
Honduras	92	87	118	72	19
Mexico	3 064	4 266	3 337	2 839	2 185
USA (c)	505	250*	250*	—	150*
Bolivia	9 281	8 925	10 243	10 635	9 943
Peru (a)	672	594	670*	590	499*
China	20 000*	22 000*	23 000*	25 000*	28 000*
Malaysia	17	26	129	22	—
Pakistan	6	24	—	45	—
Thailand	2 874	1 809	1 486	596	649
Australia (b)	1 149	1 458	1 131	1 231	1 377
World total	58 800	62 100	65 100	64 500	64 100

### Notes

- (1) This table includes antimony content of antimonial lead alloys
- (2) In addition to the countries listed, Afghanistan, Hungary and Iran are also believed to produce antimony
- (a) Including Sb content of antimonial lead plus Sb content of ores for export
- (b) Including Sb content of lead and zinc concentrates
- (c) Excluding Sb content of antimonial lead

## Antimony

**Exports of Antimony**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	84	27	98	59	33
Oxide (a)	3 900*	3 600*	3 600*	4 400*	4 300*
Belgium-Luxembourg					
Oxide (a)	3 100*	3 200*	3 400*	3 100*	3 700*
France					
Ore	54	209	19	58	144
Metal	55	125	91	45	158
Oxide	5 931	5 360	4 630	6 019	5 507
Germany, Federal Republic of					
Metal	118	104	53	57	237
Oxide	755	592	747	803	822
Italy					
Ore	126	582	30	—	—
Metal	33	1	24	4	9
Oxide	650	362	115	79	36
Netherlands					
Metal	6	59	7	—	45
Oxide	134	243	220	453	467
Spain					
Metal	465	240	43	5	...
Austria					
Ore	4	5	5	3	77
Sulphide (b)	14	46	53	4	24
Soviet Union					
Oxide (a)	700*	400*	300*	200*	200*
Turkey					
Ore	1 975	1 860	2 190	4 084	...
Metal	336	274	447	665	...
Morocco					
Ore	2 152	1 766	1 384	999	465
South Africa					
Ore (c)	4 596	1 452	822	112	76
Oxide	7 363	5 120	6 170	3 940	...
Zimbabwe					
Ore	419	170	—	—	...
Canada					
Ores & concentrates	...	...	...	...	3 833
Guatemala					
Ores & concentrates	111	1 130	...	...	...
Mexico					
Ores & concentrates	3 805	3 337	3 876	3 108	...
Metal	115	185	140	63	...
USA					
Metal	484	328	626	816	626
Oxide	574	973	638	854	1 478
Bolivia					
Ore	16 102	11 500*	18 813	17 351	11 900*
Metal	200	400*	578	1 029	500*
Oxide	797	500*	900	870	700*
Peru					
Ores & concentrates (a)	650*	160*	400*	250*	220*
Metal (a)	140*	220*	50*	...	...

**Exports of Antimony**

Country	1984	1985	1986	1987	1988
China					
Ores & concentrates (a)	7 900*	14 400*	12 100*	12 200*	6 300*
Metal	17 321	15 988	21 567	29 573	29 276
Oxide (a)	7 800*	5 400*	6 800*	7 400*	10 700*
Sulphide (a)	130*	20*	490*	100*	150*
Thailand					
Ore	5 491	5 417	2 774	3 627	3 617
Australia					
Ores & concentrates	3 158	2 834	1 549	1 427	2 276

(a) BGS estimates, based on known imports into certain countries

(b) Believed to be crude liquated sulphide

(c) Sb content

**Imports of Antimony**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ore (c)	5 800*	5 800*	...	...	...
Metal	296	559	454	389	315
Oxide	976	1 043	1 320	1 416	1 637
Belgium-Luxembourg					
Ore	6 097	5 851	5 188	6 086	5 341
Metal	201	215	385	878	1 260
Oxide	646	776	792	786	945
Denmark					
Metal	15	1	0	0	1
Oxide	45	32	68	72	79
France					
Ore	11 255	12 074	11 783	14 886	9 269
Metal	568	431	377	2 821	1 045
Oxide	504	662	640	735	988
Germany, Federal Republic of					
Ore	2 131	1 630	1 845	319	—
Metal	582	782	977	1 399	1 727
Oxide	5 536	4 806	4 581	4 792	4 922
Greece					
Metal	12	71	13	80	35
Italy					
Metal	223	247	222	155	578
Oxide	780	893	1 163	1 669	2 067
Netherlands					
Metal	35	99	64	45	111
Oxide	1 131	1 115	1 125	1 652	1 805
Portugal					
Metal	32	33	28	79	...
Spain					
Ore	436	587	630	684	...
Metal	23	41	177	235	...
Oxide	321	200	273	411	...
Austria					
Ore	36	182	678	970	0
Metal	31	80	84	63	45
Oxide	140	173	261	163	115
Sulphide	3	25	35	27	203
Finland					
Metal	6	6	8	49	7
German Democratic Republic					
Oxide (b)	200*	100*	100*	50*	60*
Norway					
Metal	71	22	26	55	10
Sweden					
Metal	2	23	13	12	112
Switzerland					
Metal	34	27	62	90	65
Yugoslavia					
Ores & concentrates	1 345	2 401	2 732	2 907	—
Algeria					
Metal	104	—	55	115	...
Canada					
Oxide	1 143	1 189	1 278	1 526	1 760
USA					
Ore	8 973	12 933	9 861	10 332	8 109
Liquated	65	151	523	92	162
Metal	4 096	4 889	7 583	9 011	17 733
Oxide	16 224	9 666	12 266	12 378	11 548
Argentina					
Ore	527	202	483	...	...

## Imports of Antimony

Country	1984	1985	1986	1987	1988
Brazil					
Ore	34	398	817	768	765
Metal	260	484	854	1 010	730
Oxide	37	49	30	44	71
Sulphide	17	13	21	...	24
Venezuela					
Metal	118	102	116	134	...
India (a)					
Metal	...	1 089	975	...	...
Oxide	...	123	107	...	...
Japan					
Ores & concentrates	6 987	5 091	6 400	5 886	6 376
Metal	5 118	4 269	3 985	4 743	5 817
Oxide	2 467	2 672	3 609	4 368	6 202
Sulphide	228	56	126	69	134
Korea, Republic of					
Ores & concentrates	1 250	883	4 655	5 266	3 780
Metal	251	58	298	725	416
Oxide	354	337	644	616	416
Malaysia					
Metal	36	60	69	99	...
Pakistan (d)					
Metal	15	32	75	66	92
Taiwan					
Metal	—	99	77	618	580
Oxide	—	380	765	1 079	1 197
Thailand					
Ores & concentrates	1 645	3 700	3 002	4 284	6 045
Metal	27	20	12	10	0
Australia					
Metal	41	90	211	130	213

(a) Years ended 31 March following that stated

(b) BGS estimates, based on known exports from certain countries

(c) BGS estimates

(d) Years ended 30 June of that stated

**Production of White Arsenic**

tonnes

Country	1984	1985	1986	1987	1988
France	3 800	9 400	10 000	7 000	7 000
Germany, Federal Republic of	360*	360*	360*	360*	360*
Portugal	144	204	197	217	214
Soviet Union	8 000*	8 100*	8 100*	8 100*	8 100*
Sweden	10 000*	10 000*	10 000*	10 000*	10 000*
Namibia (a)	2 504	2 471	2 208	1 864	2 984
Canada	8 000*	5 000*	2 000*	5 000*	2 000*
Mexico (b)	5 496	6 312	7 016	7 001	6 816
USA	6 800	2 200	—	—	—
Bolivia	151	311	84	132	191
Chile	3 500*	4 000*	4 000*	5 029	3 207*
Peru	1 090	1 257	1 273	1 221	1 093
Japan	500*	500*	500*	500*	500*

**Notes**

(1) This table includes calculated trioxide equivalents of arsenic metal produced except where this would involve double counting

(2) In addition to the countries listed, Argentina, Austria, Belgium, China, Czechoslovakia, German Democratic Republic, Finland, Hungary, Spain, United Kingdom and Yugoslavia are also believed to produce arsenic

(a) Output of Tsumeb Corp. only, trioxide equivalent of reported black arsenic

(b) Including trioxide equivalent of black arsenic

## Exports of Arsenic

Country	1984	1985	1986	1987	1988
United Kingdom					
White arsenic	2	91	131	342	...
Metallic arsenic	(a)57	(a)54	(a)204	(a)87	29
Belgium-Luxembourg					
Metallic arsenic	(a)92	(a)53	(a)53	(a)78	0
France					
White arsenic	7 225	10 223	—	—	...
Metallic arsenic	128	80	186	251	128
Germany, Federal Republic of					
White arsenic	151	304	216	284	...
Metallic arsenic	(a)13	(a)17	(a)16	(a)11	9
Italy					
White arsenic	2	24	16	5	...
Netherlands					
Metallic arsenic	(a)177	(a)89	(a)44	(a)56	24
Portugal					
White arsenic	26	150	139	76	...
Namibia					
White arsenic	2 504	2 471	2 208	1 864	2 984
Mexico					
White arsenic	3 287	3 399	4 330	4 547	...
Bolivia					
White arsenic	125	311	241	132	191
Chile					
White arsenic	3 500*	4 000*	3 000*	5 029	3 207
China					
White arsenic (b)	400*	400*	700*	1 000*	400*
Metallic arsenic (b)	100*	140*	360*	540*	520*
Hong Kong					
White arsenic (c)	21	66	308	441	554
Korea, Republic of					
White arsenic	187	307	41	268	133

## Notes

(1) This table does not purport to be comprehensive: data relating to arsenic are not fully recorded by many countries

(a) May include some tellurium

(b) BGS estimates, based on known imports into certain countries

(c) Re-exports

## Arsenic

**Imports of Arsenic**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
White arsenic	5 744	5 766	4 298	3 804	...
Metallic arsenic	(a)160	(a)156	(a)153	(a)152	58
Belgium-Luxembourg					
White arsenic	7	3	0	...	—
Metallic arsenic	(a)123	(a)83	(a)79	(a)194	100
Denmark					
White arsenic	15	15	10	29	—
France					
White arsenic	31	50	125	1 635	...
Metallic arsenic	135	91	258	104	71
Germany, Federal Republic of					
White arsenic	344	290	253	195	...
Metallic arsenic	(a)89	(a)74	(a)103	(a)111	34
Greece					
White arsenic	73	74	51	14	...
Italy					
White arsenic	551	416	494	564	...
Metallic arsenic (a)	33	59	65	92	...
Netherlands					
Metallic arsenic	(a)164	(a)96	(a)37	(a)58	38
Spain					
White arsenic	100	118	182	280	...
Metallic arsenic	28	13	12	20	...
Finland					
White arsenic (d)	1 183	1 022	1 604	1 373	—
Sweden					
Metallic arsenic	3 036	0	0	—	143
Switzerland					
White arsenic (d)	4	31	1	1	—
Turkey					
White arsenic	96	160	103	55	...
Yugoslavia					
White arsenic	115	120	148	112	...
Metallic arsenic	42	60	53	50	39
Morocco					
White arsenic	18	11	2	...	...
South Africa					
Metallic arsenic	22	15	30	43	...
USA					
White arsenic	13 985	16 473	25 730	26 934	28 056
Metallic arsenic	304	407	394	631	600
Argentina					
White arsenic	177	71	228	...	...
Brazil					
White arsenic	246	281	656	428	314
Colombia					
White arsenic	14	47	0	...	...
Uruguay					
White arsenic	40	21	39	35	51
Hong Kong					
White arsenic	238	99	116	375	348
India (b)					
White arsenic	...	495	348	...	...
Metallic arsenic	...	43	16	...	...
Indonesia					
White arsenic	44	57	101	84	93
Japan					
White arsenic	199	144	161	325	104



**Imports of Arsenic**

Country	1984	1985	1986	1987	1988
Malaysia					
White arsenic	615	1 083	554	1 368	...
Philippines					
White arsenic (d)	118	14	16	52	65
Taiwan					
White arsenic	411	368	563	646	511
Thailand					
White arsenic (d)	97	61	79	134	51
Australia					
White arsenic	...	...	...	1 442	...
New Zealand (c)					
White arsenic (d)	1 938	2 091	2 101	930	...

## Notes

(1) This table does not purport to be comprehensive: data relating to arsenic are not fully recorded by many countries

(a) May include some tellurium

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

(d) Including pentoxide and/or arsenic acid

## Production of Asbestos

tonnes

Country	1984	1985	1986	1987	1988
Greece	45 376	46 811	51 355	63 000	80 000*
Italy	147 272	136 006	115 208	100 834	94 549
Bulgaria	500	400	300	400	400*
Czechoslovakia	...	...	247	194	196
Soviet Union	2 500 000*	2 500 000*	2 400 000*	2 555 000	2 600 000*
Turkey	29 934	29 039	30 981	10 097	500
Yugoslavia	9 441	6 918	8 596	10 964	17 030
Egypt	325	229	476	209	166
Mozambique	146	55	—	—	—
South Africa					
Amosite	33 237	37 856	36 009	26 026	20 325
Crocidolite	88 884	64 731	63 203	20 682	11 885
Chrysotile	75 414	92 318	91 001	101 722	113 468
Swaziland					
Chrysotile	25 832	25 130	24 475	25 925	22 804
Zimbabwe					
Chrysotile	165 300	173 500	163 600	193 295	186 581
Canada					
Chrysotile	836 654	750 190	662 381	664 546	710 000
USA (a)	57 422	57 457	51 437	50 600	18 233
Argentina	1 093	1 244	1 697	332	294
Brazil	134 788	165 446	205 806	231 543	207 653
Colombia (b)	99 818	124 346	129 155	132 723	152 896
China	135 000*	150 000*	150 000*	150 000*	150 000*
Cyprus					
Chrysotile	7 429	16 360	13 011	18 070	14 586
India					
Amphibole	26 338	29 450	26 713	27 019	31 303
Indonesia	25 000*	25 000*	25 000*	25 000*	25 000*
Japan					
Chrysotile	3 140	2 971	3 593	3 143	3 200*
Korea, Republic of	8 062	4 703	2 983	2 518	2 428
Taiwan	1 355	625	—	—	—
World total	4 500 000	4 400 000	4 300 000	4 400 000	4 500 000

## Notes

(1) In addition to the countries listed, Democratic P.R. of Korea and Romania are also believed to produce asbestos

(a) Sold or used by producers

(b) Crude

**Exports of Unmanufactured Asbestos**

Country	1984	1985	1986	1987	1988
United Kingdom	964	308	432	463	289
Belgium-Luxembourg	349	254	660	141	551
France	921	979	438	406	556
Germany, Federal Republic of	14 927	3 064	777	1 219	1 193
Greece	34 740	29 387	44 468	23 405	53 906
Italy	57 660	66 244	44 459	51 541	...
Netherlands	217	50	177	238	—
Spain	517	189	194	23	302
Hungary	3 200*	...	1 900*	(a)1 000*	(a)1 800*
Soviet Union (a)	277 900*	309 800*	268 500*	255 700*	253 600*
Yugoslavia	2 214	2 018	1 526	1 179	204
South Africa	190 754	175 929	157 541	154 061	169 091
Swaziland	24 673	24 675	25 191	27 929	...
Zimbabwe	155 385	158 633	167 970	195 828	...
Canada	796 658	721 560	717 703	648 843	684 851
USA	39 922	45 656	47 282	60 092	31 545
Brazil	19 716	23 248	32 550	35 725	41 568
China (a)	2 800*	1 700*	1 000*	1 600*	1 000*
Cyprus	8 216	16 948	11 781	22 340	...
Japan	431	292	163	121	72
Saudi Arabia	1 426	985	28	480	9 829
Singapore	6 715	7 117	4 276	848	263
of which: Re-exports	487	1 025	4 276	848	263

(a) BGS estimates, based on known imports into certain countries

## Imports of Unmanufactured Asbestos

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	41 556	37 639	26 766	23 865	24 266
Belgium-Luxembourg	34 882	25 138	25 017	27 357	20 507
Denmark	13 536	10 362	10 269	4 381	1 078
France	70 170	63 873	65 067	70 206	76 294
Germany, Federal Republic of	74 432	63 172	64 944	55 411	44 585
Greece	3 954	4 653	1 271	964	1 773
Irish Republic	5 687	5 243	5 546	5 045	5 752
Italy	41 421	47 952	47 896	48 864	...
Netherlands	8 357	5 625	7 087	8 718	6 594
Portugal	8 126	9 932	9 208	14 247	...
Spain	47 471	38 022	43 873	45 652	47 450
Albania (d)	1 700*	1 500*	1 500*	1 200*	200*
Austria	22 654	21 595	15 148	17 749	14 858
Bulgaria	21 452	35 472	24 406	...	...
Czechoslovakia	45 335	46 783	46 203	46 879	43 664
Finland	3 157	2 479	2 165	962	853
German Democratic Republic	53 800	54 600	55 700	53 200	55 200
Hungary	35 097	33 596	31 059	28 440	30 000*
Poland	69 361	81 690	81 038	71 983	63 366
Romania (d)	2 800*	4 700*	4 100*	3 400*	...
Sweden	1 000	1 042	1 069	937	972
Switzerland	4 772	5 058	3 923	5 778	5 894
Turkey	21 872	25 544	34 112	33 340	38 059
Yugoslavia	45 468	54 373	44 212	45 600	38 456
Algeria	23 503	31 752	11 125	18 260	...
Burundi	150	422	163	400	285
Egypt	15 258	13 090	1 949	9 300	...
Ghana	621	1 760	...	...	...
Kenya	811	766	387	478	...
Morocco	4 702	1 110	4 991	1 885	5 691
Mozambique	767	3	890	25	...
Nigeria	37 439	10 778	8 640	38 156	...
Senegal	613	708	341	742	573
South Africa	20 913	11 528	11 289	11 437	...
Tunisia	6 075	5 852	9 207	7 057	5 825
Zaire	153	200*	200*	...	...
Canada	326	374	325	238	365
Cuba (f)	1 428	1 658	2 374	1 212	1 024
Dominican Republic	462	641	344	...	...
El Salvador	1 989	1 769	1 536	...	...
Guatemala	679	1 101	1 105	...	...
Honduras	1 902	1 202	1 619	...	...
Mexico	53 567	54 868	28 339	38 450	34 048
Nicaragua	622	3 676	1 212	...	...
Panama	150	225	303	164	121
USA					
Amosite	715	121	—	—	—
Crocidolite	5 656	4 795	1 988	1 692	1 252
Chrysotile	194 949	130 212	102 418	88 821	78 967
Other unmanufactured	8 643	7 301	3 948	3 828	5 108
Argentina	15 022	5 864	12 701	14 324	...
Brazil	3 791	2 591	3 658	4 134	5 566
Chile	7 347	8 387	(d)7 700*	(d)7 700*	(d)10 000*
Colombia	11 970	14 185	16 155	...	...
Ecuador	7 891	5 031	5 682	3 743	...
Peru	3 216	3 242	6 083	9 922	3 506
Uruguay	688	596	1 003	1 193	1 320
Venezuela	8 013	4 669	9 519	15 560	...

**Imports of Unmanufactured Asbestos**

Country	1984	1985	1986	1987	1988
China (d)	1 400*	1 700*	300*	1 000*	600*
Cyprus	297	462	224	3	...
Dubai	912	6 624	4 768	...	...
India (e)	68 827	78 075	73 633	...	...
Indonesia	10 964	8 149	11 185	12 205	18 698
Iran (a)	41 064	20 451	14 590	20 612	...
Israel (c)	3 932	3 621	4 158	5 111	...
Japan	239 747	261 648	255 732	277 238	320 393
Korea, Republic of	59 693	57 143	68 017	77 595	87 470
Kuwait	1 299	...	1 999	...	...
Malaysia	23 146	19 064	16 947	20 153	...
Myanmar (e)	10	1 348	...	...	...
Pakistan (b)	3 172	2 028	3 685	5 606	7 258
Philippines	1 663	1 190	1 151	1 911	2 074
Saudi Arabia	6 660	4 547	4 457	1 810	2 780
Singapore	9 951	6 078	3 987	2 194	1 701
Sri Lanka	5 057	8 590	5 586	8 156	9 898
Syria	2 449	5 928	2 486	3 860	...
Taiwan	31 764	24 519	39 735	36 469	32 680
Thailand	66 545	71 516	49 663	71 407	109 103
Australia	14 432	12 194	9 245	3 536	2 118
New Zealand (b)	1 907	1 304	1 553	154	...

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

(d) BGS estimates, based on known exports from certain countries

(e) Years ended 31 March following that stated

(f) Exports from Canada

## Barytes

## Production of Barytes

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	63 000	107 344	86 754	77 000	76 253
Belgium	39 000*	40 000*	40 000*	40 000*	40 000*
France	139 000	121 000	116 000	104 000	100 000*
Germany, Federal Republic of	166 568	171 269	201 565	173 356	165 317
Greece	24 822	3 283	2 227	4 799	...
Irish Republic	220 000	213 800	127 500	70 000	83 500
Italy	107 128	127 226	112 540	81 643	85 650
Portugal	318	1 094	120	660	1 740
Spain	68 919	67 572	49 678	7 776	...
Czechoslovakia	60 000*	60 000*	60 000*	60 000*	60 794*
Finland	8 704	6 969	8 690	11 000	11 000*
German Democratic Republic	35 000*	34 000*	34 000*	32 000*	32 000*
Poland	90 600	91 215	97 993	59 300	53 000
Romania	75 000*	75 000*	75 000*	75 000*	75 000*
Soviet Union	530 000*	540 000*	540 000*	540 000*	540 000*
Turkey	198 031	220 497	330 758	291 913	390 964
Yugoslavia	41 098	35 488	42 789	19 270	23 350
Algeria	14 200	58 000	60 300	44 000	42 800
Egypt	3 206	2 010	3 385	4 530	15 651
Kenya	210	407	34	50	48
Morocco	561 321	463 380	179 881	126 817	321 562
South Africa	4 467	4 387	8 653	8 617	8 735
Tunisia	12 100	2 200	14 400	18 000	31 300
Zimbabwe	700	400	298	191	3 400
Canada	64 197	71 049	40 335	42 000	51 000
Guatemala	377	3 703	750	1 202	2 415
Mexico	426 095	467 693	321 186	401 336	534 954
USA (b)	703 000	670 000	269 000	406 000	404 000
Argentina	44 170	55 753	58 617	29 300	45 000
Bolivia	984	1 282	129	1 337	—
Brazil (d)	139 554	100 235	102 033	155 287	100 000*
Chile	21 722	54 494	53 121	2 109	43 135
Colombia	3 340	5 050	4 198	3 792	3 900
Peru	46 323	21 661	9 945	10 000*	10 000*
Afghanistan (c)	1 800*	1 800*	1 800*	1 800*	1 800*
China	1 000 000*	1 000 000*	820 000*	900 000*	1 100 000*
India	445 011	574 767	336 858	211 726	393 000
Iran (c)	90 000*	90 000*	90 000*	90 000*	90 000*
Japan	65 863	75 844	53 547	30 379	—
Korea, Republic of	2 729	2 785	3 768	2 942	3 000*
Malaysia	23 421	23 394	22 506	38 935	38 766
Myanmar (a)	11 000*	8 148	17 273	12 000*	...
Pakistan	26 369	29 932	39 047	10 031	21 926
Philippines	581	—	—	...	349
Thailand	174 918	230 970	142 232	33 370	48 587
Australia	19 511	22 423	5 819	10 363	20 649
World total	5 800 000	6 000 000	4 600 000	4 200 000	5 100 000

## Notes

- (1) This table may include small quantities of witherite  
(2) In addition to the countries listed, Bulgaria and Cuba are believed to produce barytes

- (a) Years ended 31 March following that stated  
(b) Sold or used by producers  
(c) Years ended 20 March following that stated  
(d) Including beneficiated and directly shipped material

## Exports of Barytes

Country	1984	1985	1986	1987	1988
United Kingdom	14 997	17 108	6 720	8 214	17 104
Belgium-Luxembourg	33 912	86 620	55 378	64 985	51 297
France	131 394	95 170	98 185	82 963	93 887
Germany, Federal Republic of	46 028	55 989	39 947	32 180	36 829
Greece	16 000	14 000	22 109	40	30
Irish Republic	224 555	198 933	121 585	77 707	69 969
Italy	9 510	27 136	3 992	1 741	...
Netherlands	59 067	64 442	42 091	62 765	80 545
Spain	51 833	58 957	41 892	22 346	2 334
Bulgaria	130 726	129 095	138 188	...	...
Czechoslovakia (b)	2 000*	2 000*	1 500*	500*	500*
German Democratic Republic (b)	1 600*	700*	200*	...	...
Norway	3 515	8 801	10 053	22 613	10 574
Romania (b)	700*	200*	400*	...	...
Turkey	215 981	191 934	193 667	231 026	233 898
Yugoslavia	20 256	19 790	37 095	9 277	10 095
Algeria	—	2 500	1 000	1 000	...
Ivory Coast	1 057	931	1 290	...	—
Morocco	570 973	487 982	257 381	254 463	386 316
Tunisia	6 112	3 000	—	4 822	3 851
Canada	1 247	1 677	6 621	6 052	8 121
Mexico	54 043	34 675	29 792	65 939	44 629
USA	1 398	5 414	12 502	14 005	288
Bolivia	1 073	1 365	239	1 445	—
Brazil	12 717	7 303	6 000	...	6 445
Chile	82 383	68 828	26 843	...	25 076
Peru	43 291	(b)78 900*	(b)56 800*	(b)14 500*	(b)25 500*
China	951 432	972 899	531 195	813 800	1 095 854
Hong Kong (c)	262	16	120	2 396	5 941
India (a)	347 317	374 927	25 614	...	...
Indonesia	762	3 591	—	1 716	2 178
Malaysia	10 250	8 155	...	7 171	...
Singapore	11 303	32 431	12 939	12 870	17 624
of which: Re-exports	6 423	11 975	11 485	10 878	6 835
Thailand	205 557	213 870	79 680	47 704	74 561
Australia	1 683	2 022	1 240	381	395

## Notes

(1) Trade in barytes is reported under item 278.92 of the Standard International Trade Classification (Revision 3) and is described as 'barytes and witherite'. However, only small quantities of witherite are traded

(a) Years ended 31 March following that stated

(b) BGS estimates, based on known imports into certain countries

(c) Re-exports

## Barytes

## Imports of Barytes

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	158 473	120 346	90 386	112 042	157 892
Belgium-Luxembourg	8 165	8 193	8 439	7 084	7 694
Denmark	11 096	1 914	14 556	17 379	13 030
France	30 855	43 660	35 552	34 620	34 250
Germany, Federal Republic of	209 420	221 614	198 558	188 872	215 032
Greece	40	2 590	5 175	1 234	1 375
Irish Republic	423	391	875	2 652	4 737
Italy	11 787	19 388	24 615	42 985	...
Netherlands	88 490	94 843	62 341	88 147	107 033
Portugal	564	1 282	1 466	1 428	...
Spain	392	259	1 237	7 243	10 657
Austria	11 325	5 034	9 067	3 112	6 555
Finland	1 419	1 721	1 769	1 883	1 845
Hungary	13 179	11 663	10 184	12 333	15 958
Norway	107 994	124 048	116 489	111 194	162 357
Poland (b)	...	5 000*	5 500*	13 500*	...
Romania (b)	47 600*	45 100*	64 500*	...	...
Soviet Union (b)	160 100*	175 000*	181 800*	198 800*	...
Sweden	5 321	5 606	6 858	6 489	5 440
Switzerland	1 294	1 348	885	985	3 068
Yugoslavia	380	270	2 365	327	2 979
Algeria	150	674	50	—	...
Cameroon	29 151	8 114	...	...	...
Gabon	936	8 125	2 716	...	...
Ivory Coast	6 604	6 952	124	...	1 071
South Africa	3 495	1 464	2 000	2 093	...
Tunisia	139	154	90	20	147
Canada	17 685	26 589	10 525	4 573	4 736
Trinidad & Tobago	12 147	19 809	19 081	18 027	...
USA	1 611 351	1 929 663	695 778	759 331	1 146 924
Argentina	1 043	1 403	259	1 577	...
Colombia	47	9 019	10 847	...	...
Ecuador	3 025	440	132	3 007	...
Venezuela	69 362	85 807	102 679	35 970	...
Abu Dhabi	5 566	27 522	6 367	12 983	16 993
Dubai	25 126	2 722	3 592	...	...
Hong Kong	378	227	425	3 060	6 450
Indonesia	60 457	67 536	57 959	15 364	33 197
Japan	41 681	50 356	30 962	68 996	91 355
Korea, Republic of	949	1 113	1 436	3 241	3 533
Malaysia	12 429	12 725	10 437	15 992	...
Philippines	44	1 247	43	2 257	1 298
Saudi Arabia	4 124	12 680	475	664	567
Singapore	11 428	18 116	14 382	12 766	14 488
Syria	2 979	8 525	3 072	239	...
Taiwan	7 914	4 131	6 636	1 586	1 619
Australia	1 282	1 770	2 306	1 181	13 534
New Zealand (a)	4 623	6 014	3 337	2 029	...

## Notes

(1) Trade in barytes is reported under item 278.92 of the Standard International Trade Classification (Revision 3) and is described as 'barytes and witherite'. However, only small quantities of witherite are traded

(a) Years ended 30 June of that stated

(b) BGS estimates, based on known exports from certain countries



## Production of Bentonite and Fuller's Earth

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Fuller's earth (a)	202 000	216 000	202 033	213 055	213 000
France					
Bentonite	12 200	14 900	10 000*	8 000*	8 000*
Germany, Federal Republic of					
Bentonite	154 000	169 000	179 000	167 000	197 000
Fuller's earth	674 000	701 000	680 000	677 000	670 000
Greece					
Bentonite	778 722	1 054 234	1 317 825	1 300 525	1 200 000*
Italy					
Bentonite	308 823	299 272	305 622	313 094	301 434
Fuller's earth	30 000	30 400	30 960	40 150	38 955
Spain					
Bentonite	72 582	90 239	114 972	103 420	100 000*
Attapulgit	43 907	59 697	67 820	40 818	...
Sepiolite	283 985	267 393	369 351	374 758	...
Czechoslovakia					
Bentonite	...	...	25 081	152 656	157 284
Hungary					
Bentonite	64 158	59 853	79 888	102 000	66 014
Poland					
Bentonite	75 500	85 200	94 200	88 600	100 000
Romania					
Bentonite	180 000*	180 000*	185 000*	180 000*	180 000*
Turkey					
Bentonite	21 970	42 040	62 367	89 262	80 218
Yugoslavia					
Bentonite	132 887	148 752	141 726	154 288	125 069
Algeria					
Bentonite	28 100	36 400	32 300	24 600	25 000*
Fuller's earth	3 500*	3 500*	3 500*	3 500*	...
Egypt					
Bentonite	3 353	3 785	5 129	3 978	3 166
Morocco					
Bentonite	1 825	2 876	3 834	2 948	3 445
Fuller's earth (f)	34 358	24 425	35 100	54 200	52 694
Mozambique					
Bentonite	414	361	1 112	936	986
Senegal					
Attapulgit	115 498	88 017	77 108	117 873	323 470
South Africa					
Bentonite	41 849	43 472	48 265	48 953	66 750
Attapulgit	4 843	5 885	10 125	6 026	7 161
Canada					
Bentonite	66 639	65 129	72 026	70 281	88 800
Guatemala					
Bentonite	682	2 727	3 836	24 781	976
Mexico					
Bentonite	267 348	267 695	136 478	129 596	133 037
Fuller's earth	45 697	58 000	52 200	49 112	49 317
USA					
Bentonite (c)	3 118 847	2 898 710	2 551 950	2 545 772	2 870 971
Fuller's earth (c)	1 722 876	1 868 149	1 732 703	1 865 890	1 973 137
Argentina					
Bentonite	125 703	147 065	146 191	108 595	110 000*
Fuller's earth	3 611	1 743	2 000*	2 000*	2 000*
Brazil					
Bentonite	201 025	236 368	229 371	216 591	110 893
Peru					
Bentonite	12 971	2 017	33 080	18 700	...

**Production of Bentonite and Fuller's Earth**

tonnes

Country	1984	1985	1986	1987	1988
Cyprus	32 400	52 000	55 000	79 600	90 300
India					
Bentonite	131 000	161 000	105 000	119 000	...
Fuller's earth	20 435	23 000	89 000	93 000	...
Iran					
Bentonite	35 000	27 000	27 000*	27 000*	27 000*
Israel					
Bentonite (e)	5 898	6 000*	6 000*	6 000*	6 000*
Japan					
Bentonite	415 974	461 530	408 864	415 806	455 137
Korea, Republic of					
Bentonite	14 400	13 200	16 800	12 600	...
Myanmar (d)					
Bentonite	710	851	406	508	...
Pakistan					
Bentonite	1 740	1 611	1 362	2 537	4 370
Fuller's earth	19 139	10 647	15 228	17 945	15 282
Philippines					
Bentonite	38 249	25 026	1 800	759	2 030
Australia					
Bentonite	39 172	29 070	39 933	30 392	35 671
Fuller's earth	15 000*	15 000*	15 000*	15 000*	15 000*
New Zealand					
Bentonite	6 418	7 400	3 140	—	1 255
World total Bentonite	6 390 000	6 630 000	6 440 000	6 550 000	6 700 000
World total Fuller's earth (b)	3 220 000	3 370 000	3 380 000	3 570 000	3 870 000

## Notes

(1) Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important

(2) Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process

(3) In some countries, such as the United Kingdom, calcium bentonite is known as fuller's earth, a term which is also used to refer to attapulgite, a mineralogically distinct clay mineral but exhibiting similar properties

(4) In addition to the countries listed, Austria, Bulgaria, China, Soviet Union and Tanzania are also believed to produce bentonite and France, Iran and Japan may produce fuller's earth

(a) BGS estimates of saleable production based on data from producing companies

(b) Including attapulgite and sepiolite

(c) Sold or used by producers

(d) Years ended 31 March following that stated

(e) A low grade form of bentonite, known as metabentonite

(f) Smectite

## Exports of Bentonite and Fuller's Earth

Country	1984	1985	1986	1987	1988
United Kingdom					
Bentonite	22 195	40 256	33 695	35 605	39 027
Fuller's earth	16 619	23 111	22 577	24 824	31 091
Belgium-Luxembourg					
Bentonite	1 488	2 041	280	86	453
Fuller's earth	659	482	661	82	547
France					
Bentonite	7 676	8 296	8 019	7 419	9 005
Fuller's earth	12 033	5 459	2 546	2 507	3 971
Germany, Federal Republic of					
Bentonite	33 552	34 444	33 063	31 097	43 388
Fuller's earth	3 348	4 854	5 301	5 093	4 735
Greece					
Bentonite	380 246	453 714	460 875	489 861	391 781
Italy					
Bentonite	38 144	28 063	20 780	24 155	...
Netherlands					
Bentonite	23 916	30 572	30 405	28 045	39 936
Fuller's earth	9 074	301	575	991	—
Spain					
Bentonite	24 236	29 045	33 258	36 914	...
Fuller's earth	2 670	2 817	3 336	2 702	...
Bulgaria					
Bentonite	101 153	86 757	113 005	...	...
Hungary					
Bentonite	12 920	10 338	11 423	10 875	12 496
Turkey					
Bentonite	7 051	29 325	42 199	24 740	...
Yugoslavia					
Bentonite	189	292	79	4 799	2 792
Morocco					
Fuller's earth (a)	38 640	32 720	30 495	42 002	75 000
Senegal					
Fuller's earth (b)	7 996	11 224	2 022	8 171	71 714
South Africa					
Bentonite	915	1 445	1 609	580	808
Mexico					
Bentonite	3 602	7 170	11 488	11 846	...
USA					
Bentonite	510 673	580 659	527 767	489 209	569 071
Fuller's earth	105 039	96 244	109 604	96 991	112 265
Argentina					
Bentonite	6 433	8 665	12 821	6 489	...
Colombia					
Bentonite	—	850	1 350	...	...

**Exports of Bentonite and Fuller's Earth**

tonnes

Country	1984	1985	1986	1987	1988
China					
Bentonite (c)	1 100*	900*	20 000*	1 300*	8 300*
Fuller's earth (c)	1 200*	500*	600*	1 000*	1 500*
India (d)					
Bentonite	69 237	21 344	6 843	...	...
Fuller's earth	306	150	125	...	...
Indonesia					
Bentonite	5 184	3 009	4 206	25 832	5 544
Kuwait					
Bentonite	3 393	...	...	...	...
Philippines	17 917	34 897	—	—	—
Singapore					
Bentonite	21 817	13 823	7 376	11 985	19 365
of which: Re-exports	19 524	11 463	7 376	11 985	19 365
Fuller's earth	7 923	6 335	2 105	960	6 179
of which: Re-exports	7 923	6 321	2 105	960	6 179

## Notes

- (1) See notes 1-3 to production table
  - (2) The figures in this table refer to natural and sodium-exchanged bentonite, and fuller's earth, Standard International Trade Classification (Revision 3) 278.27
  - (3) Activated bentonite and fuller's earth, Standard International Trade Classification (Revision 3) 598.65 are excluded
  - (4) Some countries are believed to include sodium-exchanged bentonite, often referred to as activated bentonite, under Standard International Trade Classification (Revision 3) 598.65, e.g. Italy
- (a) Smectite  
(b) Attapulgite  
(c) BGS estimates, based on known imports into certain countries  
(d) Years ended 31 March following that stated

## Imports of Bentonite and Fuller's Earth

Country	1984	1985	1986	1987	1988
United Kingdom					
Bentonite	81 051	83 982	102 648	98 133	115 114
Fuller's earth	5 672	2 013	1 437	1 284	3 068
Belgium-Luxembourg					
Bentonite	19 873	20 166	20 007	19 893	37 102
Fuller's earth	9 470	1 520	1 173	800	481
Denmark					
Bentonite	3 234	2 669	4 779	5 608	7 875
Fuller's earth	981	1 129	749	540	691
France					
Bentonite	95 069	98 366	88 061	77 629	114 725
Fuller's earth	1 898	1 922	2 978	1 405	1 142
Germany, Federal Republic of					
Bentonite	82 612	114 610	116 903	119 114	187 642
Fuller's earth	4 593	6 905	9 769	10 809	11 672
Greece					
Bentonite	1 657	358	371	548	353
Italy					
Bentonite	48 559	20 731	31 615	39 228	...
Fuller's earth	2 718	3 065	2 575	2 143	...
Netherlands					
Bentonite	90 934	74 619	85 191	67 407	85 396
Fuller's earth	2 615	3 455	4 882	5 451	11 534
Portugal					
Bentonite	19 131	22 453	21 767	23 064	...
Fuller's earth	152	980	883	436	...
Spain					
Bentonite	28 484	30 413	27 460	28 692	...
Austria					
Bentonite	1 391	2 432	5 250	6 361	12 620
German Democratic Republic					
Bentonite (c)	15 100*	12 300*	13 000*	11 700*	12 400*
Fuller's earth (c)	900*	700*	1 400*	1 700*	900*
Norway					
Bentonite	38 128	40 600	33 683	28 446	23 362
Fuller's earth	412	4 131	10 286	12 022	197
Poland					
Bentonite (c)	15 100*	16 900*	27 100*	24 700*	17 300*
Sweden					
Bentonite	6 653	6 005	9 228	11 958	7 693
Algeria					
Bentonite (b)	14	436	1 019	33	...
Ivory Coast					
Bentonite	467	776	421	...	65
Morocco					
Bentonite	682	200	20	547	62
Senegal					
Bentonite	2 104	336	710	1 684	603
Tunisia					
Bentonite	4 844	3 032	4 891	563	1 102
Zimbabwe					
Fuller's earth	162	(b) 2 896	(b) 2 748	(b) 1 413	...
Canada					
Bentonite	337 048	346 013	326 024	318 071	334 872
Fuller's earth	4 152	4 970	5 438	10 787	6 477
Mexico					
Bentonite	496	739	612	1 319	...
USA					
Bentonite	5 322	7 352	2 509	3 665	3 200
Fuller's earth	7	3 461	75	239	486
Brazil					
Bentonite	14 098	12 774	21 185	13 518	16 989
Chile					
Bentonite (c)	3 600*	1 000*	3 900*	3 500*	1 100*
Colombia					
Bentonite	6 736	15 071	3 700	...	...

**Imports of Bentonite and Fuller's Earth**

tonnes

Country	1984	1985	1986	1987	1988
Peru					
Bentonite	1 041	893	806	915	294
Uruguay					
Bentonite	108	142	199	417	221
Venezuela					
Bentonite	16 332	13 505	25 340	10 897	...
Indonesia					
Bentonite	25 542	28 189	23 005	2 157	13 532
Fuller's earth	961	918	529	18	35
Korea, Republic of					
Bentonite	3 816	5 062	5 414	3 749	10 728
Kuwait					
Bentonite	30 709	...	...	...	...
Malaysia					
Bentonite	20 797	50 833	83 798	56 192	...
Fuller's earth	5 474	1 814	803	2 145	...
Pakistan (a)	1 045	283	7 486	1 522	15 854
Philippines	2 048	3 374	1 883	2 322	4 601
Singapore					
Bentonite	35 468	30 132	36 360	9 431	44 902
Fuller's earth	12 531	9 946	5 301	1 467	5 848
Taiwan					
Bentonite	14 040	16 623	18 624	20 051	23 712
Thailand					
Bentonite	4 212	2 914	3 243	5 369	11 474
Australia					
Bentonite	24 419	30 531	24 942	8 654	22 269

## Notes

- (1) See notes 1-3 to production table
- (2) The figures in this table refer to natural and sodium-exchanged bentonite, and fuller's earth, Standard International Trade Classification (Revision 3) 278.27
- (3) Activated bentonite and fuller's earth, Standard International Trade Classification (Revision 3) 598.65 are excluded
- (4) Some countries are believed to include sodium-exchanged bentonite, often referred to as activated bentonite, under Standard International Trade Classification (Revision 3) 598.65, e.g. Italy
- (a) Years ended 30 June of that stated
- (b) Including crude kaolin
- (c) BGS estimates, based on known exports from certain countries

## Mine Production of Bismuth

tonnes (metal content)

Country	1984	1985	1986	1987	1988
France	79	70	95	100	100
Italy	26	54	66	44	32
Romania	80*	80*	80*	75*	65*
Soviet Union	82*	83*	84*	85*	85*
Yugoslavia	30	68	21	73	23
Canada (a)	166	201	153	165	181
Mexico	433	925	749	1 012	958
USA	400*	400*	400*	400*	400*
Bolivia	3	159	43	1	13
Peru (a)	650	785	605	413	357
China	260*	260*	260*	260*	270*
Japan	560	642	640	546	524
Korea, Republic of	126	135	136	145	140*
Australia	700*	700*	700*	700*	750*
World total	3 600	4 600	4 000	4 000	3 900

## Notes

(1) The figures in this table are in some instances derived from reported bismuth content of refined and impure metal plus recoverable bismuth in ores and concentrates exported

(2) Production for some countries may include bismuth produced from imported ores but it is thought that any resulting duplication is insignificant in the countries shown

(3) In addition to the countries listed, Belgium, Brazil, Bulgaria, German Democratic Republic and Namibia are also believed to produce bismuth

(a) Including Bi content of bullion and concentrates exported

## Bismuth

**Exports of Bismuth**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	418	(a)370*	(a)310*	(a)460*	566
France					
Compounds	41	62	43	35	162
Metal	12	11	1	40	73
Germany, Federal Republic of					
Compounds	60	39	45	81	104
Metal	427	251	77	146	144
Italy					
Metal	23	40	25	80	33
Netherlands					
Metal	28	12	27	17	30
Canada					
Metal	...	...	...	...	103
Mexico					
Metal	496	495	673	1 993	1 508
USA					
Metal	177	226	45	38	154
Peru					
Metal	(a)310*	326	483	1 002	384
Japan					
Metal	158	230	257	55	68
Korea, Republic of					
Metal	136	139	178	152	180

## Notes

(1) The compounds recorded in this table are bismuth carbonate and/or bismuth nitrate

(a) BGS estimates, based on known imports into certain countries



## Imports of Bismuth

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	503	402	370	550	678
France					
Compounds	1	1	0	3	59
Metal	232	207	304	327	427
Germany, Federal Republic of					
Compounds	4	9	6	14	9
Metal	350	385	434	688	659
Italy					
Compounds	65	18	18	10	13
Metal	69	88	111	61	95
Netherlands					
Compounds	2	48	1	—	246
Metal	34	46	21	25	28
Spain					
Metal	103	59	82	83	...
Turkey					
Compounds	4	4	4	6	...
Yugoslavia					
Compounds	4	2	4	8	0
Metal	5	18	4	—	30
Mexico					
Metal	632	134	21	—	...
USA					
Metal	980	928	1 228	1 693	1 749
Argentina					
Metal	25	15	31	...	...
Brazil					
Compounds (a)	4	9	16	9	6
Metal	101	35	72	72	55
Australia					
Metal	14	6	9	16	11

### Notes

(1) The compounds recorded in this table are bismuth carbonate and/or bismuth nitrate

(a) Also includes oxide and chloride

**Production of Bromine**

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	28 532 000	29 851 000	26 000 000	26 184 000	27 128 000
France	17 500 000*	20 000 000*	19 000 000*	20 000 000*	18 000 000*
Germany, Federal Republic of	3 306 000	3 077 000	2 500 000*	2 500 000*	2 500 000*
Italy	500 000*	600 000*	450 000*	520 000*	500 000*
Spain	300 000*	350 000*	280 000*	300 000*	300 000*
Soviet Union	70 000 000*	70 000 000*	65 000 000*	65 000 000*	65 000 000*
USA (a)	175 000 000	145 000 000	141 000 000	152 000 000	163 000 000
India	246 000	1 089 300	1 229 400	1 181 600	1 241 900
Israel	90 700 000*	100 000 000*	105 000 000*	110 000 000*	115 000 000*
Japan	12 000 000*	12 000 000*	15 000 000*	15 000 000*	15 000 000*
World total	398 100 000	382 000 000	375 500 000	392 700 000	407 700 000

(a) Elemental bromine sold as such or used in the preparation of bromine compounds by primary producers

**Exports of Bromine**

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	2 017 764	1 970 929	2 307 258	2 556 122	2 146 979
Belgium-Luxembourg	5 000	—	5 000	17 800	17 200
Germany, Federal Republic of	28 300	6 200	3 200	219 200	7 100
Italy	17 947	72 900	86 056	4 900	...
Netherlands	1 340 000	2 030 000	616 000	686 000	724 000
German Democratic Republic (a)	718 000*	1 358 000*	1 491 000*	1 826 000*	2 416 000*
USA	30 935 000	2 836 000	8 119 000	3 348 000	4 328 000
Israel (a)	23 800 000*	27 700 000*	25 000 000*	29 200 000*	32 400 000*

## Notes

(1) In general, trade in bromine compounds is not separately distinguished from other halogen salts and has therefore not been included in this table

(a) BGS estimates, based on known imports into certain countries

# Imports of Bromine

Bromine  
kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	6 169 089	9 275 204	8 453 307	8 968 048	9 725 931
Belgium-Luxembourg	1 653 200	1 280 900	1 660 500	1 842 700	2 121 700
Denmark	74 100	130 000	76 500	104 500	52 000
France	5 173 000	6 782 500	4 800 000	5 799 500	6 966 200
Germany, Federal Republic of	5 865 200	7 443 600	7 026 100	6 959 700	6 677 300
Italy	1 736 768	1 614 300	2 612 707	2 140 000	...
Netherlands	6 933 000	8 007 000	7 627 000	8 267 000	9 332 000
Portugal	600	700	...	200	...
Spain	284 000	165 000	45 000	59 000	...
Hungary	630 000	649 000	655 000	843 000	521 000
Turkey	353	187	230	2 029	...
Yugoslavia	9 000	2 000	1 000	2 000	12 000
Algeria	419	8	35	54	...
Morocco	18	276	6	...	...
South Africa	18 200	72 700	50 000	31 500	...
USA	4 100	5 003	154 926	248 306	257 000
Argentina	8 000	20 000	19 000	...	...
Brazil	19 842	14 479	13 431	17 000	30 397
Colombia	848	219	626	...	...
Peru	546	200	549	92	339
Venezuela	...	4 481	2 443	5 775	...
India (a)	...	504 675	94 280	...	...
Korea, Republic of	319 040	356 117	228 360	162 856	285 682
Pakistan (b)	15 266	7 133	11 088	2 016	4 032
Taiwan	56 621	14 428	121	796	80

## Notes

(1) In general, trade in bromine compounds is not separately distinguished from other halogen salts and has therefore not been included in this table

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated



**Figure 3** World production of cadmium compared with the annual average producer price expressed in constant 1980 US dollars.

*Constant commodity prices have been derived from Metals Week, as quoted in Metallstatistik (published by Metallgesellschaft, 1989).*

## Production of Cadmium

Country	1984	1985	1986	1987	1988
United Kingdom	390	370	379	498	399
Belgium	1 472	1 252	1 380	1 308	1 836
France	563	337	431	457	558
Germany, Federal Republic of	1 110	1 095	1 218	1 125	1 156
Italy	520	360	300	320	700
Netherlands	636	594	557	517	655
Spain	290	268	247	297	438
Austria	49	52	52	26	26
Bulgaria	175*	175*	170*	180*	200*
Finland	614	565	532	428	808
German Democratic Republic	15*	15*	18*	18*	20*
Norway	150	150	154	147	169
Poland	600*	610*	500	620	600
Romania	60*	55*	55*	50*	48*
Soviet Union	2 750*	2 750*	2 700*	2 600*	2 650*
Turkey	31*	32*	6*	11*	22*
Yugoslavia	270	279	259	284	405
Algeria	80	128	124	102	55
Namibia	40	59	61	51	106
Zaire	318	295	364	299	281
Canada (a)	1 757	1 696	1 552	1 571	1 694
Mexico (b)	840	888	963	1 139	1 259
USA (a)	1 686	1 603	1 486	1 515	1 885
Argentina	46	46	47	53	54
Brazil	224	224	233	214	283
Peru	384	420	387	351	303
China	450*	540*	650*	750*	840*
India	143	194	160	214	237
Japan	2 400	2 555	2 542	2 374	2 614
Korea, Dem. P.R. of	260*	350*	360*	380*	380*
Korea, Republic of	410*	450*	455*	470*	490*
Australia	1 082	910	909	950	855
World total	19 800	19 300	19 300	19 300	22 000

(a) Including cadmium sponge and/or secondary metal

(b) Including oxides

## Cadmium

**Exports of Cadmium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	136	104	85	62	147
Belgium-Luxembourg					
Metal	727	804	633	583	1 032
Sulphide	48	55	60	86	56
France	490	275	411	316	544
Germany, Federal Republic of					
Metal (a)	405	296	439	991	...
Oxide	51	38	15	23	—
Italy	147	322	224	221	560
Netherlands	714	615	541	842	703
Spain	184	209	230	230	...
Austria	43	45	55	40	20
Bulgaria (b)	60*	50*	40*	40*	40*
Finland	620	569	567	609	784
Norway	137	143	162	135	140
Soviet Union	400*	400*	400*	400*	400*
Sweden	15	15	46	—	—
Yugoslavia	38	55	23	81	120
Namibia	40	59	61	51	106
Zaire	308	224	293	174	...
Canada	1 388	1 477	1 383	1 157	1 113
Mexico	373	561	600	782	760
USA	135	160	38	270	626
Peru (b)	220*	100*	150*	100*	170*
China (b)	100*	150*	340*	280*	690*
Japan	446	382	452	201	158
Korea, Republic of					
Metal	393	145	104	163	731
Oxide	159	179	465	292	—
Australia	899	669	682	2 343	1 499

(a) Including rhenium

(b) BGS estimates, based on known imports into certain countries

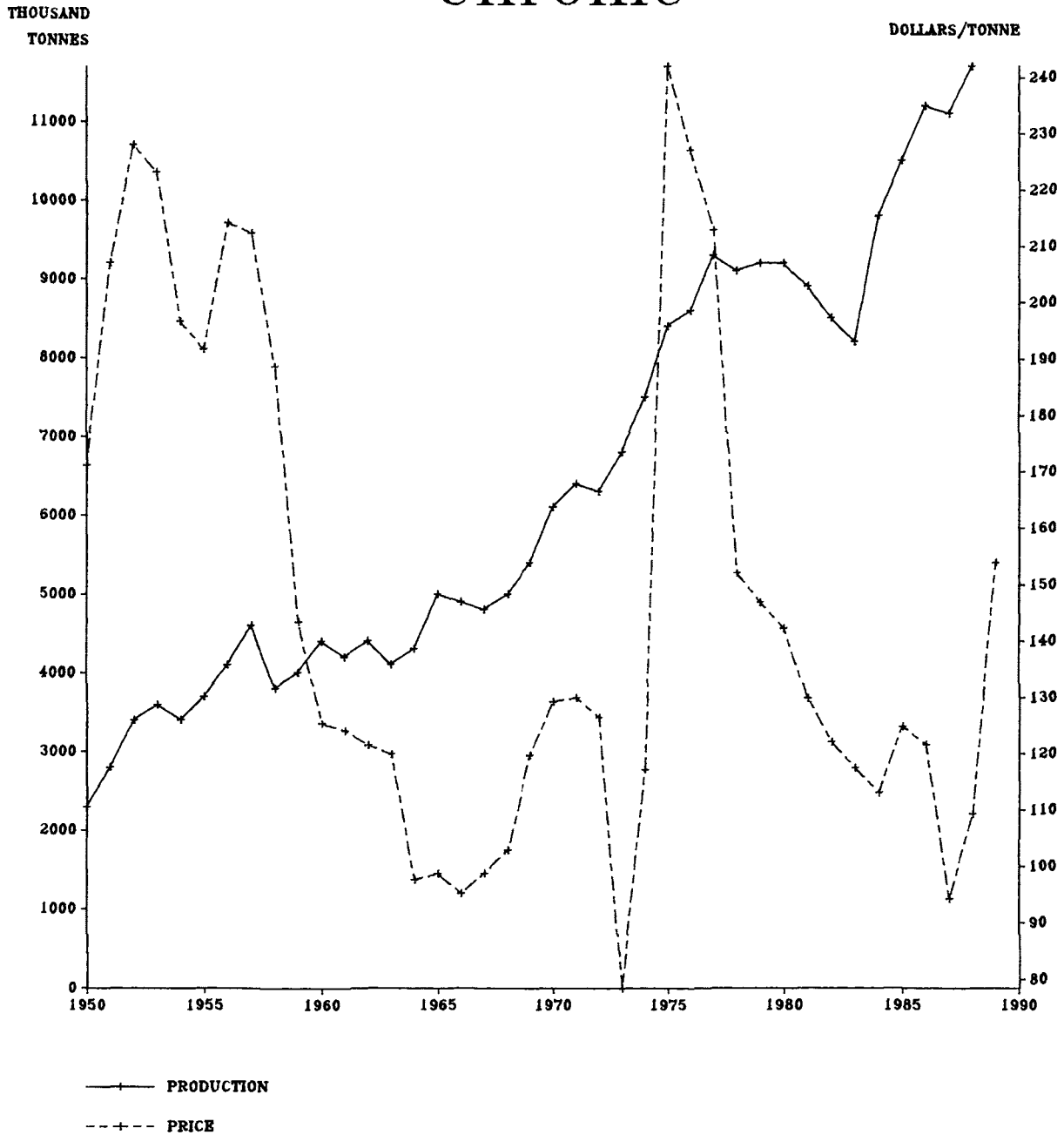
**Imports of Cadmium**

Country	1984	1985	1986	1987	1988
United Kingdom	820*	878	1 095	1 093	1 157*
Belgium-Luxembourg					
Metal	1 189	1 174	1 509	1 586	2 096
Sulphide	29	27	6	18	6
Denmark	3	3	1	1	1
France					
Metal	921	892	888	1 137	1 179
Sulphide	61	42	39	58	76
Germany, Federal Republic of					
Metal	757	546	531	511	658
Oxide	571	532	556	660	—
Sulphide	9	9	6	14	59
Italy					
Metal	107	54	105	90	84
Sulphide	8	6	6	3	6
Netherlands					
Metal	112	129	53	115	102
Sulphide	4	2	4	3	7
Spain	31	49	92	87	...
Austria	5	1	2	0	1
Czechoslovakia	303	164	170	146	93
Finland	0	0	0	242	68
German Democratic Republic (a)	140*	110*	180*	130*	50*
Soviet Union (a)	300*	300*	100*	110*	...
Sweden	241	260	201	122	177
USA	1 898	1 988	3 174	2 701	2 483
Brazil					
Metal	16	1	3	208	22
Oxide	39	76	121	155	74
India (b)	20	64	52	...	...

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 31 March following that stated

# Chrome



**Figure 4** World production of chrome ore compared with the price of Turkish ore, f.o.b. US ports, expressed in constant 1985 US dollars.

Trend-line analysis of the production data indicates a growth rate of approximately 4% per annum.

Constant commodity prices have been derived from those quoted by USBM in Mineral Facts and Problems (1960 et seq.) and Mineral Commodity Summaries (1984 et seq.), using the GDP deflator index for the USA.



**Production of Chromium Ores and Concentrates**

Country	1984	1985	1986	1987	1988
Greece	50 364	58 948	60 063	63 825	55 000*
Albania	720 000*	825 000*	850 000*	830 000*	750 000*
Finland (b)	335 800	506 018	492 094	503 159	536 309
Soviet Union	2 940 000*	2 940 000*	3 185 000*	3 150 000*	3 240 000*
Turkey (a)	487 405	588 576	617 652	762 071	800 000*
Madagascar	59 765	126 697	89 300	106 773	171 484
South Africa	3 407 151	3 698 679	3 907 473	3 784 402	4 244 632
Sudan	25 000	16 000	18 000	10 000	25 000
Zimbabwe	476 400	526 500	553 106	570 298	561 630
Cuba	37 900	37 700	50 000	52 400	55 000*
Brazil (a)	255 914	189 504	222 990	191 033	230 000*
India	441 704	567 056	629 671	623 591	759 000
Iran	59 000	56 000	56 000*	56 000*	56 000*
Japan	7 420	11 920	10 642	11 815	9 508
Oman	5 900	6 000*	4 820	4 000*	4 000*
Pakistan	2 745	5 188	8 299	9 963	4 924
Philippines (b)	260 889	272 031	202 214	187 900	162 535
Vietnam	16 000*	15 000*	15 000*	15 000*	14 000*
New Caledonia	87 794	78 820	72 207	61 832	70 341
World total	9 700 000	10 500 000	11 000 000	11 000 000	11 700 000

## Notes

(1) In addition to the countries listed, Bulgaria, China, Democratic P.R. of Korea and Thailand are also believed to produce chromite

(a) Including beneficiated and direct shipping ore

(b) Including foundry sand and/or lumpy ore

## Chromium

**Exports of Chromium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	27	171	405	217	207
Metal	3 889	4 071	3 828	3 733	3 469
Belgium-Luxembourg					
Ores & concentrates	51	36	0	85	1 484
Metal	111	301	121	123	133
France					
Ores & concentrates	1 069	3 124	951	1 368	3 112
Metal	1 630	1 615	1 797	1 659	2 191
Germany, Federal Republic of					
Ores & concentrates	8 877	8 909	12 061	11 392	14 419
Metal	252	197	132	143	189
Greece					
Ores & concentrates	8 625	8 830	10 964	7 089	6 484
Italy					
Ores & concentrates	678	1 544	3 710	2 053	...
Metal	45	139	211	307	...
Netherlands					
Ores & concentrates	21 377	27 379	30 070	28 005	31 902
Metal	117	2	75	6	5
Albania					
Ores & concentrates (b)	787 000*	587 000*	467 000*	412 000*	425 000*
Austria					
Ores & concentrates	349	953	555	—	213
Finland					
Ores & concentrates	273 069	177 153	161 387	144 017	200 693
Soviet Union					
Ores & concentrates	442 000	471 000	474 000	521 000	632 000
Turkey					
Ores & concentrates	439 680	478 069	451 384	569 733	843 115
Yugoslavia					
Ores & concentrates	25 848	13 150	7 919	10 589	2 459
Madagascar					
Ores & concentrates	107 548	115 000*	130 244	83 842	...
South Africa					
Ores & concentrates	1 096 856	1 739 336	1 133 625	1 442 747	1 461 713
Sudan					
Ores & concentrates	5 250	2 500	24 000	...	...
Cuba					
Ores & concentrates	41 212	41 607	37 771	...	...
USA					
Ores & concentrates	53 327	94 789	84 820	5 982	4 964
of which: Re-exports	3 497	3 335	1 322	4 837	1 033
Metal	243	202	293	379	322
China					
Ores & concentrates (b)	...	...	...	3 000*	...
Metal (b)	1 100*	500*	1 100*	1 300*	1 200*
India (c)					
Ores & concentrates	238 387	229 729	119 084	170 000	500 000*
Iran (a)					
Ores & concentrates	2 500	12 600	...	(b)13 500*	(b)7 500*
Japan					
Ores & concentrates	718	756	283	309	298
Philippines					
Ores & concentrates	244 028	159 435	130 164	105 676	163 499
New Caledonia					
Ores & concentrates	96 657	86 156	61 104	72 112	71 646

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Years ended 20 March following that stated

(b) BGS estimates, based on known imports into certain countries

(c) Years ended 31 March following that stated

## Imports of Chromium

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	129 786	137 675	138 572	124 318	199 043
Metal	185	357	367	504	391
Belgium-Luxembourg					
Ores & concentrates	4 223	5 231	3 846	2 581	3 404
Metal	233	457	536	406	374
Denmark					
Ores & concentrates	1 463	1 323	1 473	667	698
France					
Ores & concentrates	57 596	25 093	24 610	24 771	81 039
Metal	290	196	232	253	260
Germany, Federal Republic of					
Ores & concentrates	337 907	384 473	275 307	258 912	272 541
Metal	1 295	1 461	180	1 144	1 347
Greece					
Ores & concentrates	26 815	35 980	65 152	27 354	42 600
Irish Republic					
Ores & concentrates	3 803	11	29	3 010	13
Italy					
Ores & concentrates	220 529	229 118	152 169	218 974	...
Metal	244	193	197	223	...
Netherlands					
Ores & concentrates	23 802	40 239	38 247	17 229	34 477
Metal	414	120	67	82	155
Portugal					
Ores & concentrates	859	1 281	1 098	779	...
Spain					
Ores & concentrates	114 162	79 042	92 194	76 902	104 276
Austria					
Ores & concentrates	56 814	46 607	47 867	39 282	58 712
Czechoslovakia					
Ores & concentrates	176 000	174 000	188 000	188 000	171 000
German Democratic Republic					
Ores & concentrates (b)	39 800	52 300	49 600	41 000	47 400
Hungary					
Ores & concentrates (c)	17 000	15 000	15 000	13 000	...
Norway					
Ores & concentrates	538	110	520	760	558
Poland					
Ores & concentrates	150 993	151 093	145 790	190 731	168 081
Romania					
Ores & concentrates	(a)42 300*	101 400	(a)47 400*	(a)70 500*	...
Sweden					
Ores & concentrates	553 733	376 575	377 786	314 495	435 595
Metal	282	248	321	216	220
Yugoslavia					
Ores & concentrates	273 679	281 066	286 965	225 856	288 006
Canada					
Ores & concentrates (b)	18 836	16 550	23 348	19 797	32 529
Mexico					
Ores & concentrates	52 714	63 761	27 781	45 016	...
USA					
Ores & concentrates	276 310	375 958	444 753	489 900	615 332
Metal	4 254	3 587	4 069	3 957	4 104
Argentina					
Ores & concentrates	15 862	18 281	15 572	27 558	...
Brazil					
Ores & concentrates	20 674	14 685	10 756	14 380	8 649
Chile					
Ores & concentrates	6 077	4 506	4 490	...	...
Peru					
Ores & concentrates	1 720	3 427	4 144	2 658	3 246
Venezuela					
Ores & concentrates	11 914	11 307	7 041	20 149	...

## Chromium

**Imports of Chromium**

tonnes

Country	1984	1985	1986	1987	1988
China					
Ores & concentrates	280 687	364 719	385 156	230 375	429 808
Japan					
Ores & concentrates	823 394	987 240	670 625	674 743	976 168
Korea, Dem. P.R. of					
Ores & concentrates (a)	17 000*	16 000*	25 000*	24 000*	21 000*
Korea, Republic of					
Ores & concentrates	5 027	3 875	3 274	41 147	7 408
Philippines					
Ores & concentrates	24 410	29 947	17	12 000	52 111
Taiwan					
Ores & concentrates	3 514	10 726	19 048	20 899	12 238
Thailand					
Ores & concentrates	78	1 400	2 755	174	4 492
Australia					
Ores & concentrates	7 250	3 353	8 523	1 369	4 835

## Notes

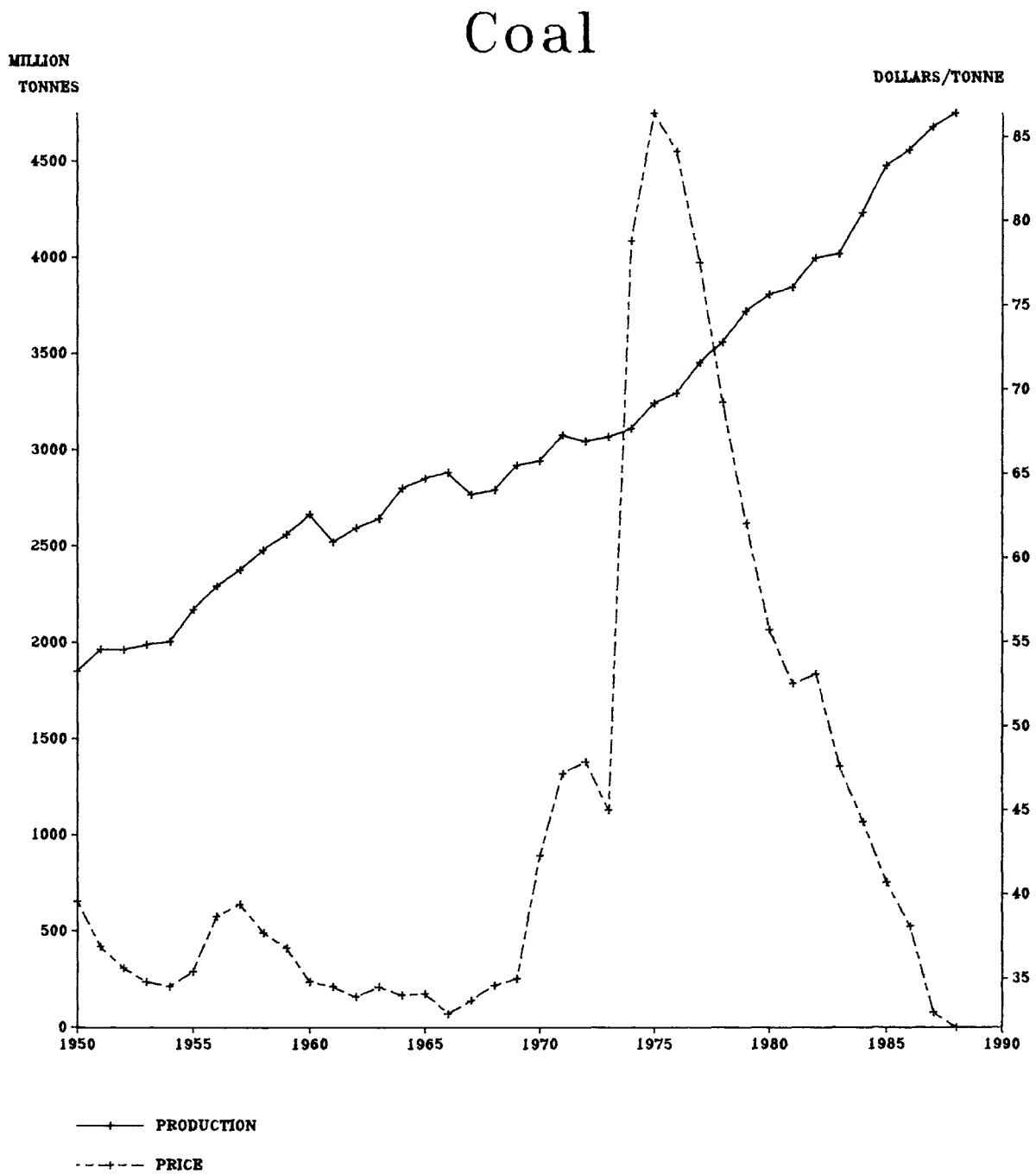
(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) BGS estimates, based on known exports from certain countries

(b) Cr<sub>2</sub>O<sub>3</sub> content

(c) Exports from Soviet Union





**Figure 5** World production of coal compared with the yearly average export unit value of bituminous coal f.o.b. US ports expressed in constant 1980 US dollars.

Trend-line analysis of the production data indicates a growth rate of approximately 2.5% per annum.

*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

# Production of Coal

Coal  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Anthracite	1 217 000	2 142 000	1 985 000	2 091 000	1 827 000
Bituminous	49 965 000	91 905 000	106 107 000	102 344 000	101 964 000
Belgium					
Anthracite	102 250	—	—	—	—
Bituminous	6 195 313	6 211 471	5 589 208	4 356 455	2 487 217
France					
Anthracite & bituminous	16 594 000	15 124 000	14 394 000	13 743 000	12 143 000
Lignite	2 426 000	1 839 000	2 142 000	2 051 000	1 651 000
Germany, Federal Republic of					
Anthracite & bituminous	79 426 000	82 398 000	80 801 000	76 300 000	73 304 000
Brown coal	126 739 000	120 667 000	114 310 000	108 799 000	108 563 000
Greece					
Lignite	32 467 048	35 875 089	39 014 076	44 612 000	48 624 000
Irish Republic					
Anthracite & semi-bituminous	70 000	56 700	53 500	45 200	41 700
Italy					
Lignite	1 806 103	1 892 436	1 541 218	1 641 745	1 600 363
Portugal					
Anthracite	194 856	238 414	209 501	228 648	227 188
Spain					
Anthracite	5 475 626	5 810 392	5 609 873	5 361 395	4 682 000
Bituminous	16 711 532	16 560 429	16 183 459	13 602 604	14 316 000
Lignite	17 405 097	17 292 434	16 527 183	15 626 963	16 740 000
Albania					
Brown coal & lignite	2 010 000	2 195 000*	2 200 000*	2 100 000*	2 400 000*
Austria					
Brown coal & lignite	2 927 939	3 081 086	2 968 978	2 785 616	2 129 264
Bulgaria					
Anthracite & bituminous	223 000	223 000	207 000	198 000	200 000
Brown coal & lignite	32 136 000	30 657 000	35 015 000	36 621 000	33 600 000
Czechoslovakia					
Bituminous	26 421 000	26 223 000	25 658 000	25 736 000	25 504 000
Lignite	3 659 000	3 682 000	3 607 000	3 639 000	3 558 000
Brown coal	101 084 000	98 634 000	99 131 000	98 347 000	96 361 000
German Democratic Republic					
Brown coal	296 341 000	312 156 000	311 260 000	308 976 000	310 314 000
Hungary					
Bituminous	2 573 382	2 639 103	2 324 722	2 360 056	2 254 882
Lignite	8 026 000	7 387 123	6 982 645	7 223 032	5 633 577
Brown coal	14 448 203	14 016 288	13 821 330	13 261 262	12 986 323
Norway					
Spitzbergen (d)					
Bituminous	451 327	507 000	437 089	398 745	274 802
Poland					
Bituminous	191 592 000	191 642 000	192 080 000	193 012 000	193 015 000
Brown coal	50 378 000	57 746 000	67 259 000	73 194 000	73 489 000
Romania					
Anthracite & bituminous	10 653 000	10 472 000	11 174 000	11 693 000	...
Lignite	36 319 000	38 513 000	39 400 000	43 109 000	...
Brown coal	827 000	834 000	858 000	897 000	...
Soviet Union					
Anthracite & bituminous	556 500 000	569 000 000	588 000 000	595 000 000	599 000 000
Lignite	155 800 000	157 000 000	163 000 000	165 000 000	172 000 000
Turkey					
Bituminous	7 103 413	7 260 013	7 015 292	7 084 479	6 687 950
Lignite	27 199 347	39 437 271	45 469 889	46 481 173	38 556 210
Yugoslavia					
Bituminous	388 926	400 321	407 203	379 000	362 000
Lignite	53 293 000	56 635 336	56 359 304	59 359 000	60 352 000
Brown coal	11 391 663	12 460 541	13 098 668	12 135 000	11 876 611
Botswana	392 851	437 053	499 373	579 409	612 873
Morocco					
Anthracite	837 500	774 500	775 000	634 200	536 700

## Production of Coal

tonnes

Country	1984	1985	1986	1987	1988
Mozambique					
Bituminous	66 855	20 400	3 895	43 319	23 856
Niger	123 644	150 635	148 111	164 313	150 000*
Nigeria					
Sub-bituminous	76 077	139 744	144 411	117 917	82 488
South Africa					
Anthracite	3 228 093	4 909 923	4 989 799	5 251 945	4 950 988
Bituminous	159 714 634	168 605 954	171 729 605	171 293 841	176 408 771
Swaziland					
Bituminous	124 569	166 079	172 199	165 371	164 845
Tanzania					
Bituminous	2 200	6 600	5 164	2 866	3 349
Zaire					
Bituminous	121 213	120 582	119 296	121 866	...
Zambia					
Bituminous	510 584	471 114	557 099	463 072	523 651
Zimbabwe					
Bituminous	3 109 000	3 114 000	4 047 000	4 831 000	5 063 544
Canada					
Bituminous	32 062 000	34 195 000	30 538 000	32 650 000	37 855 000
Sub-bituminous	15 422 000	16 871 000	18 225 000	18 537 000	19 620 000
Lignite	9 918 000	9 672 000	8 281 000	10 020 000	12 025 000
Mexico					
Bituminous	9 387 822	9 770 751	10 157 998	11 137 054	...
USA					
Anthracite	3 800 000	4 300 000	3 900 000	3 300 000	...
Bituminous & lignite	809 000 000	797 300 000	803 800 000	830 300 000	(g)861 600 000
Argentina					
Bituminous	509 151	400 232	370 000	380 855	508 000
Brazil					
Bituminous & lignite (e)	7 751 732	7 934 784	7 491 495	6 741 984	7 000 000*
Chile					
Bituminous	1 177 220	1 236 590	1 323 020	1 305 250	1 436 151
Lignite	129 570	133 170	118 000	430 900	1 034 265
Colombia					
Bituminous	6 637 000	9 706 000	10 215 000	13 454 000	15 277 000
Peru					
Anthracite	84 000	92 750	90 000	90 000*	...
Venezuela					
Bituminous	50 872	41 426	56 646	62 000	...
Afghanistan (c)					
Bituminous	148 000*	151 000*	160 000*	150 000*	...
China	789 000 000	872 000 000	894 039 000	927 965 000	985 000 000
India					
Bituminous	143 873 000	149 712 000	162 647 000	177 220 000	188 800 000
Lignite	7 681 000	7 849 000	7 991 000	8 311 000	8 400 000
Indonesia					
Anthracite & bituminous	1 468 154	1 942 135	2 572 340	2 813 533	2 854 470
Iran (c)					
Bituminous	1 241 000	1 252 000	1 262 000	1 100 000	1 147 000
Japan					
Anthracite & bituminous	16 699 103	16 339 028	16 012 870	13 034 465	11 223 396
Lignite	8 605	15 491	12 947	12 154	12 600
Korea, Dem. P.R. of					
Anthracite	44 000 000*	55 000 000*	55 000 000*	55 000 000*	55 000 000*
Lignite	12 500 000*	15 000 000*	15 000 000*	14 500 000*	14 500 000*
Korea, Republic of					
Anthracite	21 370 300	24 542 700	24 252 700	24 273 100	22 670 000
Mongolia					
Anthracite	458 000	480 000	497 000	655 000	...
Lignite	4 973 000	6 043 000	6 567 000	7 110 000	(g)8 594 800



## Production of Coal

Country	1984	1985	1986	1987	1988
Myanmar (b)	43 200*	43 800	46 000	35 000	...
Pakistan (a)	2 134 916	2 197 853	2 047 142	2 418 875	2 696 000
Philippines					
Bituminous	1 216 388	1 258 872	1 235 503	1 152 342	1 335 687
Taiwan					
Bituminous	2 010 775	1 857 858	1 725 024	1 499 240	1 225 487
Thailand					
Lignite	2 337 226	5 146 150	5 542 247	6 929 212	7 273 647
Vietnam					
Anthracite	4 900 000	5 624 000	6 392 000	6 777 000	5 500 000*
Australia					
Bituminous	116 018 000	(f)158 256 000	(f)170 067 000	(f)178 399 000	(f)176 604 000
Sub-bituminous	8 288 000	...	...	...	...
Brown coal	35 166 000	36 985 000	37 604 000	44 877 000	43 450 000
New Zealand					
Bituminous	582 400	650 500	678 800	(a) (f)2 401 956	(a)(f)2 400 556
Sub-bituminous	1 709 100	1 668 800	1 767 200	...	...
Lignite	235 100	228 500	194 700	...	...
World total	4 231 000 000	4 476 000 000	4 583 000 000	4 689 000 000	4 790 000 000

## Notes

(1) There is no international agreement as to the separate definition of lignite and brown coal. In some cases they are distinguished. Elsewhere both may be aggregated under one or other term

- (a) Including lignite
- (b) Years ended 31 March following that stated
- (c) Years ended 20 March following that stated
- (d) Not including production from mines controlled by the Soviet Union
- (e) Including beneficiated and directly shipped material
- (f) Including sub-bituminous
- (g) Including anthracite

## Coal

## Exports of Coal

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Anthracite	203 240	213 894	352 197	200 905	286 298
Other coal	2 237 167	2 343 979	2 396 213	2 140 982	1 450 667
Briquettes	73 440	98 812	154 710	114 018	78 860
Belgium-Luxembourg					
Anthracite	119 541	69 771	85 903	112 601	122 089
Other coal	1 098 769	1 393 706	1 170 047	836 194	830 587
Lignite	4 108	17 684	23 137	1 907	3 635
Briquettes	83 967	46 478	13 506	13 900	23 847
Denmark					
Coal	76 750	71 183	53 346	52 004	89 464
of which: Re-exports	76 747	71 155	53 275	50 499	...
France					
Anthracite	170 756	82 387	60 545	33 038	38 351
Other coal	721 378	958 307	643 339	718 672	1 644 505
Lignite	2 409	1 748	2 166	1 574	20
Briquettes	49 049	63 923	33 436	90 805	13 798
Germany, Federal Republic of					
Coal (b)	10 489 141	8 957 013	7 190 136	6 295 396	5 020 570
Brown coal	307 022	455 917	441 676	426 669	365 660
Briquettes	1 179 654	1 286 379	952 547	791 281	738 730
Irish Republic (b)	25 196	16 637	12 360	50 122	30 455
Italy (b)	11 703	40 437	5 588	15 587	...
Netherlands					
Anthracite	169 639	322 113	215 300	291 512	330 853
Other coal	1 095 189	1 463 254	2 165 804	1 746 868	1 416 406
Briquettes	3 482	6 562	4 754	2 545	2 734
Spain					
Coal (b)	1 710	4 975	64	75	7 117
Briquettes	1 722	0	1	30	16
Austria					
Brown coal	8 180	8 493	5 301	4 295	3 557
Czechoslovakia					
Coal	2 672 000	2 676 000	2 539 000	1 999 000	2 147 000
Brown coal	2 644 000	2 832 000	2 814 000	2 281 000	1 968 000
German Democratic Republic					
Briquettes	3 971 000	3 313 000	3 485 000	3 088 000	3 352 000
Hungary					
Brown coal	17 222	293 978	—	—	—
Norway (b)	187 835	235 498	122 726	203 239	254 941
Poland					
Coal	42 918 000	36 155 000	34 315 000	30 961 000	32 187 000
Brown coal	200 000	201 000	1 000	—	—
Soviet Union					
Coal (c)	22 674 000*	25 870 000*	29 721 000*	30 661 000*	33 414 000*
Brown coal (c)	124 100*	141 000*	144 700*	145 800*	116 400*
Sweden (b)	22 958	112 014	58 400	104 255	35 353
Turkey					
Coal	—	2 000	—	—	...
Lignite	1 365	—	1 900	3 350	...
Yugoslavia					
Lignite	151 656	243 692	129 763	5 296	...
Brown coal	67 434	260 602	279 909	61 927	(e)45 625
Morocco					
Anthracite	65 940	62 433	49 534	20 070	10 655
South Africa					
Anthracite	2 769 760	3 875 564	4 405 577	3 211 682	2 938 789
Other coal	35 390 764	41 033 738	41 080 626	39 231 329	40 059 056
Swaziland	83 376	101 057	153 664	157 108	160 239
Zimbabwe	174 776	118 844	64 645	57 651	...
Canada	24 354 988	27 572 325	25 899 685	25 466 258	29 449 069
USA					
Anthracite	617 249	1 166 752	1 324 594	1 071 346	817 129
Other coal	73 294 538	82 881 376	76 219 485	70 439 178	85 287 394
Lignite	8 087	29 739	37 262	32 771	109 037
Briquettes	101 105	77 182	64 056	88 093	44 104

## Exports of Coal

Coal

tonnes

Country	1984	1985	1986	1987	1988
Colombia	720 242	3 129 634	5 083 566	9 587 000	10 739 000
China	7 040 000	7 770 000	9 820 000	13 530 000	15 650 000
India (a)	99 824	190 262	102 135	240 000	...
Indonesia					
Anthracite	136 420	115 876	57 041	60 530	198 995
Other coal	745 924	964 862	942 405	832 056	1 162 085
Japan	13 621	4 242	1 167	1 281	1 304
Korea, Dem. P.R. of (c)	92 600*	387 200*	405 800*	288 600*	497 800*
Australia	75 856 000	87 902 000	92 022 000	101 979 000	99 821 000
New Zealand (d)	279 998	392 799	368 972	318 879	...

### Notes

(1) This table excludes bunker shipments

(a) Years ended 31 March following that stated

(b) Including anthracite

(c) BGS estimates, based on known imports into certain countries

(d) Years ended 30 June of that stated

(e) Including lignite

## Imports of Coal

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Anthracite	1 268 607	1 207 002	595 267	573 106	803 736
Other coal	7 625 715	11 525 071	9 958 292	9 207 810	10 881 160
Briquettes	241 639	230 390	109 419	137 107	167 942
Belgium-Luxembourg					
Anthracite	1 289 315	1 418 617	1 662 811	1 214 710	1 020 753
Other coal	8 074 165	8 096 674	7 092 103	8 536 441	10 334 943
Brown coal	205 252	264 131	265 294	255 758	221 441
Briquettes	199 552	295 668	193 246	166 227	123 138
Denmark					
Coal	9 807 382	12 715 760	12 153 136	12 054 761	10 304 762
Briquettes	38 977	47 636	34 226	30 135	14 683
France					
Anthracite	1 140 061	1 283 734	1 462 793	997 098	1 987 931
Other coal	19 490 727	17 131 546	15 780 308	12 060 312	10 597 286
Lignite	8 644	18 293	41 389	38 352	48 674
Briquettes	234 756	253 107	227 510	179 961	161 554
Germany, Federal Republic of					
Anthracite	28 473	32 899	29 722	27 423	75 517
Other coal	8 818 429	9 827 923	9 966 747	8 140 454	7 092 646
Brown coal	2 603 590	2 452 321	2 475 185	2 163 504	1 882 968
Briquettes	1 665 396	1 477 124	1 310 697	1 051 426	983 620
Greece					
Anthracite	35	18	9 295	124	15
Other coal	1 110 862	1 549 893	1 823 557	958 749	774 635
Irish Republic					
Anthracite	42 122	86 883	60 248	73 634	96 526
Other coal	1 351 802	1 823 653	2 562 144	2 860 951	3 361 424
Briquettes	23 108	20 462	35 457	7 179	11 448
Italy					
Anthracite	539 867	674 473	883 766	144 267	...
Other coal	19 637 618	20 124 350	19 209 148	19 844 210	...
Lignite	43 597	63 562	5 511	2 732	...
Briquettes	53 125	156 526	291 624	135 236	...
Netherlands					
Anthracite	240 099	388 001	344 366	322 434	400 968
Other coal	9 824 539	11 106 174	11 943 606	12 265 969	14 766 903
Brown coal	92 739	106 276	112 655	78 400	64 264
Briquettes	57 926	54 889	23 160	18 346	14 417
Portugal					
Anthracite	15 658	97 467	383 714	535 079	...
Other coal	474 358	1 371 069	1 508 759	2 015 262	...
Spain					
Coal (c)	6 994 182	8 417 508	8 714 966	8 879 153	8 766 349
Lignite	2 311	1 748	2 092	1 566	1 525
Briquettes	477 333	138 169	143 536	70 296	83 071
Albania (e)	271 000*	275 000*	159 000*	154 000*	231 000*
Austria					
Anthracite	51 784	55 084	26 689	28 789	16 716
Other coal	3 721 039	3 522 148	3 703 909	4 103 845	3 843 570
Brown coal	191 121	341 149	206 854	50 416	38 520
Briquettes	466 403	507 387	501 111	465 791	359 213
Bulgaria					
Anthracite	1 861 835	2 526 043	1 972 230	...	...
Other coal	5 338 392	5 527 640	5 321 579	(c) 7 258 000	...
Czechoslovakia					
Coal	4 565 000	4 686 000	4 896 000	4 235 000	4 781 000
Briquettes	708 000	736 000	658 000	702 000	977 000
Finland					
Anthracite	74 723	78 971	77 006	62 436	43 486
Other coal	3 507 232	5 010 236	5 376 721	5 008 427	4 756 402
Briquettes	7 998	6 591	5 861	6 237	6 921
German Democratic Republic (c)	3 619 000	5 098 000	7 014 000	7 166 000	5 802 000
Hungary					
Coal (c)	1 609 833	2 517 775	2 316 774	1 955 028	2 076 309
Briquettes	589 021	676 275	818 076	707 137	917 931

# Imports of Coal

Coal  
tonnes

Country	1984	1985	1986	1987	1988
Iceland	54 822	68 618	73 520	59 919	66 168
Malta	94 401	212 081	184 235	181 275	191 579
Norway (a)					
Anthracite	94 982	97 093	102 349	97 078	110 264
Other coal	673 209	815 964	667 214	629 434	662 906
Poland					
Anthracite	30 000	25 000	22 000	20 000	21 000
Other coal	1 031 000	1 060 000	1 150 000	1 092 000	1 108 000
Romania	7 043 400	6 048 500	7 100 000*	...	...
Soviet Union (e)	12 834 000*	10 373 000*	11 693 000*	9 583 000*	11 735 000*
Sweden					
Anthracite	18 283	30 437	19 304	23 895	31 181
Other coal	3 952 067	4 837 865	4 432 866	3 942 080	3 808 174
Switzerland					
Coal (c)	543 702	473 541	613 799	521 212	436 555
Briquettes	42 075	45 314	35 560	28 479	24 910
Turkey					
Coal	1 932 653	2 139 261	2 644 583	3 442 858	4 460 192
Lignite	60 795	173 939	262 155	392 885	228 644
Yugoslavia					
Anthracite	200 967	246 578	210 984	174 089	225 661
Other coal	3 411 698	4 033 498	3 812 619	3 818 760	3 631 351
Brown coal	96 476	115 414	56 821	34 381	2 444
Briquettes	50 422	46 657	129 884	125 821	22 709
Algeria	1 499 425	1 138 456	1 009 325	1 371 465	...
Botswana	27 224	27 076	27 414	...	...
Egypt	987 352	1 266 274	1 185 127	1 311 107	...
Ghana	2 000*	2 062	2 000*	3 000*	...
Kenya	83 168	96 423	74 707	91 784	...
Madagascar	7 318	439	11 988	11 686	...
Malawi	41 266	32 850	27 746	26 000	...
Morocco	155 763	420 743	755 041	1 040 745	1 018 299
Mozambique	3 792	57 790	7 857	39 416	...
Tanzania	21	20 290	13 099	28 009	...
Tunisia	23 880	20 661	12 258	11 951	28 505
Zaire	59 390	60 000*	65 000*	62 000*	...
Zimbabwe	35 557	41 169	51 321	47 708	...
Canada					
Anthracite	227 781	235 228	342 143	277 913	407 199
Other coal	18 824 107	14 781 199	13 026 147	13 872 312	15 258 058
Cuba	85 271	89 718	83 113	58 814	...
Mexico					
Coal	366 315	1 064 014	239 870	20 163	...
Lignite	6 062	6 744	3 592	3 180	...
USA					
Coal	(g) 1 167 252	1 639 449	1 844 023	1 292 578	870 976
Briquettes	...	204 651	181 645	461 732	1 138 985
Argentina	536 995	763 838	1 091 563	1 110 223	...
Brazil					
Anthracite	30 038	26 622	34 716	30 709	156 866
Other coal	8 073 572	8 233 640	8 910 793	10 559 811	10 554 775
Chile	362 774	370 950	487 616	433 000	417 000
Peru	51 365	51 364	26 573	26 450	53 517
Venezuela	33 601	46 821	51 980	29 169	...
China	2 430 000	2 310 000	2 470 000	1 940 000	1 690 000
Cyprus	51 816	61 748	54 638	151 423	...
Hong Kong	4 462 239	5 523 189	6 392 528	8 009 570	9 266 528
India (d)	543 177	2 396 808	2 345 710	2 004 000	...
Indonesia	558	45 833	335 600	2 076 520	1 035 432
Iran (b)	50 000*	100 895	134 781	267 410	...

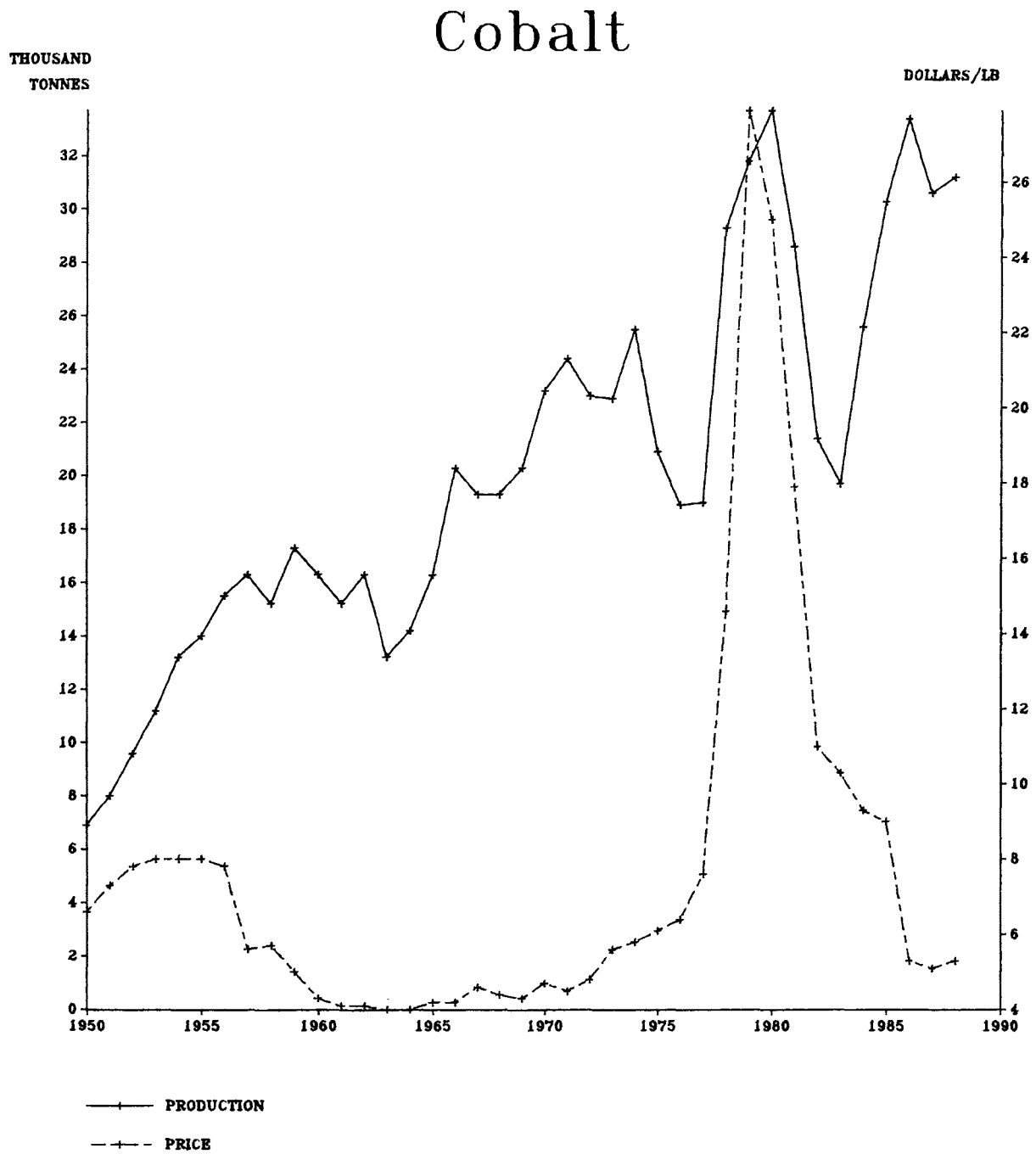
**Imports of Coal**

tonnes

Country	1984	1985	1986	1987	1988
Israel	2 669 000	3 063 000	3 084 000	3 518 000	...
Japan					
Anthracite	1 511 193	1 950 132	1 970 840	1 876 376	2 453 917
Other coal	86 307 274	91 039 940	89 376 192	90 678 010	101 726 899
Lignite	24 870	31 585	25 415	42 541	32 455
Korea, Dem. P.R. of	2 200 000*	2 500 000*	2 500 000*	2 500 000*	...
Korea, Republic of					
Anthracite	819 231	2 658 937	4 482 657	3 432 671	2 803 007
Other coal	12 193 393	17 131 446	16 436 470	18 385 997	21 913 035
Malaysia					
Anthracite	7 050	15 722	4 787	42 416	...
Other coal	384 679	476 166	375 647	477 427	...
Myanmar	30 000*	40 000*	40 000*	40 000*	...*
Pakistan (f)	499 523	715 569	797 750	832 196	814 459
Philippines	504 825	1 152 634	960 102	469 990	1 255 437
Sri Lanka	468	1 032	11 160	450	390
Taiwan	7 684 357	10 270 099	11 003 486	13 381 901	17 887 678
Thailand					
Coal (c)	145 249	245 646	182 584	254 408	292 300
Briquettes	44 981	37 048	0	0	18
Australia	22 064	26 640	1 654	1 562	26 651
New Caledonia	52 186	220 855	202 885	149 691	163 507

- (a) Excludes coal imported from Spitzbergen  
(b) Years ended 20 March following that stated  
(c) Including anthracite  
(d) Years ended 31 March following that stated  
(e) BGS estimates, based on known exports from certain countries  
(f) Years ended 30 June of that stated  
(g) Including briquettes





**Figure 6** World mine production of cobalt compared with the annual average Afrimet Indussa producer price expressed in constant 1980 US dollars.



## Mine Production of Cobalt

tonnes (metal content)

Country	1984	1985	1986	1987	1988
Albania	600*	600*	650*	650*	650*
Finland	860	724	631	187	—
Soviet Union	2 600*	2 700*	2 800*	2 700*	3 000*
Botswana	259	222	162	182	298
Morocco	—	—	—	259	253
South Africa	500*	500*	650*	720*	750*
Zaire	9 075	10 571	14 518	11 871	10 139
Zambia	3 472	4 415	4 344	4 479	5 025
Zimbabwe	77	91	76	111	122
Canada	2 123	2 067	2 297	2 490	2 398
Cuba	1 393	1 513	1 578	1 601	2 000*
Brazil	70*	70*	100*	150*	107
China	270*	270*	270*	270*	270*
Philippines	64	911	92	—	—
Australia	2 125	3 036	2 914	2 715	2 443
New Caledonia	1 750	2 171	1 936	1 724	2 141
World total	25 200	29 900	33 000	30 100	29 600

## Notes

(1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered

(2) Figures in this table relate where possible to cobalt recovered. The principal exceptions to this are Australia and New Caledonia, the figures for which relate to cobalt in ore raised

**Production of Cobalt Metal**

tonnes

Country	1984	1985	1986	1987	1988
Belgium (a)	...	...	...	...	...
France	116	123	—	—	—
Germany, Federal Republic of	...	...	502	475	656
Albania	...	...	...	230*	230*
Czechoslovakia (b)	...	...	...	...	...
Finland	2 384	2 230	947	516	436
Norway	1 191	1 525	1 526	1 573	1 851
Soviet Union	4 700*	4 800*	5 300*	5 300*	5 300*
South Africa (c)	500*	500*	500*	520*	520*
Zaire	9 075	10 571	14 518	11 871	10 139
Zambia	3 472	4 415	4 344	4 479	5 025
Canada	1 909	2 054	2 283	2 527	2 356
China	270*	270*	270*	270*	270*
Japan	905	1 320	1 340	124	109
World total	24 500	27 800	31 500	27 900	26 900

## Notes

(1) In addition to the production listed above, several countries, including the United Kingdom, France and USA, are known to produce substantial amounts of cobalt compounds

(a) Production not reported. Much of the metal recorded under Zaire is believed to be further processed in Belgium

(b) Czechoslovakia is thought to recover cobalt from materials imported from Cuba. However no data are available to enable a reliable estimate to be made

(c) Including Co content of cobalt compounds

**Exports of Cobalt**

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	920	754	711	928	820
Oxides	359	430	601	780	1 004
Belgium-Luxembourg (a)					
Metal	1 800*	1 600*	1 800*	1 400*	1 700*
Oxides	1 400*	1 000*	1 400*	1 500*	1 300*
France					
Metal	1 216	964	682	580	594
Oxides	47	9	7	31	33
Germany, Federal Republic of					
Metal	1 270	913	1 589	1 182	1 236
Oxides	112	87	57	40	37
Italy	81	56	86	82	...
Netherlands					
Metal	47	286	35	39	47
Oxides	60	48	78	123	41
Spain	65	104	63	29	...
Austria					
Oxides	54	31	16	22	29
Finland					
Metal	1 077	1 108	925	481	282
Oxides	966	535	522	676	1 772
Norway	1 270	1 529	1 638	1 613	1 740
Sweden	58	125	78	76	319
Morocco					
Ore	0	—	...	...	2 148
Zaire	13 351	9 298	13 800	9 367	...
Zambia	3 329	1 505	743	...	...
Canada					
Metal	1 487	1 552	1 805	1 875	3 060
Oxides	373	268	374	440	953
Cuba					
Oxide, sinter & sulphide (b)	1 300*	1 300*	1 400*	...	...
USA					
Metal	744	648	845	683	903
Oxides	506	424	358	378	419
Hong Kong					
Oxides (c)	19	29	31	21	14
Japan					
Oxides	74	12	24	21	48
Korea, Republic of					
Oxides	17	31	21	42	16

(a) Exports of cobalt are not separately recorded. Figures shown are BGS estimates based on known imports into certain countries

(b) Co content

(c) Re-exports

## Imports of Cobalt

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	1 832	1 692	2 387	2 253	2 898
Oxides	502	377	526	636	645
Belgium-Luxembourg					
Metal	56	13	161	494	417
Oxides	30	35	64	89	146
Denmark					
Metal	27	25	23	22	24
Oxides	10	6	9	30	52
France					
Metal	1 574	1 376	1 242	1 144	1 561
Oxides	314	202	281	389	286
Germany, Federal Republic of					
Metal	2 678	2 122	2 848	2 476	2 773
Oxides	448	441	374	311	383
Italy					
Metal	409	415	612	613	...
Oxide	184	230	235	290	...
Netherlands					
Metal	100	177	66	156	24
Oxides	282	253	280	372	321
Portugal					
Oxide	6	8	15	20	...
Spain					
Metal	119	131	194	208	...
Oxides	84	97	113	140	182
Austria					
Oxides	8	6	11	30	28
German Democratic Republic (b)	100*	100*	100*	100*	...
Norway					
Metal	(c) 2 290	491	370	1	9
Oxides	11	9	1	1	33
Sweden					
Metal	372	488	437	335	580
Oxides	6	8	10	10	12
Turkey					
Oxides	37	35	54	54	49
Yugoslavia					
Oxides	34	43	33	47	50
Kenya					
Oxides	31	0	0	0	...
South Africa					
Metal	81	177	157	115	...
Oxides	23	17	...	15	...
Canada					
Metal	...	...	...	...	768
Mexico					
Metal	117	125	71	58	83
USA					
Metal	10 471	7 526	5 291	8 443	6 562
Oxide	320	111	232	361	337
Argentina	28	25	31	...	...
Brazil					
Metal	282	405	585	508	511
Oxide	5	10	15	26	29
Venezuela					
Oxides	34	24	13	34	...
Hong Kong					
Oxide	23	19	49	20	32
India (a)	116	141	263	...	...

**Imports of Cobalt**

Country	1984	1985	1986	1987	1988
Indonesia					
Oxides	276	33	27	64	24
Japan					
Metal	2 588	2 323	3 468	4 775	4 934
Oxide	411	259	460	432	455
Korea, Republic of					
Metal	139	148	444	276	404
Oxides	21	8	29	56	64
Malaysia					
Metal	48	90	367	168	...
Oxides	115	22	12	8	...
Saudi Arabia					
Oxides	62	—	130	575	364
Taiwan					
Oxides	43	23	66	99	109
Australia					
Metal	30	34	29	27	29
Oxide	29	46	33	46	94

(a) Years ended 31 March following that stated

(b) BGS estimates, based on known exports from certain countries

(c) Including nickel scrap containing some cobalt

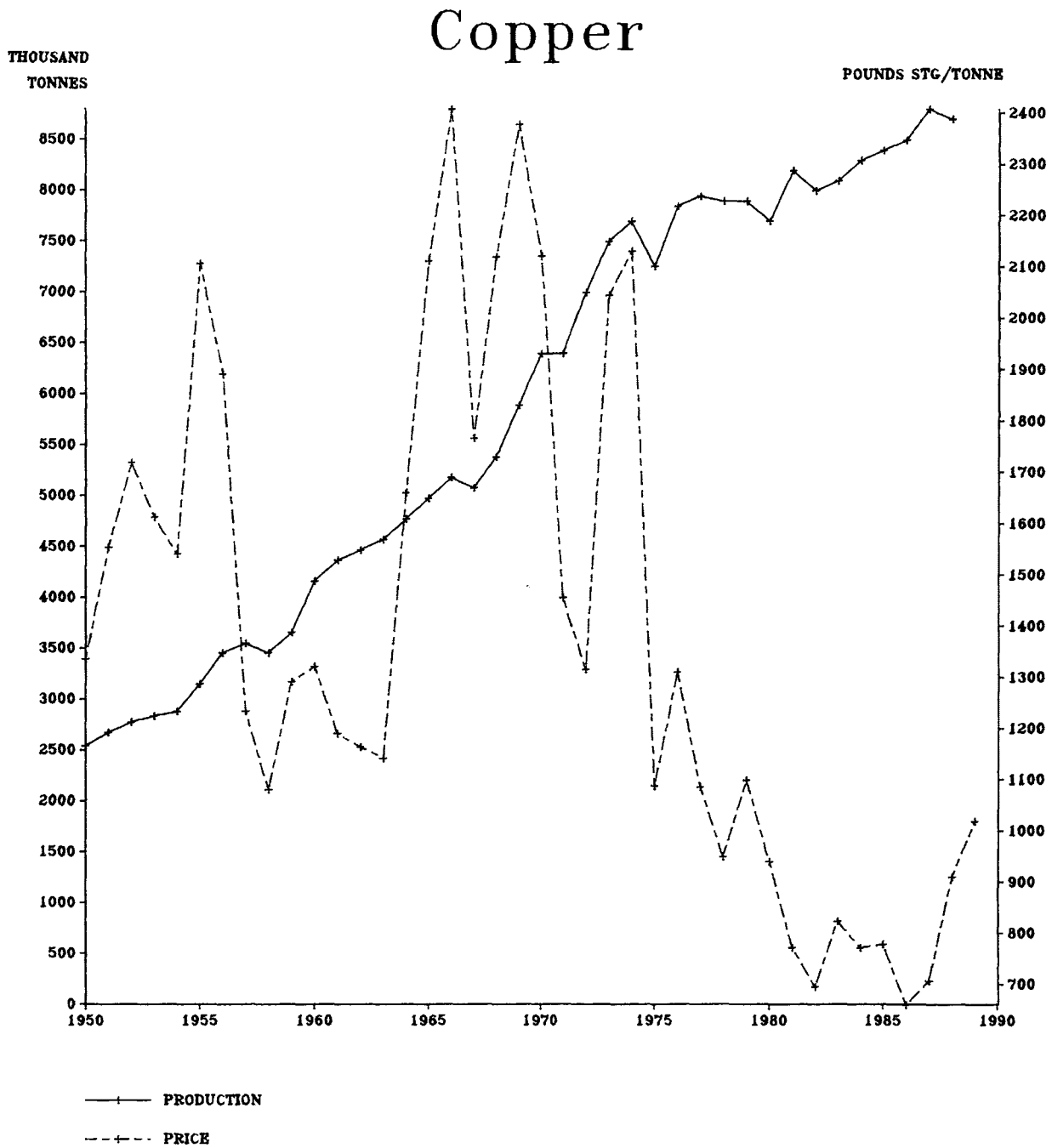
## Copper

## Mine Production of Copper

tonnes (metal content)

Country	1984	1985	1986	1987	1988
United Kingdom	657	592	602	750	732
France	310	253	294	291	246
Germany, Federal Republic of	1 000	900	800	1 500	700
Greece	300	300	300	1 000	—
Italy	876	127	—	—	—
Portugal	464	314	271	203	8 221
Spain	63 105	60 960	51 084	16 213	18 100
Albania	14 100	15 000	15 500	16 400	17 000*
Bulgaria	73 000	78 000	80 000	80 000	80 000
Czechoslovakia	10 200	10 100	8 500	9 400	10 000*
Finland	32 727	30 415	27 463	21 593	18 420
German Democratic Republic	12 000*	12 000*	11 000*	11 000*	10 000*
Norway	25 042	19 252	29 572	23 235	15 877
Poland	431 000	432 000	435 000	438 000	441 000
Romania	30 000*	30 000*	28 000*	28 000*	26 000*
Soviet Union	1 020 000*	1 030 000*	1 030 000*	1 010 000*	990 000*
Sweden	90 448	92 205	89 356	84 700	74 500
Turkey	31 075	29 860	26 085	31 531	36 200
Yugoslavia	137 575	142 479	138 544	130 470	103 523
Algeria	200	200	200	200	—
Botswana	21 471	21 692	21 337	18 934	24 428
Congo	—	100	700	1 300	1 000
Morocco	21 380	19 678	18 599	13 944	13 900
Mozambique	261	124	274	151	139
Namibia	50 000	42 966	47 111	35 672	39 483
South Africa	206 550	205 052	192 936	197 913	178 171
Zaire	500 220	504 235	502 600	501 864	466 966
Zambia	576 000	510 800	512 858	527 000	518 062
Zimbabwe	22 687	20 700	20 600	18 800	16 116
Canada (a)	721 826	738 637	698 527	794 149	758 478
Cuba	2 701	3 076	3 257	3 461	3 000
Honduras	2 720	3 329	424	306	538
Mexico	189 111	167 977	174 558	230 573	268 359
USA	1 102 613	1 102 600	1 144 200	1 243 600	1 419 700
Argentina	223	391	317	379	475
Bolivia	1 610	1 665	338	9	153
Brazil	35 212	40 999	40 183	40 332	44 470
Chile	1 290 700	1 356 200	1 401 100	1 418 100	1 451 000
Colombia	234	—	—	—	560
Peru	364 732	385 000	386 060	406 430	298 332
China	240 000*	270 000*	300 000*	350 000*	370 000*
Cyprus	1 267	1 065	559	97	383
India	47 000	48 000	49 160	54 085	51 463
Indonesia	85 619	88 750	100 490	105 346	294 711
Iran	43 300	40 000*	50 000*	40 000*	51 000*
Japan	43 309	43 208	34 928	23 817	16 666
Korea, Dem. P.R. of	10 000*	10 000*	10 000*	12 000*	12 000*
Korea, Republic of	464	308	215	249	133
Malaysia	29 288	30 506	28 301	29 861	22 014
Mongolia	100 000*	100 000*	120 000*	120 000*	130 000*
Myanmar	12 000	16 700	8 100	9 000	9 200
Oman	16 200	17 600	16 700	16 900	18 100
Philippines	233 359	222 189	217 023	216 277	218 281
Australia	235 671	259 765	248 368	232 695	243 800
Papua New Guinea	164 447	175 048	178 593	217 699	218 633
World total	8 300 000	8 400 000	8 500 000	8 800 000	9 000 000

(a) Blister copper plus recoverable copper in ores and matte exported



**Figure 7** World mine production of copper compared with the yearly average price of electrolytic wirebars on the London Metal Exchange expressed in constant 1980 pounds sterling. Trend-line analysis of the production data indicates a growth rate of approximately 3.5% per annum.

## Copper

**Smelter Production of Copper**

tonnes

Country	1984	1985	1986	1987	1988
Belgium	500*	900*	900*	100*	200*
Germany, Federal Republic of	148 800	152 400	161 900	168 900	162 500
Portugal	1 300	1 000	1 000*	200	...
Spain	88 200	88 000	103 500	104 700	115 000*
Albania	12 600	13 000	15 000	16 200	16 500
Bulgaria	70 000	70 000	70 000	80 000	80 000
Czechoslovakia	33 000	33 400	31 686	34 415	34 792
Finland	83 266	71 285	90 085	101 955	95 745
German Democratic Republic	14 000*	14 000*	15 000*	17 000*	25 000*
Hungary	3 050	3 318	3 552	3 524	3 593
Norway	36 821	37 828	35 202	30 101	31 729
Poland	365 000	380 000	366 400	367 300	358 000*
Romania	38 000	36 000	28 000	28 000	26 000*
Soviet Union	1 120 000*	1 140 000*	1 155 000*	1 140 000*	1 120 000*
Sweden	79 775	74 668	83 358	92 909	93 653
Turkey	32 023	33 884	35 466	19 247	12 910
Yugoslavia	84 657	137 073	127 236	103 399	106 457
Namibia	48 600	47 611	50 145	37 653	42 163
South Africa	180 800	168 400	184 000	189 800	180 600
Zaire (a)	465 549	471 536	476 003	472 303	436 200
Zambia (a)	531 945	544 176	514 090	523 226	466 756
Zimbabwe	24 200	24 400	29 600	30 000	27 500
Canada	469 977	489 649	450 219	473 979	504 630
Mexico	80 304	75 758	84 978	133 850	138 700
USA	1 014 124	940 681	908 087	972 141	1 042 954
Brazil	61 334	93 880	115 990	146 969	147 880
Chile	1 098 300	1 088 400	1 123 900	1 106 900	1 189 400
Peru	331 136	354 021	313 700	311 800	243 800
China	220 000*	265 000*	350 000*	417 000*	425 000*
India	40 400	33 557	39 291	32 923	44 164
Iran	47 900*	40 000*	50 000*	40 000*	52 000*
Japan	928 974	932 560	962 128	980 191	994 045
Korea, Dem. P.R. of	25 000*	30 000*	30 000*	30 000*	29 000*
Korea, Republic of	100 200	112 700	123 200	143 800	123 500
Oman	21 300	18 800	19 600	20 600	21 700
Philippines	109 200	133 826	143 678	164 476	159 218
Taiwan	61 700	60 600	63 800	61 500	56 400
Australia	179 822	167 669	169 622	172 873	177 669
World total	8 300 000	8 400 000	8 500 000	8 800 000	8 800 000

## Notes

(1) This table shows, where possible, primary metal in the form of blister and anode produced from concentrates, but may include some secondary metal produced from scrap, residues, etc.

(a) Including leach cathodes



## Production of Refined Copper

Country	1984	1985	1986	1987	1988
United Kingdom	136 834	125 426	125 574	122 287	123 958
Belgium (a) (b)	427 707	456 935	457 779	475 906	504 333
France	40 702	43 699	41 294	39 323	43 200
Germany, Federal Republic of	378 998	414 165	421 918	572 348	596 153
Italy	50 300	64 300	65 400	65 000	75 400
Portugal	5 320	4 500	5 300	5 300	5 400
Spain	156 400	151 700	155 075	151 410	158 756
Albania	11 000*	12 000*	13 000*	14 000*	16 000*
Austria	33 255	33 627	32 580	32 924	38 378
Bulgaria	70 000	73 000	74 000	76 000	78 000
Czechoslovakia	26 068	26 414	26 182	27 202	27 076
Finland	57 318	58 766	64 235	59 538	53 939
German Democratic Republic	69 000*	75 000*	73 000*	74 000*	80 000*
Hungary	25 863	23 018	22 097	23 251	15 627
Norway	30 323	31 074	30 459	29 387	31 729
Poland	372 300	387 000	388 000	390 200	400 600
Romania	45 000*	42 000*	40 000*	35 000*	33 000*
Soviet Union	1 380 000*	1 400 000*	1 400 000*	1 410 000*	1 380 000*
Sweden	61 245	57 229	84 500	91 905	90 292
Turkey	51 400	60 600	75 100	75 600	68 400
Yugoslavia	127 611	135 442	140 393	138 867	145 376
Egypt	4 181	4 013	3 671	1 141	8 427
South Africa	148 400	145 500	143 200	146 500	139 400
Zaire	224 774	221 483	217 959	210 218	202 790
Zambia	523 300	479 446	460 437	483 040	422 252
Zimbabwe	22 800	22 500	25 300	23 000	27 500
Canada	504 262	499 626	493 445	491 124	528 723
Mexico	79 806	81 039	75 478	118 040	137 300
USA	1 486 600	1 429 000	1 479 919	1 541 600	1 857 200
Argentina	11 200*	13 000*	11 000*	13 000*	11 000*
Brazil	101 711	142 880	165 990	201 712	185 930
Chile	879 700	884 300	942 300	970 300	1 012 700
Peru	219 037	227 000	229 200	224 808	179 455
China	320 000*	340 000*	350 000*	450 000*	460 000*
India	33 645	28 948	36 888	30 807	40 100
Iran	5 000*	12 000*	12 000*	30 000*	32 000*
Japan	935 156	935 977	943 037	980 349	955 108
Korea, Dem. P.R. of	35 000*	38 000*	40 000*	40 000*	40 000*
Korea, Republic of	150 176	159 242	177 841	157 900	170 500
Oman	15 180	14 323	14 561	15 490	16 267
Philippines	99 200	130 300	134 547	132 112	132 183
Taiwan	48 436	46 734	50 439	46 961	43 333
Australia	197 217	194 339	185 071	207 768	222 707
World total	9 600 000	9 700 000	9 900 000	10 400 000	10 800 000

## Notes

(1) Figures relate to both primary and secondary refined copper, whether electrolytic or fire refined. Metal recovered from secondary materials by remelting alone is excluded

(a) Including alloys

(b) Including cathodes refined in Zaire

## Copper

## Exports of Copper

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ore & matte	3 077	3 432	6 376	2 990	4 310
Unwrought	21 523	14 990	15 765	18 685	13 800
Unwrought alloys	16 927	16 561	14 147	15 581	19 585
Scrap	101 194	109 108	125 322	123 013	125 557
Belgium-Luxembourg					
Ore	742	532	573	727	263
Burnt cupreous pyrites	4 520	3 935	27	3 672	...
Unwrought	210 706	207 177	232 517	249 270	...
Unwrought alloys	8 354	10 032	10 666	8 913	7 850
Scrap	32 176	30 411	28 288	32 485	46 016
Denmark					
Unwrought	1 331	521	400	53	209
Unwrought alloys	2 512	1 044	1 666	1 674	495
Scrap	14 509	15 786	14 199	18 857	23 799
France					
Ore	293	341	608	409	1 707
Matte & cement	4 812	2 042	1 171	436	578
Unwrought					
Unrefined	2 930	7 318	4 045	7 508	5 637
Refined	4 204	7 188	9 220	3 900	6 191
Alloys	3 057	2 404	2 046	1 878	12 079
Scrap	120 467	128 625	121 832	139 481	173 896
Germany, Federal Republic of					
Matte & cement	1 124	627	828	194	7
Unwrought					
Unrefined	22 314	18 475	14 018	5 109	822
Refined	72 979	72 294	72 945	89 977	73 849
Alloys	15 719	14 798	15 133	11 981	14 987
Scrap	78 064	77 294	70 084	96 068	120 925
Irish Republic					
Unwrought	903	1 062	825	209	280
Scrap	8 897	6 928	6 312	9 783	10 121
Italy					
Ore	8 860	1 685	25	—	521
Matte & cement	1 060	1 192	11	751	156
Unwrought	10 707	11 100	5 074	4 436	13 073
Unwrought alloys	3 110	3 011	3 712	4 994	8 321
Scrap	14 235	14 814	10 927	16 476	19 447
Netherlands					
Unwrought	534	1 379	602	2 577	1 657
Unwrought alloys	7 001	8 082	5 464	4 793	5 115
Scrap	62 443	73 072	63 208	83 853	96 744
Portugal					
Ore	1 352	—	1	8 211	...
Unwrought	3 927	4 187	1 565	4	...
Scrap	855	575	1 715	1 387	...
Spain					
Ore	50 205	74 975	59 397	47 402	24 009
Burnt cupreous pyrites	13 355	2 210	—	3 274	...
Matte	1 418	1 959	3 133	3 778	4 668
Unwrought	67 097	69 447	65 361	42 525	39 631
Unwrought alloys	4 784	3 049	1 101	1 601	1 050
Scrap	450	569	605	967	11 299
Austria					
Unwrought	15 550	21 113	19 512	18 200	18 254
Unwrought alloys	6 038	5 646	4 816	5 647	6 180
Scrap	15 451	19 525	18 655	16 534	25 360
Bulgaria					
Unwrought (f)	1 200*	600*	500*	800*	1 900*
Finland					
Ore	—	—	—	—	5 243
Unwrought					
Unrefined	17 656	8 564	15 676	20 869	23 811
Refined	4 833	8 481	4 867	8 693	15 241
Alloys	1 790	1 714	2 219	2 509	1 642
Scrap	2 126	2 275	1 162	1 650	3 596

## Exports of Copper

Country	1984	1985	1986	1987	1988
German Democratic Republic					
Unwrought (f)	12 600*	11 200*	14 700*	13 300*	12 700*
Hungary					
Scrap	2 090	2 457	1 704	1 528	1 223
Norway					
Ore	72 619	82 851	106 237	115 880	71 858
Unwrought					
Unrefined	5 949	5 949	5 288	705	10 236
Refined	29 435	28 360	29 270	30 160	29 075
Scrap	5 761	5 257	7 316	9 683	10 709
Poland					
Unwrought	179 970	181 948	169 431	161 632	166 520
Soviet Union					
Unwrought (f)	99 800*	91 500*	95 800*	136 300*	129 000*
Scrap (f)	12 600*	33 900*	27 200*	22 800*	27 100*
Sweden					
Ore	71 164	108 609	83 164	72 584	55 190
Unwrought					
Unrefined	37 891	38 623	18 461	13 113	4 931
Refined	22 924	12 209	37 887	40 161	41 733
Alloys	5 226	3 374	2 304	3 400	4 031
Scrap	1 592	3 642	4 866	8 059	3 658
Switzerland					
Unwrought					
Refined	712	2 593	60	3 715	4 425
Alloys	5 256	5 790	5 249	5 202	6 588
Scrap	15 518	13 268	12 244	17 723	23 721
Turkey					
Unwrought	12	5 717	4 614	6 554	...
Yugoslavia					
Ore	6	85 391	15 000	24 500	11 722
Matte	672	933	—	3 137	4 902
Unwrought	2 395	3 392	13 682	19 387	26 520
Scrap	3 201	2 436	1 634	20 828	4 326
Algeria					
Scrap	1 226	3 228	5 290	1 760	...
Botswana					
Matte (b)	21 400	19 400	17 400	18 800	25 400
Ivory Coast					
Matte & scrap	1 405	1 308	943	...	780
Morocco					
Ore	72 174	60 615	61 509	50 854	44 675
Matte	1 363	2 524	1 169	2 235	2 738
Scrap	2 376	2 361	1 934	...	3 402
Namibia					
Unwrought	48 573	47 611	50 145	37 653	42 163
Senegal					
Scrap	1 079	999	713	612	2 085
South Africa					
Ores & concentrates (b)	25 087	29 999	25 897	27 507	14 824
Unwrought	93 549	98 408	93 534	97 359	88 010
Scrap (f)	11 000*	17 000*	11 900*	7 700*	5 700*
Tunisia					
Scrap	2 234	1 655	1 051	2 088	6 916
Zaire					
Ores & concentrates	65 305	59 060	59 227	38 884	58 000*
Unwrought					
Unrefined (e)	241 567	236 321	275 733	254 329	233 376
Refined	221 669	226 354	222 785	204 867	198 307
Zambia					
Unwrought, refined	524 647	471 249	466 346	499 412	423 773
Zimbabwe					
Unwrought	21 539	35 598	21 660	20 912	...

## Copper

## Exports of Copper

tonnes

Country	1984	1985	1986	1987	1988
Canada					
Ores, concentrates & matte (b)	332 377	320 617	341 392	381 123	345 092
Unwrought	346 018	280 043	306 892	288 811	263 958
Unwrought alloys	...	...	...	...	5 893
Scrap	52 676	62 995	70 753	72 102	75 953
Cuba					
Concentrates	2 553	3 118	2 593	3 333	...
Scrap (a)	2 799	7 450	6 165	7 932	4 213
Mexico					
Concentrates (b)	102 601	102 887	83 169	65 994	86 600
Unwrought, unrefined	14 713	11 536	21 967	10 209	19 304
Trinidad & Tobago					
Scrap	475	875	691	271	...
USA					
Ores & concentrates (b)	61 384	116 310	174 348	124 751	192 406
Unwrought					
Unrefined	8 379	17 984	15 967	12 339	35 865
Refined	92 327	52 820	12 477	9 196	60 633
Alloys	3 912	11 895	3 838	9 787	8 856
Scrap	189 203	281 574	299 667	301 971	320 751
Bolivia					
Ore	2 978	2 200*	1 668	45	...
Chile					
Ores, concentrates & matte (b)	178 800	273 900	276 800	284 600	247 700
Unwrought					
Unrefined	210 600	189 900	199 400	139 900	161 900
Refined	830 500	891 900	899 800	942 500	975 500
Colombia					
Ore	894	300	1 705	...	...
Peru					
Ore	94 297	(f)99 900*	(f)226 500*	(f)260 100*	(f)177 900*
Unwrought					
Unrefined	96 823	126 705	94 731	87 033	54 989
Refined	174 664	182 588	193 028	179 795	147 377
Cyprus					
Cement copper	3 059	1 692	1 148	304	...
Dubai					
Scrap	5 111	4 920	6 025	...	...
Hong Kong					
Unwrought (i)	3 059	4 001	1 630	3 791	32 887
Scrap	22 802	24 444	27 948	39 955	62 367
India (g)					
Ores & concentrates	18 746	45 350	7 900	...	...
Indonesia					
Ores & concentrates	188 428	204 421	298 584	250 770	299 665
Iran (c)					
Ore	13 019	8 000	...	30 000	...
Israel (h)					
Cement copper	1 544	—	—	—	...
Scrap	1 775	2 115	2 288	1 006	...
Japan					
Unwrought	22 414	58 621	85 084	73 067	78 494
Scrap	176	549	5 163	5 831	6 933
Jordan					
Scrap	655	1 224	1 060	238	...
of which: Re-exports	23	20	457	238	...
Korea, Republic of					
Unwrought	2 933	4 035	5 756	3 663	20 979
Scrap	1 517	751	1 180	443	1 274
Malaysia					
Ore	125 886	125 767	118 930	122 103	86 546
Scrap	9 685	12 354	...	14 551	...
Myanmar (g)					
Ores & concentrates	15 000	20 500	46 003	37 000	...

## Exports of Copper

Country	1984	1985	1986	1987	1988
Oman					
Unwrought	13 276	12 725	16 309	15 300	16 300
Pakistan (d)					
Scrap	18 756	21 671	1 010	181	1 295
Philippines					
Ores & concentrates	450 438	344 201	359 781	361 952	450 330
Unwrought	80 631	129 901	131 218	106 529	126 731
Scrap	9 314	6 979	8 150	8 150	2 702
Saudi Arabia					
Unwrought	214	889	2 277	3 189	2 911
Scrap	16 268	21 437	19 453	23 961	23 224
Singapore					
Unwrought	1 564	4 525	7 086	12 499	60 654
of which: Re-exports	1 562	4 515	6 999	12 403	60 603
Scrap	17 882	21 726	23 757	29 639	37 356
Taiwan					
Unwrought	300	89	49	664	2 972
Scrap	6 496	7 452	6 187	10 073	16 395
Australia					
Ores & concentrates	202 190	269 898	233 263	149 156	195 798
Matte & cement	3 977	8 000	—	—	1 310
Unwrought					
Unrefined	5 350	40	—	3 502	1 009
Refined	75 452	71 482	66 820	81 580	92 743
Alloys	455	1 525	1 525	1 775	4 514
Scrap	451	318	175	439	44
New Zealand (d)					
Unwrought	266	9	32	1	...
Scrap	1 409	1 339	744	1 260	...
Papua New Guinea					
Ores & concentrates (b)	167 107	168 712	178 774	216 731	221 891

## Notes

(1) In this table the term 'unwrought' copper corresponds to item 682.1 of the Standard International Trade Classification (Revision 3) and includes both unrefined (including blister) and refined copper

(2) The term 'unwrought' as used here includes alloys unless these are separately specified. The term 'scrap' includes scrap alloys

(a) Imports into the Netherlands

(b) Cu content

(c) Years ended 20 March following that stated

(d) Years ended 30 June of that stated

(e) Including leach cathodes

(f) BGS estimates, based on known imports into certain countries

(g) Years ended 31 March following that stated

(h) Figures may be incomplete as value only given in Israeli trade return for exports to some countries

(i) Re-exports

## Copper

## Imports of Copper

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ore & matte	2 409	1 245	10	68	801
Unwrought					
Unrefined	87 422	65 366	79 522	72 642	61 754
Refined	225 864	247 875	263 454	239 214	246 103
Alloys	1 044	887	1 141	1 331	4 610
Scrap	8 117	13 328	10 540	14 344	18 893
Belgium-Luxembourg					
Ore	2 047	3 315	3 722	912	1 434
Burnt cupreous pyrites	—	1 331	24	—	...
Unwrought					
Matte, cement & unrefined	213 954	215 520	239 974	179 036	...
Refined	180 884	199 548	215 181	209 646	...
Alloys	1 888	6 415	8 940	5 837	5 561
Scrap	115 165	152 481	119 423	147 257	208 488
Denmark					
Unwrought	148	125	72	50	204
Unwrought alloys	1 626	1 876	1 933	1 892	1 403
Scrap	5 165	4 487	7 172	7 215	11 513
France					
Ore	356	283	79	93	4 566
Burnt cupreous pyrites	2 863	4 834	4 564	11 082	—
Matte & cement	—	—	946	20	5 445
Unwrought					
Unrefined	17 667	21 284	22 301	19 025	15 137
Refined	341 562	325 429	334 529	353 544	379 214
Alloys	4 925	4 717	4 832	4 125	6 680
Scrap	31 623	34 412	43 114	43 973	52 602
Germany, Federal Republic of					
Ore	550 531	549 080	581 423	435 670	553 600
Burnt cupreous pyrites	37 889	40 852	45 961	32 289	...
Matte & cement	2 724	7 086	8 543	12 064	12 892
Unwrought					
Unrefined	85 517	77 989	69 778	49 038	43 722
Refined	465 575	442 128	447 922	395 982	433 407
Alloys	41 706	41 928	35 958	43 848	40 682
Scrap	211 757	269 855	248 067	248 301	295 279
Greece					
Matte & cement	13 367	9 959	12 486	6 277	...
Unwrought	20 216	22 614	28 217	35 140	51 200
Unwrought alloys	98	167	129	394	...
Scrap	447	0	8	371	...
Irish Republic					
Unwrought	275	246	179	185	551
Scrap	484	380	152	86	127
Italy					
Unwrought					
Unrefined	11 085	13 810	5 182	8 176	4 020
Refined	311 854	332 813	349 116	371 763	377 357
Alloys	13 803	16 822	15 648	21 085	17 195
Scrap	112 098	120 860	145 097	134 278	136 949
Netherlands					
Unwrought	23 851	19 669	23 095	24 086	22 036
Unwrought alloys	1 075	1 613	1 006	1 038	1 130
Scrap	43 123	62 001	57 512	62 487	57 453
Portugal					
Ore	4 365	3 052	0	0	...
Unwrought	15 072	13 793	12 146	29 943	24 600
Scrap	79	109	309	1 546	...
Spain					
Ore	146 958	125 318	249 641	346 867	381 205
Matte & cement	8 032	3 126	2 216	226	24
Unwrought					
Unrefined	20 869	23 570	18 290	2 301	25
Refined	24 621	23 346	31 471	13 597	8 658
Alloys	999	1 277	1 995	3 697	9 808
Scrap	23 296	31 075	29 976	32 943	50 215

# Imports of Copper

Copper  
tonnes

Country	1984	1985	1986	1987	1988
<b>Austria</b>					
Unwrought					
Unrefined	9 728	9 724	5 021	4 373	3 850
Refined	4 100	2 292	5 777	2 813	6 023
Alloys	1 199	1 299	1 700	1 715	1 539
Scrap	30 616	44 156	31 960	45 299	49 652
<b>Bulgaria</b>					
Unwrought (a)	2 600*	2 000*	1 000*	3 700*	...*
<b>Czechoslovakia</b>					
Unwrought	62 000	67 000	65 000	69 000	35 000
<b>Finland</b>					
Ore	120 130	152 619	187 820	236 919	249 107
Unwrought					
Refined	15 104	21 873	15 909	26 714	30 995
Alloys	178	483	686	524	1 030
Scrap	463	438	114	2 299	7 462
<b>German Democratic Republic</b>					
Ores & concentrates (a)	12 200*	10 700*	9 700*	13 900*	20 800*
Unwrought (a)	50 400*	50 900*	51 400*	56 900*	71 500*
Scrap (a)	24 100*	25 800*	24 000*	25 200*	24 900*
<b>Hungary</b>					
Unwrought (c)	30 112	28 129	36 600	41 953	32 038
Scrap	7 958	6 051	6 041	4 286	4 721
<b>Norway</b>					
Matte	3 604	2 488	584	27	12
Unwrought	656	330	290	133	343
Unwrought alloys	1 386	2 387	2 791	2 498	1 904
Scrap	92	526	56	309	71 509
<b>Poland</b>					
Unwrought	17 138	19 991	18 211	18 846	14 021
<b>Romania</b>					
Unwrought (a)	17 500*	10 700*	10 400*	3 900*	...
<b>Soviet Union</b>					
Ore (a)	2 000*	11 000*	4 000*	400*	...*
Unwrought	7 000*	7 000*	1 000*	1 000*	1 000*
<b>Sweden</b>					
Ore	48 058	88 957	37 710	56 037	77 758
Matte & cement	4 642	4 963	7 012	5 219	3 437
Unwrought	60 636	57 857	57 149	46 551	60 523
Unwrought alloys	4 566	3 417	5 086	4 968	5 169
Scrap	18 076	19 706	10 559	19 951	16 494
<b>Switzerland</b>					
Unwrought					
Refined	8 928	11 637	13 707	7 594	6 583
Alloys	1 020	1 403	1 512	1 148	1 189
Scrap	3 290	6 845	6 263	4 064	4 106
<b>Turkey</b>					
Ore	23 292	33 168	42 614	150	...
Unwrought	24 460	35 452	54 346	73 108	50 930
Scrap	324	619	3	223	...
<b>Yugoslavia</b>					
Unwrought	24 457	33 032	19 519	20 929	20 219
Unwrought alloys	7 366	6 217	4 383	553	37
Scrap	441	947	206	403	11
<b>Algeria</b>					
Unwrought	1 059	480	1 158	418	...
<b>Egypt</b>					
Unwrought (b)	2 098	6	1 750	16	...
<b>Morocco</b>					
Unwrought	774	664	605	676	662
<b>South Africa</b>					
Unwrought	967	665	320	975	...
Unwrought alloys	73	56	120	121	...
Scrap	312	877	6 930	4 194	...
<b>Zambia</b>					
Ores & concentrates (d)	—	30 521	29 417	23 007	32 822

## Copper

## Imports of Copper

tonnes

Country	1984	1985	1986	1987	1988
Canada					
Ores & concentrates (d)	36 225	76 136	70 673	50 510	46 694
Unwrought	25 562	19 128	20 894	16 584	7 719
Unwrought alloys	12 367	11 424	13 283	16 795	1 953
Scrap	76 335	85 200	65 768	69 322	91 107
Cuba					
Unwrought	4 637	8 380	6 445	7 773	...
Mexico					
Unwrought & scrap	34 759	99 214	26 418	40 442	45 008
USA					
Ores & concentrates (d)	13 246	3 957	4 722	4 712	4 332
Matte (d)	2 100*	3 906	668	6 787	5 822
Unwrought					
Unrefined (d)	60 683	29 025	48 936	45 218	132 735
Refined	504 369	381 088	491 690	505 283	382 320
Alloys	22 544	12 989	16 781	15 084	11 282
Scrap	55 012	55 227	111 626	77 285	86 678
Argentina					
Unwrought, refined	40 008	28 046	48 188	50 890	...
Brazil					
Ores & concentrates	87 553	164 015	261 304	340 529	378 252
Unwrought					
Unrefined	13 068	17 314	10 072	11 191	15 075
Refined	93 852	60 037	100 826	113 567	37 935
Scrap	854	3 227	8 884	19 346	3 622
Colombia					
Unwrought	2 643	2 401	711	300	...
Venezuela					
Unwrought					
Refined	5 281	6 402	11 274	24 681	20 200
Alloys	...	221	910	1 152	...
China					
Ores & concentrates	(a)150 100*	(a)212 100*	(a)244 800*	199 572	172 999
Unwrought	254 045	355 649	171 106	75 482	84 370
Scrap (a)	3 200*	7 300*	5 200*	8 000*	19 700*
Hong Kong					
Unwrought	5 789	5 391	2 356	9 577	30 542
Scrap	7 394	9 148	6 784	12 732	22 408
India (e)					
Unwrought	80 138	83 681	52 767	76 857	56 000*
Scrap	14 936	29 021	40 198	...	...
Indonesia					
Unwrought	17 535	16 065	17 903	32 430	30 639
Unwrought alloys	268	231	391	289	382
Iran (f)					
Unwrought	1 386	324	41	27	...
Scrap	740	65	4	150	...
Israel					
Unwrought (a)	1 300*	300*	700*	700*	400*
Japan					
Ores & concentrates	2 930 184	3 009 571	3 036 896	2 981 054	3 435 547
Matte & cement	1 311	132	33	21	65
Unwrought	535 860	390 634	300 215	375 944	443 872
Unwrought alloys	2 245	2 517	2 819	4 481	4 979
Scrap	92 595	81 660	79 467	97 841	108 438
Korea, Republic of					
Ore	347 665	355 210	389 143	553 628	346 370
Matte & cement	25 911	33 127	18 897	9 941	25 114
Unwrought	53 966	60 275	99 682	120 011	147 960
Scrap	32 364	32 592	74 949	215 933	129 098
Malaysia					
Unwrought	18 308	20 745	8 827	19 027	...



**Imports of Copper**

Country	1984	1985	1986	1987	1988
Philippines					
Concentrates	—	—	—	22 005	107 030
Unwrought	151	5	8	544	2 483
Saudi Arabia					
Unwrought	—	4 105	14 381	17 406	9 902
Singapore					
Unwrought	876	2 250	5 660	12 775	77 952
Scrap	3 436	3 587	7 401	7 873	13 367
Taiwan					
Ores & concentrates	212 923	160 931	179 704	153 155	118 023
Unwrought	91 134	47 665	109 475	166 902	176 690
Scrap	34 017	28 401	42 507	49 693	30 479
Thailand					
Unwrought	15 835	19 223	20 228	27 303	29 594
Scrap	83	49	10	530	2 087
Australia					
Scrap	1 174	1 161	1 247	2 295	2 769
New Zealand (g)					
Unwrought	2 490	3 427	1 627	1 481	...

## Notes

(1) In this table the term 'unwrought' copper corresponds to item 682.1 of the Standard International Trade Classification (Revision 3) and includes both unrefined (including blister) and refined copper

(2) The term 'unwrought' as used here includes alloys unless these are separately specified. The term 'scrap' includes scrap alloys

(a) BGS estimates, based on known exports from certain countries

(b) Including matte and scrap

(c) Including semi-manufactures

(d) Cu content

(e) Years ended 31 March following that stated

(f) Years ended 20 March following that stated

(g) Years ended 30 June of that stated

**Production of Diamond**

carats

Country	1984	1985	1986	1987	1988
Soviet Union	10 700 000*	10 800 000*	10 800 000*	10 800 000*	11 000 000*
Angola	923 669	717 028	266 184	871 391	1 044 551
Botswana	12 882 000	12 634 000	13 138 000	13 225 344	15 229 000
Central African Republic	337 150	353 481	358 514	413 093	343 408
Ghana	345 800	636 000	559 200	442 100	215 900
Guinea	48 300	87 800	187 960	195 000	146 440
Ivory Coast (a)	23 159	5 000	13 581	67 365	116 543
Liberia (a)	238 877	137 572	242 152	294 996	167 030
Namibia	931 300	909 500	1 009 600	1 037 261	974 565
Sierra Leone	345 000	349 000	315 000	360 000	300 000
South Africa	10 120 712	10 205 936	10 226 963	9 050 855	8 506 272
Swaziland	16 837	21 128	39 144	40 000*	72 676
Tanzania	277 000	255 736	173 972	122 824	81 883
Zaire	18 459 000	19 975 254	23 232 663	19 650 310	18 162 555
Brazil	800 927	450 000*	625 000*	522 000*	533 000*
Guyana	7 496	11 868	9 379	7 469	4 357
Venezuela	272 922	215 272	211 731	113 000	151 800
China	1 000 000*	1 000 000*	1 000 000*	1 000 000*	1 000 000*
India	15 887	16 271	16 116	18 915	14 613
Indonesia	27 000*	27 000*	27 000*	30 000*	30 000*
Australia	5 692 193	7 070 062	29 232 453	30 331 701	34 826 000
World total	63 500 000	65 900 000	91 700 000	88 600 000	92 900 000

## Notes

(1) This table does not show production of synthetic diamond

(a) Exports

# Exports of Diamond

Diamond  
carats

Country	1984	1985	1986	1987	1988
United Kingdom					
Industrial	2 298 780	6 463 161	7 835 713	9 811 635	15 218 700
Other	30 547 167	32 308 258	37 187 999	43 516 160	52 687 892
Belgium-Luxembourg					
Rough	36 745 317	44 561 153	55 514 230	61 175 323	69 309 541
Cut	3 561 441	3 932 737	3 889 064	4 297 277	4 716 709
Industrial	11 793 810	9 761 317	10 908 673	12 297 579	17 715 358
France					
Rough	2 171	79 648	3 878	6 675	7 932
Cut	46 788	75 929	24 083	45 342	31 013
Industrial	358 172	270 584	248 381	184 013	178 948
Dust	351 830	661 550	896 390	773 915	...
Germany, Federal Republic of					
Industrial	431 591	452 399	236 063	321 105	302 117
Other	128 435	127 319	174 259	173 268	186 461
Irish Republic					
Industrial	115 000	685 000	—	—	685 000
Italy					
Industrial	4 208	49 029	1 108	5 083	...
Other	1 230	1 954	2 341	250	...
Netherlands					
Rough	184 830	170 555	249 931	417 832	231 191
Cut	237 351	202 676	142 686	97 536	163 343
Industrial	661 750	762 316	1 183 953	1 023 087	898 393
Portugal	60 489	66 708	19 678	87 155	...
Spain					
Industrial	£652 000	£794 000	£39 000	£27 000	£62 000
Other	£333 000	£2 706 000	£160 000	£310 000	£198 000
Austria					
Industrial	95 000	20 000	5 000	240 000	65 000
Other	20 000	10 000	25 000	5 000	150 000
Malta	£3 025 000	£2 697 000	£2 312 000	£2 189 000	£1 068 000
Soviet Union (e)	618 200*	687 200*	1 033 000*	1 096 200*	896 600*
Sweden					
Industrial	£56 000	£57 000	£33 000	£47 000	£33 000
Other	£2 904 000	£1 948 000	£1 243 000	£1 736 000	£1 353 000
Switzerland					
Industrial	...	...	...	...	145 000
Other	...	...	...	...	13 770 000
Central African Republic					
Gem	226 400	238 800	246 606	300 679	...
Industrial	100 000	104 100	685	—	...
Ghana					
Industrial	323 000	642 000	561 000	397 000	...
Ivory Coast	23 159	5 000	13 581	67 365	116 543
Kenya	17 640	95 000	17 500	25 000	...
Liberia	238 877	137 572	242 152	294 996	167 030
Sierra Leone					
Industrial	183 129	129 805	136 905	...	...
Other	291 481	91 046	168 377	...	...
South Africa (c)					
Rough	£558 899 000	£614 699 000	£714 917 000	£890 847 000	...
Cut	£132 224 000	£137 541 000	...	...	...
Industrial	£4 516 000	£9 098 000	£1 292 000	£1 776 000	...
Tanzania	299 245	285 710	194 635	120 390	82 651
Tunisia					
Industrial	125 000	155 000	265 000	255 000	295 000
Other	370 000	445 000	780 000	655 000	805 000
Zaire	18 130 000	19 617 000	23 304 000	19 651 000	18 445 000
Canada					
Cut (f)	56 798	55 134	49 414	47 669	...
Industrial (f)	102 636	342 232	539 194	187 413	...
Dust	271 131	1 211 990	648 844	1 748 415	470 631
of which: Re-exports	269 340	1 211 490	647 138	1 738 250	...

**Exports of Diamond**

carats

Country	1984	1985	1986	1987	1988
USA					
Rough	1 739 936	1 807 846	1 800 589	1 684 400	1 367 803
of which: Re-exports	1 737 804	1 805 471	1 797 509	1 684 200	1 367 597
Cut	532 574	572 452	726 420	845 868	767 275
of which: Re-exports	149 544	134 407	168 441	258 671	176 863
Industrial	3 301 116	3 291 223	3 563 727	2 539 863	2 993 356
of which: Re-exports	2 441 922	1 734 890	1 894 607	1 538 122	1 163 513
Dust (b)	47 992 891	51 592 844	51 162 598	56 791 746	74 533 263
of which: Re-exports	779 447	1 867 827	4 323 607	1 789 198	2 440 236
Brazil	20 830	1 625	19 380	36 335	50 360
Venezuela					
Rough	...	190 000	190 000	—	...
China					
Industrial (e)	88 900*	66 700*	163 800*	100 100*	48 100*
Other (e)	40 500*	276 900*	196 300*	234 400*	152 800*
Hong Kong	405 509	697 648	858 030	883 666	1 370 457
of which: Re-exports	399 582	695 023	855 556	878 732	1 367 357
India (d)					
Gem	£742 327 000	£857 219 000	£1 050 679 000	...	...
Israel (a)					
Cut	2 633 000	3 139 000	3 827 000	4 376 000	...
Japan					
Industrial	29 369	4 694	89 188	89 000	38 820
Other	2 173	1 192	15 513	9 267	3 797
Korea, Republic of	£467 000	£860 000	£1 133 000	£356 000	£520 000
Malaysia					
Cut	£5 003 000	£6 277 000	...	£15 386 000	...
Other	£22 000	£1 158 000	...	£702 000	...
Singapore					
Rough	£595 000	—	£21 000	£57 000	£401 000
of which: Re-exports	£539 000	—	—	£57 000	£401 000
Cut	£12 932 000	£11 668 000	£5 800 000	£11 676 000	£11 393 000
of which: Re-exports	£10 943 000	£11 332 000	£5 314 000	£11 234 000	£9 841 000
Industrial	£938 000	£342 000	£180 000	£134 000	£177 000
of which: Re-exports	£901 000	£166 000	£180 000	£104 000	£165 000
Sri Lanka					
Industrial	—	5 554	331 715	—	—
Other	14 426	279 811	348 915	316 288	268 622
Taiwan					
Industrial	180 000	9 800 000	12 440 000	32 060 000	12 710 000
Other	27 990 000	6 600 000	12 340 000	29 660 000	10 625 000
Thailand	123 814	99 952	133 692	228 251	387 034
Australia					
Gem	(g)2 682 585	(g)2 670 546	(h)1 563 129	(h)25 333	(h)631 392
Industrial	903 480	561 451	1 813 194	145 137	1 572 718

## Notes

(1) Carats have been used as the unit in this table except where the only obtainable figure is the value. In these cases the national currency figure has been converted to £ sterling

(2) See explanatory notes at the front of the volume regarding currency conversion

(a) Figures may be incomplete as value only given in Israeli trade return for exports to some countries

(b) May include synthetic material

(c) Values shown are for the common customs area

(d) Years ended 31 March following that stated

(e) BGS estimates, based on known imports into certain countries

(f) Re-exports

(g) Including some rough, unsorted industrial diamonds

(h) Excluding unsorted rough diamonds

## Imports of Diamond

Country	1984	1985	1986	1987	1988
United Kingdom	£1 438 041 669	£1 376 511 719	£1 711 289 733	£1 624 878 505	£2 003 661 163
Belgium-Luxembourg					
Rough	37 746 620	42 855 082	55 831 368	66 204 960	66 154 145
Cut	2 698 445	2 662 239	3 508 531	3 543 728	4 060 064
Industrial	16 534 385	18 750 532	18 232 730	18 592 351	21 943 039
France					
Rough	949 325	23 950	15 025	15 173	52 155
Cut	297 018	236 638	300 679	372 972	443 627
Industrial	479 777	1 347 679	253 252	280 955	360 430
Dust	4 663 900	5 284 730	5 598 255	5 863 980	...
Germany, Federal Republic of					
Rough	9 678	20 405	11 325	9 224	14 104
Cut	461 321	401 563	479 011	563 920	601 688
Industrial	1 082 628	1 166 858	1 180 203	1 155 651	983 250
Greece					
Industrial	27 280	33 875	29 413	...	...
Other	190 352	9 370	19 202	...	...
Irish Republic					
Industrial	5 000	3 015 000	2 930 000	110 000	185 000
Italy					
Industrial	179 458	187 880	153 921	169 003	...
Other	193 540	219 958	222 140	231 400	...
Netherlands					
Rough	394 046	456 201	332 423	485 550	421 154
Cut	201 484	205 906	161 756	135 534	314 466
Industrial	545 383	567 090	1 130 572	1 325 000	848 112
Portugal	143 244	154 911	155 718	139 144	...
Spain					
Rough	£120 000	£99 000	£28 000	£70 000	£11 000
Industrial	£829 000	£1 399 000	£939 000	£949 000	£925 000
Other	£11 059 000	£19 647 000	£4 234 000	£5 317 000	£6 341 000
Austria					
Industrial	65 000	55 000	50 000	10 000	10 135 000
Other	40 000	80 000	80 000	110 000	60 000
Bulgaria (a)	87 300*	179 200*	138 500*	25 200*	18 700*
Czechoslovakia (a)	103 500*	52 900*	55 600*	180 200*	29 200*
Finland					
Industrial	10 000	15 000	425 000	15 000	210 000
Other	15 000	35 000	30 000	640 000	125 000
German Democratic Republic (a)	35 100*	25 700*	68 900*	39 300*	89 900*
Hungary					
Industrial	18 926	21 474	30 386	29 149	120 487
Malta					
Rough	£3 734 000	£2 487 000	£2 892 000	£2 094 000	£1 638 000
Industrial	£4 000	£73 000	£225 000	£4 000	£36 000
Norway					
Industrial	10 000	35 000	245 000	15 000	15 000
Other	30 000	65 000	15 000	80 000	30 000
Romania (a)	521 500*	387 200*	376 700*	614 100*	560 200*
Sweden					
Industrial	£478 000	£577 000	£414 000	£347 000	£545 000
Other	£9 564 000	£7 167 000	£5 193 000	£7 344 000	£5 742 000
Switzerland					
Industrial	...	...	...	...	465 000
Other	...	...	...	...	15 850 000
Turkey					
Industrial	100 000	260 000	270 000	140 000	...
Other	—	115 000	75 000	50 000	...
Yugoslavia					
Industrial	£773 000	£756 000	£762 000	£461 000	£494 000
Dust	£742 000	£796 000	£862 000	£1 169 000	£961 000
Other	£238 000	£238 000	£192 000	£228 000	£124 000
Algeria					
Industrial	£229 000	£311 000	£235 000	£151 000	...
Kenya					
Rough & cut	30 000	...	...	...	...

## Diamond

## Imports of Diamond

carats

Country	1984	1985	1986	1987	1988
South Africa					
Rough	208 500	230 500	258 000	343 500	...
Cut	17 500	37 000	20 000	22 500	...
Industrial	278 500	359 000	1 450 000	596 500	...
Tunisia					
Industrial	200 000	270 000	35 000	5 000	115 000
Other	385 000	665 000	720 000	625 000	750 000
Zambia					
Industrial	3 045 000	6 250 000	2 040 000	...	...
Canada					
Cut	263 143	297 961	296 740	273 018	91 934
Industrial	1 382 677	1 360 396	1 733 857	3 348 200	2 110 586
Dust	2 378 496	2 647 489	4 128 282	2 457 987	6 576 190
Costa Rica					
Industrial	330 000	330 000	160 000	210 000	...
El Salvador					
Industrial	235 000	...	...	...	...
Panama					
Industrial	755 000	25 000	—	—	—
USA					
Rough	1 240 982	1 042 183	1 288 018	1 369 360	1 644 298
Cut	2 606 491	7 108 435	7 884 765	7 752 028	8 752 894
Industrial	8 241 025	9 334 533	8 947 358	3 833 816	6 908 427
Bort	219 295	390 389	251 608	326 548	515 145
Dust	6 827 639	6 753 549	7 260 957	12 677 384	12 479 416
Argentina					
Industrial	360 000	135 000	115 000	...	...
Dust	...	500 000	455 000	...	...
Brazil					
Cut	225	260	1 870	...	—
Industrial	48 575	88 730	132 250	115 000	171 455
Dust	3 001 360	3 355 145	4 221 980	4 590 000	6 068 840
Colombia					
Industrial	75 000	25 000	95 000	...	...
Other	15 000	55 000	85 000	...	...
Venezuela					
Industrial	...	1 190 000	415 000	725 000	...
Abu Dhabi	40 000	1 175 000	30 000	110 000	60 000
China					
Industrial	502 298	551 052	759 872	530 740	1 044 235
Other (a)	65 600*	68 900*	123 700*	321 200*	131 600*
Cyprus	£1 088 000	£984 000	£847 000	£1 053 000	...
Dubai					
Industrial	115 000	...	...	...	...
Other	49 685	26 295	16 440	...	...
Hong Kong					
Rough	87 054	90 611	105 825	99 698	216 690
Cut	1 248 658	1 343 518	1 984 785	2 472 936	2 791 158
Industrial	148 748	234 076	427 305	355 698	653 788
India (d)					
Rough	...	39 808 594	58 620 165	...	...
Industrial	170 000	715 000	590 000	...	...
Israel					
Rough (c)	6 438 000	8 123 000	9 717 000	10 757 000	...
Cut (c)	401 000	444 000	478 000	601 000	...
Industrial (c)	4 325 000	5 779 000	6 778 000	8 529 000	...
Japan					
Rough	29 605	18 129	151 272	23 431	40 279
Cut	1 042 415	1 177 040	1 571 921	2 356 713	3 344 661
Industrial	681 713	721 704	737 530	519 349	631 311
Dust	1 399 120	1 267 595	1 305 535	1 541 830	1 810 015
Korea, Republic of					
Cut	£171 000	£767 000	£959 000	£435 000	£532 000
Industrial	£721 000	£682 000	£772 000	£1 083 000	£1 535 000
Dust	387 210	62 900	106 335	96 590	1 243 200
Other	£452 000	£951 000	£521 000	£193 000	£325 000

# Imports of Diamond

Diamond  
carats

Country	1984	1985	1986	1987	1988
Malaysia					
Rough	£918 000	£222 000	£7 351 000	£13 335 000	...
Cut	£16 401 000	£18 770 000	£9 037 000	£6 945 000	...
Industrial	£19 000	£36 000	£17 000	£44 000	...
Philippines					
Industrial	150 867	178 802	1 067 311	226 862	132 950
Qatar	5 090	14 215	125	1 500	...
Saudi Arabia					
Industrial	55 000	40 000	6 090 000	2 340 000	380 000
Other	77 000	90 000	60 000	305 000	1 895 000
Singapore					
Rough	£996 000	£101 000	£136 000	£62 000	£240 000
Cut	£32 703 000	£23 437 000	£27 022 000	£30 724 000	£40 463 000
Industrial	£1 409 000	£1 174 000	£439 000	£223 000	£454 000
Sri Lanka					
Industrial	47	3 704	251 980	81 169	166 231
Other	61 595	168 737	303 194	329 633	437 343
Taiwan					
Industrial	535 000	620 000	1 580 000	5 085 000	265 000
Dust	3 930 000	7 075 000	4 455 000	7 085 000	9 825 000
Other	80 000	105 000	1 250 000	25 000	...
Thailand					
Rough	963 131	318 261	511 943	612 143	3 542 997
Cut	214 962	134 235	259 998	443 824	6 405 575
Industrial	13 261	12 965	7 255	6 927	787 404
Australia					
Rough	—	3 736	—	90 554	313 343
Gem	96 966	114 185	112 121	113 639	127 555
Industrial	1 471 714	1 787 148	2 249 893	2 749 365	2 176 931
New Zealand (b)					
Industrial	£93 000	£251 000	£220 000	£182 000	...
Other	£2 639 000	£2 380 000	£2 434 000	£4 670 000	...

## Notes

(1) Carats have been used as the unit in this table except where the only obtainable figure is the value. In these cases the national currency figure has been converted to £ sterling

(2) See explanatory notes at the front of the volume regarding currency conversion

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 30 June of that stated

(c) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

(d) Years ended 31 March following that stated

**Production of Diatomite**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	200*	200*	300*	350*	320*
Denmark (a)					
Moler (d)	(e)63 745	(e)72 029	92 975	94 995	95 000*
France (b)	247 400	269 900	269 000	250 000*	250 000*
Germany, Federal Republic of	49 000	48 400	49 500	47 200	47 200
Italy	28 000*	30 000*	27 000*	28 000*	28 000*
Portugal	1 600	1 600	2 120	2 890	2 070
Spain (b)	73 013	96 251	128 050	66 217	70 000*
Iceland	27 265	29 388	22 897	23 345	25 142
Romania	300 000*	290 000*	300 000*	280 000*	280 000*
Soviet Union	240 000*	245 000*	250 000*	255 000*	260 000*
Turkey	6 540	3 000*	3 000*	5 149	3 000*
Yugoslavia	7 249	7 927	10 749	5 458	5 364
Algeria	2 800	2 600	4 000	3 300	3 600*
Kenya	1 512	1 420	1 450	616	712
South Africa	258	947	1 800	194	199
Canada	4 100	2 632	3 000*	3 000*	3 000*
Costa Rica	...	...	4 200	5 200	5 200
Mexico	44 634	45 781	36 022	34 708	35 000*
USA (c)	569 000	576 000	570 000	597 000	629 000
Argentina	5 227	9 929	14 362	10 000*	10 000*
Brazil (f)	7 721	12 731	11 856	16 011	16 000*
Chile	1 712	2 317	2 684	3 218	2 919
Colombia	—	—	—	2 800	3 000
Peru	7 471	14 854	10 390	10 000*	10 000*
Korea, Republic of	48 496	53 613	54 841	64 783	71 852
Thailand	471	410	204	177	470
Australia	6 430	7 587	9 048	10 263	11 279
World total	1 740 000	1 820 000	1 880 000	1 820 000	1 870 000

## Notes

(1) In addition to the countries listed, Czechoslovakia, Hungary and Japan are also believed to produce diatomite

(a) Sales

(b) Including tripoli

(c) Sold or used by producers

(d) Moler is an impure diatomite containing a large proportion of clay

(e) Excluding moler used for bricks, blocks etc.

(f) Including beneficiated and directly shipped material



## Exports of Diatomite

Country	1984	1985	1986	1987	1988
United Kingdom	611	177	521	484	679
Belgium-Luxembourg	...	...	...	537	730
Denmark					
Diatomite	67 960	73 113	74 267	77 890	81 438
Moler bricks	25 535	19 956	19 125	15 795	23 705
France	31 655	32 337	31 730	31 741	36 283
Germany, Federal Republic of	2 021	1 510	1 247	1 409	2 274
Italy	3 003	4 114	3 014	2 942	...
Netherlands	876	1 796	486	831	586
Spain	2 233	3 250	4 087	7 780	8 756
Austria	2 425	2 471	2 203	2 653	2 811
Czechoslovakia (a)	3 100*	4 200*	4 800*	4 900*	5 300*
Hungary (a)	3 200*	2 800*	5 000*	1 800*	1 800*
Iceland	26 486	27 123	23 423	23 214	25 840
Sweden	71	611	46	95	125
Switzerland	32	40	50	60	70
Turkey	363	62	4	2 692	513
Yugoslavia	394	1 504	655	369	712
Kenya	298	208	428	419	...
Mexico	4 081	4 467	5 460	5 824	...
USA	115 282	108 944	119 298	126 394	147 324
Hong Kong (b)	22	254	442	624	1 440
Japan	2 200	2 599	1 506	1 400	1 986
Korea, Republic of	—	—	167	422	100
Singapore (b)	366	202	115	223	661
Taiwan	226	60	34	731	22

(a) BGS estimates, based on known imports into certain countries

(b) Re-exports

## Imports of Diatomite

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	20 881	23 915	26 412	25 689	42 718
Belgium-Luxembourg	8 008	8 463	8 304	13 252	13 670
Denmark	6 110	5 526	5 575	5 669	5 867
France	8 638	7 212	5 756	10 568	11 687
Germany, Federal Republic of	37 363	39 162	38 856	39 326	37 903
Greece	1 888	1 693	2 145	1 407	1 793
Irish Republic	329	364	146	224	149
Italy	4 669	5 044	8 916	5 883	...
Netherlands	24 376	64 815	77 143	22 034	20 749
Portugal	4 000	4 172	3 807	4 352	...
Spain	2 579	2 704	3 338	3 173	3 456
Austria	11 142	12 931	14 721	13 049	14 342
Czechoslovakia (b)	2 500*	2 900*	1 900*	1 200*	1 800*
Finland	4 295	4 739	5 506	4 910	2 785
German Democratic Republic (b)	1 500*	1 100*	1 600*	1 700*	1 900*
Norway	1 640	2 177	1 986	2 020	1 835
Poland (b)	700*	2 200*	1 500*	2 300*	2 000*
Romania (b)	800*	1 000*	1 100*	400*	500*
Sweden	2 566	2 826	2 318	2 884	2 810
Switzerland	6 244	6 920	6 303	6 308	7 196
Turkey	142	81	147	147	132
Yugoslavia	543	1 144	1 187	1 150	1 352
Algeria	12	277	79	54	...
Cameroon	300*	300*	400*	600*	700*
Gabon	375	348	384	...	...
Ivory Coast	132	129	214	...	142
Kenya	171	1	0	0	...
Morocco	247	53	98	126	341
South Africa	5 333	6 039	4 399	1 568	...
Tunisia	144	189	167	436	795
Zaire	100	911*	400*	...	...
Zambia	367	139	277	...	...
Zimbabwe	99	451	437	291	...
Canada	23 891	24 226	26 338	24 482	19 592
Costa Rica	212	271	264	290	...
Dominican Republic	586	648	785	...	...
El Salvador	445	366	488	...	...
Guatemala	427	416	184	289	...
Honduras	398	502	555	...	...
Mexico	190	143	546	422	...
Nicaragua	631	187	277	...	...
Panama	306	314	433	575	316
USA	307	4 491	710	6 022	3 000
Argentina	2 811	2 032	2 300	1 822	...
Brazil	1 302	1 401	1 310	1 750	1 200
Colombia	561	1 005	1 585	...	...
Ecuador	595	449	501	688	...
Peru	1 838	842	1 460	2 631	1 097
Venezuela	4 837	9 670	4 656	14 664	...
Cyprus	176	156	203	186	...
Hong Kong	562	602	984	1 227	2 330
Indonesia	1 075	637	769	1 323	2 045
Iran (c)	1 304	707	1 545	431	...
Israel (b)	600*	1 000*	800*	700*	1 100*
Japan	3 985	3 164	3 901	5 006	6 860
Malaysia	715	489	788	688	...
Pakistan (a)	17 575	198	254	194	408

## Imports of Diatomite

Diatomite  
tonnes

Country	1984	1985	1986	1987	1988
Philippines	474	148	408	795	628
Saudi Arabia	6 871	4 252	2 586	698	1 867
Singapore	1 146	866	963	1 139	1 956
Sri Lanka	3 419	15	83	60	41
Taiwan	4 692	3 544	4 296	4 623	7 150
Thailand	98	36	153	373	105
Australia	11 115	12 479	10 637	12 004	6 763
Fiji	104	58	67	...	...
New Zealand (a)	1 370	1 067	1 353	1 870	...

(a) Years ended 30 June of that stated

(b) BGS estimates, based on known exports from certain countries

(c) Years ended 20 March following that stated

**Production of Feldspar**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	5 901	5 934	7 304	5 692	6 267
France	208 900	171 500	274 000	216 000	322 000
Germany, Federal Republic of	286 200	261 400	246 500	310 400	308 800
Italy	1 030 000	1 116 375	1 141 542	1 188 700	1 367 700
Portugal	29 003	29 011	35 281	40 917	51 107
Spain (c)	136 943	136 190	135 526	161 631	165 000*
Austria	2 554	13 570	2 850	4 692	8 222
Finland	64 733	174 219	72 950	77 817	312 738
Norway (d)	67 820	80 095	87 257	80 016	67 000*
Poland	46 300	60 100	57 200	57 600	50 000*
Romania	85 000*	86 000*	86 000*	82 000*	82 000*
Soviet Union	330 000*	340 000*	340 000*	340 000*	340 000*
Sweden (e)	49 833	41 720	35 160	34 226	35 000*
Turkey	10 000*	20 000*	12 180	30 336	43 663
Yugoslavia	34 824	49 480	48 000	45 000	35 614
Egypt	5 879	19 073	18 020	15 963	6 131
Kenya	682	879	—	—	—
Morocco	1 000*	1 000*	1 000*	1 000*	1 000*
Mozambique	185	67	—	—	—
Nigeria	1 000*	1 000*	803	535	75
South Africa	39 018	33 012	52 762	66 513	81 889
Zambia	184	185	214	45	120
Zimbabwe	1 399	2 300	2 027	2 962	3 730
Guatemala	4 262	5 582	5 446	7 079	7 200
Mexico	84 791	100 000*	85 019	106 490	86 258
USA (e)	644 000	635 000	667 000	653 000	649 000
Argentina	17 948	27 066	24 087	29 282	...
Brazil	84 033	99 053	105 042	94 433	140 041
Chile	3 026	2 565	2 275	705	3 614
Colombia	32 766	34 348	35 722	33 760	37 136
Ecuador	2 084	3 405	1 710	4 315	...
Peru	3 225	—	19 467	10 000	10 000*
Uruguay	1 950	1 541	1 632	3 016	...
Venezuela	40 497	42 440	34 000	43 000	45 000*
Hong Kong	23 101	26 777	35 208	22 853	11 050
India	42 859	44 303	48 264	49 663	50 000*
Iran (b)	33 000	32 000	32 000*	32 000*	32 000*
Japan	511 493	526 502	483 948	480 584	539 048
Korea, Republic of	127 057	145 414	130 895	180 269	241 511
Myanmar (a)	6 218	2 861	1 916	1 800*	1 800*
Pakistan	5 486	5 633	11 575	6 675	9 510
Philippines	11 486	5 866	6 661	6 500*	9 200*
Sri Lanka	3 155	2 878	7 270	7 442	7 278
Taiwan	15 452	11 055	26 290	28 116	19 101
Thailand	74 404	104 586	115 163	168 881	293 686
Australia	3 898	6 704	10 006	11 499	25 373
World total	4 200 000	4 500 000	4 500 000	4 700 000	5 500 000

## Notes

(1) In addition to the countries listed, China, Czechoslovakia and Namibia are also believed to produce feldspar

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) Including pegmatite

(d) Underground: production of ground withheld

(e) Sold or used by producers

## Exports of Feldspar

Feldspar  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	456	316	357	450	823
France	59 566	53 004	46 847	62 775	77 857
Germany, Federal Republic of	16 570	20 312	26 313	27 329	29 131
Italy	35 469	39 139	29 413	29 632	...
Netherlands	2 179	1 421	1 114	1 364	1 216
Portugal (a)	1 240	1 895	7 267	22 706	...
Spain (a)	3 482	4 739	2 578	3 382	...
Finland	(a)35 299	(a)35 209	(a)40 301	(a)32 964	34 050
Norway	81 026	86 708	74 185	74 953	69 059
Sweden	(a)30 950	(a)21 803	(a)22 273	(a)16 047	26 386
Switzerland	(a)169	(a)159	(a)153	(a)95	46
Turkey	1 034	2 911	17 050	17 898	20 095
Yugoslavia	3 793	6 722	2 228	3 026	3 576
South Africa	620	—	913	3 475	3 874
Guatemala (c)	3 542	3 041	2 731	3 946	...
Mexico	1 198	477	688	3 845	...
USA (a)	9 144	8 435	11 596	8 773	12 510
Brazil	2	5	10	2 500	6 925
China (a) (b) (c)	40 900*	35 400*	52 300*	89 100*	106 600*
Hong Kong (c)	36 957	38 571	50 555	77 515	79 524
of which: Re-exports	24 257	28 721	28 165	51 805	56 324
India (d)	37 689	16 781	20 033	...	...
Japan	31 770	27 646	32 822	31 281	28 841
Korea, Republic of	22 988	22 746	16 759	19 258	24 101
Singapore (a)	4 938	4 314	3 585	1 597	4 002
of which: Re-exports	4 928	4 306	3 585	1 597	4 002
Thailand	16 982	35 198	46 064	96 644	263 370

(a) May include some leucite and nepheline

(b) BGS estimates, based on known imports into certain countries

(c) Including some fluorspar

(d) Years ended 31 March following that stated

## Imports of Feldspar

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	54 335	55 879	59 337	53 985	50 756
Belgium-Luxembourg	24 778	17 806	18 372	19 853	23 799
Denmark	5 678	6 558	4 932	3 837	4 595
France	19 846	23 497	23 627	28 331	29 020
Germany, Federal Republic of	51 164	46 213	55 193	62 299	66 710
Greece	2 229	1 529	4 446	3 200	3 497
Irish Republic	(a) (c)6 425	(a) (c)7 612	(a) (c)8 119	(a) (c)3 668	3 262
Italy	13 117	12 453	7 019	10 917	...
Netherlands	21 609	20 167	19 749	14 425	11 203
Portugal	277	253	322	424	...
Spain (a)	18 067	18 403	19 829	32 607	...
Austria	(a)4 485	(a)4 474	(a)4 466	(a)4 716	4 767
German Democratic Republic (a) (b)	18 700*	22 700*	10 600*	20 300*	11 100*
Hungary	350	337	352	625	545
Norway	125	231	187	82	1 362
Poland	9 944	10 034	11 630	15 578	12 401
Sweden	(a)11 419	(a)11 860	(a)13 392	(a)12 431	10 035
Switzerland	(a)11 890	(a)17 301	(a)11 691	(a)14 994	16 207
Yugoslavia	769	910	490	1 676	2 373
Algeria (a)	2 255	3 407	3 000	1 627	...
Egypt (a) (c)	2 648	990	8 331	9 079	...
Morocco (a)	1 798	749	358	1 022	1 095
Tunisia	2 329	1 934	1 561	1 462	2 041
Canada	...	...	...	...	13 235
Costa Rica (c)	2 623	2 229	2 954	3 907	...
Mexico	794	705	610	206	...
Panama (c)	865	712	3 400	209	1 517
USA	23	864	1 136	4 384	6 193
Venezuela	1 267	837	981	1 841	...
Hong Kong (c)	21 842	23 989	37 396	69 976	85 947
Indonesia (a)	13 522	6 872	12 504	14 193	16 000
Israel (a) (b)	200*	100*	3 500*	6 100*	...
Japan	(a)9 611	(a)7 802	(a)6 766	(a)17 977	11 709
Jordan (a) (c)	2 251	640	928	805	...
Korea, Republic of	37	804	771	1 905	2 849
Malaysia (a) (c)	16 145	24 247	20 867	25 846	...
Philippines (a) (c)	2 667	1 633	1 535	6 516	3 423
Saudi Arabia (a) (c)	1 663	890	275	560	619
Singapore (a)	7 812	5 992	4 413	1 613	5 686
Syria (a) (c)	4 006	878	1 879	937	...
Taiwan (a) (c)	110 482	140 593	158 131	224 733	338 580
Thailand (a)	1 054	1 196	531	2 910	879
Australia	(a)18 424	(a)1 643	(a)5 441	(a)10 019	40
New Zealand (a) (c) (d)	1 385	1 139	832	758	...

(a) May include some leucite and nepheline

(b) BGS estimates, based on known exports from certain countries

(c) Including some fluorspar

(d) Years ended 30 June of that stated

## Production of Fluorspar

Country	1984	1985	1986	1987	1988
United Kingdom	137 000	167 390	133 420	120 000	103 797
France	232 050	224 000	198 000	183 000	193 000
Germany, Federal Republic of	83 300	83 100	88 800	85 200	77 700
Greece	83	35	150	250*	250*
Italy	188 263	152 212	145 537	134 400	134 714
Spain	295 666	305 609	282 460	151 427	152 800
Czechoslovakia	96 000*	95 000*	95 000*	95 000*	95 000*
German Democratic Republic	100 000*	100 000*	100 000*	90 000*	90 000*
Romania	20 000*	20 000*	20 000*	18 000*	18 000*
Soviet Union	550 000*	560 000*	560 000*	560 000*	545 000*
Sweden	3 454	3 169	265	220	...
Turkey	2 258	9 804	1 604	10 000*	13 240
Egypt	118	60	80	502	1 849
Kenya	46 578	57 949	50 851	60 190	67 351
Morocco	65 900	74 350	83 000	78 500	100 500
South Africa	319 206	349 207	333 885	316 606	328 421
Tunisia	44 500	42 200	36 300	43 300	56 000
Canada	—	—	—	10 000	36 000
Mexico	699 429	730 447	766 822	817 635	828 000
USA	65 000*	60 000*	71 000*	64 000*	64 000*
Argentina	23 157	30 612	39 076	54 600	55 000*
Brazil (a)	75 711	83 102	83 680	88 944	89 360
China	650 000*	750 000*	820 000*	975 000*	1 150 000*
India	21 928	20 270	18 574	18 457	18 400*
Korea, Dem. P.R. of	40 000*	40 000*	40 000*	40 000*	40 000*
Korea, Republic of	4 672	705	243	63	261
Mongolia	747 000	787 000	790 000	780 000*	790 000*
Pakistan	703	3 175	4 353	3 673	375
Thailand	287 379	298 899	167 909	102 398	76 341
World total	4 800 000	5 000 000	4 900 000	4 900 000	5 100 000

### Notes

(1) In addition to the countries listed, Bulgaria is also believed to produce fluorspar

(a) Including beneficiated and directly shipped material

## Fluorspar

**Exports of Fluorspar**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	8 200	7 504	5 137	4 732	8 115
Belgium-Luxembourg	1 902	237	20	—	3 069
France	60 928	56 187	45 701	47 046	38 563
Germany, Federal Republic of	16 518	15 833	13 100	20 463	24 897
Italy	70 801	44 786	11 743	37 732	...
Netherlands	290	224	408	461	1 863
Spain	151 313	148 978	174 148	90 970	...
German Democratic Republic (b)	46 500*	41 800*	36 000*	33 500*	25 500*
Sweden	1 847	4 939	557	1 458	2 108
Kenya	52 180	60 726	41 132	45 681	108 000
Morocco	74 200	64 245	79 944	87 708	89 694
South Africa	343 432	283 023	288 070	281 427	313 186
Tunisia	3 150	7 250	6 100	8 536	15 000
Canada	...	...	...	...	38 301
Mexico	707 634	736 685	437 591	474 774	509 437
USA	11 128	9 060	14 730	2 679	3 163
China	634 481	734 182	700 130	775 848	911 976
Japan	(a)327	(a)157	(a)157	(a)245	1 558
Korea, Republic of	513	—	—	—	—
Thailand	230 407	199 640	137 619	114 542	25 487

(a) May include some leucite and nepheline

(b) BGS estimates, based on known imports into certain countries



## Imports of Fluorspar

Country	1984	1985	1986	1987	1988
United Kingdom	20 000*	18 000*	(b)28 200*	(b)17 900*	(b)12 300*
Belgium-Luxembourg	8 310	7 773	7 662	10 643	17 663
Denmark	586	499	486	491	420
France	15 425	13 151	12 990	14 554	14 220
Germany, Federal Republic of	194 558	233 280	208 860	190 138	242 761
Greece	4 986	9 642	11 720	13 839	4 597
Irish Republic	(a) (c)6 425	(a) (c)7 612	(a) (c)8 119	(a) (c)3 668	38
Italy	97 836	91 645	82 274	67 317	...
Netherlands	18 330	27 152	23 148	30 330	35 963
Portugal	1 860	571	437	2 716	...
Albania (b)	300*	700*	1 000*	1 000*	200*
Austria	14 416	13 090	12 356	13 919	11 387
Bulgaria (b)	800*	850*	200*	300*	700*
Finland	6 455	8 605	6 382	8 260	7 548
Hungary	8 034	7 715	6 481	5 912	4 124
Norway	43 925	47 089	47 021	46 804	48 942
Poland	20 779	20 561	23 907	22 898	17 685
Romania (b)	4 800*	12 600*	4 200*	4 800*	...
Soviet Union (b)	117 500*	123 200*	51 000*	...	...
Sweden	11 932	9 929	10 648	10 956	11 670
Turkey	21	636	100	80	...
Yugoslavia	6 751	9 298	9 223	8 280	10 349
Algeria	1 187	1 049	1 900	26	...
Egypt (a) (c)	2 648	990	8 331	9 079	...
Tunisia	—	—	6 629	2 840	2 798
Canada	166 709	111 726	164 114	134 567	194 057
Costa Rica (c)	2 623	2 229	2 954	3 667	...
Panama (c)	865	712	3 400	209	1 517
USA	650 432	552 576	483 208	542 319	693 412
Chile (b)	3 000*	3 000*	3 100*	4 100*	...
Peru	329	240	2 268	279	382
Venezuela	329	649	302	1 203	...
Hong Kong (c)	21 842	23 989	37 396	69 976	85 947
India (c)	12 824	8 807	24 921	...	...
Japan	513 284	570 656	527 236	527 545	609 113
Jordan (a) (c)	2 551	640	928	805	...
Korea, Republic of	29 947	46 093	28 598	61 752	50 453
Malaysia (a) (c)	12 105	20 673	13 399	16 799	...
Philippines (a) (c)	2 667	1 633	1 535	6 516	3 423
Saudi Arabia (a) (c)	1 663	890	275	560	619
Syria (a) (c)	4 006	878	1 879	937	...
Taiwan (a) (c)	110 482	140 593	158 131	224 733	338 580
Thailand	703	983	392	754	2
Australia	25 885	26 192	23 640	13 374	29 227
New Zealand (a) (c) (d)	1 385	1 139	832	758	...

(a) May include some leucite and nepheline

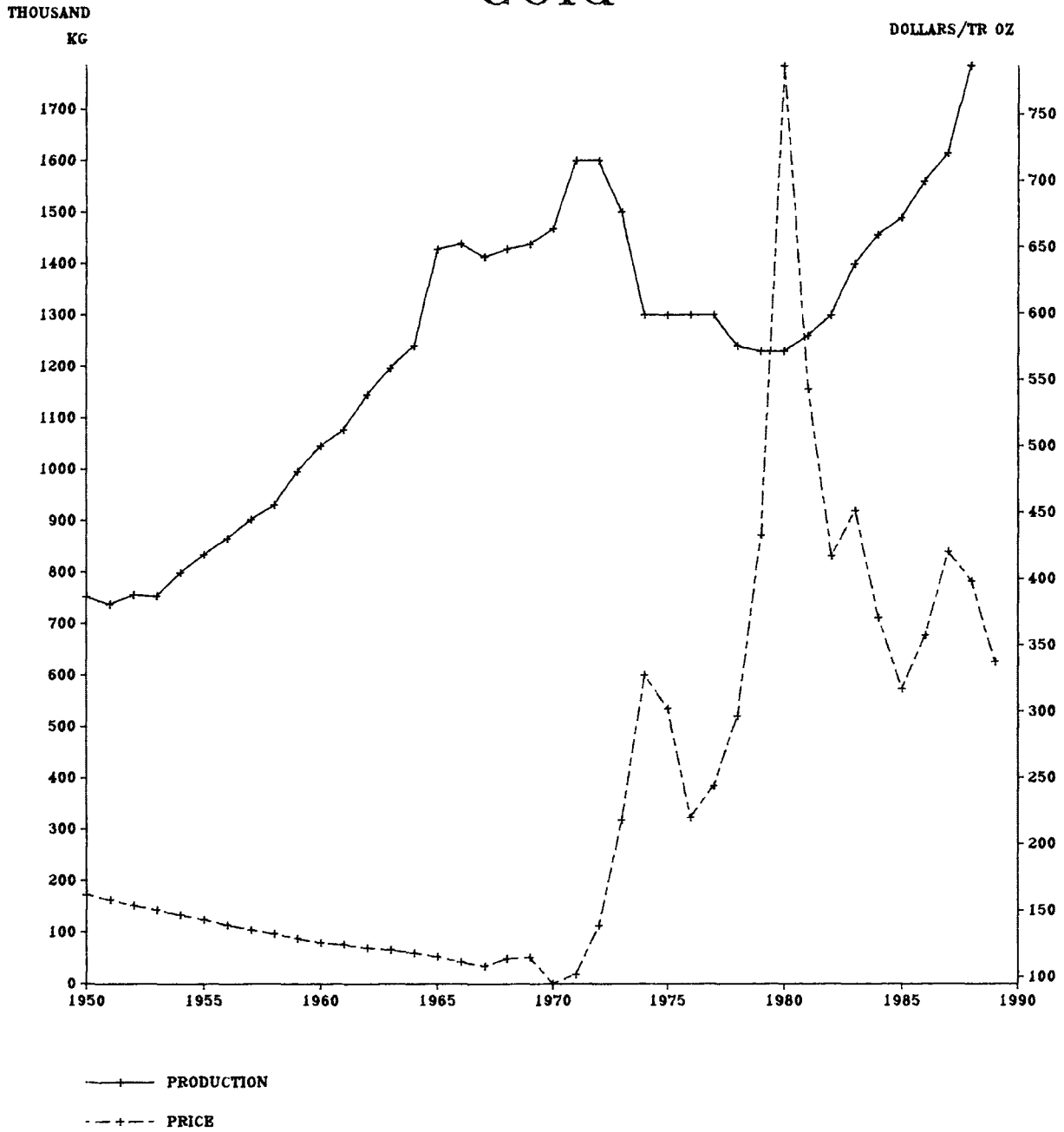
(b) BGS estimates, based on known exports from certain countries

(c) Including some feldspar

(d) Years ended 30 June of that stated

(e) Years ended 31 March following that stated

# Gold



**Figure 8** World mine production of gold compared with the annual average London price expressed in constant 1985 US dollars.  
*Constant commodity prices derived from those quoted in International Financial Statistics Yearbook (1989) published by the International Monetary Fund.*

## Mine Production of Gold

kilograms (metal content)

Country	1984	1985	1986	1987	1988
France	2 407	2 380	2 360	1 810	2 753
Germany, Federal Republic of	50*	60*	60*	60*	60*
Portugal	193	229	303	320	317
Spain	8 097	10 254	8 949	13 044	...
Finland	1 046	996	501	708	594
Hungary	600*	600*	600*	600*	600*
Romania	2 000*	2 000*	2 000*	2 000*	2 000*
Soviet Union	300 000	271 000	275 000*	275 000*	280 000*
Sweden	4 408	4 710	4 332	3 800	3 900*
Yugoslavia (d)	3 892	4 460	4 498	5 348	4 620
Botswana	18	13	25	32	21
Burkina Faso	700*	1 600*	2 500*	2 700*	2 800*
Burundi	35	25	31	30	30*
Cameroon	8*	7	8	8*	8*
Central African Republic	236	249	220	224	382
Congo	3	13	9	10*	10*
Ethiopia (b)	662	918	923	643	728
Gabon	41	49	55	79	138
Ghana	8 923	9 311	8 951	10 227	11 631
Kenya	14	11	73	14	17
Liberia (a)	328	147	610	657	677
Mali	500	500	500*	700*	600*
Namibia	196	194	184	172	240
Rwanda	8	8	6	8	16
Sierra Leone	570*	591	370	373	400*
South Africa	681 930	672 944	640 026	600 229	620 177
Sudan	30	52	53	700	50
Tanzania	39	55	85	201	164
Zaire	3 643	2 266	1 958	4 365	3 563
Zambia (c)	379	246	58	350	262
Zimbabwe	14 877	14 691	14 853	14 693	14 965
Canada	83 446	87 561	102 899	115 818	134 813
Costa Rica (e)	595	1 073	362	336	313
Dominican Republic	10 522	10 219	8 879	7 798	6 335
Honduras	131	157	85	92	123
Mexico	7 058	7 524	7 795	7 988	9 098
Nicaragua	1 100*	787	892	984	878
USA	64 840	75 497	116 299	153 874	200 919
Argentina	688	882	944	982	943
Bolivia	1 270	561	763	2 806	4 889
Brazil	37 218	29 673	23 361	35 780	56 447
Chile	16 829	17 240	17 947	17 035	20 614
Colombia	24 880	35 547	39 996	26 546	29 020
Ecuador	1 800	2 400	9 870	9 400	9 500*
French Guiana	315	407	326	520	522
Guyana	328	321	436	666	585
Peru	5 829	6 621	8 846	5 592	5 088
Venezuela	1 741	2 193	2 494	3 861	3 673
China	59 000*	60 600*	65 300*	71 500*	77 800*
India	1 988	1 850	1 931	1 864	1 900
Indonesia	2 279	2 508	3 301	3 680	4 731
Japan	3 220	5 309	10 280	8 590	7 308
Korea, Dem. P.R. of	5 000*	5 000*	5 000*	5 000*	5 000*
Korea, Republic of (d)	2 462	2 403	4 649	7 600	11 121
Malaysia	2 788	2 768	2 749	3 516	2 928
Philippines	25 727	33 063	35 430	34 080	35 300
Taiwan (d)	1 176	953	910	536	237

## Gold

**Mine Production of Gold**

kilograms (metal content)

Country	1984	1985	1986	1987	1988
Australia	40 309	58 521	75 079	110 696	156 950
Fiji	1 676	1 888	2 856	2 866	4 274
New Zealand	672	886	1 265	1 148	2 404
Papua New Guinea	18 573	31 025	36 733	35 937	38 089
Solomon Islands	80	29	98	74	50
World total	1 459 000	1 486 000	1 558 000	1 616 000	1 797 000

## Notes

(1) In several countries, for example Brazil, Colombia and Indonesia, a certain amount of gold produced in very small operations is not recorded in the official statistics used in compiling this table

(2) Small operations in Brazil are believed to produce substantial amounts of gold

(3) In addition to the countries listed, Bulgaria, Czechoslovakia, German Democratic Republic, Myanmar, Norway and Thailand are also believed to produce gold

(a) Exports

(b) Years ended 6 July of that stated

(c) Contained in blister copper, refinery muds and electrolytic copper

(d) Metal production

(e) Central Bank purchases

# Exports of Gold

Gold  
kilograms

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal					
Refined	523 297	425 395	474 642	367 532	609 753
Other	4 631	4 990	6 239	6 102	5 205
Waste & scrap	30 962	25 392	2 954	3 747	2 862
Belgium-Luxembourg					
Metal	22 967	28 003	18 762	16 279	19 088
Waste & scrap	£6 481 000	£3 001 000	£3 378 000	£3 455 000	£4 560 000
Denmark					
Metal	326	198	293	391	684
of which: Re-exports	134	91	251	375	...
Waste & scrap	12 204	11 072	8 045	40 855	6 777
of which: Re-exports	4 964	3 825	3 835	4 084	...
France					
Metal	24 135	19 536	24 911	26 044	28 768
Waste & scrap	37 667	124 186	122 384	78 681	369 700
Germany, Federal Republic of					
Metal	48 901	46 541	65 608	33 925	45 665
Waste & scrap	10 818	49 836	15 892	30 727	135 140
Irish Republic					
Metal	£936 000	£642 000	£646 000	£35 000	£21 000
Waste & scrap	£459 000	£608 000	£650 000	£1 046 000	£1 282 000
Italy					
Metal	3 063	5 169	2 774	30 561	...
Netherlands					
Metal	3 059	1 935	1 331	2 556	23 293
Waste & scrap	42 000	20 000	35 000	9 000	11 000
Spain					
Metal	3 876	1 845	3 793	1 404	760
Austria					
Metal	435	510	542	528	1 015
Finland					
Metal	809	757	892	1 367	1 405
Norway					
Metal	433	273	318	726	696
Waste & scrap	316	318	155	145	65
Soviet Union					
Metal (c)	21 000*	28 800*	64 400*	38 100*	33 600*
Sweden					
Metal	4 000	5 000	7 000	8 000	6 000
Waste & scrap	7 000	13 000	24 000	49 000	21 000
Switzerland					
Metal	889 793	929 893	921 911	671 605	841 276
Waste & scrap	...	...	...	...	63 351
Ghana					
Metal	8 880	8 966	8 359	10 092	...
Liberia					
Metal	328	147	610	657	677
Namibia					
Metal	196	194	184	172	240
Sierra Leone					
Metal	83	80	193	...	...
South Africa					
Metal	£6 037 000 000	£5 399 000 000	£5 210 000 000	£5 265 000 000	£4 906 000 000
Zaire					
Metal	2 498	1 687	1 952	3 352	...
Zimbabwe					
Metal	10 843	12 115	21 642	18 052	...
Canada					
Ores & concentrates (b)	5 814	6 035	7 302	8 604	...
Metal	124 481	113 230	165 632	69 876	126 935
Dominican Republic					
Metal	10 522	10 219	8 879	7 798	6 335

## Gold

**Exports of Gold**

kilograms

Country	1984	1985	1986	1987	1988
USA					
Ore (b)	103	76	221	1 395	1 386
Metal					
Unrefined	2 255	2 984	14 898	20 446	20 614
Refined	111 418	92 662	359 817	78 838	300 965
Other	2 212	37 062	2 374	3 886	4 459
Waste & scrap	44 289	31 566	30 657	28 199	36 037
Bolivia					
Ores & concentrates (b)	405	513	248	1 226	1 873
Metal	506	20	362	1 370	2 380
Chile					
Metal	7 516	8 552	8 205	...	...
Colombia					
Ore	199 000	174 200	215 000	...	...
Peru					
Metal	5 469	5 465	662	66	24
Hong Kong					
Metal (a)	1 499	2 117	47 959	15 815	23 333
Waste & scrap (a)	675	1 304	5 068	2 337	1 470
Indonesia					
Metal	—	1	1 425	19 818	21 764
Japan					
Metal	6 341	4 463	5 827	11 525	11 241
Jordan					
Metal (a)	3	939	1 809	4 630	...
Korea, Dem. P.R. of					
Metal (c)	10 800*	7 300*	4 800*	7 700*	7 500*
Korea, Republic of					
Metal	251	15	1 413	3 395	6 551
Malaysia					
Metal	1 667	814	...	999	...
Waste & scrap	222	231	...	315	...
Philippines					
Ores & concentrates (b)	9 190	10 338	12 273	6 596	8 529
Singapore					
Metal	3 459	1 981	4 129	4 555	4 624
of which: Re-exports	365	317	793	1 536	778
Waste & scrap	919	759	1 280	1 749	2 213
Taiwan					
Waste & scrap	17 860	21 446	19 462	197	12 339
Australia					
Ores, concentrates & unrefined metal (b)	1 156	1 921	2 796	1 403	(d)4 362
Refined metal	30 461	47 958	55 889	84 999	(e)138 353
Fiji					
Metal	1 650	1 863	2 899	...	...
Papua New Guinea					
Metal	18 573	31 025	36 733	35 937	38 089

## Notes

(1) In this table the term 'metal' as used here includes both unwrought and partly worked gold and alloys but excludes gold coin

(a) Re-exports

(b) Au content

(c) BGS estimates, based on known imports into certain countries

(d) Excluding unrefined metal

(e) Including unrefined metal

# Imports of Gold

Gold  
kilograms

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	11 544	852	1 930	2 879	12 892
Metal					
Unrefined	3 450	4 786	9 654	19 751	8 455
Refined	436 670	347 880	487 986	354 971	571 458
Other	8 455	19 228	28 075	33 060	23 709
Waste & scrap	175 111	162 774	161 604	205 799	165 158
Belgium-Luxembourg					
Metal	61 809	65 353	53 012	45 014	53 114
Waste & scrap	£1 694 000	£1 903 000	£1 805 000	£1 463 000	£3 371 000
Denmark					
Metal	763	824	1 128	1 054	4 134
Waste & scrap	439	634	597	8 211	534
France					
Metal	92 973	31 426	51 030	92 643	134 333
Waste & scrap	1 242	1 604	27 107	1 548	6 400
Germany, Federal Republic of					
Metal	73 145	83 125	100 310	78 855	165 884
Waste & scrap	97 997	176 469	187 094	158 364	783 171
Greece					
Metal	1 530	2 572	2 643	1 628	1 986
Irish Republic					
Metal	£2 697 000	£4 138 000	£4 128 000	£4 021 000	£4 030 000
Italy					
Metal	202 487	231 954	217 097	199 393	...
Netherlands					
Metal	4 711	5 869	5 040	3 621	3 936
Waste & scrap	3 000	6 000	10 000	7 000	1 000
Portugal					
Metal	188	228	649	348	...
Spain					
Metal	248	1 723	3 769	5 932	10 337
Waste & scrap	35 603	72 501	2 000	25	474
Austria					
Metal	3 275	3 345	4 522	3 105	13 459
Finland					
Metal	910	892	756	745	753
Malta					
Metal	1 913	1 263	2 355	3 424	1 792
Norway					
Metal	582	632	753	554	702
Waste & scrap	2	15	61	175	240
Sweden					
Metal	£3 771 000	£4 639 000	£8 364 000	£12 589 000	£12 021 000
Waste & scrap	£231 000	£202 000	£295 000	£511 000	£454 000
Switzerland					
Metal	766 297	883 081	1 195 002	909 709	968 810
Waste & scrap	...	...	...	...	64 199
Algeria					
Metal	2 254	2 751	16	5	...
Reunion					
Metal	52	52	375	217	...
South Africa					
Metal	3 410	420	200	150	...
Waste & scrap	1 685	—	—	—	...
Tunisia					
Metal	449	387	290	115	...
Bermuda					
Metal	847	1 704	...	160	1 887
Canada					
Ores & concentrates (c)	553	475	704	1 060	...
Metal	67 873	95 872	115 148	59 940	51 525
USA					
Ore (c)	7 446	2 489	2 288	2 259	3 976
Metal					
Unrefined (a)	52 033	56 969	59 731	43 058	32 350
Refined	195 827	197 853	429 252	75 367	57 597

## Gold

## Imports of Gold

kilograms

Country	1984	1985	1986	1987	1988
Brazil					
Metal	55	78	58	62	4
Brunei					
Metal	113	429	673	...	...
Cyprus					
Metal	1 102	1 307	1 480	1 555	...
Hong Kong					
Metal	165 427	162 627	51 259	157 268	464 257
Indonesia					
Metal	1 500	340	20	—	2
Israel					
Metal	£94 371 000	£104 853 000	£104 863 000	£100 356 000	...
Japan					
Metal	191 984	196 815	607 830	239 217	293 784
Waste & scrap	1 329	1 011	1 666	1 821	2 246
Jordan					
Metal	25 168	13 664	3 647	1 042	...
Korea, Republic of					
Metal	1 954	11 545	5 895	24 467	7 396
Macao					
Metal	876	2 600	17	93	1 680
Malaysia					
Metal	7 366	7 721	7 507	6 324	...
Philippines					
Metal	309	267	298	103	117
Saudi Arabia					
Metal	18 675	18 140	3 458	13 534	13 400
Singapore					
Metal	4 433	3 295	3 878	4 850	6 466
Waste & scrap	29	241	561	800	398
Taiwan					
Metal	52 165	34 496	27 565	87 575	362 686
Thailand					
Metal	2 379	4 360	4 063	6 648	11 211
Australia					
Metal	3 527	7 972	7 184	7 420	3 691
New Zealand (b)					
Metal	1 062	1 745	549	141	...

## Notes

(1) In this table the term 'metal' as used here includes both unwrought and partly worked gold and alloys but excludes gold coin

(a) Including waste and scrap

(b) Years ended 30 June of that stated

(c) Au content



**Production of Graphite**

Country	1984	1985	1986	1987	1988
Germany, Federal Republic of (b)	12 400	12 800	13 200	9 900	9 700
Austria (a)	43 789	30 764	36 167	39 391	7 577
Czechoslovakia	27 000*	15 000*	13 686	12 763	14 304
Norway	10 067	2 684	—	—	—
Romania	12 400*	12 000*	12 000*	12 000*	12 000*
Soviet Union	80 000*	82 000*	83 000*	84 000*	84 000*
Turkey	...	...	3 586	11 760	12 911
Madagascar	14 155	14 700	16 188	13 569	14 564
Zimbabwe	12 334	10 450	15 004	13 530	11 441
Mexico	41 529	35 378	37 856	38 461	43 831
Brazil (d)	32 680	43 664	47 660	41 919	50 200
China	185 000*	185 000*	185 000*	185 000*	200 000*
India	39 106	33 586	40 483	26 864	25 000*
Korea, Dem. P.R. of	25 000*	25 000*	25 000*	25 000*	25 000*
Korea, Republic of	58 563	71 479	97 218	107 345	104 384
Myanmar (c)	234	200*	722	500*	—
Sri Lanka	5 768	7 472	7 453	6 718	6 394
World total	605 000	587 000	634 000	629 000	621 000

**Notes**

(1) This table includes all forms of amorphous and crystalline graphite but excludes synthetic material

(2) In addition to the countries listed, Canada, Egypt and Namibia are also believed to produce graphite

(a) Crude

(b) Including production from imported crude graphite

(c) Years ended 31 March following that stated

(d) Including beneficiated and directly shipped material

## Graphite

**Exports of Graphite**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	3 862	2 563	3 739	3 184	3 250
Belgium-Luxembourg	3 254	74	62	8	95
France	555	808	497	567	615
Germany, Federal Republic of	12 210	11 522	9 844	10 287	9 981
Italy	5 481	445	244	342	...
Netherlands	253	89	87	514	1 283
Austria	11 552	11 826	10 284	8 330	8 926
Czechoslovakia (a)	2 800*	3 100*	2 800*	3 100*	2 900*
Norway	8 888	6 161	954	56	24
Sweden	117	128	5	4	68
Madagascar	14 527	16 125	13 707	11 141	...
Zimbabwe	11 989	15 440	14 700	12 503	...
Canada	...	...	...	...	6 101
Mexico	21 323	19 298	18 918	19 598	...
USA	6 667	9 240	13 089	11 700	11 068
Brazil	5 082	8 725	9 213	9 986	12 706
China (a)	78 800*	71 800*	80 400*	86 100*	103 200*
Hong Kong (c)	856	508	3 036	3 781	3 930
India (b)	1 871	1 043	1 027	...	...
Japan	2 927	2 553	2 666	2 019	1 767
Korea, Dem. P.R. of (a)	11 000*	5 800*	4 600*	6 600*	9 200*
Korea, Republic of	39 864	48 353	30 969	56 827	51 537
Sri Lanka	7 215	9 170	9 824	10 388	8 958
Taiwan	237	188	204	178	70

## Notes

(1) This table excludes synthetic graphite

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Re-exports

## Imports of Graphite

Country	1984	1985	1986	1987	1988
United Kingdom	19 540	23 460	23 101	19 729	23 437
Belgium-Luxembourg	992	827	951	824	578
Denmark	1 414	1 316	1 388	1 068	1 588
France	4 578	5 277	5 572	5 864	5 706
Germany, Federal Republic of	31 983	33 998	37 793	30 504	30 264
Greece	272	765	791	717	656
Italy	6 280	5 955	6 867	7 465	...
Netherlands	954	636	1 204	1 726	2 306
Portugal	95	123	148	541	...
Spain	2 004	2 519	3 993	4 692	4 226
Austria	7 134	3 280	4 966	2 083	3 291
Bulgaria (d)	2 000*	2 000*	1 400*	1 700*	1 000*
Czechoslovakia (d)	300*	300*	400*	300*	300*
Finland	37	84	82	115	77
German Democratic Republic	5 712	6 634	5 289	4 947	5 338
Hungary	1 549	993	1 302	2 270	4 690
Norway	573	495	441	233	61
Poland	7 445	6 082	3 929	4 066	4 957
Sweden	675	743	570	789	599
Switzerland	141	108	237	187	158
Turkey	474	555	440	509	453
Yugoslavia	2 220	2 267	2 234	2 415	2 560
Algeria	481	632	161	25	...
Egypt	921	518	165	1 365	...
Mauritius	390	1 030	714	...	1 813
South Africa	4 122	3 834	2 751	3 182	...
Canada	...	...	...	...	9 237
USA	52 840	47 842	38 817	43 334	53 830
Argentina	301	183	391	435	...
Venezuela	701	927	681	1 014	...
Hong Kong	1 545	1 499	3 685	4 104	2 995
India (c)	245	620	389	...	...
Indonesia	98	150	968	704	448
Iran (a)	526	160	734	653	...
Japan	85 009	78 857	58 645	94 268	96 611
Korea, Republic of	1 260	1 084	3 180	3 784	5 942
Malaysia	1 183	908	510	734	...
Pakistan (b)	1 777	1 566	845	2 630	2 433
Philippines	199	73	122	365	328
Singapore	1 125	427	407	314	587
Taiwan	6 574	8 428	8 513	8 390	14 890
Thailand	532	722	827	1 138	665
Australia	979	1 199	1 460	2 069	3 427
New Zealand (b)	113	36	108	121	...

## Notes

(1) This table excludes synthetic graphite

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

(d) BGS estimates, based on known exports from certain countries

## Gypsum

**Production of Gypsum**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Gypsum	3 082 000	3 130 000	3 363 000	(a)3 500 000*	(a)3 700 000*
Anhydrite	56 000	59 000	53 000	...	...
France					
Gypsum	5 820 000	5 286 000	5 259 000	5 409 000	5 628 000
Anhydrite	909 681	935 075	...	...	...
Germany, Federal Republic of					
Gypsum	1 756 700	1 396 400	1 482 600	1 397 300	1 451 300
Anhydrite	560 000	607 000	505 000	309 700	...
Greece	582 741	467 794	556 098	650 000*	650 000*
Irish Republic	325 000	304 100	288 700	284 200	326 500
Italy	1 003 677	1 281 328	1 219 823	1 200 000*	1 300 000*
Luxembourg	400*	400*	400*	400*	400*
Portugal	227 708	241 893	265 301	323 035	...
Spain	5 365 795	5 524 511	5 062 941	6 684 653	6 700 000*
Austria					
Gypsum	600 094	569 671	586 432	578 614	624 101
Anhydrite	140 023	124 322	115 317	86 437	97 644
Bulgaria	393 000	388 000	395 000	306 000	350 000*
Czechoslovakia (a)	842 000	771 600	743 100	771 000	774 000
German Democratic Republic (d)	302 300	311 700	304 500	299 300	302 400
Poland (d)	250 000	235 900	264 000	260 900	279 000
Romania	1 650 000*	1 620 000*	1 600 000*	1 600 000*	1 500 000*
Soviet Union	4 200 000*	4 223 000	4 599 000	4 781 000	4 800 000*
Switzerland	220 000*	220 000*	200 000*	230 000*	230 000*
Turkey	53 080	78 058	128 051	301 743	235 062
Yugoslavia	607 000	600 000	595 000	553 000	555 231
Algeria	250 000*	250 000*	275 000*	275 000*	275 000*
Angola	20 000*	20 000*	18 000	22 000	20 000*
Egypt (f)	810 000	841 000	905 688	1 088 472	1 100 000*
Ethiopia	7 000*	7 000*	7 000*	1 800	2 700*
Kenya	320	74 078	11 060	38 819	37 565
Libya	180 000*	180 000*	180 000*	180 000*	180 000*
Mauritania	800	5 470	12 642	19 402	6 033
South Africa	535 286	458 399	404 205	349 079	372 169
Sudan	8 000	6 400	50 000	8 500	10 000
Tanzania	7 600	14 411	14 144	29 646	19 570
Tunisia	55 000*	60 000*	65 000*	75 000*	...
Canada (a)	7 775 082	7 760 783	8 802 805	9 093 926	9 512 000
Cuba	130 000*	130 000*	130 000*	130 000*	130 000*
Dominican Republic	200 000*	310 000	132 000	59 777	66 261
Guatemala	22 147	16 888	30 608	53 323	34 448
Honduras	22 000*	22 000*	22 000*	22 000*	22 000*
Jamaica	180 200	179 000	117 000	176 300	145 500
Mexico	2 945 222	2 366 019	2 625 178	2 457 810	2 649 290
Nicaragua	10 000*	8 310	8 000*	7 299	7 000*
USA	12 990 000	13 076 000	13 973 000	14 163 000	14 869 000
Argentina	566 943	460 816	462 195	561 073	500 000*
Brazil (e)	420 978	529 613	628 479	659 217	650 000*
Chile	167 477	195 911	192 847	235 173	315 798
Colombia	260 408	251 038	295 042	302 100	307 236
Ecuador	3 000*	1 348	7 393	30 640	...
Paraguay	6 000	2 500	2 800	3 100	3 600
Peru	66 722	28 640	172 619	142 000	140 000*
Uruguay	74 091	118 334	114 162	142 629	...
Venezuela	142 386	188 754	241 000	240 000	250 900

## Production of Gypsum

Country	1984	1985	1986	1987	1988
Afghanistan	3 000*	3 000*	3 000*	3 000*	3 000*
China	4 800 000*	5 000 000*	6 500 000*	7 200 000*	7 300 000*
Cyprus	22 100	16 100	30 000	45 700	32 710
India	1 257 756	1 289 307	1 640 443	1 733 720	1 576 000
Iran (c)	9 666 000	8 384 000	8 400 000*	8 400 000*	8 200 000*
Iraq	300 000*	300 000*	300 000*	350 000*	350 000*
Israel	46 000	45 000*	45 000*	45 000*	45 000*
Jordan	111 524	91 965	70 083	114 560	84 866
Laos	82 000	110 000*	98 000	110 000*	80 000*
Lebanon	5 000*	3 000*	3 000*	3 000*	3 000*
Mongolia	32 000*	32 000*	32 000*	32 000*	32 000*
Myanmar (b)	39 200	39 000	23 064	25 000*	...
Pakistan (a)	368 554	409 550	373 096	449 013	384 000
Philippines	600	300	13 080	13 233	2 250
Saudi Arabia	152 869	155 482	140 736	134 976	...
Syria	79 580	106 250	160 000*	160 000*	160 000*
Taiwan	1 882	2 199	2 447	1 378	2 438
Thailand	1 110 660	1 273 459	1 665 557	3 030 919	4 549 011
Vietnam	25 000*	25 000*	25 000*	25 000*	25 000*
Yemen Arab Republic	24 295	25 000	53 000	150 000	60 000
Australia	1 931 205	1 744 470	1 671 001	1 580 331	1 655 956
World total	76 900 000	75 000 000	79 600 000	84 600 000	87 600 000

(a) Including anhydrite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Calcined

(e) Including beneficiated and directly shipped material

(f) Years ended 30 June of that stated

## Gypsum

## Exports of Gypsum

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Crude	2 721	4 295	2 569	1 951	1 378
Calcined	13 927	12 060	14 852	10 195	12 176
Belgium-Luxembourg					
Crude	51 816	40 453	17 077	37 366	25 970
Calcined	58 291	76 460	77 128	94 073	102 402
Denmark					
Crude & calcined	1 855	2 001	3 134	3 886	4 716
of which: Re-exports	177	1 471	2 858	3 189	...
France					
Crude	918 172	1 061 618	1 083 869	941 296	915 155
Calcined	270 505	232 434	225 556	228 276	241 953
Germany, Federal Republic of					
Crude	131 915	120 921	115 991	188 384	184 425
Calcined	133 486	153 666	163 929	189 072	227 885
Greece	392	61	24	95 430	4 928
Irish Republic					
Crude	831	1 439	1 387	5 557	20 239
Calcined	50 708	61 184	54 809	46 359	35 776
Italy					
Crude	3 133	4 054	7 378	8 488	...
Calcined	11 174	12 718	6 425	4 799	...
Netherlands					
Crude	24 520	36 231	35 874	97 978	74 852
Calcined	2 371	5 922	17 788	11 945	9 759
Spain					
Crude & calcined	2 274 742	2 192 552	2 486 269	2 595 372	2 983 643
Austria					
Crude	99 577	84 167	64 024	64 217	66 137
Calcined	92 227	57 293	55 271	53 062	61 612
German Democratic Republic					
Calcined	88 663	105 498	97 812	83 596	95 051
Norway					
Crude	2 341	—	—	—	—
Poland	66 163	50 596	(a)4 000*	...	...
Romania (a)	16 900*	18 500*	12 300*	12 700*	11 100*
Soviet Union (a)	19 800*	23 400*	13 700*	18 300*	21 900*
Sweden					
Crude & calcined	496	377	409	326	279
Switzerland					
Crude & calcined	13 847	11 970	15 143	18 972	13 827
Turkey					
Crude & calcined	854	3 657	5 539	1 280	14 227
Yugoslavia	2 269	8 826	10 556	9 125	16 158
Kenya	702	812	1 623	72	...
Morocco					
Crude	124 750	140 350	183 770	...	203 250
Calcined	2 356	4 506	2 636	...	662
South Africa	2 184	1 599	663	—	—
Zimbabwe					
Crude	1 038	2 149	1 380	6 000	...
Canada					
Crude	6 229 110	5 879 660	5 942 849	5 723 359	5 651 286
Calcined	...	...	...	...	19 786
Dominican Republic	4 097	13 243	25 000*	59 777	60 000*
Guatemala	13 281	9 091	16 141	33 186	...
Jamaica	170 553	160 548	100 143	117 577	89 497
Mexico	3 911 840	3 898 762	2 337 521	2 183 696	2 241 215
Nicaragua	632	—	—	...	...
USA					
Crude	5 284	4 085	13 155	3 417	4 423
Calcined	113 491	70 835	127 758	111 899	241 718
Argentina	5 012	8 676	10 065	12 350	...
Venezuela	17 918	8 750	—	—	...

## Exports of Gypsum

Country	1984	1985	1986	1987	1988
Abu Dhabi					
Crude & calcined	887	404	546	3 513	2 167
China (a)	10 100*	12 200*	19 400*	30 500*	31 600*
Cyprus					
Crude	2 045	4 449	10 659	11 749	...
Calcined	4 883	1 342	1 565	4 158	...
Dubai					
Crude & calcined	1 176	...	...	...	...
Hong Kong (c)	1 677	7 307	4 709	4 960	2 928
India (b)	18 565	3 449	724	...	...
Indonesia					
Crude	—	1 839	83 935	80 421	116 213
Japan					
Crude	4 137	689	694	866	1 061
Calcined	5 521	5 453	4 143	4 166	4 835
Korea, Republic of					
Crude	96	34	34	12	11 205
Calcined	24 130	19 000	35	70	83
Laos	70 000	70 410	90 490	...	...
Philippines					
Crude	—	—	5 250	61 227	60 790
Saudi Arabia					
Crude & calcined	29 517	16 085	14 414	18 593	25 228
Singapore					
Crude & calcined	2 316	2 666	2 739	5 040	7 279
of which: Re-exports	2 076	2 563	2 543	4 656	6 386
Syria	181	11 563	76 713	72 606	...
Taiwan	228	553	726	741	1 747
Thailand					
Crude	771 194	892 243	1 226 606	1 147 271	3 833 944
Calcined	8 514	14 025	90 766	324 888	20 734
Australia					
Crude & calcined	732 221	520 761	428 584	200 230	120 594

## Notes

(1) In this table the term 'crude' as used here may include some anhydrite

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Re-exports

## Gypsum

**Imports of Gypsum**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Crude	30 566	52 042	34 148	88 461	169 119
Calcined	56 521	57 213	52 043	55 645	64 501
Belgium-Luxembourg					
Crude	267 177	265 187	345 419	436 366	516 063
Calcined	153 351	136 607	162 542	148 755	179 578
Denmark					
Crude	206 835	150 825	199 781	248 719	274 126
Calcined	11 912	8 000	9 026	10 357	23 836
France					
Crude	17 626	27 818	60 572	120 361	169 546
Calcined	8 195	11 401	30 177	38 765	59 757
Germany, Federal Republic of					
Crude	686 562	775 736	760 252	698 306	590 642
Calcined	136 688	101 124	94 389	86 260	154 656
Greece					
Crude	98	111	125	164	156
Calcined	698	803	1 298	648	742
Irish Republic					
Crude	1 454	1 487	3 832	4 896	1 550
Calcined	3 653	3 160	7 124	3 348	5 335
Italy					
Crude	187	254	777	4 875	...
Calcined	9 283	13 189	14 692	11 782	...
Netherlands					
Crude	280 379	269 597	251 780	316 316	340 126
Calcined	137 184	156 792	202 425	192 993	207 383
Portugal					
Crude	36 478	38 022	47 619	48 095	...
Calcined	945	1 241	1 566	5 675	...
Spain					
Crude & calcined	879	1 000	704	1 107	144 953
Austria					
Crude	5 344	6 117	6 471	5 160	5 002
Calcined	5 908	5 709	6 279	7 222	5 515
Czechoslovakia	24 000	26 000	23 000	20 000	24 000
Finland					
Crude	175 509	166 283	183 044	218 806	203 648
Calcined	2 820	2 748	2 729	3 374	4 786
Hungary					
Calcined	87 973	82 133	77 830	69 686	76 984
Iceland	5 174	7 124	4 555	6 683	9 993
Norway					
Crude	172 412	146 742	146 727	130 280	38 208
Calcined	6 798	56 812	64 591	100 525	221 321
Sweden					
Crude	293 204	286 282	284 810	406 680	492 098
Calcined	5 820	6 163	6 858	11 532	9 974
Switzerland					
Crude	30 580	31 898	30 456	132 730	65 281
Ground & calcined	35 825	38 198	38 751	48 379	49 923
Algeria					
Crude & calcined	3	181	1 927	1	...
Cameroon					
Crude & calcined	6 368	19 940	...	...	...
Canary Islands	12 500	17 600	29 901	60 652	...
Egypt	...	2 591	1 759	...	...
Gabon					
Crude & calcined	564	1 466	808	...	...
Ghana	2 267	9 269	...	...	...
Ivory Coast					
Crude	27 664	26 888	19 703	...	27 622
Calcined	2 568	4 014	1 869	...	3 897
Kenya	15 698	1 832	2 140	2 148	...
Liberia					
Crude & calcined	...	5 234	439	5 049	...
Madagascar					
Crude & calcined	2 002	5 491	4 001	...	...
Melilla	282	456	377	142	...



## Imports of Gypsum

Country	1984	1985	1986	1987	1988
Reunion					
Crude & calcined	6 786	7 730	10 151	11 660	...
Senegal					
Crude	23 592	22 264	14 210	8 574	12 282
Calcined	314	611	500	1 160	1 575
South Africa					
Crude & calcined	8 609	7 331	6 407	12 215	...
Tunisia					
Crude & calcined	680	848	520	478	679
Zaire					
Crude & calcined	463	200*	5 900*	...	...
Zimbabwe	2 293	1 796	765	31	...
Bahamas	699	2 230	930	...	...
Canada					
Crude	131 809	121 803	221 647	217 624	275 362
Calcined	21 427	24 632	21 307	25 898	669 995
Costa Rica					
Crude	17 761	23 622	(c)20 574	(c)15 420	...
Calcined	930	1 064	...	...	...
El Salvador					
Crude	12 658	8 534	(c)22 390	...	...
Calcined	321	207	...	...	...
Guadeloupe	...	9 967	10 690	10 918	...
Martinique	...	8 257	9 749	12 459	...
Mexico					
Crude	7 338	6 318	4 810	1 581	...
Calcined	5 492	5 082	3 735	4 079	...
Panama	15 961	9 011	9 757	9 532	13 045
Trinidad & Tobago					
Crude & calcined	2 048	3 410	10 973	6 815	...
USA					
Crude	8 078 000	9 001 399	8 671 930	8 815 373	8 781 000
Ground & calcined	10 000	1 961	22 011	2 344	2 000
Colombia	26 544	62 047	65 043	...	...
Ecuador	54 139	16 307	16 700	31 874	...
Paraguay					
Crude & calcined	4 308	6 003	8 858	...	...
Uruguay					
Crude & ground	874	1 340	960	1 225	8 929
Venezuela	25 565	90 702	76 289	50 785	...
Abu Dhabi	963	1 380	1 212	2 947	3 684
Bahrain	2 429	13 186	180 473	2 891	...
Hong Kong	89 364	103 210	110 865	124 717	113 482
Indonesia	384 301	304 939	197 521	122 373	92 531
Israel (a)	1 000*	1 100*	2 100*	1 800*	5 000*
Japan					
Crude	255 426	304 834	775 279	1 468 129	2 909 802
Calcined	827	860	1 070	2 693	4 244
Jordan	2 383	2 015	1 248	2 701	...
Korea, Republic of	222 204	151 864	227 812	198 680	395 178
Kuwait	33 214	...	56 684	...	...
Macao	6 685	14 584	19 060	28 162	30 521
Malaysia					
Crude & calcined	170 782	185 990	152 529	137 416	...
Oman	10 788	20 992	33 206	...	...
Philippines					
Crude	68 289	127 351	145 945	122 681	170 764
Calcined	3 577	3 276	5 007	5 222	7 613
Qatar	1 208	2 285	2 801	4 186	...

## Gypsum

**Imports of Gypsum**

tonnes

Country	1984	1985	1986	1987	1988
Saudi Arabia	111 172	107 639	66 335	21 367	61 963
Singapore					
Crude & calcined	141 613	97 845	56 130	77 647	53 960
Sri Lanka	7 037	15 108	12 446	23 621	20 858
Taiwan					
Crude	260 406	333 373	322 403	155 631	412 782
Calcined	72 290	78 465	78 715	30 215	16 843
Thailand					
Crude & calcined	570	655	933	22 231	1 862
Australia	1 146	1 246	2 343	2 011	2 075
Fiji	5 040	40	3 028	...	...
New Caledonia					
Crude & calcined	1 839	1 734	4 076	4 227	4 067
New Zealand (b)					
Crude	130 006	140 277	139 083	136 846	...
Calcined	394	334	309	218	...

## Notes

(1) In this table the term 'crude' as used here may include some anhydrite

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 30 June of that stated

(c) Including calcined

**Production of Iodine**

Country	1984	1985	1986	1987	1988
Soviet Union	2 000 000*	2 000 000*	2 000 000*	2 000 000*	2 000 000*
USA	1 150 000*	1 150 000*	1 150 000*	1 150 000*	1 350 000*
Chile	2 661 000	3 020 000	3 126 500	3 100 700	4 034 900
China	450 000*	450 000*	450 000*	450 000*	450 000*
Indonesia	24 970	13 416	5 790	8 227	9 753
Japan	7 302 000	7 251 000	7 389 000	7 014 000	7 451 000
World total	13 600 000	13 900 000	14 100 000	13 700 000	15 300 000

Iodine

**Exports of Iodine**

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	96 738	224 044	197 053	145 488	149 883
Belgium-Luxembourg	123 300	66 400	26 000	21 100	36 700
Denmark	6 500	33 600	133 600	144 400	—
France	52 000	60 900	98 000	75 000	68 500
Germany, Federal Republic of	74 400	63 800	47 100	71 500	123 500
Italy	3 050	1 800	14 300	3 600	...
Netherlands	17 000	14 000	12 000	6 000	7 000
Portugal	200	1 200	...	100	...
Spain	1 228	750	6 000	5 362	...
Norway	...	...	...	...	1 158 000
Chile	2 856 000	3 016 000	3 042 000	3 099 750	3 939 000
Hong Kong (b)	2 200	910	1 706	2 475	15 201
Indonesia	28 000	2 000	—	—	—
Japan	(a)5 229 939	(a)6 605 257	(a)6 640 532	(a)6 091 360	6 120 490
Taiwan	1 700	2 379	1 400	3 350	3 601

(a) Includes fluorine and bromine but is thought to be mainly iodine

(b) Re-exports

# Imports of Iodine

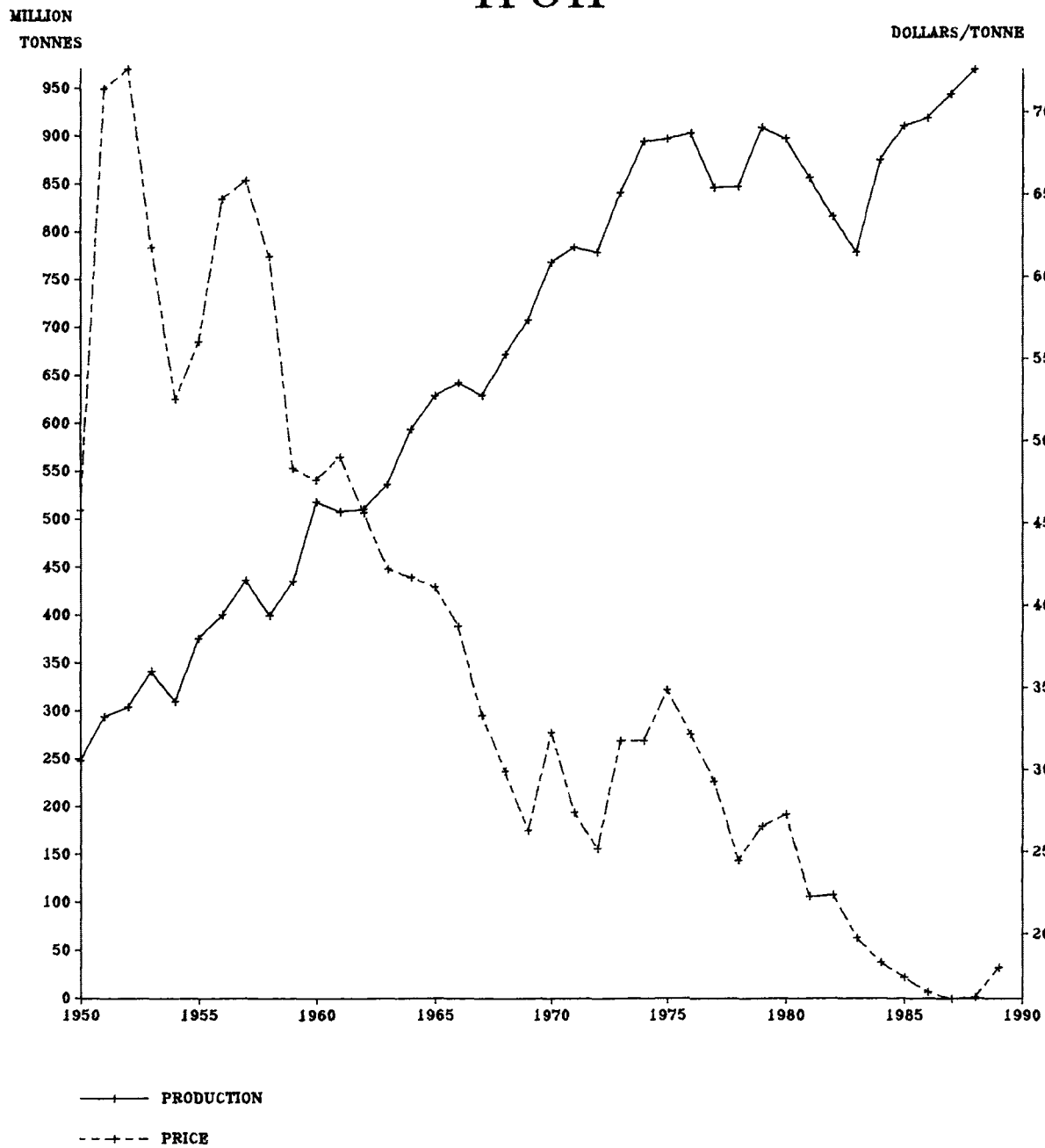
Iodine  
kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	2 069 652	1 329 097	1 546 232	1 665 688	1 602 149
Belgium-Luxembourg	194 200	179 500	103 800	129 300	16 000
Denmark	4 400	4 200	6 200	26 700	4 300
France	880 000	893 800	866 500	1 142 700	859 700
Germany, Federal Republic of	961 300	1 879 500	1 703 600	1 087 800	916 500
Greece	1 000	1 000	2 000	1 000	750
Italy	293 957	538 300	557 320	726 700	...
Netherlands	367 000	458 000	376 000	355 000	547 000
Portugal	10 800	20 500	15 800	14 300	...
Spain	189 021	215 010	227 638	335 000	...
Hungary	35 000	44 500	26 600	47 500	35 400
Turkey	5 503	4 006	5 766	5 638	...
Yugoslavia	53 000	85 000	51 000	5 000	12 000
Algeria	3 358	2 072	2 623	1 406	...
Morocco	695	512	666	...	...
Tunisia	2 014	2 780	1 443	—	950
Canada	275 000	426 000	397 000	89 000	36 734
Dominican Republic	3 905	507	1 343	...	...
USA	2 298 400	2 441 066	2 576 068	3 143 411	3 229 000
Argentina	15 600	19 000	20 000	...	...
Brazil	222 540	260 544	253 431	178 000	182 039
Colombia	8 247	13 164	17 502	...	...
Ecuador	6 508	1 740	2 750	4 000	...
Peru	1 679	800	2 845	1 530	1 752
Uruguay	1 100	500	1 200	10 900	900
Venezuela	...	8 631	9 611	24 364	...
Hong Kong	3 550	550	1 500	2 426	15 800
India (a)	...	347 031	544 588	...	...
Indonesia	11 486	35 963	13 449	16 397	20 620
Korea, Republic of	15 536	13 464	14 451	13 213	10 805
Pakistan (b)	11 153	16 533	15 358	12 284	29 627
Taiwan	18 739	34 814	22 811	33 241	27 555
Thailand	2 895	2 803	3 022	5 429	2 987
Australia (b)	24 306	19 460	...	...	...

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

# Iron



**Figure 9** World production of iron ore compared from 1965 with the yearly average price of 61.5% Brazilian ore c.i.f. German ports expressed in constant 1980 US dollars (prior to 1965, Liberian ore).

*Constant commodity prices derived from those quoted in International Financial Statistics Yearbook (1989) published by the International Monetary Fund.*

## Production of Iron Ore

Country	1984	1985	1986	1987	1988
United Kingdom	379 300	274 400	289 000	262 700	224 100
France	15 029 000	14 459 000	12 436 000	11 225 000	9 756 000
Germany, Federal Republic of (f)	977 000	1 034 000	717 000	247 300	68 900
Italy	273 700	...	...	...	...
Portugal (f)	36 000	78 210	54 700	27 250	23 450
Spain	7 981 174	6 462 977	6 053 932	4 499 599	4 300 000
Albania (b)	1 082 000	1 130 000*	1 150 000*	1 200 000*	...
Austria	3 600 000	3 270 000	3 120 000	3 050 000	2 300 000
Bulgaria	2 063 000	1 985 000	2 179 000	1 850 000	1 850 000
Czechoslovakia	1 869 000	1 859 000	1 784 000	1 798 000	1 773 000
Finland	1 099 920	898 810	643 000	648 000	555 550
German Democratic Republic	36 000	—	—	—	—
Hungary	383 000	311 000	—	—	—
Norway	3 837 042	3 496 570	3 618 239	3 114 569	2 644 181
Poland	10 900	11 300	8 800	6 300	6 300
Romania	1 916 000	2 287 000	2 431 000	2 281 000	2 400 000*
Soviet Union	247 104 000	248 000 000	250 000 000	251 000 000	250 000 000
Sweden	17 806 000	20 525 000	20 529 000	19 069 000	20 441 000
Turkey	4 049 425	3 994 534	5 248 789	5 365 794	5 712 985
Yugoslavia	5 411 448	5 478 154	6 618 122	5 983 000	5 545 155
Algeria	3 664 000	3 376 000	3 360 000	3 382 000	3 118 000
Egypt	1 887 974	2 121 717	1 998 813	2 047 578	2 112 026
Liberia	14 857 000	14 369 000	14 233 000	13 210 000	12 767 000
Mauritania	9 105 320	9 200 000	7 200 000	9 008 000	9 300 000
Morocco	162 967	180 028	195 600	227 500	114 289
South Africa (c)	24 646 695	24 414 154	24 482 538	22 008 032	25 247 678
Tunisia	309 623	309 338	310 000	295 000	325 117
Zimbabwe	925 000	1 098 000	1 115 000	1 328 393	1 020 900
Canada (g)	39 929 907	39 501 601	36 166 884	37 701 825	39 934 000
Cuba	93 300	202 400	20 000	168 500	...
Mexico	8 317 200	7 819 900	7 299 100	7 522 900	8 431 000
USA	52 092 000	49 533 000	39 486 000	47 648 000	57 515 000
Argentina	571 414	638 894	809 525	567 047	1 118 978
Brazil (a)	112 057 012	128 174 116	129 376 538	134 493 672	145 100 000
Chile	7 115 792	6 509 986	7 008 975	6 690 168	7 865 712
Colombia	441 074	455 142	523 082	610 521	613 890
Peru	3 978 749	4 881 324	5 025 998	5 100 018	4 189 390
Venezuela	13 054 524	14 753 638	16 753 406	17 111 000	18 321 000
China	126 710 000	137 830 000	149 450 000	161 420 000	164 000 000
India	41 943 000	44 186 000	51 610 000	49 411 000	52 322 000
Indonesia (d)	82 967	130 930	153 271	193 986	202 778
Iran (e)	2 711 000	2 799 000	2 800 000*	2 800 000*	2 800 000*
Japan	323 375	336 025	289 731	263 367	99 418
Korea, Dem. P.R. of	8 000 000*	8 000 000*	8 000 000*	8 000 000*	8 500 000*
Korea, Republic of	625 200	668 100	582 300	469 500	666 000
Malaysia	193 827	181 660	207 963	161 287	131 821
Philippines	—	—	14 978	...	...
Thailand	60 670	93 800	37 330	97 026	99 257
Australia	89 046 000	97 447 113	94 014 818	101 747 638	96 064 000
New Zealand (d)	2 417 113	2 536 462	2 601 345	2 294 370	2 351 593
World total	880 000 000	918 000 000	922 000 000	948 000 000	974 000 000

## Notes

(1) In addition to the countries listed, Vietnam is also believed to produce iron ore

(a) Including beneficiated and direct shipping ore

(b) Nickeliferous iron ore

(c) Including by-product magnetite

(d) Including iron sand

(e) Years ended 20 March following that stated

(f) Including manganiferous iron ore

(g) Including shipments of by-product iron ore

**Exports of Iron Ore**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	343	5 710	1 008	1 225	2 108
Belgium-Luxembourg					
Iron ore	302	15 263	1 057	2 771	6 960
Burnt pyrites	50 314	149 816	149 601	190 202	186 342
Denmark					
Iron ore	6 647	6 834	4 870	2 541	1 814
Burnt pyrites	—	—	598	2 727	2 283
France	4 752 054	4 627 846	4 168 509	3 739 520	3 725 445
Germany, Federal Republic of					
Iron ore	3 732	2 576	4 591	5 808	20 202
Burnt pyrites	32 478	16 930	16 581	19 028	17 526
Italy					
Iron ore	678	35	2 520	382	...
Burnt pyrites	45 045	22 873	43 209	45 296	...
Netherlands (b)	45 392	55 203	47 741	105 180	222 890
Spain					
Iron ore	1 973 178	2 128 443	1 790 541	1 991 261	2 281 590
Burnt pyrites	1 126	1 862	4 889	20 303	30 658
Norway					
Iron ore	3 083 237	2 577 892	2 532 249	2 530 392	1 757 308
Burnt pyrites	136 340	107 445	33 109	28 230	36 385
Soviet Union	45 922 000	43 880 000	46 948 000	45 433 000	43 063 000
Sweden	17 600 000	18 371 000	17 219 000	16 762 000	17 722 000
Yugoslavia					
Burnt pyrites	45 740	59 727	29 143	67 714	62 528
Algeria	974 452	450	48 000	60 591	...
Liberia	16 870 127	12 965 737	14 383 060	13 510 130	13 779 000
Mauritania	9 526 400	9 333 000	8 929 000	9 002 000	10 005 000
Morocco					
Burnt pyrites	116 538	161 673	119 701	108 181	84 484
Sierra Leone	422 199	—	—	...	...
South Africa	11 869 778	10 226 420	8 850 166	8 802 068	11 502 939
Canada	30 737 478	32 259 299	31 030 016	29 679 324	30 523 423
USA (b)	5 073 164	5 114 168	4 553 414	5 094 233	5 289 090
Bolivia	6 600*	—	10 586	7 490	9 357
Brazil	90 294 409	94 217 889	91 134 817	95 331 958	112 838 812
Chile	5 230 000	4 824 000	4 650 488	5 384 125	6 682 000
Peru	4 088 737	5 224 003	4 209 247	4 428 859	4 520 000
Venezuela	7 939 723	9 032 038	10 026 746	11 699 908	12 128 000
India (c)	25 525 972	30 149 478	28 224 843	28 981 000	32 300 000
Malaysia	16 636	13 134	34 797	1 849	493
Philippines					
Iron ore	4 050 631	4 034 354	3 603 981	4 016 908	4 873 530
Burnt pyrites	13 709	11 751	7 917	10 408	10 298
Australia	85 480 485	86 914 280	79 677 812	78 257 560	94 703 000
New Zealand (a)	2 067 668	2 227 140	2 408 027	1 790 950	1 464 000

(a) Years ended 30 June of that stated

(b) Including burnt pyrites

(c) Years ended 31 March following that stated



## Imports of Iron Ore

Country	1984	1985	1986	1987	1988
United Kingdom					
Iron ore	14 138 152	15 404 459	14 557 610	18 027 959	17 718 174
Burnt pyrites	295 647	250 183	249 267	168 170	216 312
Belgium-Luxembourg					
Iron ore	19 701 313	18 996 516	18 056 269	18 385 542	20 795 613
Burnt pyrites	55 160	1 574 252	52 264	59 736	55 473
Denmark					
Iron ore	1 330	1 662	3 391	7 657	2 670
Burnt pyrites	20 348	19 710	28 981	28 690	21 795
France					
Iron ore	16 088 410	16 294 196	16 190 547	15 055 320	18 727 063
Burnt pyrites	70 196	44 487	47 390	61 121	74 272
Germany, Federal Republic of					
Iron ore	42 568 169	45 007 234	41 632 480	39 583 086	45 169 473
Burnt pyrites	51 184	35 550	31 966	34 424	102 327
Italy (a)	19 243 947	18 294 000	17 600 602	16 522 832	17 320 000
Netherlands (a)	7 238 702	8 508 191	7 066 463	7 049 135	7 561 586
Portugal	147 431	683 298	542 935	764 088	477 000
Spain	4 220 470	5 023 218	4 286 832	5 766 867	5 555 921
Albania (d)	71 100*	3 000*	3 700*	18 000*	...
Austria					
Iron ore	3 889 886	3 684 492	3 201 141	3 310 712	4 164 338
Burnt pyrites	10 411	19 860	12 776	27 441	11 467
Bulgaria	2 286 333	2 214 834	2 248 384	2 308 000	2 077 000
Czechoslovakia	11 108 000	11 268 000	11 264 000	10 366 000	10 058 000
Finland	1 856 315	1 755 577	1 986 999	2 261 376	2 336 526
German Democratic Republic (b)	1 971 000	2 681 000	2 598 000	2 525 000	2 375 000
Hungary	4 169 685	2 381 513	3 414 036	3 403 301	2 326 326
Iceland	15 647	23 000	24 862	17 163	...
Norway	39 813	230 175	17 715	20 637	193 657
Poland	17 110 000	16 973 000	16 644 000	17 116 000	16 643 000
Romania	14 963 000	15 207 000	16 417 000	14 800 000	15 200 000*
Sweden	38 000	68 000	68 000	70 000	129 000
Switzerland (a)	10 049	6 418	11 240	8 860	12 551
Turkey	1 655 668	1 724 869	2 525 965	1 891 532	1 863 680
Yugoslavia	1 566 357	2 179 583	1 346 968	1 081 456	1 485 638
Kenya	14 500	16 250	—	16	...
Nigeria (a)	15 225	371 845	340 758	6 104	143 000
Tunisia	—	12 532	70 689	63 066	46 511
Canada	4 946 893	5 800 193	5 367 245	5 212 743	4 791 064
Mexico	131	2 137	208 617	44 872	198 813
Trinidad & Tobago	199 755	318 284	400 061	614 986	...
USA (a)	17 435 339	16 221 626	17 017 575	16 867 561	20 126 541
Argentina	2 213 022	2 454 801	3 182 519	3 342 227	3 300 000
Abu Dhabi	0	—	37 073	21 000	40
China	5 957 437	10 060 000	13 720 000	10 895 707	10 540 959
Dubai	24 000	12 000	14 650	...	...
Indonesia					
Iron ore	198 460	132 850	754	90	128
Burnt pyrites	1 268 438	1 188 126	1 668 893	961 471	766 433
Japan	125 372 449	124 512 701	115 233 834	112 034 416	123 376 880
Korea, Republic of					
Iron ore	10 287 389	12 418 239	11 941 199	18 011 094	20 227 910
Burnt pyrites	131	—	—	9 831	—
Malaysia	414 284	830 524	1 026 495	819 111	452 000
Pakistan (c)	924 405	1 188 443	1 311 662	1 217 042	1 344 432
Philippines	3 615 003	3 388 907	2 746 302	3 790 544	3 055 329

## Iron Ore

**Imports of Iron Ore**

tonnes

Country	1984	1985	1986	1987	1988
Qatar	619 371	706 249	722 454	613 705	...
Saudi Arabia	1 044 173	324 637	1 384 625	1 479 835	1 245 122
Singapore	7 441	12 581	10 167	1 140	443
Taiwan					
Iron ore	5 199 177	4 896 129	5 358 016	6 140 854	8 477 333
Burnt pyrites	15 151	11 360	9 460	3	—
Australia	52 101	24 221	59 174	42 156	468 728

- (a) Including burnt pyrites
- (b) Fe content of concentrates
- (c) Years ended 30 June of that stated
- (d) BGS estimates, based on known exports from certain countries

## Production of Pig Iron

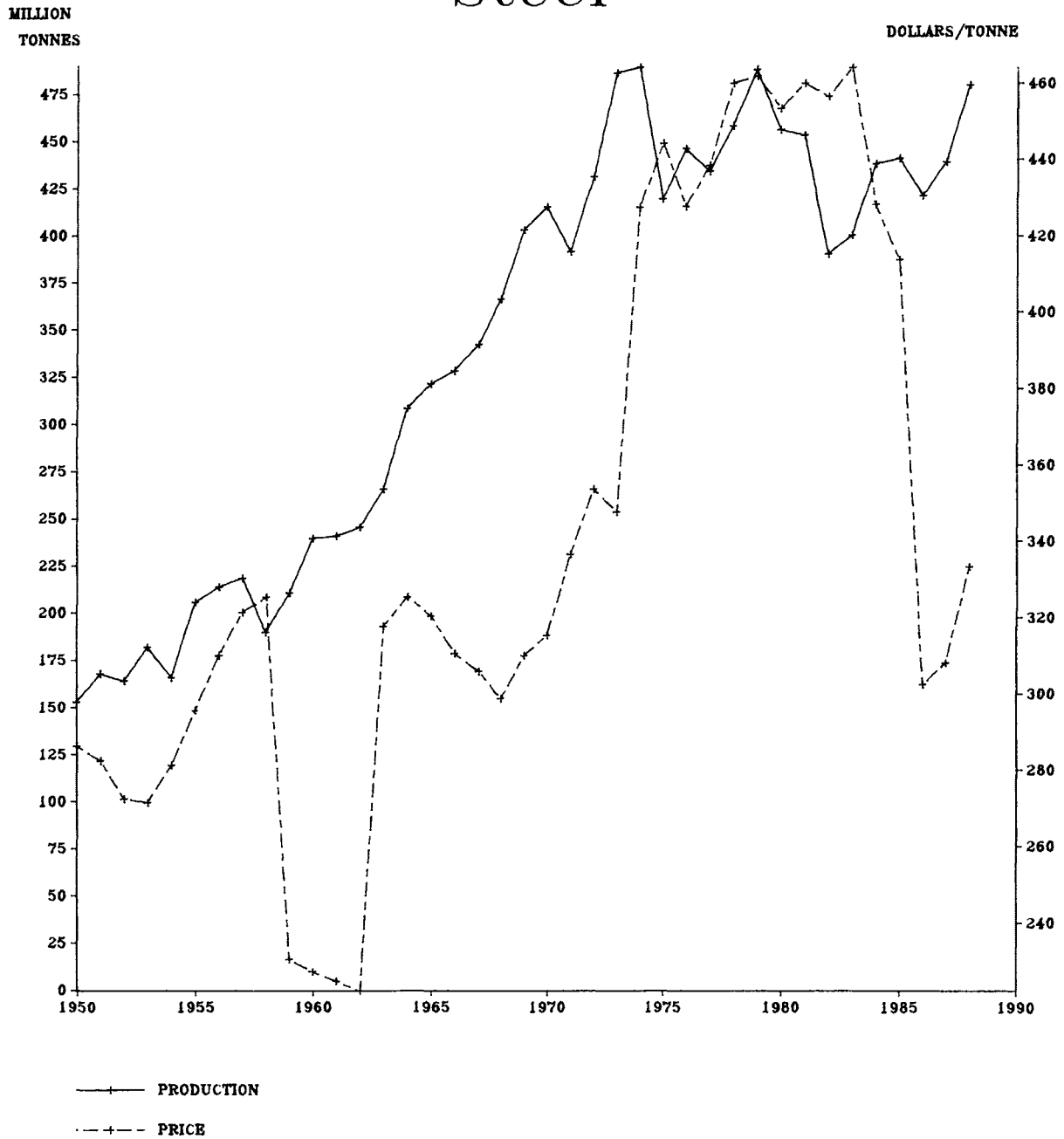
Country	1984	1985	1986	1987	1988
United Kingdom	9 487 100	10 381 400	9 685 500	12 017 400	13 055 900
Belgium	8 968 000	8 720 000	8 048 000	8 243 000	9 147 000
France	14 706 000	15 072 000	13 709 000	13 153 000	14 784 000
Germany, Federal Republic of	29 737 000	31 143 000	28 593 000	28 116 000	31 890 000
Greece	138 000	140 000*	160 000*	160 000*	160 000*
Italy	11 631 973	12 062 547	11 916 398	11 334 904	11 348 608
Luxembourg	2 767 930	2 753 800	2 649 700	2 305 100	2 519 200
Netherlands	4 925 600	4 818 700	4 628 200	4 574 700	4 993 800
Portugal	382 361	423 301	429 000	431 000	444 000
Spain	5 319 000	5 457 000	4 865 000	4 804 000	4 691 000
Austria	3 745 315	3 703 992	3 348 600	3 450 714	3 664 805
Bulgaria	1 583 155	1 713 240	1 606 287	1 657 647	1 437 000
Czechoslovakia	9 561 000	9 562 000	9 573 000	9 788 000	9 706 000
Finland	2 033 700	1 891 000	1 977 641	2 063 326	2 173 328
German Democratic Republic	2 356 700	2 578 200	2 737 600	2 754 500	2 786 000
Hungary	2 097 000	2 095 152	2 054 347	2 107 000	2 093 000
Norway	545 972	596 031	560 743	377 671	367 139
Poland	9 893 000	9 707 000	10 478 000	10 476 000	10 264 000
Romania	9 557 000	9 212 000	9 329 000	8 673 000	9 500 000*
Soviet Union	110 893 000	109 977 000	113 840 000	113 877 000	115 000 000
Sweden	2 420 166	2 609 793	2 627 553	2 574 033	2 492 000
Switzerland	54 000	66 000	79 000	70 000	70 000*
Turkey	3 014 847	3 371 025	3 926 128	4 437 873	4 461 959
Yugoslavia	2 855 000	3 120 000	3 063 000	2 868 000	2 916 000
Algeria	1 176 000	1 462 000	1 246 000	1 478 000	1 500 000
Egypt	144 106	103 306	112 705	146 764	131 598
Nigeria	151 408	242 242	108 638	130 772	...
South Africa	5 254 800	6 574 200	5 774 000	6 317 000	6 112 000
Tunisia	143 500	138 600	144 600	161 700	132 300
Zimbabwe	379 721	674 219	643 735	556 624	545 000
Canada	9 643 260	9 665 427	9 248 530	9 719 289	9 498 264
Mexico	5 373 731	5 095 305	5 157 884	5 262 520	5 279 600
Trinidad & Tobago	239 000	243 200	337 200	441 200	548 000
USA	47 138 000	45 326 000	40 176 000	43 824 000	50 571 000
Argentina	1 799 438	2 298 744	2 559 500	2 785 326	2 667 311
Brazil	17 468 949	19 256 593	20 555 073	21 137 513	23 649 551
Chile	593 501	579 820	591 208	616 757	778 500
Colombia	269 789	246 171	319 797	326 152	308 900
Peru	66 030	206 883	271 912	235 581	252 600
Venezuela	2 815 724	3 073 941	3 430 915	3 624 899	3 581 100
China	40 010 000	43 840 000	49 940 000	50 200 000	51 000 000*
India	9 292 000	9 722 000	10 566 000	10 893 000	11 200 000
Iran (a)	250 000	250 000	250 000	250 000*	250 000*
Japan	80 403 000	80 569 000	74 651 000	73 418 000	79 295 000
Korea, Dem. P.R. of	5 750 000*	5 750 000*	5 800 000*	5 900 000*	5 900 000*
Korea, Republic of	8 763 494	8 832 718	9 016 679	10 868 949	12 577 754
Pakistan	563 600	803 147	895 437	903 000	926 488
Taiwan	213 483	225 730	197 536	87 180	25 092
Australia	5 329 000	5 607 000	5 889 000	5 569 000	5 730 000
World total	491 900 000	502 000 000	497 800 000	505 200 000	532 600 000

## Notes

(1) The data in this table include sponge iron and direct reduced iron (DRI), where these have been separately identified

(a) Years ended 20 March following that stated

# Steel



**Figure 10** Production of steel ingots and castings in the non-communist world compared with the annual average price of carbon steel plate, Pittsburgh, expressed in constant 1980 US dollars.

*Constant prices derived from quotations published by American Metal Market.*

## Production of Steel Ingots and Castings

Country	1984	1985	1986	1987	1988
United Kingdom	15 121 000	15 722 000	14 725 000	17 413 700	18 950 000
Belgium	11 303 381	10 687 000	9 767 551	9 786 422	11 220 237
Denmark	548 000	528 000	632 000	606 000	649 000
France	19 000 000	18 808 000	17 865 000	17 693 000	19 046 000
Germany, Federal Republic of	39 787 000	40 908 000	37 533 000	36 577 000	41 022 000
Greece	898 000	985 000	1 010 000	907 000	959 000
Irish Republic	166 000	203 000	208 000	220 000	271 000
Italy	24 061 187	23 897 592	22 881 951	22 858 742	23 760 369
Luxembourg	3 987 440	3 945 275	3 705 300	3 301 860	3 660 890
Netherlands	5 738 700	5 517 300	5 283 000	5 082 100	5 517 900
Portugal	671 105	703 777	717 000	732 000	811 000
Spain	13 379 000	14 032 000	11 906 000	11 760 000	11 640 000
Austria	4 869 841	4 660 426	4 291 895	4 301 165	4 560 072
Bulgaria	2 878 412	2 944 000	2 965 248	3 045 000	2 880 000
Czechoslovakia	14 831 000	15 036 000	15 112 000	15 356 000	15 319 000
Finland	1 925 246	1 765 279	1 700 729	1 765 872	1 796 281
German Democratic Republic	7 573 300	7 852 800	7 967 200	8 242 700	8 131 200
Hungary	3 750 000	3 646 000	3 713 000	3 621 000	3 583 000
Norway	919 685	964 868	836 747	848 623	869 479
Poland	16 532 600	16 126 000	17 144 000	17 145 000	16 873 000
Romania	14 437 000	13 795 000	14 276 000	13 885 000	14 500 000*
Soviet Union	154 238 000	155 000 000	161 000 000	162 000 000	163 000 000
Sweden	4 657 000	4 840 000	4 710 000	4 703 000	4 779 000
Switzerland	978 000	987 000	1 075 000	866 000	988 000
Turkey	2 753 392	3 080 301	3 596 153	7 043 736	8 009 076
Yugoslavia	4 233 973	4 480 021	4 519 331	4 367 000	4 487 156
Algeria	1 143 000	1 245 000	1 120 000	1 378 000	1 400 000*
Angola	7 469	10 000*	10 000*	10 000*	10 000*
Egypt	928 000	1 028 000	1 013 000	1 433 000	2 025 000
Nigeria	180 318	250 000	134 067	136 552	139 344
South Africa	7 509 000	8 444 000	8 895 000	8 893 000	8 522 000
Tunisia	166 200	160 300	181 400	188 200	158 600
Zimbabwe	423 443	730 841	679 989	615 507	602 000
Canada	14 699 204	14 630 738	14 081 405	14 737 047	14 918 651
Cuba	325 300	401 400	411 500	401 500	450 000*
Mexico	7 559 975	7 399 150	7 225 118	7 642 259	7 820 100
Trinidad & Tobago	198 900	166 900	327 000	375 600	361 200
USA	83 940 000	80 067 000	74 032 000	80 876 000	90 650 000
Argentina	2 646 546	2 942 094	3 235 211	3 632 600	3 623 546
Brazil	18 385 724	20 455 694	21 233 346	22 227 502	24 656 900
Chile	692 393	688 980	706 217	726 149	898 700
Colombia	507 264	530 442	631 989	689 498	753 600
Peru	336 828	397 148	486 201	495 516	490 100
Uruguay	40 763	38 964	30 987	30 428	29 200
Venezuela	2 769 809	3 060 475	3 402 262	3 699 394	3 655 500
Bangladesh (b)	73 387	101 419	95 514	82 081	95 000
China	43 470 000	46 790 000	52 208 000	56 020 000	59 180 000
Hong Kong	120 000*	120 000*	120 000*	120 000*	120 000*
India	10 084 000	10 613 000	11 332 000	11 984 000	13 000 000*
Indonesia	1 171 000	1 374 000	1 729 000	2 059 000	1 850 000*
Iran	854 000	850 000	850 000	875 000	978 000
Israel	92 000	100 000	110 000	116 000	99 000
Japan	105 586 000	105 279 000	98 275 000	98 513 000	105 681 000
Jordan	112 502	136 266	136 000*	218 000*	218 000*
Korea, Dem. P.R. of	6 500 000*	6 500 000*	6 600 000*	6 730 000*	6 830 000*
Korea, Republic of	12 734 820	13 591 136	14 501 548	16 782 000	19 118 000
Malaysia	350 000	400 000	400 000	550 000	550 000*
Pakistan	610 000*	720 092	752 000	828 000	1 000 000*
Philippines	250 000	250 000	250 000	300 000	300 000
Qatar	478 000	533 000	507 000	492 000	527 000
Saudi Arabia	842 000	1 106 000	1 100 000	1 365 000	1 614 000
Singapore	362 000	365 000	390 000	422 000	425 000
Syria	70 000*	70 000*	70 000*	70 000*	70 000*

**Production of Steel Ingots and Castings**

tonnes

Country	1984	1985	1986	1987	1988
Taiwan	5 010 000	5 306 000	5 545 000	5 915 000	8 288 000
Thailand	380 971	425 000	450 000	534 172	535 000
Vietnam	53 000	61 600	64 400	69 100	...
Australia (a)	6 303 000	6 578 000	6 703 000	6 125 000	6 399 000
New Zealand	273 840	227 925	291 063	315 000	538 000
World total	707 000 000	715 000 000	709 000 000	733 000 000	776 000 000

## Notes

(1) The figures in this table refer to crude steel and cast semi-manufactures are not included

(a) Including recovery from scrap

(b) Years ended 30 June of that stated

## Production of Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ferro-manganese	75 200	76 900	99 500	92 400	107 300
Belgium					
Ferro-manganese	95 000*	90 000*	87 000*	90 000*	95 000*
France					
Blast furnace ferro-alloys					
Spiegeleisen & ferro-manganese	329 447	333 998	273 602	295 821	281 000*
Electric furnace ferro-alloys (h)					
Ferro-chrome & ferro-silico-chrome	18 636	1 007	161	55	...
Ferro-silico-manganese	34 886	22 596	16 723	18 441	22 000*
Ferro-silicon (i)	206 348	197 114	195 913	154 659	196 000*
Ferro-titanium & Fe-W,Fe-Mo,Fe-V (a)	5 476	5 159	2 414	611	...
Other ferro-alloys	116 201	95 060	84 752	57 446	...
Silicon metal	70 500	71 300	71 557	70 000*	70 000*
Germany, Federal Republic of					
Blast furnace ferro-alloys					
Spiegeleisen & ferro-manganese (g)	308 000	205 000	256 000	196 000	274 000
Electric furnace ferro-alloys					
Ferro-chrome	45 000*	50 000*	60 000*	55 000*	55 000*
Ferro-manganese & ferro-silico-manganese	22 000*	25 000*	35 000*	30 000*	30 000*
Ferro-silicon	35 000*	40 000*	50 000*	40 000*	45 000*
Other ferro-alloys	54 000*	56 000*	61 000*	60 000*	62 000*
Greece					
Electric furnace ferro-alloys					
Ferro-chrome	32 974	34 436	38 260	42 000	40 000*
Ferro-nickel	53 000*	63 800*	10 324	5 000*	9 202
Italy					
Blast furnace ferro-alloys					
Spiegeleisen	935	1 001	1 151	491	251
Ferro-manganese	34 815	50 111	48 002	19 469	27 169
Silicon pig-iron (j)	342	686	968	—	37
Electric furnace ferro-alloys					
Ferro-chrome	49 942	57 654	55 939	59 045	77 123
Ferro-manganese	15 651	17 166	11 653	17 067	12 280
Ferro-silico-manganese	72 779	64 858	66 083	75 192	66 959
Ferro-molybdenum	1 422	1 564	—	—	—
Ferro-silicon	71 157	74 616	62 799	47 075	51 131
Ferro-titanium & ferro-silico-titanium	2 158	2 291	2 508	2 861	2 636
Ferro-vanadium	79	8	—	—	—
Calcium silicide	9 075	11 999	11 514	17 097	15 047
Silicon metal	22 812	17 812	18 904	16 500	12 000*
Portugal					
Electric furnace ferro-alloys					
Ferro-manganese	46 500*	48 000*	20 000*	17 000*	10 000*
Ferro-silico-manganese	24 000*	25 000*	10 000*	8 000*	5 000*
Ferro-silicon	9 000*	9 000*	5 000*	2 000*	2 500*
Ferro-tungsten	183	150	24	—	—
Silicon metal	10 500*	11 000*	7 000*	3 000*	2 500*
Spain					
Electric furnace ferro-alloys					
Ferro-chrome	15 000*	17 000*	17 000*	20 000*	20 000*
Ferro-manganese	85 000*	86 000*	86 000*	90 000*	90 000*
Ferro-silico-manganese	70 000*	70 000*	70 000*	70 000*	70 000*
Ferro-silicon	60 000*	61 000*	61 000*	60 000*	60 000*
Other ferro-alloys	1 000*	4 000*	4 000*	5 000*	5 000*
Silicon metal	12 400	12 100	11 000	11 800	10 700
Albania					
Electric furnace ferro-alloys					
Ferro-chrome	40 000*	43 000*	45 000*	46 000*	46 000*
Austria					
Electric furnace ferro-alloys	13 000	13 000	12 000	7 000	12 000*

**Production of Ferro-alloys**

tonnes

Country	1984	1985	1986	1987	1988
<b>Bulgaria</b>					
Electric furnace ferro-alloys					
Ferro-manganese & ferro-silico-manganese	22 000*	30 000*	32 000*	31 000*	31 000*
Ferro-silicon	15 000*	14 000*	15 000*	15 000*	16 000*
Other ferro-alloys	1 000*	1 000*	1 000*	1 000*	1 000*
<b>Czechoslovakia</b>					
Electric furnace ferro-alloys					
Ferro-chrome	23 500	25 178	28 231	29 018	29 183
Ferro-manganese	(f)87 000*	62 358	57 593	59 252	60 766
Ferro-silico-manganese	...	31 000*	34 000*	33 000*	31 000*
Ferro-silicon	28 000*	20 765	21 090	21 030	22 730
Other ferro-alloys	8 500*	9 000*	8 000*	8 000*	8 000*
Silicon metal	4 000*	4 500*	5 000*	5 000*	5 000*
<b>Finland</b>					
Electric furnace ferro-alloys					
Ferro-chrome & ferro-silico-chrome	58 644	133 350	145 271	155 019	154 827
<b>German Democratic Republic</b>					
Electric furnace ferro-alloys					
Ferro-chrome	19 500*	19 500*	22 000*	22 000*	23 000*
Ferro-manganese & ferro-silico-manganese	63 000*	63 000*	68 000*	68 000*	69 000*
Ferro-silicon	23 000*	23 000*	26 000*	26 000*	26 000*
Other ferro-alloys	15 250*	15 250*	15 600*	15 600*	16 400*
Silicon metal	3 250*	3 250*	3 400*	3 400*	3 600*
<b>Hungary</b>					
Electric furnace ferro-alloys					
Ferro-silicon	10 297	10 578	10 237	9 342	10 074
Other ferro-alloys	2 000*	2 000*	2 000*	2 000*	1 000*
Silicon metal	2 000*	2 000*	2 000*	2 000*	2 000*
<b>Iceland</b>					
Electric furnace ferro-alloys					
Ferro-silicon	58 443	60 328	66 787	60 184	70 061
<b>Norway</b>					
Electric furnace ferro-alloys					
Ferro-manganese	285 169	267 670	195 257	193 748	200 000*
Ferro-silico-manganese	280 953	256 457	233 490	214 456	240 000*
Ferro-silicon	437 164	397 776	335 041	369 761	380 976
Silicon metal	89 398	105 552	86 838	81 460	82 171
<b>Poland</b>					
Blast furnace ferro-alloys					
Spiegeleisen	4 000	1 900	1 700	2 500	1 100
Ferro-manganese	87 900	99 400	95 500	95 300	91 100
Electric furnace ferro-alloys					
Ferro-chrome	48 000*	49 000*	49 000*	48 000*	45 000*
Ferro-manganese & ferro-silico-manganese	48 000*	49 000*	49 000*	49 000*	48 000*
Ferro-silicon	51 000*	52 000*	51 000*	50 000*	50 000*
Other ferro-alloys	17 000*	16 500*	16 500*	16 000*	16 000*
Silicon metal	10 000*	10 500*	10 500*	10 000*	10 000*
<b>Romania</b>					
Electric furnace ferro-alloys					
Ferro-chrome	45 000*	44 000*	44 000*	42 000*	42 000*
Ferro-manganese	87 000*	80 000*	82 000*	81 000*	80 000*
Ferro-silico-manganese	41 000*	39 000*	40 000*	40 000*	40 000*
Ferro-silicon	52 000*	50 000*	51 000*	50 000*	50 000*
Silicon metal	4 100*	4 500*	4 500*	4 500*	4 500*



## Production of Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Soviet Union</b>					
Blast furnace ferro-alloys					
Spiegeleisen	20 000*	19 000	20 000	19 000	19 000*
Ferro-manganese	550 000*	574 000	601 000	593 000	600 000*
Electric furnace ferro-alloys					
Ferro-chrome	420 000*	420 000*	425 000*	430 000*	450 000*
Ferro-silico-chrome	12 000*	12 000*	13 000*	13 500*	14 000*
Ferro-manganese	600 000*	675 000*	700 000*	700 000*	700 000*
Ferro-silico-manganese	180 000*	190 000*	200 000*	200 000*	200 000*
Ferro-phosphorus	26 000*	26 000*	26 000*	25 000*	25 000*
Ferro-silicon	750 000*	750 000*	800 000*	850 000*	850 000*
Other ferro-alloys	205 000*	205 000*	215 000*	215 000*	225 000*
Silicon metal	60 000*	60 000*	65 000*	65 000*	65 000*
<b>Sweden</b>					
Electric furnace ferro-alloys					
Ferro-chrome	134 028	135 701	126 388	111 815	115 000*
Ferro-silico-chrome	30 633	26 243	17 024	4 029	...
Ferro-molybdenum	229	143	16	—	...
Ferro-silicon	23 278	26 564	20 103	19 949	20 000*
Silicon metal	20 206	19 775	19 156	21 145	20 000*
<b>Switzerland</b>					
Electric furnace ferro-alloys					
Ferro-silicon	3 000*	3 000*	3 000*	3 000*	3 000*
Silicon metal	2 000*	2 000*	2 000*	2 000*	2 000*
<b>Turkey</b>					
Electric furnace ferro-alloys					
Ferro-chrome	48 081	48 000*	50 000*	53 000*	60 000*
Ferro-silicon	6 902	7 000*	7 000*	4 400*	5 200*
<b>Yugoslavia</b>					
Electric furnace ferro-alloys					
Ferro-chrome	75 441	73 308	66 022	56 276	93 349
Ferro-silico-chrome	8 147	7 199	7 513	6 240	3 688
Ferro-manganese	47 375	35 775	39 230	38 041	45 078
Ferro-silico-manganese	37 214	43 374	41 330	42 528	46 804
Ferro-nickel	7 500*	9 248	8 647	9 556	15 047
Ferro-silicon	94 075	91 702	99 625	98 843	120 522
Other ferro-alloys	4 484	5 539	6 715	8 071	11 450
Silicon metal	28 428	33 094	31 312	31 915	25 830
<b>Egypt</b>					
Electric furnace ferro-alloys					
Ferro-silicon	7 500*	7 500*	7 221	7 702	7 700*
<b>South Africa</b>					
Ferro-chrome	889 203	852 338	(1)924 630	(1)965 071	(1)993 685
Ferro-silico-chrome	4 987	4 651	...	...	...
Ferro-manganese	236 930	331 302	337 213	315 110	446 894
Ferro-silico-manganese	143 981	237 864	270 521	281 725	320 000*
Ferro-silicon	89 414	75 126	83 256	82 519	87 247
Other ferro-alloys	300*	548	626	1 000*	1 000*
Silicon metal	34 775	35 830	34 954	34 046	38 960
<b>Zimbabwe</b>					
Electric furnace ferro-alloys					
Ferro-chrome	170 259	183 928	187 454	186 947	180 000*
Ferro-silico-chrome	30 878	29 707	52 298	21 000	29 000*
Ferro-manganese	1 891	1 953	8 029	8 500	2 000*
<b>Canada</b>					
Electric furnace ferro-alloys					
Ferro-manganese	116 000*	118 000*	126 000*	128 000*	130 000*
Ferro-silicon	80 000*	84 000*	88 000*	90 000*	90 000*
Silicon metal	25 000*	25 000*	26 000*	30 000*	30 000*
<b>Dominican Republic</b>					
Electric furnace ferro-alloys					
Ferro-nickel	63 966	66 828	57 565	85 567	77 209

**Production of Ferro-alloys**

tonnes

Country	1984	1985	1986	1987	1988
<b>Mexico</b>					
Electric furnace ferro-alloys					
Ferro-chrome	6 862	6 254	2 670	6 300	9 295
Ferro-silico-magnesium	1 736	2 373	1 308	420	550
Ferro-manganese	160 879	153 733	156 359	161 331	165 487
Ferro-silico-manganese	41 662	39 277	60 532	80 123	80 223
Ferro-silicon	22 504	27 638	17 650	18 060	16 553
Other ferro-alloys	286	294	102	272	107
<b>USA</b>					
Ferro-chrome	72 135	89 836	86 920	104 817	109 504
Ferro-silico-chrome (e)	14 411	9 558	8 704	1 899	10 141
Ferro-manganese (d) (f)	155 246	139 298	106 474	102 462	(m)...
Ferro-phosphorus	82 660	56 211	52 750	36 458	60 220
Ferro-silicon	444 856	400 679	307 936	324 096	449 328
Other ferro-alloys (b)	89 820	81 165	65 416	32 365	167 803
Silicon metal	127 792	109 738	112 394	135 559	149 094
<b>Argentina</b>					
Electric furnace ferro-alloys					
Ferro-manganese	28 016	23 663	19 782	21 407	18 940
Ferro-silico-manganese	13 336	7 493	12 977	11 746	12 766
Ferro-silicon	16 884	18 790	22 979	23 998	25 983
Other ferro-alloys	5 217	4 892	5 272	6 790	7 803
Silicon metal	5 000*	5 000*	5 000*	13 900	15 800
<b>Brazil</b>					
Electric furnace ferro-alloys					
Ferro-calcium-silicon	17 755	22 179	23 715	25 673	31 519
Ferro-chrome	125 125	127 288	109 392	105 394	130 024
Ferro-silico-chrome	7 628	8 875	9 512	8 079	9 177
Ferro-silico-magnesium	15 429	14 876	13 053	17 575	17 000
Ferro-manganese	106 459	134 835	164 093	155 252	180 588
Ferro-silico-manganese	185 631	180 271	177 568	188 022	193 490
Ferro-molybdenum	437	509	511	422	427
Ferro-nickel	33 661	33 467	34 296	35 496	33 930
Ferro-niobium	16 522	17 676	17 391	10 880	19 106
Ferro-phosphorus	926	1 310	1 496	1 784	1 469
Ferro-silicon	151 101	181 784	217 715	231 159	267 538
Ferro-titanium	551	1 372	755	80	549
Ferro-vanadium	456	905	439	88	261
Other ferro-alloys	494	639	1 025	521	926
Silicon metal	26 783	29 477	37 077	39 982	79 287
<b>Chile</b>					
Electric furnace ferro-alloys					
Ferro-manganese	4 757	6 516	6 225	6 614	6 394
Ferro-silico-manganese	—	754	1 465	1 232	683
Ferro-molybdenum	2 211	671	1 397	1 325	1 190
Ferro-silicon	6 365	4 501	3 732	4 655	5 685
<b>Colombia</b>					
Ferro-nickel	37 500	25 500	45 500	42 877	37 519
<b>Venezuela</b>					
Ferro-silico-manganese	16 600	24 109	28 573	28 000	30 000*
Ferro-silicon	40 900	60 583	50 743	52 188	55 000*
<b>China</b>					
Ferro-chrome	120 000*	120 000*	120 000*	125 000*	150 000*
Ferro-manganese	490 000*	490 000*	600 000*	650 000*	650 000*
Ferro-silicon	195 000*	195 000*	200 000*	225 000*	250 000*
Other ferro-alloys	75 000*	75 000*	75 000*	100 000*	100 000*
Silicon metal	20 000*	25 000*	40 000*	65 000*	70 000*
<b>India</b>					
Electric furnace ferro-alloys					
Ferro-chrome	55 578	67 032	84 096	93 944	100 000*
Ferro-silico-chrome	4 096	12 215	9 493	12 321	12 000*
Ferro-manganese	158 314	166 042	179 910	173 259	175 000*
Ferro-silico-manganese	4 673	13 544	24 782	37 504	30 000*
Ferro-silicon	52 931	43 513	50 096	50 747	50 000*
Other ferro-alloys	284	461	617	528	500*
Silicon metal	1 082	—	642	1 445	1 000*

## Production of Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Indonesia</b>					
Electric furnace ferro-alloys					
Ferro-nickel	22 774	23 789	22 554	8 354	26 852
<b>Japan</b>					
Electric furnace ferro-alloys					
Ferro-calcium-silicon	1 724	2 496	2 005	1 419	1 360
Ferro-chrome	323 930	349 496	286 925	272 298	304 642
Ferro-manganese	485 008	441 703	359 044	332 286	378 351
Ferro-silico-manganese	233 061	216 916	148 429	91 896	106 970
Ferro-molybdenum	3 299	3 143	1 894	2 032	2 656
Ferro-nickel	217 053	227 043	200 311	203 143	242 276
Ferro-niobium	1 031	1 072	862	714	649
Ferro-silicon	153 386	150 167	107 236	73 706	73 767
Ferro-tungsten	144	114	122	96	91
Ferro-vanadium	3 733	3 353	2 867	2 639	3 776
Other ferro-alloys	2 727	2 575	2 015	1 384	1 761
<b>Korea, Dem. P.R. of</b>					
Ferro-manganese	70 000*	70 000*	70 000*	70 000*	70 000*
Ferro-silicon	30 000*	30 000*	30 000*	30 000*	30 000*
Other ferro-alloys	20 000*	20 000*	20 000*	20 000*	20 000*
<b>Korea, Republic of</b>					
Electric furnace ferro-alloys					
Ferro-manganese	58 600	61 396	53 721	58 044	75 924
Ferro-silicon	35 300	34 840	30 939	12 646	8 909
Other ferro-alloys	50 215	54 879	66 499	90 382	89 966
<b>Philippines</b>					
Electric furnace ferro-alloys					
Ferro-chrome	48 049	50 818	55 000*	—	—
Ferro-silicon	18 500*	20 000*	20 000*	—	—
<b>Taiwan</b>					
Electric furnace ferro-alloys					
Ferro-manganese	19 803	18 508	20 040	17 026	25 744
Ferro-silico-manganese	23 082	22 688	20 932	18 944	20 420
Ferro-silicon	23 714	17 272	14 007	7 058	10 527
<b>Australia (c)</b>					
Electric furnace ferro-alloys					
Ferro-manganese	70 883	69 000	61 000	51 000	58 000
Ferro-silico-manganese (k)	31 795	27 000	23 000	43 000	44 000
Ferro-silicon	18 313	18 700	19 000	18 000	18 000*
<b>New Caledonia</b>					
Electric furnace ferro-alloys					
Ferro-nickel	116 632	138 614	130 492	108 170	136 203

(a) Ti, W, Mo, V content of ferro-titanium, ferro-tungsten, ferro-molybdenum and ferro-vanadium

(b) Including ferro-boron and other complex boron additive alloys, ferro-nickel, ferro-molybdenum, ferro-tungsten, ferro-vanadium, spiegeleisen, ferro-zirconium and other miscellaneous alloys

(c) Years ended 30 November of that stated

(d) Including manganese metal

(e) Including other chromium alloys and chromium metal

(f) Including ferro-silico-manganese

(g) Including ferro-silicon

(h) Including alumino-thermic ferro-alloys

(i) 50% Si

(j) 10-12% Si

(k) 60% Mn

(l) Including ferro-silico-chrome

(m) Included with 'other ferro-alloys'

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Pig iron	33 798	43 768	19 983	30 992	22 888
Sponge & powder	451	471	750	990	5 360
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	1 717	2 066	2 512	3 567	...
Ferro-chrome	642	2 421	525	953	648
Ferro-silico-chrome	45	—	—	14	79
Ferro-manganese	687	17 556	12 749	13 990	9 756
Ferro-silico-manganese	1 027	127	146	419	2 820
Ferro-molybdenum	3 561	4 274	5 172	4 298	6 661
Ferro-nickel	5	28	11	0	8
Ferro-niobium & ferro-niobium-tantalum	51	38	32	147	486
Ferro-silicon	1 223	2 016	3 301	2 547	2 387
Ferro-titanium & ferro-silico-titanium	4 965	7 059	7 277	8 390	11 857
Ferro-tungsten & ferro-silico-tungsten	192	167	86	11	1
Ferro-vanadium	163	241	158	146	38
Other ferro-alloys	2 646	2 685	2 919	3 645	5 637
Ingots, blooms, billets	480 382	741 919	1 070 498	1 664 869	1 672 357
Scrap (a)	4 317 011	4 535 868	3 816 871	3 306 206	3 607 032
<b>Belgium-Luxembourg</b>					
Pig iron	3 479	4 254	5 756	10 629	15 065
Spiegeleisen	119	1 727	1 426	68	31
Sponge & powder	882	798	1 108	972	4 599
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	423	628	260	33	—
Ferro-chrome	2 913	1 338	876	2 118	3 651
Ferro-manganese	23 741	20 556	17 370	21 297	24 332
Ferro-silico-manganese, Fe-Mo & Fe-V	17 740	17 282	16 545	27 267	(h)13 529
Ferro-silicon	877	368	900	4 370	3 121
Ferro-titanium & ferro-silico-titanium	1 289	1 424	945	834	1 321
Ferro-tungsten & ferro-silico-tungsten	165	184	91	6	7
Other ferro-alloys	891	1 354	1 426	1 484	1 183
Ingots, blooms, billets	732 514	594 958	626 130	751 506	665 459
Scrap	773 706	736 458	658 309	704 546	912 898
<b>Denmark</b>					
Ingots, blooms, billets	11 624	9 001	5 842	2 531	2 428
Scrap	234 279	269 573	182 773	224 017	298 051
<b>France</b>					
Pig iron	192 206	232 638	10 880	54 082	54 433
Spiegeleisen	233	835	919	189	479
Sponge & powder	350	313	193	253	1 115
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	2 241	841	553	386	...
Ferro-chrome	1 452	333	9 344	16 784	48 363
Ferro-silico-chrome	121	346	2	9	9
Ferro-silico-magnesium	8 263	7 155	7 324	9 364	9 388
Ferro-manganese	314 111	238 967	29 316	21 076	31 962
Ferro-silico-manganese	21 551	18 352	21 860	14 830	26 290
Ferro-molybdenum	1 333	1 162	990	2 388	2 199
Ferro-nickel	56 408	55 671	33 280	6 352	3 719
Ferro-silicon	82 294	75 915	67 533	54 391	46 768
Ferro-titanium & ferro-silico-titanium	659	542	313	312	463
Ferro-tungsten & ferro-silico-tungsten	230	46	—	49	—
Ferro-vanadium	1 249	1 296	706	171	2
Ferro-silico-zirconium	3 368	2 672	1 822	1 939	1 809
Other ferro-alloys	29 239	25 251	22 241	21 907	29 690
Ingots, blooms, billets	853 918	1 000 173	771 978	855 421	966 668
Scrap	4 104 316	3 962 164	3 161 685	3 228 411	3 692 082
<b>Germany, Federal Republic of</b>					
Pig iron	531 875	677 864	500 459	499 016	389 558
Spiegeleisen	98	182	1 970	99	—
Sponge & powder	40 189	35 848	33 962	37 888	40 194
Ferro-chrome	61 218	58 445	39 721	54 345	44 660
Ferro-silico-chrome	4 184	3 021	5 056	4 346	3 980
Ferro-manganese	96 692	66 108	69 208	67 426	81 314
Ferro-silico-manganese	4 380	3 682	4 002	3 715	5 482
Ferro-molybdenum	819	503	345	196	214
Ferro-nickel	1 034	2 023	797	226	1 067
Ferro-niobium	521	490	515	484	927
Ferro-silicon	79 569	69 445	65 658	64 482	80 618
Ferro-titanium & ferro-silico-titanium	340	463	396	636	1 211
Ferro-tungsten & ferro-silico-tungsten	222	16	25	78	33
Ferro-vanadium	1 440	2 245	2 463	3 020	2 977
Other ferro-alloys	11 297	10 832	10 330	8 259	12 119
Ingots, blooms, billets	1 798 815	1 963 995	1 569 902	1 350 840	1 818 774
Scrap	3 445 580	3 623 925	3 674 154	4 521 210	4 891 361

## Exports of Iron, Steel and Ferro-alloys

Country	1984	1985	1986	1987	1988
Greece					
Ferro-chrome	29 410	23 070	43 315	50 580	30 609
Ferro-nickel	77 150	89 542	67 113	63 700	—
Irish Republic					
Scrap	42 973	50 045	40 751	26 249	32 429
Italy					
Pig iron	10 144	21 547	60 506	17 285	25 000*
Sponge & powder	2 638	2 403	982	889	...
Ferro-chrome & ferro-silico-chrome	20 189	24 592	24 442	19 505	...
Ferro-silico-magnesium	3 137	3 513	3 743	1 944	...
Ferro-manganese	319	303	334	3 606	...
Ferro-silico-manganese	11 561	2 677	5 197	9 856	...
Ferro-molybdenum	762	1 119	38	21	...
Ferro-silicon	14 004	16 783	11 306	10 122	...
Ferro-titanium & ferro-silico-titanium	1 732	1 656	1 435	2 253	...
Ferro-vanadium	47	179	18	74	...
Other ferro-alloys	3 905	2 426	3 817	4 737	...
Ingots, blooms, billets	330 034	350 443	261 791	95 047	...
Scrap	19 492	10 028	7 274	15 701	28 000
Netherlands					
Pig iron	7 999	17 945	17 966	9 806	3 737
Sponge & powder	484	75	37	502	215
Ferro-chrome	4 087	1 714	14 881	7 159	—
Ferro-manganese	562	154	103	1 125	112
Ferro-silico-manganese	115	—	285	279	303
Ferro-molybdenum	83	289	532	224	387
Ferro-nickel	8	92	13	—	—
Ferro-silicon	13	230	2 730	1 224	363
Ferro-titanium & ferro-silico-titanium	132	875	2 297	2 294	1 375
Ferro-vanadium	—	1	—	—	58
Other ferro-alloys	71	167	384	325	1 208
Ingots, blooms, billets	1 315 698	1 285 172	1 335 080	1 352 641	1 539 677
Scrap	1 683 958	1 834 659	1 991 940	2 225 779	2 649 981
Portugal					
Ferro-manganese	46 123	14 087	21 404	9 812	...
Ferro-silico-manganese	38 512	50 978	43 957	213	...
Ferro-silicon	6 177	6 876	5 252	12	...
Ferro-tungsten	193	164	28	—	...
Other ferro-alloys	—	—	—	2 655	...
Scrap	9 177	16 687	10 645	6 635	13 000
Spain					
Pig iron	927	30 125	31 460	742	61 294
Ferro-aluminium, Fe-Si-Al & Fe-Si-Mn-Al	480	252	123	515	(c)...
Ferro-chrome	14 538	15 939	9 907	13 949	(c)...
Ferro-manganese	24 579	26 781	22 083	13 103	14 270
Ferro-silico-manganese	5 257	7 074	7 076	7 132	(c)...
Ferro-molybdenum	956	2 079	2 388	2 027	(c)...
Ferro-silicon	8 233	5 980	3 620	4 579	13 725
Ferro-titanium & ferro-silico-titanium	6	29	249	0	(c)...
Other ferro-alloys	651	1 239	1 189	1 284	23 415
Ingots, blooms, billets	549 563	1 079 805	570 874	650 790	578 999
Scrap	4 180	1 304	1 628	15 790	60 094
Albania					
Ferro-chrome (f)	26 400*	8 500*	37 600*	23 900*	23 800*
Austria					
Pig iron	64	1 074	502	157	44
Ferro-alloys	12 669	12 264	12 857	13 322	18 792
Ingots & blooms	39 499	38 293	10 026	13 870	15 145
Scrap	20 910	32 191	22 305	92 200	47 222
Bulgaria					
Pig iron	262 521	78 870	52 307	67 300	70 000*
Ferro-alloys	15 000	12 000	12 000	15 000	...
Ingots, blooms, billets	261 683	288 320	375 345	...	...
Scrap	48 000	38 000	4 000	35 000	35 000*

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Czechoslovakia</b>					
Ferro-chrome (f)	3 900*	2 800*	700*	400*	600*
Ferro-manganese (f)	12 500*	15 400*	18 900*	16 800*	12 100*
Other ferro-alloys (f)	4 900*	6 500*	4 900*	4 900*	2 000*
Blooms	437 000	468 000	533 000	610 000	676 000
Scrap (f)	185 600*	140 200*	101 500*	96 800*	116 400*
<b>Finland</b>					
Pig iron	717	1	44	—	16
Ferro-chrome & ferro-silico-chrome	7 677	56 311	90 199	89 530	90 148
Ingots, blooms, billets	(f)102 000*	(f)111 300*	(f)123 800*	(f)165 400*	183 501
Scrap	9 466	9 646	359	252	1 660
<b>German Democratic Republic</b>					
Pig iron	11 000	6 000	6 000	7 000	5 000*
Ferro-silicon (f)	7 300*	5 900*	7 600*	5 300*	10 000*
Other ferro-alloys (f)	400*	400*	1 600*	1 300*	500*
Ingots, blooms, billets (f)	336 200*	535 100*	593 100*	798 000*	995 000*
Scrap (f)	17 500*	24 100*	24 600*	34 400*	85 900*
<b>Hungary</b>					
Pig iron	20 922	—	—	—	—
Ingots, blooms, billets	24 296	46 180	22 798	3 893	9 969
Scrap	79 152	26 912	6 382	106 850	151 311
<b>Iceland</b>					
Ferro-silicon	57 252	56 845	64 990	71 656	73 236
Scrap	9 784	6 237	2 527	7 668	4 507
<b>Malta</b>					
Scrap	12 744	11 798	5 427	10 566	9 803
<b>Norway</b>					
Pig iron	27 832	32 120	22 718	13 663	31 149
Ferro-chrome	601	—	—	4	—
Ferro-silico-chrome	349	—	—	—	—
Ferro-manganese	204 540	180 018	162 265	176 850	204 475
Ferro-silico-manganese	217 817	220 087	202 090	215 810	199 570
Ferro-silicon	427 489	376 486	339 711	334 761	365 882
Other ferro-alloys	10 842	11 273	11 515	11 125	13 313
Ingots, blooms, billets	199 137	143 727	40 906	122 281	70 100
Scrap	21 326	9 300	7 704	11 897	21 373
<b>Poland</b>					
Ingots, blooms, billets	160 000	82 000	108 000	163 000	...
Scrap	176 150	79 993	73 883	96 980	346 956
<b>Romania</b>					
Pig iron & ferro-alloys	17 000*	8 000*	6 000*	...	...
Ingots, blooms, billets (f)	22 900*	13 700*	12 700*	8 000*	56 100*
<b>Soviet Union</b>					
Pig iron	(f)4 130 700*	(f)4 476 400*	5 517 000	5 963 000	6 141 000*
Ferro-alloys	(f)750 000*	(f)760 000*	770 000	756 000	850 000*
Ingots, blooms, billets (f)	1 531 100*	1 667 200*	1 802 600*	1 483 400*	1 471 400*
Scrap	3 407 062	3 315 424	4 087 898	3 900 000	3 240 000
<b>Sweden</b>					
Pig iron	3 048	6 994	8 548	3 345	12 158
Sponge & powder	110 707	100 841	104 867	117 315	115 793
Ferro-chrome	95 793	103 161	85 276	78 862	96 031
Ferro-silico-chrome	2 279	2 226	2 073	3 774	—
Ferro-manganese	673	1 227	2 009	488	867
Ferro-silico-manganese	11	65	464	233	146
Ferro-molybdenum	193	102	58	18	27
Ferro-niobium	48	13	13	23	14
Ferro-silicon	20 564	21 434	11 480	12 507	14 931
Ferro-titanium	389	123	34	81	—
Ferro-tungsten	94	20	35	—	—
Ferro-vanadium	15	6	21	16	42
Other ferro-alloys	388	189	163	113	163
Ingots, blooms, billets	458 304	638 736	554 951	402 238	430 256
Scrap	21 667	21 643	28 585	44 426	87 273
<b>Switzerland</b>					
Pig iron	659	227	406	211	1 618
Sponge & powder	558	574	590	574	620
Ferro-silicon	140	115	133	84	81
Other ferro-alloys	207	201	158	163	278
Ingots, blooms, billets	9 038	4 228	26 101	26 292	25 477
Scrap	106 296	100 135	60 949	87 361	78 092

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Turkey</b>					
Pig iron	60 169	500	137 348	121 762	101 548
Ferro-chrome	53 350	53 396	45 460	41 224	59 471
Ingots, blooms, billets	185 725	532 734	726 953	633 442	1 279 654
Scrap	3 348	4 132	4 797	5 169	156
<b>Yugoslavia</b>					
Pig iron	118	14 486	8 461	35 236	8 409
Ferro-chrome	58 029	52 752	46 404	36 657	63 365
Ferro-manganese	12 109	7 650	5 883	9 542	15 244
Ferro-silico-manganese	28 645	35 860	29 168	38 561	33 741
Ferro-silicon	59 095	52 706	58 357	69 697	77 417
Other ferro-alloys	3 818	7 266	6 537	13 195	17 046
Ingots, blooms, billets	48 541	60 365	63 326	137 188	119 740
Scrap	141 732	173 419	157 542	365 935	361 815
<b>Algeria</b>					
Pig iron	279 684	48 631	64 365	69 812	...
Scrap	82 881	84 458	148 415	150 638	...
<b>Ivory Coast</b>					
Scrap	24 931	25 286	20 317	...	11 233
<b>Morocco</b>					
Scrap	91 900	80 689	52 087	...	91 430
<b>Senegal</b>					
Scrap	7 478	13 900	11 211	7 116	7 893
<b>South Africa</b>					
Pig iron (f)	122 400*	407 700*	629 400*	388 500*	383 200*
Ferro-chrome	855 587	758 617	878 971	829 869	948 450
Ferro-manganese	334 559	458 164	502 247	570 170	625 000*
Ferro-silicon	42 822	41 016	40 069	37 462	40 601
Other ferro-alloys	39 486	29 222	30 666	28 000*	39 000*
Ingots, blooms, billets (f)	147 700*	388 400*	492 800*	663 900*	561 000*
Scrap (f)	47 600*	67 500*	145 800*	70 400*	65 200*
<b>Sudan</b>					
Scrap	50	949	3 510	...	...
<b>Tunisia</b>					
Scrap	790	2 614	1 457	244	16 198
<b>Zimbabwe</b>					
Pig iron	250	28	605	7 807	...
Ferro-chrome	185 908	162 108	186 397	210 636	...
Ferro-silico-chrome	23 577	23 376	25 041	31 329	...
Ingots, blooms, billets	184 134	243 528	158 547	300 000*	...
Scrap	10 049	49 600	6 101	8 915	...
<b>Canada</b>					
Pig iron	393 894	574 132	519 606	448 251	354 988
Sponge	45 715	36 395	37 000	52 104	(g)216 613
Ferro-chrome	(c)...	(c)...	(c)...	(c)...	1 068
Ferro-manganese	9 201	43 584	45 132	23 103	25 790
Ferro-silicon	35 298	33 224	45 953	28 316	30 249
Other ferro-alloys	5 201	4 614	11 889	10 046	6 618
of which: Re-exports	151	1 060	764	145	...
Ingots, blooms, billets	249 085	77 137	233 428	104 756	180 321
Scrap	763 574	952 376	921 367	1 086 832	1 679 003
<b>Dominican Republic</b>					
Ferro-nickel	62 361	67 893	53 903	78 372	82 878
<b>Mexico</b>					
Ferro-alloys	57 496	51 049	76 127	39 643	49 883
Ingots, blooms, billets	940	6 886	120 265	173 737	...
Scrap	15 445	21 237	23 709	44 053	...
<b>Trinidad &amp; Tobago</b>					
Sponge	64 482	61 324	53 211	70 345	...

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
USA					
Pig iron	54 645	33 475	45 795	50 642	66 539
Sponge & powder	13 487	9 822	10 586	15 469	17 157
Ferro-chrome & ferro-silico-chrome	15 217	10 506	6 674	6 166	9 913
Ferro-manganese	6 470	6 871	3 956	2 686	3 219
Ferro-silico-manganese	4 902	2 832	1 787	746	4 406
Ferro-molybdenum	295	601	172	75	88
Ferro-phosphorus	35 928	44 802	34 833	31 508	19 380
Ferro-silicon	26 661	11 801	10 345	13 880	26 684
Ferro-vanadium	425	423	445	442	571
Other ferro-alloys	25 080	14 048	9 329	17 643	11 899
Ingots, blooms, billets	72 700	85 010	54 187	67 190	55 915
Scrap (a)	8 643 090	9 032 434	10 619 159	9 408 257	9 167 340
Argentina					
Ingots, blooms, billets	1 743	295 089	369 795	132 360	...
Brazil					
Pig iron	2 474 329	2 479 622	2 367 010	2 047 420	2 537 107
Ferro-chrome	53 880	60 285	20 121	14 980	37 007
Ferro-manganese	21 302	33 594	45 508	50 049	50 727
Ferro-nickel	11 175	9 871	4 694	2 208	10 412
Ferro-niobium	13 771	14 324	12 331	11 069	14 352
Fe-silico-spiegeleisen & silico-manganese	100 388	65 327	70 300	55 208	60 419
Ferro-silicon	89 874	127 371	129 262	176 349	211 397
Other ferro-alloys	13 552	11 695	10 179	19 939	19 902
Ingots, blooms, billets	1 374 833	2 434 504	2 459 002	3 420 355	4 669 042
Chile					
Ferro-alloys	6 227	3 676	5 463	...	...
Ingots, blooms, billets	49 696	61 935	66 144	37 217	...
Colombia					
Ferro-nickel	33 720	28 303	32 211	...	...
Venezuela					
Sponge & powder	373 931	267 103	259 921	216 212	...
Ferro-silicon	32 264	56 067	58 173	45 459	...
Ingots, blooms, billets	70 533	200 478	98 250	217 146	...
Bahrain					
Scrap	25 831	37 029	32 852	49 983	...
Brunei					
Scrap	11 329	8 139	5 389	...	...
China					
Pig iron (f)	3 300*	2 000*	5 700*	316 900*	1 569 500*
Ferro-silicon (f)	3 900*	1 500*	33 800*	178 800*	318 300*
Other ferro-alloys (f)	18 300*	5 100*	20 300*	69 400*	141 100*
Ingots, blooms, billets (f)	1 500*	400*	100*	900*	17 500*
Scrap	(f)23 500*	(f)18 500*	(f)3 000*	(f)114 500*	685 994
Cyprus					
Scrap (b)	13 223	14 288	13 309	4 543	...
Dubai					
Scrap	30 986	53 219	56 714	...	...
Hong Kong					
Pig iron (b)	67	1 977	71	97	4 735
Ferro-manganese (b)	5 430	500	496	1 540	4 297
Ferro-silicon (b)	—	—	3 483	30 135	82 494
Other ferro-alloys (b)	114	563	1 662	6 524	9 753
Ingots, blooms, billets (b)	41 574	41 920	24 842	13 174	34 934
Scrap	300 067	319 137	275 389	345 259	428 310
India (d)					
Pig iron	1 476	221	449	...	...
Ferro-manganese	1 950	5 330	—	...	...
Scrap	52 449	64 182	37 969	...	...
Indonesia					
Sponge & powder	69 557	86 542	96 392	75 117	138 315
Ingots, blooms, billets	20 098	—	8	26 524	41 180
Scrap	962	484	6 626	2 877	5 025



## Exports of Iron, Steel and Ferro-alloys

Country	1984	1985	1986	1987	1988
Israel					
Scrap (f)	8 600*	4 900*	5 500*	3 400*	2 000*
Japan					
Pig iron	276 749	1 066 307	1 055 582	28 598	21 787
Sponge & powder	6 798	9 318	9 166	11 520	11 771
Ferro-chrome	2 095	5 468	3 433	4 883	4 450
Ferro-manganese	22 822	25 988	6 857	19 122	12 849
Ferro-silico-manganese	93	170	16	—	1 000
Ferro-nickel	4 365	4 475	7 100	1 885	15
Ferro-silicon	1 199	913	1 091	1 345	4 868
Ferro-vanadium	122	10	94	67	25
Other ferro-alloys	2 276	2 067	3 152	4 718	5 589
Ingots, blooms, billets	136 026	323 693	221 429	250 411	159 424
Scrap	146 473	165 636	461 048	377 397	415 616
Korea, Dem. P.R. of					
Pig iron (f)	136 700*	143 100*	103 600*	96 800*	58 300*
Ingots, blooms, billets (f)	30 600*	9 000*	8 200*	17 300*	15 300*
Korea, Republic of					
Pig iron	10 110	74	1 021	2 017	76 397
Ferro-manganese	338	30	5	5	—
Ferro-silico-manganese	350	—	—	—	—
Other ferro-alloys	3 106	1 057	3 051	114	302
Ingots, blooms, billets	440 171	373 788	167 788	193 060	353 291
Scrap	135 288	74 006	71 525	42 157	40 440
Kuwait					
Scrap	123 332	...	75 619	...	...
Macao					
Scrap	7 236	6 016	4 984	7 735	6 090
Malaysia					
Sponge & powder	4 933	286 369	...	605 817	...
Scrap	20 180	21 530	20 000	44 419	...
Pakistan (e)					
Pig iron	391 999	58 258	119 911	235 058	—
Scrap	46 417	1 628	20 844	660	1 709
Philippines					
Ferro-silicon	20 856	22 428	10 079	10 225	8 415
Other ferro-alloys	45 414	50 379	55 971	50 821	61 514
Scrap	844	952	850	1 313	1 974
Saudi Arabia					
Scrap	89 836	129 743	122 511	69 381	124 161
Singapore					
Pig iron	6 580	3 263	1 100	652	922
of which: Re-exports	6 557	3 227	1 095	641	853
Ferro-alloys	607	1 126	549	1 119	2 682
of which: Re-exports	603	1 072	549	1 119	2 682
Ingots & blooms	4 752	8 621	5 014	24 169	311
of which: Re-exports	3 783	3 790	3 326	11 705	291
Scrap	108 948	166 636	90 776	155 625	265 389
Sri Lanka					
Scrap	11 000	3 535	40 988	30 941	19 423
Taiwan					
Pig iron	562	1 011	3 371	1 511	1 581
Ferro-manganese	191	111	60	100	1
Ferro-silicon	2 211	861	458	208	318
Other ferro-alloys	3 450	1 717	917	1 451	4 680
Ingots, blooms, billets	107 725	104 780	31 406	50 714	280 814
Scrap	202 414	388 225	280 941	97 755	75 239
Thailand					
Scrap	3 548	3 575	5 701	4 925	6 318

**Exports of Iron, Steel and Ferro-alloys**

tonnes

Country	1984	1985	1986	1987	1988
Australia					
Pig iron	70 665	26 185	26 221	164 939	24 789
Ferro-manganese	19 155	20 089	43 863	47 499	34 349
Other ferro-alloys	27 341	19 479	41 549	37 525	44 507
Ingots, blooms, billets	293 622	582 854	495 738	522 596	329 582
Scrap	410 396	485 223	557 811	873 716	999 747
Fiji					
Scrap	1 810	717	743	...	...
of which: Re-exports	648	359	311	...	...
New Caledonia					
Ferro-nickel	123 100	142 000	130 400	121 400	147 300
New Zealand (e)					
Ingots, blooms, billets	42 380	38 781	66 576	84 294	...
Scrap	3 113	3 061	2 612	3 308	...

## Notes

(1) In this table the term 'ingots, blooms, billets' corresponds to items 672.4,6,7 and 8 of the Standard International Trade Classification (Revision 3) which includes those of alloy and high carbon steel

- (a) Excluding ships intended for breaking up
- (b) Re-exports
- (c) Included with 'other ferro-alloys'
- (d) Years ended 31 March following that stated
- (e) Years ended 30 June of that stated
- (f) BGS estimates, based on known imports into certain countries
- (g) Including powder
- (h) Excluding ferro-molybdenum and ferro-vanadium

## Imports of Iron, Steel and Ferro-alloys

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Pig iron	86 804	101 216	118 121	105 419	192 706
Sponge & powder	13 975	13 620	13 122	17 158	19 754
Ferro-chrome	68 086	77 082	95 627	110 089	103 300
Ferro-silico-chrome	—	1 063	21	4	35
Ferro-manganese	37 625	44 553	53 492	36 954	67 918
Ferro-silico-manganese	28 062	29 401	30 471	20 978	32 285
Ferro-molybdenum	403	374	276	663	600
Ferro-nickel	16 437	17 270	21 454	22 307	17 757
Ferro-niobium	731	864	575	559	536
Ferro-silicon	81 754	84 669	66 170	77 547	74 077
Ferro-titanium & ferro-silico-titanium	992	799	955	727	929
Ferro-tungsten & ferro-silico-tungsten	41	86	83	114	94
Ferro-vanadium	827	655	519	666	565
Other ferro-alloys	10 663	9 576	10 439	13 424	15 422
Ingots, blooms, billets	273 399	250 382	242 711	200 524	344 972
Scrap (a)	33 809	51 020	44 839	72 635	91 733
<b>Belgium-Luxembourg</b>					
Pig iron	94 478	113 020	121 731	132 428	254 260
Spiegeleisen	579	1 171	1 532	425	109
Sponge & powder	2 733	1 914	1 631	1 859	10 331
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	892	464	404	540	—
Ferro-chrome	44 974	49 686	45 552	41 663	70 994
Ferro-silico-chrome	3 189	3 157	2 253	2 774	2 455
Ferro-manganese	52 460	56 037	47 342	59 331	64 233
Ferro-silico-manganese	35 439	30 594	40 049	47 411	44 216
Ferro-molybdenum	298	591	709	906	1 389
Ferro-nickel	6 322	7 239	5 243	3 818	9 037
Ferro-silicon	29 170	30 947	28 639	31 098	31 673
Ferro-titanium & ferro-silico-titanium	494	608	510	509	623
Ferro-vanadium	226	120	112	62	128
Other ferro-alloys	2 783	3 303	3 534	3 916	33 362
Ingots, blooms, billets	629 469	548 315	446 328	557 653	1 702 942
Scrap	1 672 749	1 489 540	1 221 785	1 583 802	1 902 586
<b>Denmark</b>					
Pig iron	35 777	58 763	75 989	77 687	113 331
Sponge & powder	4 031	1 169	1 375	887	2 074
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	1 035	811	254	533	...
Ferro-chrome & ferro-silico-chrome	249	144	85	73	48
Ferro-manganese	2 707	2 024	1 618	1 285	1 501
Ferro-silico-manganese	3 540	4 002	6 247	4 678	5 863
Ferro-molybdenum	14	17	5	9	2
Ferro-silicon	3 140	2 774	3 165	2 998	3 696
Other ferro-alloys	132	160	194	214	976
Ingots, blooms, billets	8 781	81 510	6 707	14 187	19 448
Scrap	131 692	47 735	121 242	89 288	116 737
<b>France</b>					
Pig iron	413 009	479 635	370 163	385 667	278 479
Spiegeleisen	340	366	1 973	143	255
Sponge & powder	11 298	11 528	11 200	12 495	14 155
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	14	270	343	685	...
Ferro-chrome	154 506	160 073	168 118	195 857	181 099
Ferro-silico-chrome	849	493	500	1 639	225
Ferro-silico-magnesium	665	858	1 731	2 185	2 776
Ferro-manganese	40 990	35 479	64 310	59 384	63 253
Ferro-silico-manganese	41 018	39 064	58 888	53 572	51 384
Ferro-molybdenum	1 367	1 514	1 565	2 422	2 093
Ferro-nickel	93 980	107 069	79 875	41 838	54 372
Ferro-silicon	35 238	38 524	34 761	45 945	57 515
Ferro-titanium & ferro-silico-titanium	1 458	1 578	2 065	2 782	1 872
Ferro-tungsten & ferro-silico-tungsten	335	454	325	644	596
Ferro-vanadium	625	760	1 037	919	1 103
Other ferro-alloys	2 670	3 098	1 871	1 732	8 493
Ingots, blooms, billets	805 794	645 678	673 186	626 393	580 550
Scrap	407 253	461 415	354 205	518 960	801 103

## Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Germany, Federal Republic of</b>					
Pig iron	213 032	218 013	271 986	263 039	237 191
Spiegeleisen	—	89	1 109	491	384
Sponge & powder	21 239	19 280	21 124	25 438	29 846
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	502	190	153	579	...
Ferro-chrome	244 644	287 300	273 340	326 987	363 146
Ferro-silico-chrome	12 520	17 793	16 545	14 048	20 807
Ferro-manganese	87 111	129 855	106 140	98 155	109 637
Ferro-silico-manganese	122 635	123 253	111 817	114 860	124 442
Ferro-molybdenum	5 401	5 795	5 962	5 954	7 285
Ferro-nickel	99 327	101 491	88 157	62 913	82 134
Ferro-niobium	3 363	2 947	3 055	2 401	2 532
Ferro-silicon	241 656	220 079	213 950	198 127	217 871
Ferro-titanium & ferro-silico-titanium	3 533	3 717	4 510	4 603	5 434
Ferro-tungsten & ferro-silico-tungsten	532	819	691	645	1 343
Ferro-vanadium	2 644	2 754	2 032	1 772	2 068
Other ferro-alloys	5 755	8 531	7 346	8 940	22 293
Ingots, blooms, billets	1 068 611	1 327 219	1 315 906	1 449 815	1 802 890
Scrap	1 766 682	1 619 550	1 383 917	1 195 750	1 477 132
<b>Greece</b>					
Pig iron	6 561	8 074	19 761	17 141	10 000*
Ferro-manganese	2 751	6 114	5 343	3 742	—
Ferro-silico-manganese	5 924	6 642	6 525	4 842	3 710
Ferro-silicon	2 812	2 807	3 901	2 562	2 200
Other ferro-alloys	322	473	452	561	1 338
Ingots, blooms, billets	538 751	437 262	417 482	464 205	...
Scrap	327 572	313 312	455 302	652 477	350 000*
<b>Irish Republic</b>					
Pig iron	600	574	1 046	558	3 027
Ferro-alloys	2 188	2 662	2 984	3 469	3 904
Ingots, blooms, billets	557	780	467	6 817	2 412
Scrap	87 580	135 912	121 979	148 594	179 594
<b>Italy</b>					
Pig iron	310 388	265 842	398 276	451 190	600 000*
Spiegeleisen	2 777	485	197	713	...
Sponge & powder	75 591	46 786	27 318	103 428	...
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	1 844	1 129	1 218	1 465	...
Ferro-chrome	106 703	97 833	99 031	93 267	...
Ferro-silico-chrome	518	1 114	1 826	1 706	...
Ferro-silico-magnesium	1 242	1 357	2 201	2 646	...
Ferro-manganese	115 780	81 824	90 052	89 408	...
Ferro-silico-manganese	27 968	27 008	23 545	28 627	...
Ferro-molybdenum	1 248	1 500	2 403	2 376	...
Ferro-nickel	16 134	22 085	21 719	21 329	20 555
Ferro-niobium	2 348	1 912	1 290	1 155	...
Ferro-silicon	65 506	48 133	55 361	59 002	...
Ferro-titanium & ferro-silico-titanium	1 064	780	737	830	...
Ferro-tungsten & ferro-silico-tungsten	97	95	147	264	...
Ferro-vanadium	816	916	1 121	827	...
Other ferro-alloys	1 593	1 280	1 299	2 096	...
Ingots, blooms, billets	533 576	1 090 573	1 265 566	1 222 883	...
Scrap	5 487 097	5 777 199	4 746 375	4 911 165	5 060 000
<b>Netherlands</b>					
Pig iron	44 078	41 628	49 702	48 433	63 364
Sponge & powder	3 562	2 322	1 792	2 872	2 054
Ferro-aluminium,Fe-Si-Al & Fe-Si-Mn-Al	82	144	213	325	—
Ferro-chrome	5 523	2 798	16 083	7 988	1 913
Ferro-silico-chrome	57	61	95	56	83
Ferro-manganese	26 629	22 664	17 046	14 274	18 764
Ferro-silico-manganese	6 656	5 737	6 486	6 987	7 261
Ferro-molybdenum	122	502	563	278	459
Ferro-nickel	890	86	254	67	109
Ferro-silicon	5 203	5 063	7 972	4 847	7 340
Ferro-titanium & ferro-silico-titanium	241	977	2 369	2 425	1 599
Ferro-tungsten & ferro-silico-tungsten	1	72	117	190	—
Ferro-vanadium	75	72	81	54	113
Other ferro-alloys	541	770	884	918	1 904
Ingots, blooms, billets	220 102	156 445	118 474	100 037	86 257
Scrap	479 712	586 431	849 807	1 014 012	768 885

## Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>Portugal</b>					
Pig iron	7 421	6 919	7 630	16 223	20 000*
Ferro-chrome	356	424	271	281	...
Ferro-manganese	94	187	183	463	...
Ferro-silico-manganese	8	1 397	29	14	...
Ferro-silicon	643	364	991	3 253	...
Other ferro-alloys	131	228	416	551	...
Ingots, blooms, billets	11 099	2 219	4 426	3 746	...
Scrap	120 120	104 781	104 453	124 615	180 000
<b>Spain</b>					
Pig iron	54 530	86 818	140 230	114 700	138 379
Sponge & powder	81 010	88 045	62 981	47 262	35 062
Ferro-aluminium & ferro-silico-aluminium	315	129	19	12	(d)...
Ferro-chrome	52 294	46 615	71 371	80 627	(d)...
Ferro-silico-chrome	2 368	1 691	1 620	2 080	(d)...
Ferro-manganese	1 045	1 259	6 635	14 129	9 064
Ferro-silico-manganese	1 601	1 516	11 392	14 535	(d)...
Ferro-molybdenum	67	162	108	197	(d)...
Ferro-nickel	8 690	7 908	24 850	24 632	(d)...
Ferro-silicon	2 750	5 299	11 975	11 089	5 497
Ferro-titanium & ferro-silico-titanium	159	75	200	227	(d)...
Ferro-tungsten & ferro-silico-tungsten	17	27	47	62	(d)...
Ferro-vanadium	79	168	418	206	(d)...
Other ferro-alloys	2 699	3 080	10 155	2 375	114 325
Ingots, blooms, billets	130 402	162 161	408 032	145 783	96 064
Scrap	5 020 310	6 146 278	4 341 976	4 284 658	4 504 780
<b>Albania</b>					
Ferro-alloys (g)	1 600*	2 300*	2 900*	2 300*	2 400*
<b>Austria</b>					
Pig iron	43 839	47 179	35 479	33 157	42 274
Sponge & powder	5 403	5 204	5 372	6 036	6 686
Ferro-chrome	25 904	20 677	19 373	17 823	22 202
Ferro-manganese	25 430	22 779	18 945	18 777	23 887
Ferro-molybdenum	63	109	175	189	191
Ferro-nickel	4 580	3 305	2 602	2 770	1 305
Ferro-niobium & ferro-niobium-tantalum	292	299	318	268	275
Ferro-silicon	14 726	16 215	16 966	14 085	21 452
Ferro-titanium	479	766	704	455	487
Ferro-tungsten	253	106	176	444	648
Ferro-vanadium	33	129	105	69	177
Other ferro-alloys	8 409	10 142	8 874	8 622	9 517
Ingots & blooms	72 248	75 936	163 273	100 163	222 415
Scrap	363 084	239 048	115 029	68 523	101 539
<b>Bulgaria</b>					
Pig iron	664 573	404 296	425 398	483 000	369 000*
Ferro-chrome	9 171	8 830	8 940	(d)...	...
Ferro-manganese	3 363	3 397	3 169	4 000	...
Ferro-silicon	8 534	10 031	9 375	(d)...	...
Other ferro-alloys	5 062	5 578	5 323	25 000	...
Ingots, blooms, billets	451 000*	392 000*	257 000*	310 000*	...
<b>Czechoslovakia</b>					
Pig iron	745 000	869 000	808 000	717 000	675 000
Ferro-chrome & ferro-silico-chrome (g)	1 200*	3 200*	900*	1 700*	1 300*
Ferro-titanium & ferro-silico-titanium (g)	800*	1 200*	700*	800*	800*
Other ferro-alloys (g)	101 300*	119 700*	118 900*	115 400*	120 300*
Ingots, blooms, billets	154 000	318 000	165 000	113 000	...
Scrap (g)	84 300*	43 900*	43 200*	19 700*	13 900*
<b>Finland</b>					
Pig iron	6 729	15 317	14 382	12 982	8 937
Sponge & powder	880	953	499	327	1 696
Ferro-chrome & ferro-silico-chrome	6 339	1 443	1 446	1 944	1 863
Ferro-manganese	5 825	4 293	4 496	4 355	5 955
Ferro-silico-manganese	17 291	21 690	13 988	22 515	16 472
Ferro-molybdenum	345	692	490	624	639
Ferro-silicon	10 198	7 138	7 660	9 994	8 422
Ferro-titanium	248	399	275	487	387
Ferro-vanadium	84	105	217	205	211
Other ferro-alloys	21 342	18 152	15 512	31 100	25 070
Ingots, blooms, billets	6 891	10 689	5 650	30 197	76 839
Scrap	32 516	113 350	63 336	54 853	16 096

## Imports of Iron, Steel and Ferro-alloys

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Country	1984	1985	1986	1987	1988
<b>German Democratic Republic</b>					
Pig iron	863 900	1 090 500	1 145 800	1 339 600	1 280 100
Ferro-manganese	62 000	75 000	74 000	73 000	...
Other ferro-alloys	16 000	13 000	6 000	11 000	...
Ingots, blooms, billets	172 000	111 000	107 000	131 000	...
Scrap	1 035 000	886 000	986 000	903 000	900 000*
<b>Hungary</b>					
Pig iron	279 461	272 413	254 297	261 512	351 122
Ferro-chrome	8 801	10 390	11 183	13 393	11 250
Ferro-manganese	37 794	44 951	42 250	36 292	36 416
Ferro-molybdenum	255	261	315	436	200
Ferro-silicon	6 373	6 742	7 424	6 871	8 146
Other ferro-alloys	12 564	14 799	14 697	14 170	14 662
Ingots, blooms, billets	5 602	—	—	999	—
Scrap	20 084	14 000	8 330	14 307	5 046
<b>Malta</b>					
Ingots, blooms, billets	7 804	6 044	6 342	5 275	6 124
<b>Norway</b>					
Pig iron	5 859	5 458	4 693	3 460	2 249
Spiegeleisen	170	842	88	0	—
Sponge & powder	243	305	749	785	2 560
Ferro-chrome	477	840	830	652	719
Ferro-manganese	0	0	0	3 130	2 001
Ferro-silico-manganese	—	60	310	2 401	2 691
Ferro-silicon	553	1 512	995	630	1 477
Other ferro-alloys	255	413	255	304	399
Ingots, blooms, billets	826	5 708	5 320	3 072	7 673
Scrap	12 888	10 831	6 145	32 528	163 664
<b>Poland</b>					
Pig iron & ferro-alloys	1 271 515	1 411 338	1 477 696	1 420 314	1 369 961
Ingots, blooms, billets	19 000	13 000	16 000	16 000	...
Scrap	5 543	3 786	3 444	5 116	2 241
<b>Romania</b>					
Pig iron	169 800	117 400	100 000	100 000	100 000*
Ferro-alloys	154 000	151 800	162 000	...	...
Ingots, blooms, billets	218 000	281 000	309 000	...	...
<b>Soviet Union</b>					
Pig iron	(g)64 200*	...	30 426	29 574	105 894
Sponge & powder (g)	4 000*	3 400*	1 900*	100*	300*
Ferro-alloys	(g)4 200*	(g)4 200*	29 163	29 726	29 340
<b>Sweden</b>					
Pig iron	38 593	46 791	56 967	51 193	65 230
Sponge & powder	375	900	1 178	1 678	2 980
Ferro-chrome	47 653	52 098	43 258	50 593	44 420
Ferro-silico-chrome	1 450	1 645	100	2 611	2 455
Ferro-manganese	31 588	28 402	26 464	25 963	31 104
Ferro-silico-manganese	12 241	15 696	17 559	11 926	17 336
Ferro-molybdenum	1 624	1 377	1 388	1 431	2 039
Ferro-nickel	22 056	7 485	13 403	14 049	9 283
Ferro-niobium	280	212	213	291	266
Ferro-silicon	27 834	21 341	17 400	22 515	24 142
Ferro-titanium	1 308	1 059	1 442	1 475	1 876
Ferro-tungsten	301	639	326	372	697
Ferro-vanadium	955	1 057	1 120	1 105	1 097
Other ferro-alloys	982	745	1 539	1 227	2 426
Ingots, blooms, billets	79 643	35 008	48 909	136 936	122 352
Scrap	840 314	884 807	704 779	789 422	799 280
<b>Switzerland</b>					
Pig iron	71 123	63 011	42 237	34 282	42 596
Sponge & powder	5 113	3 785	4 858	4 478	4 941
Ferro-aluminium	286	301	377	557	373
Ferro-silicon	8 049	7 219	7 963	6 814	7 157
Other ferro-alloys	17 269	15 003	15 156	14 648	13 042
Ingots, blooms, billets	93 993	80 443	51 123	14 451	97 977
Scrap	272 801	239 933	323 815	136 487	85 587

## Imports of Iron, Steel and Ferro-alloys

Country	1984	1985	1986	1987	1988
<b>Turkey</b>					
Pig iron	42 831	139 226	116 372	127 185	149 753
Sponge & powder	1 179	50 916	1 115	25 575	32 793
Ferro-manganese	25 619	25 647	21 007	41 707	...
Ferro-silico-manganese (d)...		17 163	25 502	28 049	...
Ferro-silicon	11 379	12 099	14 487	27 035	...
Other ferro-alloys	15 300	3 314	1 668	1 290	...
Ingots, blooms, billets	1 210 309	1 659 318	920 934	1 553 498	979 542
Scrap	1 038 108	1 147 623	1 798 755	2 831 269	3 036 714
<b>Yugoslavia</b>					
Pig iron	64 129	53 314	63 325	25 381	39 119
Sponge & powder	2 124	1 982	1 985	1 999	1 866
Ferro-chrome	763	1 840	1 172	232	204
Ferro-manganese	1 754	1 563	1 714	1 078	1 561
Ferro-molybdenum	1 022	697	989	656	—
Ferro-phosphorus	567	704	482	682	—
Ferro-silicon	1 657	1 074	838	1 268	959
Ferro-tungsten	64	96	114	197	—
Ferro-vanadium	250	267	406	332	—
Other ferro-alloys	3 652	1 851	2 682	880	3 488
Ingots, blooms, billets	488 202	438 612	573 493	435 382	393 589
Scrap	781 453	728 581	650 918	688 997	746 283
<b>Algeria</b>					
Pig iron	25 833	17 975	22 478	9 691	...
Ferro-chrome	516	691	320	—	...
Ferro-manganese	8 572	1 024	4 495	2 170	...
Ferro-silico-manganese	122	218	179	170	...
Ferro-phosphorus	85	29	4	—	...
Ferro-silicon	7 118	8 711	4 029	2 784	...
Ferro-vanadium	50	50	—	50	...
Other ferro-alloys	457	1 975	291	454	...
Ingots, blooms, billets	2 721	14 398	10 166	9 289	...
<b>Egypt</b>					
Pig iron	129	48 451	20 783	10	...
Ferro-alloys	5 700	11 138	5 465	16 479	...
Ingots & billets	16 397	66 307	93 930	33 500*	...
Scrap	1 133	2 197	1 539	1 992	...
<b>Ethiopia</b>					
Ingots, blooms, billets	1 789	5 049	6	34	369
Scrap	640	1 296	—	356	...
<b>Kenya</b>					
Pig iron & ferro-alloys	1 024	524	401	441	...
Ingots & blooms	24 714	19 578	39 158	48 039	...
Scrap	2 432	45	6 108	4 684	...
<b>Liberia</b>					
Pig iron	4 843	8 190	1 951	2 967	...
<b>Mauritius</b>					
Pig iron & ingots	15 830	17 240	21 034	15 905	25 410
<b>Morocco</b>					
Pig iron	2 764	1 146	911	2 042	...
Ferro-chrome	68	55	31	...	60
Ferro-manganese	133	125	127	132	174
Ferro-silico-manganese	20	5	5	21	12
Ferro-silicon	126	210	128	192	197
Ingots, blooms, billets	177 746	299 517	231 273	289 084	376 982
Scrap	896	2 167	3 266	2 000	32
<b>Nigeria</b>					
Pig iron	367	92	167	628	...
Ferro-manganese	841	2 986	4 501	2 515	...
Other ferro-alloys	1 912	7 403	685	457	...
Ingots & blooms	51 988	191 567	92 176	139 614	...
<b>Rwanda</b>					
Ingots	25 593	23 904	31 017	31 336	36 578

## Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
<b>South Africa</b>					
Pig iron	240	83	50	95	...
Sponge & powder	1 926	1 275	2 314	2 148	...
Ferro-chrome	5 630	5 080	3 585	7 354	...
Ferro-silico-magnesium	571	646	793	524	...
Ferro-molybdenum	407	336	764	693	...
Ferro-silicon	511	32	—	324	...
Ferro-titanium & ferro-silico-titanium	396	714	300	538	...
Other ferro-alloys	1 182	1 123	1 451	2 370	...
Ingots & blooms	45 513	23 094	995	221	...
Scrap	55 548	7 302	9 900	10 757	...
<b>Tanzania</b>					
Pig iron & ferro-alloys	1 667	1 722	...	487	...
Ingots & blooms	1 647	1 144	4 149	3 697	...
<b>Tunisia</b>					
Pig iron	1 753	1 552	553	1 376	2 351
Ferro-alloys	1 524	726	1 734	871	1 719
Ingots, blooms, billets	15 292	37 696	38 415	39 386	79 214
Scrap	—	2 695	538	1 753	598
<b>Zimbabwe</b>					
Ferro-manganese	893	1 168	1 720	137	...
Ferro-silicon	1 933	1 957	1 392	867	...
Other ferro-alloys	323	235	112	138	...
<b>Canada</b>					
Pig iron	5 269	10 080	11 814	9 794	9 022
Sponge & powder	8 152	7 317	6 637	7 060	8 555
Ferro-chrome	33 078	28 266	39 038	44 118	48 879
Ferro-silico-chrome	(d)...	(d)...	(d)...	(d)...	2 914
Ferro-manganese & spiegeleisen	29 797	27 481	20 283	39 606	35 346
Fe-silico-manganese & silico-spiegeleisen	6 823	6 601	6 773	13 301	17 260
Ferro-nickel	(d)...	(d)...	(d)...	(d)...	3 060
Ferro-niobium	(d)...	(d)...	(d)...	(d)...	1 196
Ferro-silicon	24 763	12 048	13 552	12 367	20 275
Ferro-vanadium	245	192	165	208	271
Other ferro-alloys	11 801	50 121	14 128	15 092	11 069
Ingots, blooms, billets	184 186	144 672	254 633	725 656	1 346 115
Scrap	1 131 023	881 570	747 194	775 830	1 185 699
<b>Costa Rica</b>					
Ingots, blooms, billets	45 933	44 332	43 989	...	...
<b>Cuba</b>					
Pig iron	222 611	237 984	284 210	271 774	...
Scrap (i)	96 515	99 185	88 755	55 699	—
<b>Dominican Republic</b>					
Ingots, blooms, billets	39 212	9 869	10 342	...	...
Scrap	50 372	11 049	36 969	...	...
<b>El Salvador</b>					
Ingots, blooms, billets	15 655	10 394	14 885	7 396	...
Scrap	4 662	31	8	...	...
<b>Guatemala</b>					
Ingots, blooms, billets	22 144	25 416	11 652	26 576	...
<b>Honduras</b>					
Ingots, blooms, billets	5 516	6 022	2 496	...	...
<b>Jamaica</b>					
Ingots, blooms, billets	3 596	1 332	853	16 468	23 307
<b>Mexico</b>					
Pig iron	7 190	17 399	8 630	9 171	...
Sponge & powder	1 944	2 847	1 689	2 059	...
Ferro-alloys	7 603	6 911	4 218	6 565	7 573
Ingots, blooms, billets	258 356	326 678	139 233	3 855	...
Scrap	631 182	839 890	453 934	464 079	460 000*
<b>Nicaragua</b>					
Ingots, blooms, billets	4 022	24 540	35 072	38 579	...
<b>Panama</b>					
Ingots, blooms, billets	13 213	16 091	12 495	24 564	...



## Imports of Iron, Steel and Ferro-alloys

Country	1984	1985	1986	1987	1988
USA					
Pig iron	639 905	317 666	269 382	323 774	640 456
Sponge & powder	159 113	93 928	88 527	56 239	176 259
Ferro-chrome	386 287	299 340	351 522	295 017	422 349
Ferro-silico-chrome	7 205	3 574	5 896	7 581	9 388
Ferro-manganese	371 320	328 232	352 072	333 531	481 970
Ferro-silico-manganese	125 640	150 335	177 419	173 618	210 661
Ferro-molybdenum	946	689	789	1 515	1 680
Ferro-nickel	39 052	33 138	36 713	41 178	40 440
Ferro-niobium	3 031	3 279	2 395	2 803	2 957
Ferro-silicon	130 318	139 028	204 288	209 120	209 466
Ferro-titanium & ferro-silico-titanium	525	438	618	1 293	1 552
Ferro-tungsten & ferro-silico-tungsten	357	118	244	407	781
Ferro-vanadium	1 315	1 144	678	385	134
Ferro-zirconium	689	703	456	182	677
Ingots, blooms, billets	1 375 079	1 206 120	1 955 161	2 096 366	2 109 977
Scrap	518 919	547 648	643 627	750 994	941 495
Argentina					
Pig iron	176 771	31 871	—	—	91 000
Ferro-chrome	3 567	1 885	2 170	(d)...	...
Ferro-manganese	543	2 272	1 302	2 913	...
Ferro-silicon	112	79	190	61	...
Other ferro-alloys	738	457	175	4 018	...
Blooms & billets	265 950	81 658	...	...	...
Scrap	1 530	645	1 067	670	...
Brazil					
Sponge & powder	4 226	29 339	2 061	1 789	3 182
Ferro-chrome	197	196	750	1 337	199
Other ferro-alloys	128	3 112	367	304	475
Ingots, blooms, billets	—	11	463 999	422 306	338
Scrap	30 506	103 997	490 596	145 919	86 587
Chile					
Scrap (g)	23 300*	20 800*	11 200*	5 200*	...
Colombia					
Ferro-chrome	261	298	554	...	...
Ferro-manganese	8 009	4 848	5 866	...	...
Ferro-silico-manganese	1 331	1 469	1 224	...	...
Ferro-silicon	1 732	1 943	2 209	...	...
Other ferro-alloys	379	532	613	...	...
Ingots, blooms, billets	18 748	5 370	11 620	14 407	...
Scrap	43 587	58 093	90 021	...	...
Ecuador					
Ingots, blooms, billets	109 655	156 568	140 386	121 167	...
Peru					
Ferro-chrome	402	470	480	454	167
Ferro-manganese	1 596	1 361	1 962	1 869	1 821
Ferro-silico-manganese	1 460	462	812	1 896	607
Ferro-silicon	705	753	880	402	565
Scrap	26 675	58 873	64 396	90 151	...
Suriname					
Ferro-alloys	9 020	6 051	3 024	5 907	...
Ingots, blooms, billets	2 907	1 956	2 212	1 793	...
Scrap	9 105	4 623	3 360	8 197	...
Uruguay					
Ferro-alloys	843	634	817	644	598
Ingots, blooms, billets	6 800	450	12 520	19 507	9 551
Venezuela					
Sponge & powder	20 868	33 685	53 871	128 066	...
Ferro-manganese	38 818	37 953	35 416	41 028	...
Ferro-silico-manganese	3	2 667	3	—	...
Other ferro-alloys	998	1 366	2 046	2 864	...
Ingots, blooms, billets	3 059	1 597	4 342	30 977	...
Scrap	362 944	495 936	539 226	277 273	...

## Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
Bahrain					
Blooms & billets	60 411	52 011	34 903	30 468	...
China					
Pig iron	(g)1 145 100*	(g)2 560 700*	(g)2 515 100*	1 472 680	869 911
Ferro-alloys (g)	18 900*	7 600*	1 200*	...	1 900*
Ingots, blooms, billets	658 159	1 979 454	1 612 340	364 781	151 137
Scrap	(g)273 300*	(g)497 400*	(g)649 500*	(g)431 600*	154 393
Cyprus					
Pig iron	356	1 740	1 519	502	...
Hong Kong					
Pig iron	5 635	4 471	3 768	6 961	7 892
Ferro-manganese	6 326	1 848	1 998	2 442	8 731
Ferro-silicon	1 067	1 690	4 677	34 911	96 300
Other ferro-alloys	1 547	1 670	3 220	7 770	13 433
Ingots, blooms, billets	147 722	128 827	173 778	127 032	189 684
Scrap	27 748	20 093	33 669	43 600	86 071
India (e)					
Pig iron	3 546	21 587	44 810	30 000	30 000*
Sponge & powder	...	41 535	67 654	...	...
Ferro-chrome & ferro-silico-chrome	9 172	11 390	4 600	...	...
Ferro-manganese & ferro-silico-manganese	811	962	267	...	...
Ferro-nickel	19 036	23 324	29 854	...	...
Ferro-silicon	129	300	7 342	...	...
Other ferro-alloys	1 043	1 432	1 298	...	...
Ingots, blooms, billets	...	120 298	360 857	...	...
Scrap	618 646	1 331 719	2 103 291	1 800 000	1 800 000*
Indonesia					
Pig iron	94 910	79 795	72 239	18 287	125 082
Sponge & powder	414	456	21 491	54 130	75 903
Ferro-manganese	20 727	13 465	15 696	13 647	6 760
Ferro-silico-manganese	(d)...	(d)...	5 248	6 493	9 754
Ferro-silicon	7 769	9 650	3 847	3 933	331
Other ferro-alloys	2 170	1 651	373	6 266	355
Ingots, blooms, billets	118 883	42 286	92 912	206 872	321 261
Scrap	243 121	190 903	475 559	461 513	584 708
Iran (f)					
Pig iron	173	6 229	9 754	525	...
Ferro-alloys	3 836	14 910	1 143	3 130	...
Ingots, blooms, billets	252 376	512 930	532 132	681 774	...
Israel					
Pig iron (g)	1 000*	800*	400*	100*	500*
Ferro-alloys (g)	1 400*	1 600*	1 000*	1 000*	700*
Ingots, blooms, billets (b)	126 081	50 101	68 920	81 899	...
Scrap (g)	2 100*	2 100*	4 800*	6 000*	1 400*
Japan					
Pig iron	777 318	604 462	920 870	1 301 780	2 823 811
Sponge & powder	44 869	142 151	46 091	137 217	39 395
Ferro-chrome	395 381	317 595	372 513	427 711	473 707
Ferro-silico-chrome	8 665	10 026	10 356	7 166	17 511
Ferro-manganese	14 102	5 878	7 125	27 425	27 383
Ferro-silico-manganese	114 082	121 600	176 821	150 740	158 410
Ferro-molybdenum	591	988	1 065	1 018	1 486
Ferro-nickel	44 754	46 155	38 700	29 935	48 664
Ferro-niobium	2 050	2 869	1 925	1 779	3 360
Ferro-silicon	338 646	306 830	350 069	387 454	539 846
Ferro-tungsten & ferro-silico-tungsten	268	100	160	368	488
Ferro-vanadium	566	457	366	186	595
Other ferro-alloys	8 870	7 413	9 485	10 201	25 076
Ingots, blooms, billets	232 911	353 195	335 399	437 507	559 218
Scrap	4 017 591	3 253 534	3 223 714	2 358 164	1 790 558
Jordan					
Pig iron	241	16 005	21 399	16 647	...
Ingots, blooms, billets	145 510	94 281	173 742	131 856	...
Scrap	2 551	2 073	1 810	3 797	...

## Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1984	1985	1986	1987	1988
Korea, Dem. P.R. of					
Ferro-manganese (g)	13 300*	7 500*	800*	6 700*	1 500*
Other ferro-alloys (g)	7 800*	8 600*	11 500*	18 200*	11 200*
Korea, Republic of					
Pig iron	203 169	99 452	386 108	672 919	2 780 749
Sponge & powder	3 090	19 282	4 083	5 837	7 510
Ferro-chrome	6 222	7 529	10 431	13 752	16 290
Ferro-manganese	4 084	1 818	1 124	4 409	3 743
Ferro-molybdenum	202	313	582	541	946
Ferro-nickel	820	780	725	364	946
Ferro-silicon	5 899	9 094	15 834	43 395	68 440
Ferro-vanadium	81	228	262	319	492
Other ferro-alloys	4 126	2 987	3 857	4 878	6 847
Ingots & blooms	99 779	75 812	393 137	927 978	631 587
Scrap	2 080 765	2 395 299	3 115 164	3 518 698	3 892 465
Malaysia					
Pig iron	5 701	3 128	1 313	2 976	...
Ferro-manganese	8 764	6 578	5 927	5 193	...
Ferro-silicon	3 389	2 408	4 088	2 345	...
Other ferro-alloys	1 133	1 312	4 282	5 416	...
Ingots, blooms, billets	550 324	350 369	46 575	129 454	...
Scrap	48 361	33 507	4 218	221 707	...
Pakistan (h)					
Pig iron	6 805	417	738	689	1 431
Ferro-manganese	4 927	4 616	6 896	9 650	16 611
Ferro-silicon	7 716	5 053	4 084	5 007	10 775
Other ferro-alloys	21 003	13 211	1 265	54 370	1 503
Ingots, blooms, billets	9 844	546	6 144	29 279	25 905
Scrap	136 908	92 524	168 286	255 039	659 009
Philippines					
Pig iron	90	—	21 989	69 810	73 395
Ferro-manganese	894	591	1 431	2 297	3 963
Ferro-silicon	3	14	108	554	159
Other ferro-alloys	449	53	184	563	1 544
Ingots, blooms, billets	280 712	219 868	281 008	466 537	552 892
Scrap	1 568	751	85 243	108 994	93 730
Qatar					
Scrap	6 954	1 372	8 060	9 973	...
Saudi Arabia					
Pig iron	103 153	98 862	17 998	7 927	1 850
Sponge & powder	342	231	369	—	...
Ferro-alloys	192	30 967	—	153	155
Ingots, blooms, billets	20 463	51 895	28 732	6 180	15 558
Scrap	552	637	1 052	36 263	540 553
Singapore					
Pig iron	7 559	41 503	53 909	72 285	115 846
Sponge & powder	547	3 981	4 781	467	2 117
Ferro-manganese	1 101	6 186	3 183	1 960	1 184
Ferro-silicon	1 319	1 940	2 718	3 958	4 347
Other ferro-alloys	8 334	1 542	4 898	5 627	9 890
Ingots & blooms	113 806	161 503	240 236	169 840	172 602
Scrap	78 646	65 402	209 091	126 698	182 054
Sri Lanka					
Ingots, blooms, billets	6 397	8 049	20 291	41 888	32 358
Syria					
Pig iron	5 797	3 826	3 601	1 731	...
Ingots, blooms, billets	72 604	39 340	60 660	14 425	...
Scrap	1 778	35 658	18 369	23 502	...
Taiwan					
Pig iron	211 151	170 484	303 244	629 122	738 696
Sponge & powder	2 932	3 613	10 636	8 278	9 028
Ferro-chrome	9 261	10 186	29 886	15 904	51 194
Ferro-manganese	975	3 593	8 936	18 865	23 895
Ferro-silicon	3 096	1 768	11 894	19 406	33 591
Other ferro-alloys	2 435	612	824	887	1 454
Ingots, blooms, billets	238 682	233 934	454 773	966 982	2 130 564
Scrap	577 658	694 665	1 225 472	943 592	1 255 740

**Imports of Iron, Steel and Ferro-alloys**

tonnes

Country	1984	1985	1986	1987	1988
<b>Thailand</b>					
Pig iron	13 641	11 707	6 971	38 655	92 954
Sponge & powder	1 658	6 153	9 046	4 567	18 242
Ferro-manganese	3 386	4 015	2 980	3 586	6 769
Ferro-silico-manganese	1 186	1 644	2 265	1 321	1 277
Ferro-silicon	3 606	3 967	3 525	4 870	7 609
Other ferro-alloys	1 682	1 516	712	558	922
Ingots, blooms, billets	14 581	43 760	55	47 247	160 568
Scrap	494 354	657 950	555 114	903 323	1 158 249
<b>Australia</b>					
Ferro-chrome	15 000	12 930	16 387	11 734	7 706
Ferro-manganese (c)	2 989	6 060	6 734	3 925	4 906
Ferro-silico-manganese	774	940	392	656	433
Ferro-molybdenum	168	132	108	271	293
Ferro-nickel	864	1 129	945	1 085	381
Ferro-silicon	9 461	13 890	11 469	12 897	9 095
Other ferro-alloys (c)	1 282	1 600	1 480	1 655	1 936
Ingots & billets	5 934	25 821	24 729	122 794	132 649
Scrap (h)	226	618	...	...	...
<b>Fiji</b>					
Ingots, blooms, billets	12 909	9 227	10 813	...	...
<b>New Zealand (h)</b>					
Pig iron	259	308	577	117	...
Ferro-manganese	665	248	434	1 260	...
Other ferro-alloys	2 475	3 877	3 617	3 278	...
Ingots, blooms, billets	4 312	3 743	558	44	...
Scrap	2 391	3 147	5 120	3 366	...

**Notes**

- (1) In this table the term 'ingots, blooms, billets' corresponds to items 672.4,6,7 and 8 of the Standard International Trade Classification (Revision 3) which includes those of alloy and high carbon steel
- (a) Excluding ships intended for breaking up
- (b) Figures may be incomplete as value only given in Israeli trade return for imports from some countries
- (c) Including powder
- (d) Included with 'other ferro-alloys'
- (e) Years ended 31 March following that stated
- (f) Years ended 20 March following that stated
- (g) BGS estimates, based on known exports from certain countries
- (h) Years ended 30 June of that stated
- (i) Exports from the Soviet Union

## Production of Kaolin

Country	1984	1985	1986	1987	1988
United Kingdom (a)	2 809 882	2 870 034	2 912 607	3 058 821	3 276 795
Belgium	69 000	37 000	40 000	38 000	45 000
Denmark	14 000*	15 000*	10 404	9 304	39 554
France	306 600	313 300	356 000	309 000	337 000
Germany, Federal Republic of (g)	370 000	342 000	477 000	553 000	612 000
Greece	92 407	89 833	141 210	144 634	145 000*
Italy	52 604	59 856	35 132	57 074	70 585
Portugal	104 388	80 097	70 567	116 687	92 003
Spain (c)	319 273	413 719	573 666	450 968	...
Austria	91 669	93 889	97 136	91 537	89 491
Bulgaria	256 000	257 000	265 000	281 000	...
Czechoslovakia (h)	540 000	548 000	546 000	581 000	579 000
Finland	3 837	4 060	4 017	4 754	5 494
German Democratic Republic	175 000*	175 000*	165 000*	150 000*	...
Hungary (c)	47 172	35 523	35 869	38 468	34 901
Poland	52 900	55 200	55 500	60 300	69 500
Romania	410 000*	410 000*	410 000*	400 000*	...
Soviet Union	2 800 000*	2 900 000*	3 000 000*	3 000 000*	3 000 000*
Turkey	60 882	69 870	91 893	126 119	216 245
Yugoslavia	201 782	243 826	214 561	218 851	218 673
Algeria	15 500	13 100	14 200	16 000	17 800
Burundi	1 990	4 360	5 113	5 290	...
Egypt (d)	141 000	108 000	127 800	125 256	...
Ethiopia	9 000*	9 000*	9 000*	5 500*	...
Kenya	295	1 851	560	40	42
Madagascar	5	2 500*	2 500*	1 427	365
Nigeria	114	—	169	187	55
South Africa	136 160	128 899	126 129	151 730	175 033
Tanzania	1 700	1 636	2 270	1 446	...
Zimbabwe	1 350	1 104	901	780	95
Mexico	130 296	282 337	276 427	151 104	213 766
USA (e)	7 214 541	7 069 984	7 755 961	8 007 911	8 973 088
Argentina	90 545	73 802	117 378	100 128	56 130
Brazil (b)	596 688	655 205	706 017	742 825	850 000*
Chile	48 608	48 537	42 170	44 533	54 129
Colombia (j)	281 500	312 350	346 580	366 300	391 940
Ecuador	2 634	7 271	3 036	11 017	...
Paraguay	50 000	60 000	60 000	72 000	76 000
Peru	1 000*	210	6 328	233	200*
Venezuela	12 540	18 660	15 000	20 000*	20 000*
Bangladesh (d)	2 613	4 178	2 695	12 272	...
China	500 000*	500 000*	500 000*	500 000*	500 000*
Hong Kong	70	9 602	850	—	—
India (i)	101 166	118 227	100 647	93 720	85 000*
Indonesia	83 414	106 869	132 240	122 046	139 799
Iran	100 000*	100 000*	100 000*	100 000*	100 000*
Israel	27 000*	27 000*	27 000*	27 000*	27 000*
Japan	153 551	145 870	131 563	112 477	120 389
Jordan	26 453	15 848	15 697	11 336	23 452
Korea, Republic of	671 000	612 000	791 000	547 000	774 000
Malaysia	72 472	82 576	85 052	96 882	116 869
Pakistan	10 383	6 644	37 056	32 208	40 422
Philippines	8 618	10 843	16 784	...	...
Sri Lanka	7 390	6 346	6 260	6 769	7 097
Taiwan	79 411	76 605	63 228	67 525	81 879
Thailand	58 616	106 704	132 155	206 568	269 976

**Production of Kaolin**

tonnes

Country	1984	1985	1986	1987	1988
Australia (c) (f)	218 885	165 827	185 617	176 958	159 067
New Zealand	25 098	24 471	28 464	25 548	29 649
World total	19 700 000	19 900 000	21 500 000	21 700 000	23 600 000

**Notes**

(1) In addition to the countries listed, Lebanon and Vietnam are also believed to produce kaolin

(a) Sales

(b) Including beneficiated and directly shipped material

(c) Including beneficiated material

(d) Years ended 30 June of that stated

(e) Sold or used by producers

(f) White clays; including kaolin and ball clay

(g) Washed and dried

(h) Beneficiated

(i) Beneficiated; excludes directly used natural kaolin

(j) Crude

## Exports of Kaolin

Kaolin  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	2 559 668	2 574 959	2 523 713	2 600 398	2 902 034
Belgium-Luxembourg	31 728	38 642	37 002	41 019	77 279
Denmark	686	602	688	648	598
France	147 872	136 225	172 114	168 310	248 250
Germany, Federal Republic of	91 955	104 303	117 216	134 928	191 559
Greece	18 576	15 341	27 585	27 749	22 855
Italy	33 918	50 304	23 117	29 833	...
Netherlands	106 473	119 020	132 208	143 393	140 380
Portugal	517	906	1 140	2 594	...
Spain	108 994	109 218	127 840	160 924	...
Austria	49 853	45 193	52 029	48 860	48 568
Bulgaria	29 648	44 782	60 975	...	...
Czechoslovakia	389 000	386 000	383 000	391 000	414 000
German Democratic Republic	147 848	148 704	137 876	126 578	136 668
Hungary	6 603	8 098	7 443	6 904	6 888
Soviet Union (a)	43 800*	46 600*	31 200*	31 200*	30 000*
Sweden	5 505	4 466	1 558	2 807	1 706
Turkey	16 901	17 796	11 895	25 726	...
South Africa	638	1 297	1 566	682	193
Mexico	2 117	2 527	2 012	88	...
USA	1 286 750	1 251 539	1 436 563	1 838 498	2 143 157
Brazil	195 830	196 402	207 848	213 756	315 003
China (a)	58 800*	50 800*	78 700*	190 200*	286 900*
Hong Kong	10 275	10 655	73 866	176 647	263 611
of which: Re-exports	9 670	9 453	72 366	170 796	251 611
India (b)	5 306	8 329	5 705	...	...
Indonesia	10 920	34 908	44 807	76 405	82 682
Japan	4 476	2 824	9 318	6 151	7 061
Jordan	7 126	—	—	—	...
Korea, Republic of	67 702	60 331	55 819	49 296	48 180
Malaysia	38 132	36 756	46 913	47 905	51 625
Thailand	36	1 103	3 601	4 718	7 218

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

## Imports of Kaolin

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	4 187	4 202	4 678	7 654	8 265
Belgium-Luxembourg	275 863	297 481	310 426	369 848	489 747
Denmark	38 169	36 182	29 749	28 311	24 776
France	360 501	310 456	309 698	340 115	373 609
Germany, Federal Republic of	910 816	871 793	893 504	919 567	1 000 505
Greece	43 762	41 181	52 864	52 196	14 062
Italy	603 297	635 996	617 589	684 532	...
Netherlands	453 660	454 237	460 099	471 362	465 546
Portugal	8 249	8 976	15 728	17 261	...
Spain	187 548	188 449	177 728	195 495	...
Austria	102 598	95 401	86 699	99 744	140 888
Bulgaria (c)	1 300*	9 400*	4 000*	3 300*	2 900*
Czechoslovakia (c)	7 300*	8 100*	7 700*	7 300*	6 300*
Finland	518 724	571 391	627 611	792 504	950 300
German Democratic Republic	3 100	1 400	5 000	4 600	4 400
Hungary	60 843	59 451	63 278	59 564	60 158
Norway	75 477	79 528	75 743	76 492	88 665
Poland	123 782	145 961	160 181	159 001	160 137
Romania (c)	25 500*	25 600*	33 000*	25 000*	24 100*
Sweden	403 377	419 400	386 682	442 104	441 212
Turkey	5 922	7 401	5 442	10 031	...
Yugoslavia	83 307	83 136	93 096	91 789	83 307
Algeria (d)	13 445	15 961	4 722	5 014	...
Ivory Coast	114	139	121	...	111
Morocco	9 908	7 853	8 032	5 456	7 757
Tunisia	7 975	8 974	14 007	34 539	26 291
Zimbabwe (e)	...	2 896	2 748	1 413	...
Canada	253 076	271 468	333 272	417 405	389 724
Mexico	84 162	95 989	93 126	91 832	...
USA	9 669	8 515	9 374	9 548	7 601
Argentina	24 731	15 449	24 448	...	...
Brazil	1 369	1 281	841	862	844
Colombia	9 197	9 339	6 036	...	...
Ecuador	2 544	2 643	4 925	3 149	...
Peru	3 374	2 184	2 135	2 237	3 094
Uruguay	2 848	2 539	2 792	5 009	4 934
Venezuela	21 938	21 017	16 770	29 958	...
Bangladesh (b)	7 269	5 158	5 398	5 880	...
Hong Kong	42 503	38 827	82 336	197 422	265 948
Indonesia	29 956	22 207	19 460	27 597	35 301
Iran (a)	14 666	14 484	11 720	8 671	...
Israel (c)	30 900*	14 200*	12 700*	13 500*	8 900*
Japan	684 405	706 745	678 359	763 079	970 491
Korea, Republic of	36 032	41 979	53 079	103 665	107 370
Malaysia	4 168	2 666	1 233	2 004	...
Pakistan (b)	5 136	4 569	5 712	7 102	8 293
Philippines	6 115	7 401	8 687	15 024	22 913
Saudi Arabia	4 570	3 094	2 122	2 364	3 398
Taiwan	82 337	80 129	120 134	156 723	149 557
Thailand	2 668	4 320	19 429	14 400	26 666
Australia	7 310	2 437	4 461	12 270	12 487
New Zealand (b)	210	5 659	6 675	6 543	...

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

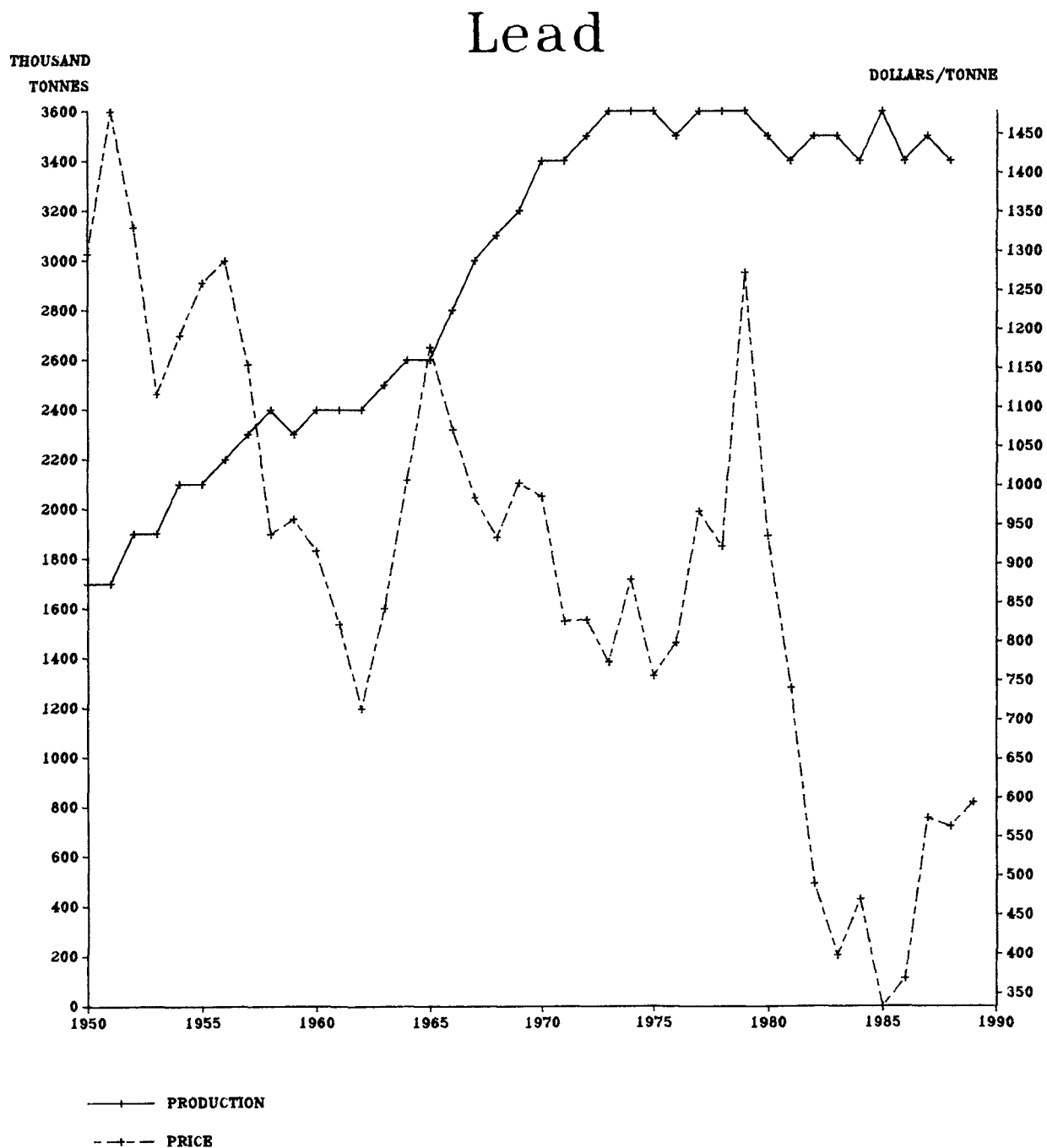
(c) BGS estimates, based on known exports from certain countries

(d) Including bentonite

(e) Including fuller's earth







**Figure 11** World mine production of lead compared with the yearly average domestic producer price of pig on the New York Market expressed in constant 1980 US dollars.  
*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

# Mine Production of Lead

Lead  
tonnes (metal content)

Country	1984	1985	1986	1987	1988
United Kingdom	2 431	3 994	648	691	1 185
France	2 647	2 488	2 478	2 199	2 000
Germany, Federal Republic of (a)	21 000	20 500	16 700	24 500	17 900
Greece	22 154	19 752	20 873	20 600	25 900
Irish Republic	37 200	34 600	36 400	33 800	32 500
Italy	21 500	15 622	11 119	12 202	16 503
Spain	96 726	85 636	82 057	81 629	74 900
Austria	5 574	7 500	5 699	6 437	3 315
Bulgaria	95 000	97 000	97 000	95 000	90 000
Czechoslovakia	3 100	2 718	2 944	2 849	2 814
Finland	2 478	2 422	1 980	2 401	1 924
Greenland	17 800	17 800	17 000	21 000	23 000
Hungary	587	575	174	—	—
Norway	3 967	3 597	3 366	3 071	2 787
Poland	52 800	51 300	42 500	48 800	49 500
Romania	30 000*	34 300*	36 300*	30 200*	32 800*
Soviet Union	570 000*	580 000*	520 000*	510 000*	520 000*
Sweden	87 297	82 421	95 652	90 400	85 300
Turkey	15 786	9 790	9 626	9 094	10 100
Yugoslavia	113 648	115 115	116 944	106 670	103 286
Algeria	3 600	3 800	3 500	3 500	3 600
Congo	2 500	2 500	1 000	—	—
Morocco	100 558	107 072	77 152	75 185	70 100
Namibia	42 600	48 600	37 100	29 500	18 900
Nigeria	200*	260*	100*	100*	—
South Africa	94 764	98 424	97 778	93 642	90 233
Tunisia	4 100	2 500	1 900	2 100	2 200
Zambia	20 310	15 062	15 375	12 380	12 356
Canada	311 391	307 400	349 281	413 685	366 564
Honduras	21 054	21 635	6 454	3 728	11 195
Mexico	183 314	206 732	182 672	177 161	171 337
USA	334 500	424 200	353 100	318 700	393 700
Argentina	28 542	28 582	26 868	26 069	28 717
Bolivia	7 448	6 242	3 121	9 118	12 544
Brazil	18 775	16 997	13 614	11 633	14 314
Chile	4 284	2 473	1 501	829	1 359
Peru (a)	198 400	200 600	194 378	203 950	149 037
China	210 000*	220 000*	226 800	267 200	311 600
India	18 600	26 000	25 000	29 000	23 300
Iran (b)	19 900	21 600	20 000	20 000	18 000
Japan	48 110	49 716	34 998	28 024	22 090
Korea, Dem. P.R. of	90 000*	80 000*	85 000*	90 000*	90 000*
Korea, Republic of	10 837	9 698	11 863	13 998	14 500
Myanmar	8 300	7 623	6 600	4 600	6 000
Thailand	24 306	28 672	38 369	34 286	30 000
Australia	440 620	497 954	447 673	489 150	462 170
World total	3 400 000	3 600 000	3 400 000	3 500 000	3 400 000

(a) Recoverable

(b) Years ended 20 March following that stated

Lead

**Production of Refined Lead**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	338 374	327 197	328 630	346 954	373 845
Belgium (a)	127 711	114 293	98 313	108 030	126 561
Denmark (b)	13 128	4 503	500*	445	400
France	205 701	223 637	230 403	245 924	255 700
Germany, Federal Republic of	357 200	356 400	366 600	340 400	345 100
Greece	11 600	13 700	19 300	2 700	15 100
Irish Republic	9 000	10 000	10 000	10 000	11 700
Italy	146 458	140 055	132 374	168 300	168 400
Netherlands	33 600	37 300	35 700	40 300	39 500
Portugal	6 000	7 000	6 000	7 000	7 000
Spain	147 600	156 100	124 900	122 700	110 800
Austria	20 066	19 696	18 807	22 841	25 047
Bulgaria	114 000*	116 000*	113 700*	117 000*	113 000*
Czechoslovakia	21 134	21 437	23 602	26 008	26 045
Finland	2 074	224	150	—	—
German Democratic Republic	44 700*	44 500*	44 500*	49 100*	55 000*
Poland	83 400	87 300	88 300	89 800	90 700
Romania	45 917	48 636	51 513	43 186	44 000
Soviet Union	800 000*	810 000*	790 000*	775 000*	795 000*
Sweden	65 636	56 975	87 604	92 858	85 400
Switzerland	2 000	2 000	2 500	2 500	1 500
Turkey	9 000	10 000	9 600	10 000	11 000
Yugoslavia	82 815	99 954	113 154	112 417	109 888
Algeria	5 000	4 000	4 000	4 000	4 000
Morocco	48 300	63 500	55 300	64 900	71 000
Namibia	28 930	38 511	40 047	40 634	44 447
Nigeria	600	800	600	300	500
South Africa	24 000	34 100	29 700	34 500	36 200
Tunisia	8 399	2 043	2 349	1 622	—
Zambia	3 300	8 873	6 648	7 979	6 385
Canada	254 380	240 011	257 680	230 661	268 076
Jamaica	2 000*	600*	800*	500*	1 000*
Mexico	193 200	223 500	208 900	208 800	205 000*
Trinidad & Tobago	1 200*	1 500*	1 400*	1 000*	—
USA (c)	965 100	1 053 600	931 800	1 027 900	1 037 000
Argentina	28 000	28 663	30 657	32 173	28 900
Brazil (d)	71 621	81 575	84 691	88 203	98 182
Colombia	3 400*	3 700*	4 000*	4 500*	5 000*
Peru	71 200	83 300	67 400	70 792	53 601
Venezuela	17 000	20 000	19 000	18 500	13 100
China	200 000*	215 000*	239 600	246 400	241 400
India	22 697	22 185	26 831	30 466	32 000
Indonesia	4 000*	7 000*	6 000*	7 000*	7 000*
Iran	7 500	7 500	8 000	10 000	10 000*
Japan	362 948	367 000	361 452	338 500	340 000
Korea, Dem. P.R. of	65 000*	65 000*	65 000*	70 000*	70 000*
Korea, Republic of	20 304	22 394	22 890	82 500	90 000
Malaysia	9 000	10 000	12 000	9 000	15 000
Myanmar	6 995	9 400	5 300	3 900	4 300
Philippines	4 000	7 000	7 000	7 000	7 000*
Taiwan	44 300	48 700	53 500	66 400	67 300
Thailand	6 198	7 536	9 122	11 366	15 600
Australia	220 347	215 747	171 039	216 660	179 864
New Zealand	6 000	6 000	4 000	4 000	5 000
World total	5 400 000	5 600 000	5 400 000	5 700 000	5 800 000

## Notes

(1) Figures relate to both primary and secondary refined lead and include the lead content of antimonial lead. Metal recovered from secondary materials by remelting alone is excluded

(a) Including alloys

(b) Sales

(c) Excluding Pb content of primary antimonial lead

(d) Including direct use scrap

## Exports of Lead

Lead  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	2 644	3 728	3 189	1 658	1 290
Unwrought	116 686	93 478	89 494	87 348	93 038
Unwrought alloys	26 395	29 695	30 204	25 322	17 912
Scrap	34 383	30 800	14 783	21 394	17 177
Belgium-Luxembourg					
Unwrought	69 709	52 726	47 823	54 935	55 869
Unwrought alloys	14 993	17 847	10 236	9 633	5 662
Scrap	7 427	8 555	7 445	23 362	19 025
Denmark					
Ore	200	—	—	250	—
Unwrought	600	330	2 444	174	131
Unwrought alloys	10 231	3 713	852	174	1 175
Scrap	14 206	14 520	14 362	13 275	14 068
France					
Unwrought	35 781	39 559	34 821	53 054	51 759
Unwrought alloys	18 055	20 207	23 017	27 865	24 115
Scrap	17 973	12 630	7 105	8 330	5 455
Germany, Federal Republic of					
Ore	3	9 991	9 822	10 770	4 729
Unwrought	66 093	70 802	65 938	53 555	64 406
Unwrought alloys	40 467	36 190	33 062	34 238	31 422
Scrap	15 756	14 558	11 496	11 604	9 725
Greece					
Ore	33 706	23 000	38 800	33 100	—
Unwrought (a)	2 000	2 168	3 442	3 064	1 000
Irish Republic					
Ores & concentrates	61 114	62 622	60 400	56 218	49 516
Unwrought (a)	294	132	14	83	353
Scrap	5 107	4 085	2 062	3 761	3 651
Italy					
Ore	30 906	24 907	14 498	16 512	15 765
Unwrought	4 397	5 036	2 754	16 047	38 983
Unwrought alloys	4 409	6 749	7 700	4 448	2 358
Scrap	320	1 255	96	153	700
Netherlands					
Unwrought	2 547	7 062	8 660	12 160	5 835
Unwrought alloys	12 826	12 989	11 710	10 462	10 278
Scrap	30 024	20 213	17 203	16 173	20 917
Portugal					
Ore	1 048	1 090	1 029	1 065	...
Spain					
Ore	42 322	40 769	42 215	65 913	67 586
Unwrought (a)	61 486	56 014	22 500	18 250	14 315
Scrap	5 026	14	121	3 976	824
Austria					
Unwrought	467	988	1 126	1 935	7 272
Scrap	93	49	4 565	4 227	1 601
Bulgaria					
Unwrought (a) (f)	1 600*	2 400*	6 000*	6 700*	7 400*
Czechoslovakia					
Ores & concentrates (f)	5 800*	5 900*	6 100*	5 600*	5 800*
Finland					
Ore	7 494	6 105	3 927	4 850	4 277
Unwrought (a)	25	83	228	660	184
Scrap	262	1 044	1 415	6 709	9 751
Greenland					
Ores & concentrates	29 376	26 313	26 955	27 925	...
Hungary					
Scrap	2 614	3 017	1 860	1 813	1 837
Norway					
Ore	6 732	6 686	7 180	6 026	4 378
Scrap	8 159	6 475	7 171	8 308	9 080

## Lead

## Exports of Lead

tonnes

Country	1984	1985	1986	1987	1988
Soviet Union					
Unwrought (a) (f)	23 000*	25 200*	25 800*	18 200*	11 800*
Sweden					
Ore	47 895	42 962	58 060	56 820	60 980
Unwrought	55 450	50 590	50 648	52 213	57 117
Unwrought alloys	7 956	14 215	15 140	14 072	12 415
Scrap	458	165	573	2 217	3 379
Switzerland					
Unwrought	6 815	4 983	2 088	2 855	(a)3 484
Scrap	10 077	10 391	16 008	11 232	14 799
Turkey					
Ore (e)	76	—	—	1 954	...
Yugoslavia					
Concentrates	5 925	5 764	734	727	1 140
Unwrought	14 698	15 071	11 886	15 497	(a)11 102
Unwrought alloys	1 599	2 031	466	2 787	...
Algeria					
Ore	6 777	4 746	3 153	3 471	...
Ivory Coast					
Scrap	1 006	702	1 014	...	145
Morocco					
Ore	85 272	60 366	35 243	30 556	43 487
Unwrought	46 107	55 893	55 679	63 410	62 528
Namibia					
Unwrought	28 930	38 511	40 047	40 634	44 447
South Africa					
Concentrates (b)	81 377	102 790	102 637	90 790	91 470
Unwrought (f)	10 600*	7 200*	16 800*	18 900*	13 700*
Scrap (f)	1 400*	1 400*	2 300*	1 500*	1 200*
Tunisia					
Ore	4 500	3 300	3 000	2 000	5 000
Unwrought	5 949	1	—	60	240
Scrap	621	99	2 923	1 592	407
Zambia					
Unwrought	9 201	5 546	1 623	...	...
Canada					
Ore (b)	114 721	93 658	118 375	207 938	169 494
Unwrought	124 528	114 007	111 852	100 206	199 588
Scrap	5 959	11 393	25 565	21 971	9 214
Honduras					
Ores & concentrates (b)	13 772	15 580	16 498	6 131	...
Mexico					
Ores & concentrates	10 980	9 872	5 618	15 770	12 567
Unwrought	93 496	107 003	108 736	86 602	105 045
Scrap	3 617	2 122	1 907	3 099	...
USA					
Ores & concentrates (b)	11 858	9 987	4 380	106 596	143 007
Unwrought	3 745	23 468	8 874	3 425	6 419
Unwrought alloys	1 232	1 931	2 342	1 041	1 137
Scrap	45 097	59 950	65 031	52 944	81 888
Argentina					
Ores & concentrates	15 540	19 854	17 079	19 727	...
Bolivia					
Ore	6 124	5 300*	26 720	14 312	18 500*
Chile					
Ores & concentrates	8 925	2 266	2 111	137	...
Peru					
Ores & concentrates	274 137	221 090	201 657	253 224	179 574
Unwrought (a)	55 075	61 217	48 848	42 804	31 749

## Exports of Lead

Lead  
tonnes

Country	1984	1985	1986	1987	1988
Dubai					
Scrap	2 780	3 037	5 924	...	...
Hong Kong					
Unwrought	729	344	436	11 561	5 691
of which: Re-exports	714	344	429	11 537	5 627
Scrap	3 097	1 883	2 502	3 523	3 266
Iran (c)					
Ore	14 823	50 700	23 100	30 000	...
Japan					
Ores & concentrates	14 172	5 343	—	—	—
Unwrought (a)	17 454	25 131	25 379	17 113	1 286
Scrap	548	3 974	2 893	18 201	23 998
Korea, Dem. P.R. of					
Unwrought (a) (f)	16 300*	13 100*	15 500*	13 900*	11 500*
Korea, Republic of					
Ore	3 000	1 700	—	4 606	—
Unwrought (a)	2	251	9 186	8 713	3 504
Myanmar (d)					
Unwrought	9 011	1 780	6 304	4 571	...
Saudi Arabia					
Scrap	1 848	735	1 653	5 346	17 638
Singapore					
Unwrought (a)	1 472	673	5 584	8 608	23 072
of which: Re-exports	1 154	527	5 443	8 216	22 113
Scrap	3 597	7 057	5 103	9 690	8 131
of which: Re-exports	—	2 530	961	921	519
Taiwan					
Unwrought (a)	15 925	20 602	23 473	16 030	30 880
Thailand					
Ore	42 004	46 788	54 110	51 247	59 665
Australia					
Ores & concentrates	150 687	180 986	217 787	125 863	181 000
Unwrought					
Base bullion (b)	199 119	175 263	184 920	178 300	191 112
Refined (a)	150 441	156 733	111 929	133 150	159 387
Scrap	9 112	19 101	26 070	36 371	33 658

### Notes

(1) In this table the term 'unwrought' lead corresponds to item 685.1 of the Standard International Trade Classification (Revision 3) and comprises base bullion, pigs, unwrought bars, etc.

- (a) Including alloys
- (b) Pb content
- (c) Years ended 20 March following that stated
- (d) Years ended 31 March following that stated
- (e) Complex lead-zinc ore
- (f) BGS estimates, based on known imports into certain countries

## Imports of Lead

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	50 000*	40 000*	52 000*	41 000*	39 222
Unwrought	173 092	182 476	181 203	183 831	210 321
Unwrought alloys	2 581	2 799	1 830	2 804	5 466
Scrap	1 482	2 047	3 819	10 456	8 837
Belgium-Luxembourg					
Ore	67 774	114 697	76 144	107 072	114 018
Unwrought	50 579	39 195	49 740	30 810	24 451
Unwrought alloys	7 372	10 195	11 639	10 315	12 109
Scrap	15 053	11 626	6 218	10 317	12 357
Denmark					
Unwrought	9 337	246	8 502	9 329	4 574
Unwrought alloys	6 732	20 222	11 024	6 080	4 054
Scrap	5 872	994	339	323	152
France					
Ore	158 366	190 536	182 378	183 927	190 104
Unwrought	41 588	28 098	27 830	32 412	34 823
Unwrought alloys	13 661	13 009	9 245	10 148	12 080
Scrap	4 870	9 279	14 644	20 640	21 443
Germany, Federal Republic of					
Ore	206 723	236 490	194 054	226 010	235 442
Unwrought	130 402	118 711	121 939	79 908	87 138
Unwrought alloys	14 281	16 428	25 727	27 855	25 476
Scrap	69 865	45 905	50 542	44 995	30 397
Greece					
Ore	8 531	9 783	9 009	12 501	—
Unwrought (a)	13 879	9 752	1 937	4 859	6 844
Irish Republic					
Unwrought (a)	2 204	257	1 251	1 297	1 030
Scrap	4 700	4 787	7 359	8 473	10 141
Italy					
Ore	11 329	12 019	30 945	70 867	96 713
Unwrought	105 455	97 924	122 387	93 310	102 476
Unwrought alloys	19 289	17 071	18 424	16 310	14 229
Scrap	14 188	12 763	18 122	18 507	16 168
Netherlands					
Unwrought	23 060	26 500	28 733	26 918	27 650
Unwrought alloys	9 140	9 009	8 177	9 104	7 034
Scrap	22 045	24 593	19 257	14 021	19 317
Portugal					
Unwrought (a)	21 175	20 112	21 609	23 773	24 200
Scrap	3	14 770	6 235	53	...
Spain					
Ore	88 050	66 862	50 319	40 866	57 867
Unwrought (a)	4 936	3 661	8 900	13 370	10 125
Scrap	226	768	40	698	6 865
Austria					
Ore	7 730	3 987	4 124	1 152	6 884
Unwrought	39 271	37 501	38 516	31 476	36 714
Scrap	4 332	6 745	6 333	3 787	3 023
Bulgaria					
Ore (f)	2 100*	2 000*	6 000*	12 000*	13 200*
Czechoslovakia					
Unwrought (a)	27 000	25 000	25 000	23 000	20 000
Finland					
Unwrought	12 137	15 953	10 742	12 926	7 869
Unwrought alloys	2 803	3 625	5 030	5 029	4 221
German Democratic Republic					
Unwrought (a) (f)	4 100*	6 900*	11 500*	10 900*	17 300*
Scrap (f)	4 900*	7 600*	1 700*	9 700*	5 500*
Hungary					
Unwrought & semi-manufactures	9 343	7 454	6 729	5 225	9 267
Norway					
Unwrought	8 156	6 965	7 658	6 317	6 865
Unwrought alloys	5 994	6 825	6 573	7 151	3 300
Poland					
Unwrought	6 133	6 195	3 041	2 838	—



## Imports of Lead

Lead  
tonnes

Country	1984	1985	1986	1987	1988
Soviet Union					
Ore (f)	38 000*	41 800*	43 600*	25 400*	17 200*
Unwrought (a) (f)	58 200*	62 100*	5 600*	12 600*	13 400*
Sweden					
Ore	21 524	8 264	—	—	3 312
Unwrought	457	2 021	1 479	594	2 227
Unwrought alloys	2 877	2 790	2 346	3 197	658
Scrap	10 393	20 651	16 378	18 551	23 244
Switzerland					
Unwrought	8 167	10 681	10 186	8 075	(a)9 803
Turkey					
Unwrought (a)	10 179	16 480	12 862	13 629	17 789
Yugoslavia					
Concentrates	573	416	2 887	—	20 007
Unwrought (a)	11 614	9 518	13 439	7 752	8 578
Scrap	—	960	1 859	1 112	509
Algeria					
Unwrought	3 959	7 993	14 265	11 430	...
Unwrought alloys	2 103	2 390	2 761	4 784	...
Egypt					
Unwrought & scrap	12 358	16 934	8 085	16 368	...
Kenya					
Unwrought (a)	229	246	56	98	...
Madagascar					
Unwrought (a)	233	259	115	208	...
Mozambique					
Unwrought	133	281	1	394	...
Nigeria					
Unwrought (a)	35	1 542	317	1 283	...
South Africa					
Ore	7 277	15 567	14 867	15 110	...
Unwrought	9 912	3 877	1 200	1 378	...
Scrap	791	126	300	296	...
Tunisia					
Ore	6 319	—	—	—	—
Unwrought	—	1 501	2 709	3 038	3 713
Canada					
Ores & concentrates	21 564	...	...	...	15 718
Unwrought	6 312	5 676	4 244	12 559	14 690
Scrap	48 137	44 308	61 530	74 152	36 741
Mexico					
Unwrought & scrap	1 250	839	1 331	2 344	...
USA					
Ores & concentrates (b)	68 800	42 665	86 747	229 858	235 034
Unwrought					
Base bullion	45	799	161	10 905	6 586
Other	148 411	121 049	123 919	174 430	132 073
Alloys	14 871	13 752	17 575	14 457	16 268
Scrap	2 873	1 850	2 269	6 088	6 938
Brazil					
Ore	10 724	27 447	30 120	38 095	25 047
Unwrought (a)	652	2 141	3 410	15 580	2 642
Scrap	6 543	12 888	16 308	25 192	31 135
Colombia					
Unwrought (a)	618	790	1 424	1 400	...
Uruguay					
Unwrought	1 169	1 068	1 312	1 926	1 848
Venezuela					
Unwrought (a)	7 394	7 889	8 790	9 018	...
Scrap	1 243	3 740	3 164	5 756	...

**Imports of Lead**

tonnes

Country	1984	1985	1986	1987	1988
China					
Unwrought (a)	(f)6 400*	(f)1 700*	(f)6 200*	(f)4 000*	4 577
Hong Kong					
Unwrought (a)	1 893	2 321	5 072	12 006	7 781
Scrap	287	458	681	524	1 461
India (c)					
Unwrought	(a)38 706	33 232	39 946	...	...
Unwrought alloys	...	8 255	9 261	...	...
Scrap	4 196	6 542	3 170	...	...
Indonesia					
Unwrought	8 958	7 670	7 853	8 620	...
Unwrought alloys	5 452	5 500	7 291	6 888	...
Iran (d)					
Unwrought	6 603	11 944	5 017	11 330	...
Israel (g)					
Unwrought	1 753	2 990	2 108	3 340	...
Japan					
Ore	249 226	261 795	273 829	294 728	279 537
Unwrought	97 982	74 561	46 966	39 398	51 991
Unwrought alloys	10 466	13 279	23 380	10 006	23 783
Scrap	450	185	83	65	17
Jordan					
Unwrought & scrap	332	314	130	—	...
Korea, Republic of					
Unwrought	22 900	37 109	38 917	37 649	84 395
Unwrought alloys	8 566	26 694	16 115	10 030	2 786
Scrap	6 534	20 162	39 382	45 891	53 902
Malaysia					
Unwrought (a)	13 505	12 291	11 659	13 552	...
Scrap	792	4 666	1 053	1 755	...
Pakistan (e)					
Unwrought (a)	2 284	2 276	1 942	3 935	3 525
Philippines					
Unwrought (a)	2 756	2 984	4 532	8 739	4 723
Scrap	—	3 600	4 307	9 069	12 394
Singapore					
Unwrought (a)	6 349	5 457	9 674	16 206	26 405
Syria					
Unwrought & scrap	1 204	2 439	1 454	1 176	...
Taiwan					
Unwrought (a)	12 170	12 272	16 154	20 947	18 925
Scrap	56 773	54 839	89 536	79 653	80 956
Thailand					
Unwrought	11 655	8 917	8 276	12 643	12 037
Unwrought alloys	777	386	1 376	811	939
Scrap	1 589	0	1 095	3 686	11 790
Australia					
Ores & concentrates	...	8 000	11 297	20 111	59 050
New Zealand (e)					
Unwrought (a)	5 220	5 408	4 346	4 144	...

**Notes**

(1) In this table the term 'unwrought' lead corresponds to item 685.1 of the Standard International Trade Classification (Revision 3) and comprises base bullion, pigs, unwrought bars, etc.

(a) Including alloys

(b) Pb content

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

(e) Years ended 30 June of that stated

(f) BGS estimates, based on known exports from certain countries

(g) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

## Production of Lithium Minerals

Lithium  
tonnes

Country	1984	1985	1986	1987	1988
Portugal Lepidolite	985	130	1 800	9 380	14 109
Soviet Union	55 000*	55 000*	55 000*	55 000*	55 000*
Namibia	904	1 873	855	916	1 558
Zimbabwe	22 548	27 910	32 760	14 959	15 073
Canada	700*	4 500*	7 500*	10 000*	15 000*
USA (a) (b)	5 000*	4 500*	4 000*	4 000*	4 000*
Argentina	25	35	184	178	24
Brazil					
Amblygonite	49	118	49	52	...
Lepidolite	—	26	30	—	...
Petalite	477	1 323	1 614	2 946	(d)3 500*
Spodumene	288	107	366	505	...
Chile (c)	2 110	4 508	4 458	6 139	7 332
China	15 000*	15 000*	15 000*	15 000*	15 000*
Australia Spodumene	6 668	12 009	8 530	16 621	27 396
World total (a)	7 400*	7 600*	7 200*	7 400*	7 900*

(a) Li content

(b) Mostly spodumene

(c) Carbonate

(d) Including amblygonite, lepidolite and spodumene

## Lithium

**Exports of Lithium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	163	...	...	...	...
Oxides	222	...	...	199	201
Carbonate	38	100	286	432	548
Belgium-Luxembourg					
Oxides	—	54	50	—	99
France					
Oxides	79	48	21	36	100
Germany, Federal Republic of					
Metal	59	71	54	49	...
Oxides	692	761	694	909	712
Carbonate	1 294	1 093	1 462	1 444	1 371
Netherlands					
Oxides	14	27	18	—	17
Carbonate	31	9	62	132	64
Spain					
Lithium minerals	1 567	47	9	96	...
South Africa					
Lithium minerals (a)	300*	3 100*	1 500*	100*	400*
Zimbabwe					
Lithium minerals	23 805	28 117	22 837	18 053	...
USA					
Oxides	3 721	3 562	2 897	2 917	3 788
Carbonate	8 213	6 312	5 253	5 783	7 168
Chile					
Carbonate	959	4 770	4 487	6 063	7 153
China					
Oxides (a)	500*	400*	500*	600*	600*
Carbonate (a)	400*	700*	1 100*	1 300*	1 100*

(a) BGS estimates, based on known imports into certain countries

## Imports of Lithium

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Metal	12	21	36	51	...
Oxides	1 188	459	510	625	630
Carbonate	431	659	1 160	1 742	2 066
<b>Belgium-Luxembourg</b>					
Oxides	156	175	187	225	198
Carbonate	257	214	237	249	271
<b>France</b>					
Metal	10	18	41	7	...
Oxides	479	473	329	415	388
Carbonate	548	410	596	578	623
<b>Germany, Federal Republic of</b>					
Metal	21	22	24	22	...
Oxides	674	687	1 668	1 515	1 631
Carbonate	5 026	5 328	5 068	5 034	4 368
<b>Italy</b>					
Metal	5	6	1	45	...
Oxides	416	298	267	396	...
Carbonate	361	335	527	702	...
<b>Netherlands</b>					
Metal	21	11	1	2	—
Oxides	68	102	83	68	65
Carbonate	244	246	466	514	469
<b>Spain</b>					
Lithium minerals	441	430	567	803	...
Oxides	100	140	95	206	...
Carbonate	210	143	289	282	...
<b>South Africa</b>					
Lithium minerals	1 146	443	600	623	...
<b>Canada</b>					
Carbonate	...	1 375	953	1 260	1 522
<b>USA</b>					
Lithium minerals	136	4 170	12 010	16 487	14 361
<b>Brazil</b>					
Oxides	271	426	388	471	503
Carbonate	79	267	36	118	237
<b>Japan</b>					
Metal	32	42	50	81	...
Oxides	858	797	885	888	935
Carbonate	3 773	4 430	2 431	3 096	3 318
<b>Korea, Republic of</b>					
Oxides	38	43	287	588	152
Carbonate	159	152	166	309	513
<b>Australia</b>					
Oxides (a)	151	139	...	...	...

(a) Years ended 30 June of that stated

**Production of Magnesite**

tonnes

Country	1984	1985	1986	1987	1988
Greece	1 057 006	884 373	943 759	841 604	930 000*
Spain	691 542	692 196	587 609	396 002	473 000*
Austria	1 183 409	1 255 043	1 084 360	946 943	1 121 585
Czechoslovakia	660 000	654 000	666 000	671 000	631 000
Poland	20 600	19 200	20 900	22 300	23 900
Soviet Union	2 000 000*	1 975 000*	1 925 000*	1 900 000*	1 875 000*
Turkey	723 268	1 136 714	1 306 645	1 189 667	1 011 118
Yugoslavia	373 547	417 407	422 548	403 000	382 000
Egypt	2 918	477	6 095	5 038	110
South Africa	33 059	28 898	61 186	74 961	74 088
Zimbabwe	21 642	19 385	27 649	28 991	30 121
Canada (b)	112 000	136 000	144 000	150 000*	200 000*
Brazil (c)	326 235	265 177	307 096	396 830	400 000*
Colombia	9 176	12 411	14 936	15 444	17 760
China	2 000 000*	2 000 000*	2 000 000*	2 000 000*	2 000 000*
India	417 979	421 379	460 315	419 933	460 000
Iran (a)	5 000*	5 000*	5 000*	5 000*	5 000*
Korea, Dem. P.R. of	1 900 000*	1 900 000*	1 900 000*	1 900 000*	1 900 000*
Nepal	44 349	19 851	63 190	38 388	45 000
Pakistan	3 876	2 113	1 757	3 824	3 766
Philippines	625	1 090	2 111	2 000*	2 000*
Australia	67 041	57 535	41 441	53 941	62 848
World total	11 700 000	11 900 000	12 000 000	11 500 000	11 600 000

**Notes**

(1) In addition to the countries listed, Bulgaria, Kenya, New Caledonia and USA are also believed to produce magnesite

(a) Years ended 20 March following that stated

(b) Officially described as magnesitic dolomite and brucite

(c) Including beneficiated and directly shipped material

## Exports of Magnesite

Country	1984	1985	1986	1987	1988
United Kingdom					
Crude	50	155	105	50	4 028
Calcined	28 374	28 472	3 255	1 865	1 948
Belgium-Luxembourg					
Crude	404	282	154	534	994
Calcined	2 553	4 140	4 790	2 313	2 112
France					
Crude	222	980	515	218	450
Calcined	1 549	2 935	1 830	6 666	6 794
Germany, Federal Republic of					
Crude	133	24	22	204	3 024
Calcined	17 285	22 661	31 571	46 274	53 438
Greece					
Crude	24 931	10 447	8 054	3 000	—
Calcined	402 572	332 779	326 861	273 369	...
Irish Republic (a)	74 600*	72 800*	53 100*	46 200*	63 200*
Italy					
Crude	946	2 373	743	713	...
Calcined	60 433	59 301	111 705	97 851	...
Netherlands					
Crude	1 554	1 049	1 618	2 260	2 224
Calcined	25 122	33 020	31 500	33 604	36 885
Spain					
Crude & calcined	123 050	119 024	108 740	86 982	96 867
Austria					
Crude	697	573	755	387	58
Calcined	167 799	154 233	137 550	140 875	150 026
Czechoslovakia	428 000	446 000	305 000	303 000	306 000
Finland	65	1 860	503	581	33
Norway	9 870	10 271	8 689	4 170	3 493
Soviet Union (a)	9 200*	9 700*	6 800*	8 000*	5 700*
Sweden	502	1 889	575	796	531
Turkey					
Crude	46 812	58 597	17 833	32 069	...
Calcined	117 802	100 812	116 209	134 025	(d)214 718
Yugoslavia	6 857	8 271	7 953	5 817	7 365
South Africa (c)	£1 599 000	£17 000	£409 000	£398 000	...
Zimbabwe	18 051	16 852	23 175	25 099	...
Canada					
Crude & calcined	...	...	...	...	68 326
Brazil					
Calcined	97 267	84 169	75 263	73 585	110 745
China (a)	413 600*	495 600*	522 400*	542 000*	768 600*
Hong Kong					
Crude & calcined (e)	18 399	15 457	29 478	25 638	42 105
India (b)					
Calcined	3 030	1 358	2 192	...	...
Israel (a)	24 400*	21 900*	8 600*	21 400*	15 300*
Japan	4 109	4 144	4 745	2 794	4 963
Korea, Dem. P.R. of (a)	212 300*	237 700*	194 200*	217 100*	260 200*
Singapore	602	245	172	480	1 561
of which: Re-exports	602	245	28	123	261
Australia	3 984	5 443	2 652	4 095	3 043

## Notes

(1) So far as possible sea water magnesia has been excluded from this table if specifically identified in trade accounts

(2) Countries known to produce sea water magnesia and which do not specifically identify it in their trade accounts are Irish Republic, Israel and Norway

(3) The term 'calcined', as used here, includes dead-burned, sintered and caustic-burned (caustic calcined) material

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Values shown are for the common customs area

(d) Including crude

(e) Re-exports

## Magnesite

## Imports of Magnesite

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Crude	12 420	14 860	9 241	7 778	16 323
Calcined	119 216	118 218	110 356	107 334	139 362
Belgium-Luxembourg					
Crude	524	315	803	447	823
Calcined	18 295	17 616	18 822	13 720	21 514
Denmark					
Crude & calcined	10 051	8 710	11 013	9 125	11 819
France					
Crude	80	53	100	117	5 843
Calcined	158 681	158 897	168 310	181 492	193 301
Germany, Federal Republic of					
Crude	5 779	6 242	4 918	6 089	18 405
Calcined	390 625	369 230	361 565	309 741	389 251
Greece	9 898	26 883	24 413	10 973	17 283
Irish Republic	43 948	36 202	42 251	35 623	27 371
Italy					
Crude	23 141	20 266	12 720	12 965	...
Calcined	84 030	72 517	72 416	71 898	...
Netherlands					
Crude	4 408	3 933	1 939	2 582	12 284
Calcined	60 868	74 263	77 687	56 607	71 464
Portugal	741	698	1 006	929	...
Spain					
Crude & calcined	63 967	64 887	59 253	54 837	64 116
Austria					
Crude	221	153	584	118	590
Calcined	116 497	150 117	121 481	108 534	136 281
Bulgaria (b)	24 100*	25 100*	6 100*	8 100*	7 100*
Finland	14 359	17 631	9 620	5 225	6 727
German Democratic Republic (b)	63 200*	58 200*	32 000*	31 000*	33 100*
Hungary					
Calcined	91 467	94 990	100 032	91 480	80 606
Norway	6 110	7 947	6 911	9 292	8 149
Poland					
Calcined	222 513	263 398	211 464	251 748	253 417
Romania (b)	78 300*	66 700*	50 200*	54 100*	45 200*
Soviet Union					
Calcined	569 887	582 650	696 638	577 600	538 627
Sweden	30 005	28 126	23 471	28 130	38 770
Switzerland					
Calcined	4 524	5 178	5 185	6 157	5 416
Yugoslavia					
Crude	31 543	27 533	5 244	0	5
Calcined	19 712	15 805	16 388	12 897	10 358
Algeria	545	802	697	1 202	...
Egypt	2 434	9 210	2 289	8 484	...
Morocco	162	49	120	166	171
South Africa					
Crude & calcined	79 915	75 601	81 187	106 400	...
Tanzania	150	2 501	251	7	...
Tunisia	514	375	480	698	958
Zaire	627	450*	150*	...	...
Canada					
Crude	...	...	...	...	28 851
Calcined	49 943	46 468	46 600	72 757	110 169
USA					
Crude & calcined	191 255	223 410	264 820	247 123	281 104



## Imports of Magnesite

Country	1984	1985	1986	1987	1988
Argentina					
Crude & calcined	17 687	19 926	15 811	20 179	...
Brazil					
Crude & calcined	1 268	536	1 376	745	1 089
Chile	7 691	59 461	37 285	...	...
Peru					
Crude & calcined	4 722	5 238	5 081	8 202	7 133
Venezuela					
Crude & calcined	20 913	89 051	60 201	94 519	...
Hong Kong	22 593	21 331	31 501	28 322	47 463
India (c)	4 807	9 575	31 318	...	...
Indonesia	3 690	6 456	8 641	5 367	6 664
Iran (d)	385	251	66	61	...
Israel (b)	1 200*	1 000*	1 100*	1 200*	3 200*
Japan					
Crude	50 420	38 538	33 613	36 202	56 855
Calcined	268 207	296 228	220 347	246 041	309 350
Korea, Republic of	335 380	12 347	5 078	11 703	75 284
Malaysia	5 921	9 645	5 595	9 730	...
Pakistan (a)	1 513	1 318	722	660	1 529
Philippines					
Crude & calcined	6 039	5 651	8 375	29 268	24 143
Singapore	567	791	472	1 781	8 397
Taiwan	20 264	20 242	8 698	469	4 506
Thailand					
Crude	7 426	7 704	13 234	19 176	18 229
Calcined	3 771	2 493	1 204	2 874	3 332
Australia					
Calcined	9 619	16 107	9 933	17 021	3 028
New Zealand (a)	5 691	7 650	6 795	2 201	...

## Notes

(1) So far as possible sea water magnesia has been excluded from this table if specifically identified in trade accounts

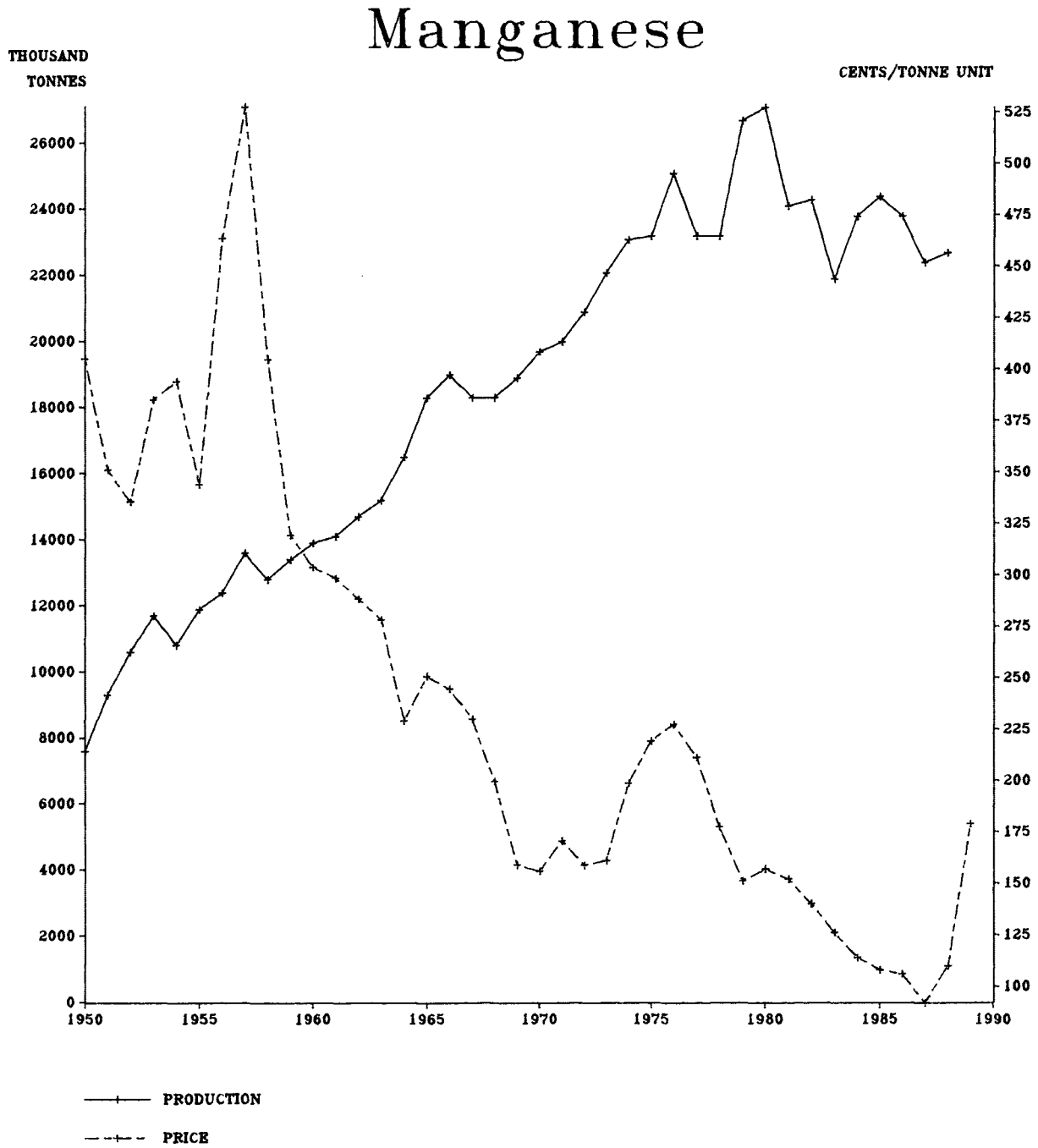
(2) The term 'calcined', as used here, includes dead-burned, sintered and caustic-burned (caustic calcined) material

(a) Years ended 30 June of that stated

(b) BGS estimates, based on known exports from certain countries

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated



**Figure 12** World production of manganese ore compared with the yearly average price of Indian 46-48% Mn ore, c.i.f. US ports, expressed in constant 1980 US cents per metric ton unit.

*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

## Production of Manganese Ore

Country		1984	1985	1986	1987	1988
Greece	(50%)	5 447	5 058	4 560	5 000*	...
Italy	(30%)	9 528	8 621	6 396	3 802	9 701
Austria (e)		67 037	60 074	58 945	57 486	44 273
Bulgaria	(30%)	45 000	38 000	37 000	38 000	35 000
Czechoslovakia	(17%) (d)	900*	950*	900*	900*	900*
Hungary	(30%)	67 000	62 294	62 172	69 964	80 983
Romania	(22%)	66 000	68 000	67 000	65 000*	65 000*
Soviet Union	(35%)	10 089 000	9 900 000	9 300 000	9 400 000	9 100 000
Turkey	(40%)	42 796	10 750	7 770	7 000*	7 000*
Yugoslavia	(34%)	21 079	31 800	41 280	41 297	40 100
Gabon	(50%)	2 021 000	2 349 000	2 440 000	2 216 000	2 185 700
Ghana	(40%)	286 700	315 600	259 300	253 600	230 900
Morocco	(50%)	59 127	43 690	40 334	42 500	30 100
South Africa						
Metallurgical	(40%)	2 857 619	3 442 544	3 563 647	2 766 804	3 331 418
Chemical	(55%)	191 750	158 464	155 647	125 310	122 537
Zaire	(45%)	30 776	37 240	913	...	...
Mexico	(38%)	476 200	396 400	459 000	385 300	443 600
USA	(10%)	80 216	(a)18 037	(a)12 991	(a)18 000*	...
Argentina	(30%)	5 888	7 276	9 886	6 393	9 000
Brazil	(40%) (b)	2 693 131	2 523 194	2 696 799	2 067 385	1 900 000*
Chile	(33%)	26 172	35 635	31 631	31 803	43 655
China	(30%)	2 900 000*	2 600 000*	2 700 000*	2 700 000*	2 700 000*
India	(35%) (c)	1 130 109	1 258 903	1 284 081	1 275 111	1 324 000
Indonesia	(50%)	12 267	33 496	6 612	1 855	10 278
Iran	(30%)	66 000	55 000	55 000	55 000	55 000*
Japan	(26%)	61 635	21 140	5 905	—	80
Philippines	(48%)	615	387	457	445	670
Thailand	(45%)	8 695	4 412	4 888	9 148	7 664
Australia	(48%)	1 848 889	2 002 960	1 648 921	1 853 279	1 976 087
World total		25 200 000	25 500 000	25 000 000	23 500 000	23 800 000

## Notes

(1) Estimated average manganese content is given in parentheses for each country, relating where possible to the later years

(2) In addition to the countries listed, Colombia, Cuba and Vietnam are also believed to produce manganese ore

(a) Shipments of manganiferous iron ore only

(b) Including beneficiated and direct shipping ore

(c) Including ore grading 54% to less than 35% Mn

(d) Manganiferous iron ore

(e) Mn content of domestic iron ore

## Manganese

**Exports of Manganese**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ore (a)	1 934	3 853	235	323	419
Metal	1 001	(c)600*	(c)600*	(c)500*	1 813
Belgium-Luxembourg					
Ore	2 757	492	877	737	1 431
Metal	1 489	1 327	1 960	1 760	1 778
France					
Ore (a)	76 454	73 775	95 250	107 069	95 569
Metal	6 434	5 789	4 014	5 575	7 293
Germany, Federal Republic of					
Ore (a)	757	1 144	1 000	2 172	2 934
Metal	131	118	193	461	407
Greece					
Ore	361	—	501	...	20
Italy					
Ore (a)	1 919	1 272	1 747	484	...
Netherlands					
Ore	46 597	47 849	41 166	51 917	57 035
Metal	1 338	1 830	1 241	1 100	1 313
Portugal					
Ore	—	—	—	19 468	...
Bulgaria					
Ore	(c)36 000*	(c)10 000*	7 000	11 000	(c)8 000*
Hungary					
Ore	11 657	11 417	9 081	12 035	8 400
Norway					
Ore	5	—	505	5	10 000
Soviet Union					
Ore	1 081 000	1 126 000	1 101 000	714 000	982 000
Sweden					
Metal	68	86	113	119	273
Turkey					
Ore	—	6 914	602	28	...
Yugoslavia					
Ore	7 156	13 281	6 995	1 060	—
Gabon					
Ore	...	...	2 550 898	2 290 000	2 380 000
Ghana					
Ore	237 000	252 000	277 000	239 000	...
Morocco					
Ore	69 665	47 012	50 738	43 927	47 371
South Africa					
Ore	3 038 301	2 890 306	2 415 694	1 561 846	2 735 023
Metal	36 603	26 387	27 166	31 109	...
Zaire					
Ore (c)	19 700*	25 500*	...	...	...
Mexico					
Ore	246 470	133 634	123 670	158 132	166 755
USA					
Ore	223 197	69 753	41 554	70 743	67 498
Metal	3 718	4 805	4 840	5 626	9 496
Brazil					
Ore	878 976	901 201	759 875	715 842	1 048 546
China					
Ore	(c)13 100*	(c)4 400*	(c)4 300*	(c)6 800*	40 250*
Metal (c)	200*	750*	1 300*	1 500*	3 000*
India (d)					
Ore (b)	621 432	486 380	221 918	270 000	...
Indonesia					
Ore (a)	26 260	30 665	4 959	5 000	5 720
Japan					
Ore (b)	2 476	1 605	1 293	1 853	929

**Exports of Manganese**

Country	1984	1985	1986	1987	1988
Singapore					
Ore	25 492	21 954	23 565	21 772	15 833
of which: Re-exports	12 230	7 392	23 565	21 772	15 833
Thailand					
Ore	4 100	—	—	—	660
Australia					
Ore	1 460 139	1 402 897	1 144 579	1 306 000	1 553 000

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Including manganiferous iron ore

(b) Including ferruginous manganese ore

(c) BGS estimates, based on known imports into certain countries

(d) Years ended 31 March following that stated

## Manganese

## Imports of Manganese

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ore (b)	269 865	386 299	159 482	120 550	195 457
Metal	3 113	4 215	4 831	2 484	2 859
Belgium-Luxembourg					
Ore	221 559	230 711	199 138	75 549	232 668
Metal	2 333	2 096	2 994	3 421	3 207
Denmark					
Ore	416	1 085	575	543	410
France					
Ore (b)	1 007 721	1 039 791	760 987	702 453	1 485 531
Metal	1 184	824	1 183	2 124	2 197
Germany, Federal Republic of					
Ore (b)	535 843	377 795	473 126	378 627	514 446
Metal	6 102	6 225	6 344	5 489	7 150
Greece					
Ore	...	10 852	589	15	82
Irish Republic					
Ore (b)	28 072	24 178	34 758	26 343	27 467
Italy					
Ore (b)	273 192	392 646	329 736	452 653	...
Metal	2 653	3 522	1 664	1 836	...
Netherlands					
Ore	50 386	72 493	130 177	124 983	53 425
Metal	1 560	2 113	2 004	1 710	2 203
Portugal					
Ore (c)	227 526	127 342	126 764	92 572	...
Spain					
Ore	417 653	299 032	244 299	202 286	199 632
Metal	524	466	674	614	...
Austria					
Ore	441	666	437	472	270
Bulgaria					
Ore	94 400	92 600	82 500	65 000	...
Czechoslovakia					
Ore	482 000	457 000	332 000	438 000	484 000
Finland					
Ore	7 005	10 045	2 265	2 218	1 266
German Democratic Republic					
Ore (a)	21 800	19 500	30 200	23 800	27 400
Hungary					
Ore	340	480	440	420	140
Norway					
Ore	737 061	701 993	817 544	628 173	847 235
Metal	1 121	1 678	1 315	1 641	1 263
Poland					
Ore	648 163	617 977	670 843	682 259	693 211
Romania					
Ore	165 000	225 000	196 000	...	...
Sweden					
Ore	486	336	12 121	11 139	11 710
Metal	977	1 072	1 726	2 064	1 593
Turkey					
Ore	1 348	1 300	840	1 618	...
Yugoslavia					
Ore	148 033	140 249	132 548	88 173	130 587
Ivory Coast					
Ore	1 301	2 067	3 030	...	2 750
Kenya					
Ore (b)	1 998	1 592	3 550	2 363	...
South Africa					
Ore	7 970	5 250	3 050	3 931	...
Zimbabwe					
Ore	5 131	6 539	23 550	18 419	...
Canada					
Ore (a)	77 543	102 199	94 914	80 957	124 282
Metal	3 078	3 757	2 655	2 085	4 086

## Imports of Manganese

Country	1984	1985	1986	1987	1988
Mexico					
Ore	141 803	146 455	112 353	44 669	...
USA					
Ore	306 714	344 087	415 884	301 732	464 202
Metal	12 033	8 609	8 844	8 132	10 957
Argentina					
Ore	28 970	64 000	50 578	60 353	...
Brazil					
Ore	1 006	3 753	2 106	0	32 749
Metal	1 217	1 336	1 364	1 605	1 710
Colombia					
Ore	3 397	2 241	3 951	12 600	...
Peru					
Ore	1 056	1 320	1 099	662	580
Venezuela					
Ore	28 956	48 377	48 006	62 259	...
Hong Kong					
Ore	135	243	341	665	629
India (e)					
Ore	3 947	4 809	3 954	...	...
Metal	217	236	130	...	...
Indonesia					
Ore (b)	1 545	1 153	1 170	1 998	1 680
Iran					
Ore (d)	3 700*	1 500*	3 500*	...	1 000*
Japan					
Ore (c)	2 212 243	2 183 066	1 806 871	1 580 662	1 922 113
Korea, Dem. P.R. of					
Ore (d)	41 600*	21 300*	30 600*	29 200*	60 200*
Korea, Republic of					
Ore	255 364	275 920	222 831	373 880	391 811
Malaysia					
Ore	1 462	1 128	985	1 170	...
Pakistan (f)					
Ore	25 030	163	33 187	27 722	173
Philippines					
Ore (b)	3 438	2 669	3 040	3 594	3 209
Saudi Arabia					
Ore	22 649	20 144	27 929	26 124	19 509
Singapore					
Ore	35 095	35 923	28 846	45 512	51 062
Sri Lanka					
Ore	1 342	290	104	1 299	198
Taiwan					
Ore	97 160	128 970	119 241	131 704	170 943
Australia					
Ore	1 299	1 576	1 703	1 575	2 845
Metal	1 561	1 012	649	923	3 170

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Mn content

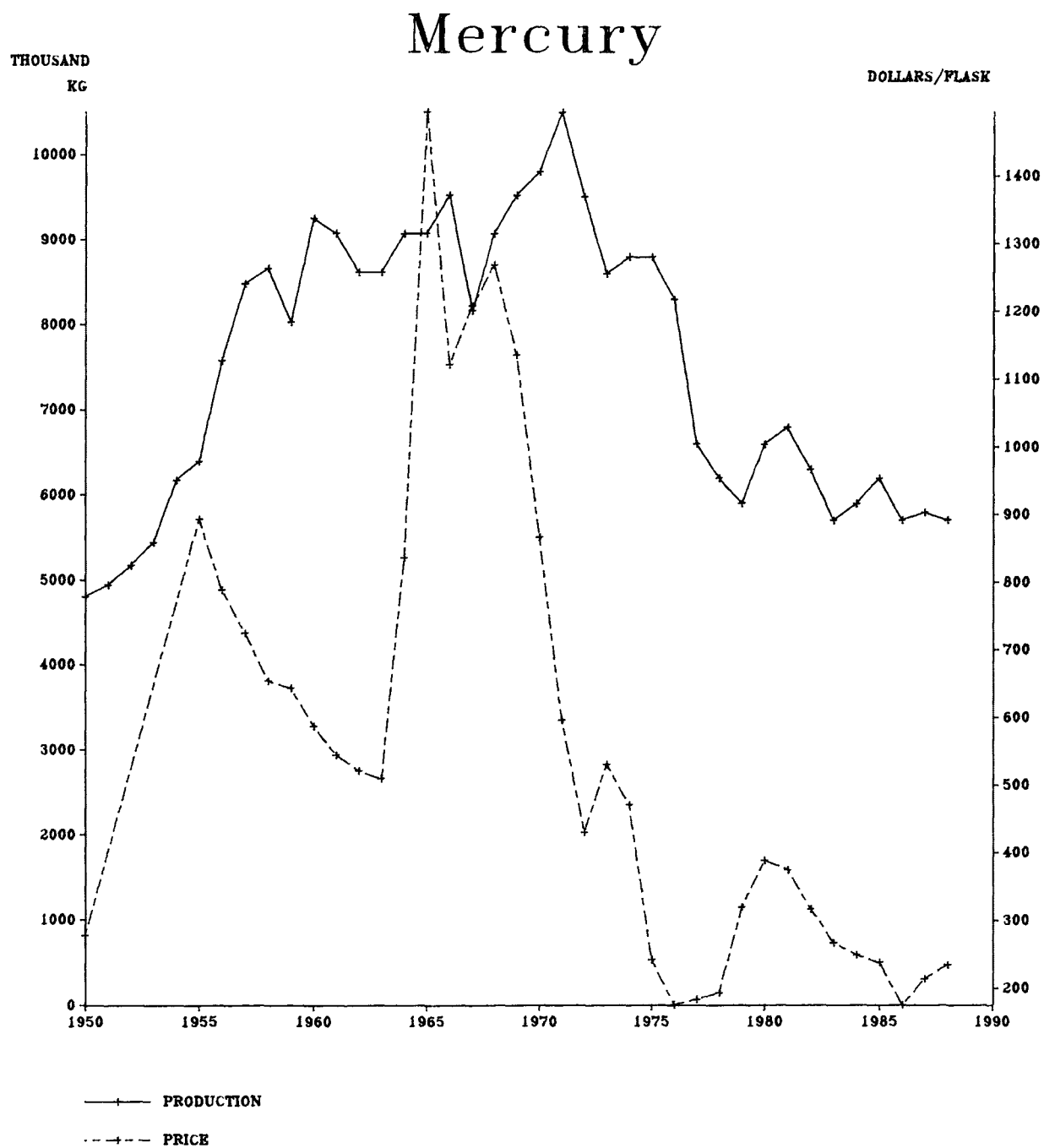
(b) Including manganiferous iron ore

(c) Including ferruginous manganese ore

(d) BGS estimates, based on known exports from certain countries

(e) Years ended 31 March following that stated

(f) Years ended 30 June of that stated



**Figure 13** World production of mercury compared with the annual average price (USA) expressed in constant 1980 US dollars.

*Constant commodity prices have been derived from Metals Week, as quoted in Metallstatistik (published by Metallgesellschaft, 1989).*



**Production of Mercury**Mercury  
kilograms

Country	1984	1985	1986	1987	1988
Spain	1 519 898	1 552 707	1 470 379	1 570 971	1 499 000
Czechoslovakia	152 000	158 000	168 000	164 000	168 000
Finland	79 000	125 138	87 021	217 134	97 026
Soviet Union	1 600 000*	1 600 000*	1 500 000*	1 650 000*	1 650 000*
Turkey	182 125	226 328	261 649	210 519	97 360
Yugoslavia	72 000	88 000	75 000	67 000	70 000
Algeria	587 000	793 500	756 000	705 000	700 000
Mexico	384 000	394 000	185 000	124 000	345 000
USA	656 642	569 839	483 000	100 000*	380 000*
China	800 000*	800 000*	850 000*	900 000*	950 000*
World total	6 000 000	6 300 000	5 800 000	5 700 000	6 000 000

**Exports of Mercury**

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom	43 392	69 778	20 479	64 487	66 572
Belgium-Luxembourg	26 800	9 900	11 400	3 000	2 600
Denmark	7 600	6 300	1 100	7 100	4 200
France	79 000	56 000	87 900	32 400	322 400
Germany, Federal Republic of	199 300	149 600	111 700	137 700	72 900
Italy	82 005	19 400	3 000	54 900	38 000
Netherlands	420 000	25 000	23 000	50 000	96 000
Spain	1 590 000	942 000	1 089 000	702 000	691 000
Austria	6 200	2 900	2 800	1 700	2 900
Finland	177 000	108 000	81 000	224 000	94 000
Norway	57 000	57 000	30 000	73 000	63 000
Sweden	97 000	5 000	11 000	7 000	8 000
Switzerland	7 993	29 450	5 206	19 845	2 960
Turkey	270 649	298 114	181 459	100 740	232 812
Yugoslavia	22 000	41 000	34 000	17 000	27 000
Algeria	1 144 770	2 032 127	569 500	607 501	...
Canada	...	...	...	...	48 701
Dominican Republic	3 800	...	...	...	...
Mexico	229 735	92 295	155 346	137 000	137 000
USA (a)	168 000*	143 000*	162 000*	132 000*	91 000*
China (a)	154 000*	377 000*	564 000*	1 101 000*	718 000*
Hong Kong (b)	5 813	42 637	93 730	242 503	80 993
Japan	74 785	330 946	272 485	200 365	191 150
Singapore	6 703	10 678	5 680	21 445	2 542
of which: Re-exports	6 703	10 653	5 680	21 445	2 542

(a) BGS estimates, based on known imports into certain countries

(b) Re-exports

## Imports of Mercury

Country	1984	1985	1986	1987	1988
United Kingdom	287 637	393 346	417 712	435 615	311 020
Belgium-Luxembourg	329 400	259 800	211 700	115 200	161 500
Denmark	12 000	15 600	7 100	14 900	6 300
France	148 000	157 000	188 000	123 400	130 700
Germany, Federal Republic of	426 100	402 800	412 400	343 400	256 100
Greece	2 000	2 000	4 000	2 000	3 091
Irish Republic	1 100	19 900	18 500	1 400	7 452
Italy	137 731	170 000	179 329	144 300	192 000
Netherlands	170 000	26 000	33 000	83 000	104 000
Portugal	15 300	19 100	15 100	7 600	...
Spain	1 030	1 053	18 000	98 000	198 000
Austria	11 400	6 500	5 500	7 000	7 300
Czechoslovakia (a)	26 300*	8 600*	10 000*	...	...
Finland	1 000	1 000	...	2 000	2 000
German Democratic Republic (a)	333 000*	374 000*	50 000*	335 000*	...
Hungary	97 000	61 000	57 000	60 000	65 000
Norway	9 000	13 000	3 000	8 000	4 000
Poland (a)	18 000*	...	...	...	15 000*
Romania (a)	254 000*	214 000*	203 000*	69 000*	...
Sweden	20 000	16 000	47 000	11 000	2 539 000
Switzerland	61 656	58 778	37 384	17 691	16 025
Yugoslavia	29 000	8 000	10 000	23 000	48 000
Egypt	29 000	21 000	19 000	18 000	...
Morocco	7 477	11 279	3 261	...	...
South Africa	29 000	22 300	30 000	114 200	...
Tunisia	7 965	10 772	11 027	10 706	10 368
Canada	75 000	40 000	77 000	33 000	36 238
USA	918 488	618 901	695 914	653 302	326 563
Argentina	74 600	46 000	212 000	45 000	...
Brazil	177 005	186 441	222 349	272 000	202 970
Colombia	31 819	35 533	37 088	...	...
Peru	18 988	15 200	27 318	44 814	25 114
Uruguay	200	300	4 500	33 700	4 300
Venezuela	121 931	6 096	47 558	104 149	...
Hong Kong	15 390	97 683	123 626	253 964	158 219
India (d)	315 000	291 868	286 508	...	...
Indonesia	11 118	40 422	179 190	192 285	55 207
Iran (b)	5 215	12 200	4 694	4 170	...
Israel (a)	4 000*	1 800*	400*	1 500*	600*
Japan	52 470	17 694	29 647	75 309	39 911
Korea, Dem. P.R. of (a)	10 000*	10 000*	5 000*	...	1 000*
Korea, Republic of	13 983	14 179	19 579	28 509	33 791
Malaysia	14 850	8 360	6 000	8 520	...
Myanmar (d)	2 845	307 340	3 099	6 096	...
Pakistan (c)	77 718	21 646	49 418	109 429	45 092
Philippines	16 842	30 549	55 013	65 966	132 451
Saudi Arabia	—	—	565 533	—	87 975
Singapore	14 181	25 345	31 552	45 335	55 576
Sri Lanka	1 333	1 089	1 359	917	400
Taiwan	11 185	9 989	9 723	8 511	18 321
Thailand	5 219	8 636	13 874	11 269	11 193
Australia	34 439	30 861	66 310	52 100	76 044

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 20 March following that stated

(c) Years ended 30 June of that stated

(d) Years ended 31 March following that stated

**Production of Mica**

tonnes

Country	1984	1985	1986	1987	1988
France (e)	10 854	10 084	10 834	9 300	9 000*
Portugal (a)	823	440	484	160	...
Spain (e)	990	727	325	370	400*
Norway (b)	4 000*	4 000*	3 000*	4 000*	4 000*
Soviet Union	49 000*	50 000*	50 000*	50 000*	50 000*
Yugoslavia	235	644	756	887	807
Madagascar	719	589	1 775	402	693
Morocco	1 200	1 440	1 500*	1 060	1 000*
South Africa	2 899	2 153	2 509	1 159	1 669
Zimbabwe	960	581	1 390	801	1 368
Canada	12 100	11 500*	11 800	13 200	14 148
Mexico	1 676	1 446	1 748	3 419	3 000*
USA (d) (e)	146 000	125 000	134 000	146 000	130 000
Argentina	290	721	551	791	780
Brazil (a)	3 265	931	1 662	1 485	1 734
China (c)	16 000*	16 800*	19 700*	18 300*	11 500*
India	9 608	7 482	7 519	10 547	10 000*
Sri Lanka	626	529	895	1 228	1 981
Taiwan	304	114	774	787	4 387
Australia	2 194	1 574	24	106	3 584
World total	264 000	237 000	251 000	264 000	250 000

## Notes

(1) In addition to the countries listed, Namibia, Pakistan and Romania are also believed to produce mica

(a) Exports

(b) Crude only

(c) Conservative BGS estimates, based on reconstructed exports

(d) Sold or used by producers

(e) Including mica recovered from mica schists and/or kaolin beneficiation

## Exports of Mica

Mica  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Unmanufactured	89	112	95	23	50
Ground	754	1 310	1 101	2 560	4 262
Waste	2 563	1 668	1 940	1 727	80
Belgium-Luxembourg	26	225	82	12	928
France					
Unmanufactured	5 050	2 887	2 591	2 542	763
Ground	4 548	4 842	4 310	4 492	6 631
Germany, Federal Republic of					
Unmanufactured	52	36	0	15	55
Ground	1 203	1 411	1 364	1 327	1 232
Italy					
Unmanufactured	194	116	43	107	...
Ground	364	113	79	134	...
Netherlands					
Unmanufactured	315	983	779	1 016	473
Ground	458	475	222	655	524
Portugal	823	440	484	160	...
Spain	49	60	22	21	529
Austria	829	316	1 659	371	651
Finland	548	566	274	1 315	1 976
Norway	2 009	1 934	1 422	1 916	1 946
Sweden	28	20	46	38	—
Switzerland	75	130	77	89	142
Turkey	162	32	20	121	34
Madagascar	874	779	1 874	653	...
Morocco	1 434	1 330	1 508	2 230	1 862
Mozambique	286	...	...	...	...
South Africa	884	1 076	720	1 105	851
Zimbabwe					
Ground	259	396	845	468	...
Canada	...	...	...	...	8 774
USA					
Unmanufactured	1 909	1 361	1 503	913	1 181
Ground	5 236	6 559	5 313	4 301	5 412
Brazil	3 265	931	1 662	1 485	1 734
China (a)	16 000*	16 800*	19 700*	18 300*	11 500*
India (b)					
Block	678	717	578	...	...
Splittings	2 476	2 708	2 695	...	...
Condenser films	48	3	8	...	...
Waste	13 151	14 520	16 581	...	...
Japan	455	290	366	318	529
Malaysia	246	862	...	1 797	2 420
Singapore	396	222	51	298	377
of which: Re-exports	350	215	51	298	377
Sri Lanka	631	534	889	1 309	1 805
Taiwan	295	248	198	394	183

### Notes

(1) This table shows unmanufactured mica and includes sheet, block, splittings, ground and waste, unless these are separately specified. Mica powder is included under the term 'ground'

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

## Mica

**Imports of Mica**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Unmanufactured	169	82	570	515	57
Ground	6 334	3 185	1 925	5 524	3 471
Waste	12 391	12 587	17 519	13 904	10 186
Belgium-Luxembourg					
Unmanufactured	1 138	3 600	6 568	5 023	...
Ground	2 866	962	779	939	1 169
Denmark	254	272	258	206	238
France					
Unmanufactured	3 022	3 676	4 214	3 989	3 305
Ground	1 025	633	631	876	919
Germany, Federal Republic of					
Unmanufactured	4 620	4 912	4 124	2 860	1 698
Ground	6 222	7 034	7 343	11 911	13 919
Greece	263	474	514	591	522
Irish Republic	241	135	222	127	207
Italy					
Unmanufactured	313	400	109	265	...
Ground	985	1 111	986	863	...
Netherlands					
Unmanufactured	330	876	987	1 594	785
Ground	1 589	1 724	893	1 181	1 357
Portugal	283	382	168	160	...
Spain	1 244	3 963	2 567	1 506	1 550
Austria	205	321	183	221	426
Finland	198	248	276	304	590
German Democratic Republic	1 042	1 124	1 212	820	628
Norway					
Unmanufactured	178	165	179	347	130
Waste	2 113	3 878	1 115	1 535	3 097
Poland	1 750	1 241	1 357	729	1 643
Soviet Union (c)	1 300*	1 600*	1 500*	...	...
Sweden	422	447	399	434	398
Switzerland	753	611	585	726	856
Turkey	25	20	326	9	7
Yugoslavia	133	253	297	336	101
Egypt	80	258	28	14	...
South Africa	1 073	586	500	493	...
Tunisia	106	12	13	8	9
Canada	2 396	2 311	2 174	2 204	1 815
Jamaica	59	119	103	162	108
Mexico	161	132	154	57	...
Trinidad & Tobago	176	117	129	67	...
USA					
Block	76	296	105	42	183
Splittings	559	483	899	786	1 317
Ground	5 812	5 487	5 451	5 673	7 780
Other unmanufactured	4 730	3 426	2 150	4 195	4 449
Colombia	150	113	53	...	...
Venezuela	1 061	1 033	704	429	...
Dubai	230	248	26	...	...
Hong Kong	48	32	48	57	68
Indonesia	704	909	599	237	440
Iran (a)	15	8	11	150	...
Japan					
Block	2 963	2 163	1 965	3 648	90
Splittings	2 611	1 903	1 457	2 824	4 944
Waste	3 554	3 088	5 603	3 504	6 269
Other unmanufactured	3 873	3 711	6 118	7 251	9 819

**Imports of Mica**

Country	1984	1985	1986	1987	1988
Korea, Republic of	569	1 023	987	1 084	1 926
Malaysia	67	118	87	352	...
Philippines	67	26	109	134	139
Saudi Arabia	670	608	—	654	—
Singapore	2 027	1 220	496	382	1 010
Taiwan					
Unmanufactured	51	33	54	251	208
Ground	243	160	391	572	680
Thailand	319	153	177	274	319
Australia	204	395	670	686	911
New Zealand (b)	£122 000	£120 000	£105 000	£119 000	...

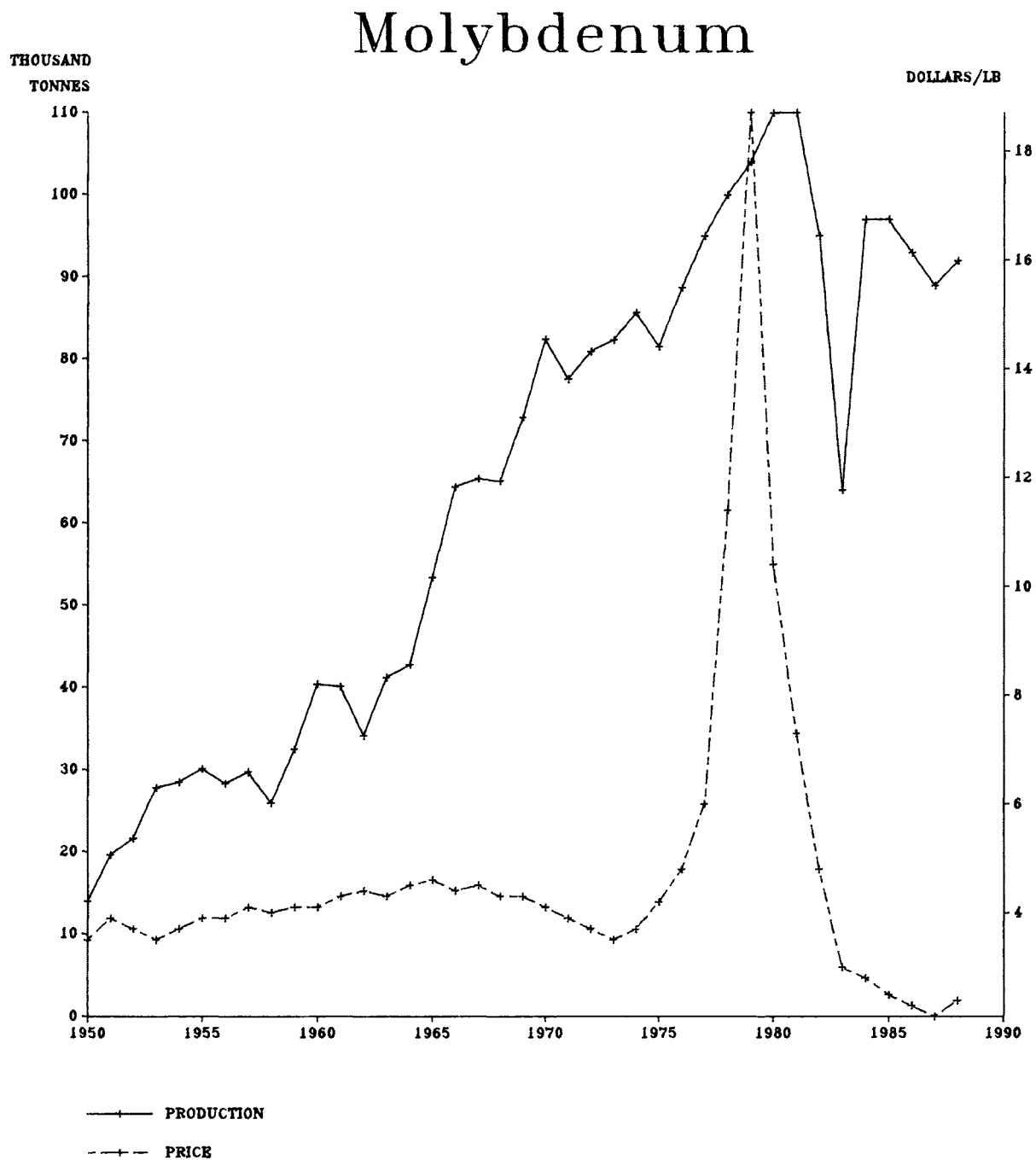
**Notes**

(1) This table shows unmanufactured mica and includes sheet, block, splittings, ground and waste, unless these are separately specified. Mica powder is included under the term 'ground'

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) BGS estimates, based on known exports from certain countries



**Figure 14** World mine production of molybdenum compared with the annual price in the USA of molybdenum in oxide expressed in constant 1980 US dollars.

*Constant commodity prices derived from INTERMET Molybdenum data-base (1987) and Mineral Commodity Summaries (1989) published by USBM.*



## Mine Production of Molybdenum

Molybdenum  
tonnes (metal content)

Country	1984	1985	1986	1987	1988
Bulgaria	190*	190*	190*	200*	200*
Soviet Union	11 200*	11 300*	11 400*	11 500*	11 500*
Turkey	100*	100*	100*	100*	100*
Niger	57	32	20*	8	15*
Canada	11 557	6 950	11 251	14 771	13 535
Mexico	4 054	3 761	3 350	4 400	4 456
USA	47 021	49 173	42 627	34 073	43 051
Chile	16 861	18 391	16 581	16 941	15 515
Peru	3 085	3 833	3 491	3 352	2 370
China	2 000*	2 000*	2 000*	2 000*	2 000*
Iran	500*	500*	500*	500*	500*
Japan	157	100*	100*	100*	100*
Korea, Republic of	159	335	317	327	266
Mongolia	1 000*	1 000*	1 100*	1 100*	1 100*
World total	98 000	98 000	93 000	89 000	95 000

### Notes

(1) In addition to the countries listed, Australia, India, Democratic P.R. of Korea, and Romania are also believed to produce molybdenum

**Exports of Molybdenum**

tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Ores & concentrates	4 906	4 402	2 894	2 269	2 551
Metal	414	408	629	763	489
Oxides	1 614	1 594	1 109	1 044	459
<b>Belgium-Luxembourg</b>					
Ores & concentrates	10 847	11 412	11 346	12 890	16 519
Metal	90	114	141	142	151
Oxides	39	42	36	53	55
<b>France</b>					
Ores & concentrates	227	193	4 961	2 115	1 266
Metal	288	280	290	295	308
<b>Germany, Federal Republic of</b>					
Ores & concentrates	5 291	3 526	4 045	3 417	2 213
Metal	680	649	636	849	874
Oxides	(c)2 281	(c)2 170	1 191	761	566
<b>Italy</b>					
Metal	49	4	64	35	...
<b>Netherlands</b>					
Ores & concentrates	15 801	18 224	13 699	8 694	15 953
Metal	122	274	220	422	266
Oxides	1 631	1 509	945	1 455	2 211
<b>Austria</b>					
Metal	1 284	1 439	1 267	1 266	1 640
<b>Finland</b>					
Ores & concentrates	488	—	—	—	—
<b>Sweden</b>					
Ores & concentrates	745	1 375	1 687	2 747	1 725
Metal	71	118	7	13	21
<b>Canada</b>					
Ores & concentrates (a)	8 894	5 636	11 368	14 253	13 972
<b>Mexico</b>					
Ores & concentrates (a)	4 674	14 533	2 875	4 237	...
<b>USA</b>					
Ores & concentrates (a)	28 764	28 966	22 295	18 430	23 500
Metal	907	863	1 289	1 596	1 654
<b>Chile</b>					
Ores & concentrates (a)	4 676	5 572	5 969	1 957	1 045
Oxides	11 538	11 516	16 949	15 669	13 385
<b>Peru</b>					
Ores & concentrates	5 699	7 254	6 839	6 203	4 279
<b>China</b>					
Ores & concentrates (b)	50*	500*	12 300*	7 600*	3 100*
Metal (b)	...	10*	70*	40*	90*
<b>Japan</b>					
Metal	41	55	63	81	62
<b>Korea, Republic of</b>					
Ores & concentrates	—	230	308	126	—

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Mo content

(b) BGS estimates based on known imports into certain countries

(c) Including tungsten and vanadium oxides

## Imports of Molybdenum

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	18 042	19 057	19 248	15 756	19 882
Metal	489	358	278	315	337
Oxides	102	304	237	135	256
Belgium-Luxembourg					
Ores & concentrates	21 952	22 150	21 874	24 787	28 512
Metal	173	223	211	480	292
Oxides	282	39	147	180	190
France					
Ores & concentrates	6 246	5 677	7 446	8 632	9 612
Metal	243	260	248	233	389
Oxides	77	144	124	157	140
Germany, Federal Republic of					
Ores & concentrates	18 597	17 600	17 817	16 305	17 329
Metal	964	1 146	1 033	828	1 272
Oxides	192	174	120	107	544
Italy					
Ores & concentrates	4 438	4 810	2 742	2 870	...
Metal	189	142	218	195	...
Oxides	86	65	65	32	...
Netherlands					
Ores & concentrates	20 741	24 061	22 961	15 985	17 697
Metal	178	186	116	202	163
Oxides	9	24	30	27	10
Spain					
Ores & concentrates	3 446	4 600	5 236	4 991	...
Metal	38	25	52	43	55
Austria					
Metal	109	97	117	121	130
Oxides	2 063	2 241	2 066	1 706	2 852
Czechoslovakia					
Ores & concentrates (a)	600*	600*	900*	800*	1 900*
Finland					
Ores & concentrates	671	1 121	326	1 074	1 245
Metal	6	6	1	4	6
Sweden					
Ores & concentrates	6 357	6 479	7 246	7 402	7 870
Metal	71	138	186	262	283
Oxides	138	125	96	236	234
Switzerland					
Metal	21	22	20	23	17
Yugoslavia					
Metal	29	14	24	20	20
South Africa					
Metal	23	23	14	15	...
Oxides	188	414	361	481	...
Canada					
Metal	...	...	...	...	159
Oxides	238	187	202	193	188
USA					
Ores & concentrates	21	83	789	1 784	141
Metal	323	338	373	444	...
Oxides	3 992	1 893	810	4 142	722
Argentina					
Oxides	519	357	479	...	...
Brazil					
Ores & concentrates	2 590	2 893	2 493	3 093	3 094
Metal	51	56	75	58	68
Oxides	519	542	484	740	615

## Molybdenum

**Imports of Molybdenum**

tonnes

Country	1984	1985	1986	1987	1988
Japan					
Ores & concentrates	18 246	21 138	18 024	17 115	22 987
Metal	423	428	290	380	662
Oxides	578	384	414	468	351
Korea, Republic of					
Ores & concentrates	179	115	263	522	13 520
Metal	15	21	28	32	58
Philippines					
Metal	20	20	2	4	9
Singapore					
Metal	11	4	1	4	7
Taiwan					
Metal	90	60	85	105	127
Australia					
Ores & concentrates	138	174	133	86	38

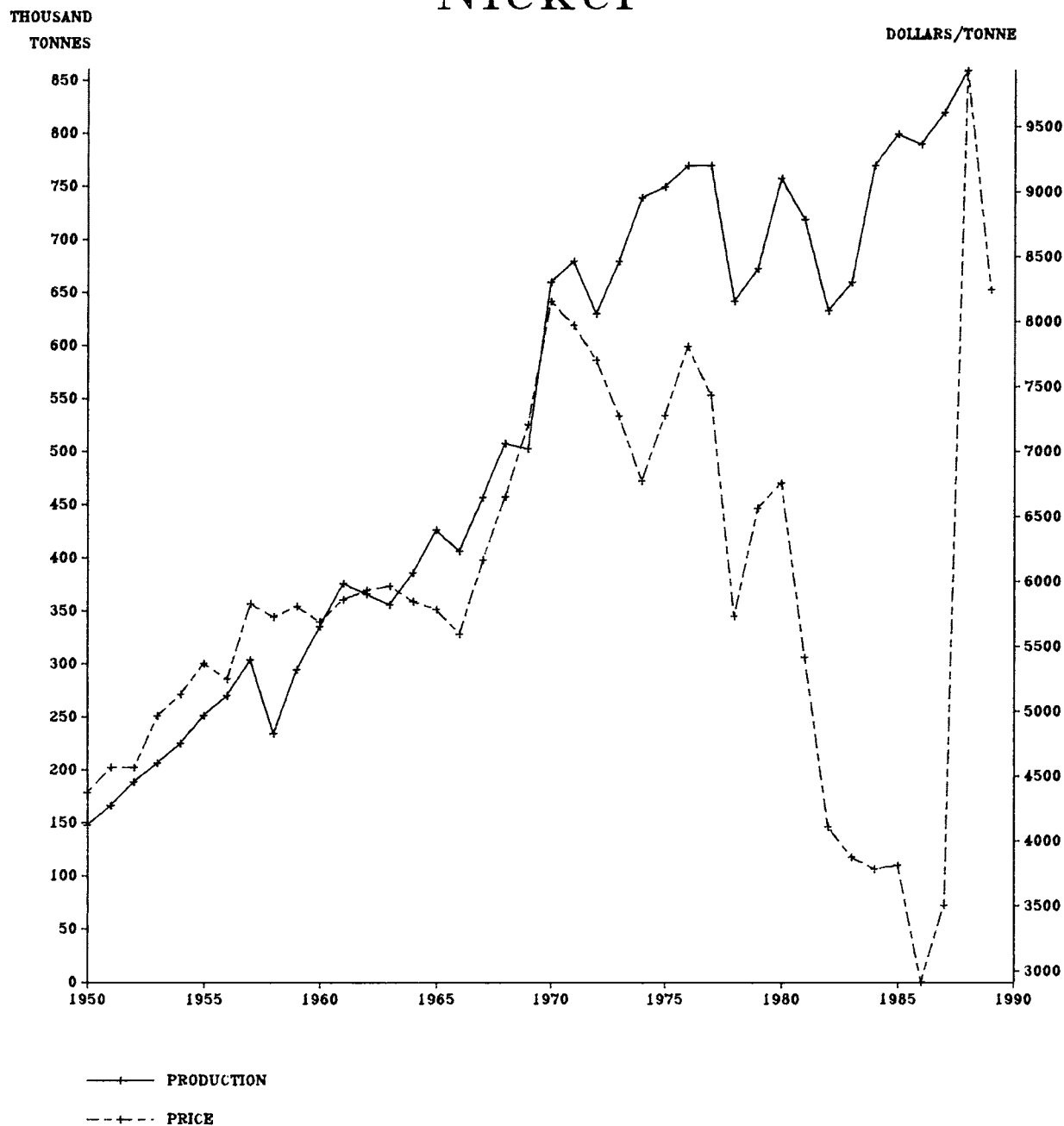
## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) BGS estimates, based on known exports from certain countries



# Nickel



**Figure 15** World mine production of nickel compared with the yearly average f.o.b. contract price of Canadian electrolytic cathodes and from 1980, LME cathodes, expressed in constant 1980 US dollars.

*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

## Mine Production of Nickel

tonnes (metal content)

Country	1984	1985	1986	1987	1988
Greece (d)	15 829	15 952	10 324	9 200	13 100
Albania	7 200	7 200	7 500	7 700	8 000*
Finland	6 323	7 993	11 403	10 083	4 115
German Democratic Republic	2 000	2 000	2 000	2 000	2 000
Norway	326	425	467	386	300
Soviet Union	180 000*	190 000*	185 000*	195 000*	205 000*
Yugoslavia	2 200*	2 800*	3 200*	3 500*	5 600*
Botswana	18 604	19 565	18 972	16 528	22 539
South Africa (a)	22 500	29 000	31 800	34 300	34 800
Zimbabwe	10 251	9 897	9 732	10 393	11 489
Canada (b)	173 725	169 971	163 639	189 086	198 744
Cuba	31 835	32 064	33 523	34 258	41 700*
Dominican Republic (d)	24 805	25 400	21 900	32 500	29 300
USA	13 190	5 558	1 066	—	—
Brazil	23 532	20 300	21 240	22 092	18 667
Colombia	20 799	14 608	20 980	22 033	18 647
China	18 300*	25 800*	29 400*	30 400*	28 600*
Indonesia	47 800	48 200	67 300	57 200	59 800
Myanmar (e)	20*	20*	20*	20*	20*
Philippines	13 601	28 158	12 745	8 500	10 300
Australia	76 923	85 757	76 739	74 554	62 639
New Caledonia (c)	58 326	72 361	64 518	57 470	62 400
World total	770 000	810 000	790 000	820 000	840 000

(a) Refined nickel and nickel in matte

(b) Refined nickel and nickel in oxide and salts plus nickel in matte and concentrate exported

(c) Ni and Co content

(d) Ni content of ferro-nickel

(e) Ni content of nickel speiss. Years ended 31 March following that stated

## Nickel

**Smelter/Refinery Production of Nickel**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	22 300	17 800	30 900	29 500	28 000
France	5 217	7 019	8 241	6 690	9 124
Greece	15 829	15 900	10 300	9 200	13 100
Albania	4 000	4 000	4 000	4 000	4 500
Czechoslovakia	4 500*	4 000*	4 000*	3 800*	3 800*
Finland	15 282	15 656	16 243	17 689	16 343
German Democratic Republic	3 000*	3 000*	3 200*	3 200*	3 500*
Norway	35 548	37 513	38 202	44 564	52 547
Soviet Union	193 000*	198 000*	195 000*	210 000*	215 000*
Yugoslavia	1 800	2 800	3 200	3 500	5 600
South Africa	20 500	24 000	25 400	27 000	27 200
Zimbabwe	10 400	11 500	16 400	16 700	18 300
Canada	111 591	108 041	122 962	140 122	153 984
Cuba	17 346	15 884	16 670	17 223	21 000*
Dominican Republic (a)	24 219	25 802	21 989	29 100	32 400
USA	40 763	33 005	1 498	—	—
Brazil	12 716	13 166	13 465	13 862	13 103
Colombia	16 575	11 373	18 018	19 295	16 884
China	17 500*	24 600*	28 000*	29 000*	30 000*
Indonesia	4 800	4 800	4 500	1 700	4 900
Japan	89 361	92 594	92 990	94 175	100 620
Philippines	3 528	16 993	1 153	—	—
Australia	38 660	40 807	42 097	44 529	37 400
New Caledonia	29 158	36 103	33 001	29 531	37 351
World total	740 000	760 000	750 000	790 000	840 000

## Notes

(1) Data relate to refined nickel plus the nickel content of ferro-nickel and nickel oxide

(a) Shipments of ferro-nickel (Ni content)



# Exports of Nickel

Nickel

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Mattes, sinters etc.	184	323	682	1 285	762
Unwrought	10 527	8 477	15 610	16 786	15 999
Unwrought alloys	1 849	2 108	1 840	1 779	2 565
Scrap	5 842	5 408	4 629	5 030	4 185
Oxides	88	130	79	98	218
Belgium-Luxembourg					
Unwrought	173	146	50	59	461
Unwrought alloys	80	72	263	312	908
Scrap	843	1 139	739	991	1 396
Denmark					
Scrap	58	15	30	87	631
France					
Unwrought	4 316	5 267	6 051	5 754	6 509
Unwrought alloys	1 266	953	889	1 086	527
Scrap	3 602	3 637	3 109	2 865	4 586
Oxides	80	30	8	15	65
Germany, Federal Republic of					
Mattes, sinters etc.	1 786	1 491	1 727	1 187	1
Unwrought	6 651	2 726	2 985	5 838	6 215
Unwrought alloys	3 695	3 905	3 405	3 589	3 142
Scrap	9 404	10 032	5 668	6 492	9 989
Oxides	76	58	98	95	88
Irish Republic					
Unwrought (a)	59	36	35	7	260
Scrap	149	151	161	208	330
Italy					
Unwrought (a)	141	124	113	378	845
Scrap	169	119	163	281	601
Netherlands					
Mattes, sinters etc. (b)	4 800*	3 500*	3 700*	5 000*	4 000*
Unwrought (a)	426	443	500	650	400
Scrap	3 015	3 068	4 684	3 433	6 740
Oxides (b)	500*	400*	500*	200*	150*
Spain					
Scrap	328	164	96	64	166
Austria					
Scrap	774	295	214	104	123
Finland					
Unwrought (a)	13 247	13 852	15 086	13 309	10 458
Scrap	2 269	1 777	59	55	0
Norway					
Ore	8 231	10 843	11 871	8 991	6 914
Unwrought	37 812	35 669	37 917	44 125	50 789
Scrap	49	143	108	91	86
Soviet Union					
Mattes, sinters etc. (b)	250*	500*	200*	300*	7 900*
Unwrought (a) (b)	37 500*	29 100*	39 000*	54 600*	55 800*
Sweden					
Unwrought (a)	622	96	52	78	1 802
Scrap	613	533	655	740	642
Switzerland					
Unwrought	(g)12	(g)105	(g)44	(g)122	(a)662
Scrap	422	256	295	369	440
Yugoslavia					
Unwrought	466	347	—	—	—
Scrap	154	398	70	81	12
Botswana					
Mattes, sinters etc.	86 587	53 155	51 290	56 000*	...
South Africa					
Slurry, mattes, sinters etc. (b)	46 000*	42 800*	29 200*	29 700*	46 200*
Unwrought (a) (b)	16 400*	16 100*	17 900*	14 800*	15 300*
Scrap (b)	400*	400*	200*	400*	500*
Zimbabwe					
Unwrought (a)	11 303	10 896	14 326	15 832	...

**Exports of Nickel**

tonnes

Country	1984	1985	1986	1987	1988
Canada					
Ores, concentrates, mattes etc. (c)	79 492	81 276	71 712	77 275	67 888
Unwrought	80 507	81 773	86 057	96 165	...
Scrap	9 696	4 948	6 253	7 663	6 929
Cuba					
Oxide, sinter & sulphide (e)	36 658	33 416	34 912	...	...
USA					
Unwrought (a)	23 815	16 415	1 961	1 825	2 080
Scrap	11 934	14 093	9 538	10 489	11 626
China					
Unwrought (a) (b)	...	100*	2 200*	9 700*	5 200*
Hong Kong					
Unwrought (f)	3 020	3 242	4 865	6 228	4 979
Scrap	293	118	387	956	526
Oxides (f)	189	244	162	76	39
Indonesia					
Ore	579 284	626 745	963 198	992 877	1 253 611
Mattes, sinters etc.	49 848	54 004	54 315	49 496	58 769
Japan					
Unwrought (a)	348	313	181	228	544
Malaysia					
Unwrought alloys	473	106	...	17	...
of which: Re-exports	392	91	...	—	...
Philippines					
Ores & concentrates	527 205	616 455	420 809	483 417	489 055
Unwrought (a)	2 344	11 284	2 566	—	—
Singapore					
Unwrought	4 717	2 069	2 399	1 483	2 436
of which: Re-exports	4 685	2 017	2 399	1 483	2 436
Scrap	160	1 072	280	142	97
of which: Re-exports	16	947	16	30	38
Taiwan					
Unwrought	3	392	356	1 140	2 431
Scrap	1 825	1 889	1 506	2 180	3 891
Australia (d)	61 100*	61 900*	71 800*	66 800*	58 700*
New Caledonia					
Ores	1 332 945	1 443 908	1 074 502	1 019 729	1 301 864
Mattes, sinters etc.	8 900	11 800	12 900	9 900	14 000

**Notes**

(1) In this table the term 'unwrought' nickel corresponds to item 683.1 of the Standard International Trade Classification (Revision 3) which excludes all electro-plating anodes

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Including alloys

(b) BGS estimates, based on known imports into certain countries

(c) Ni content

(d) BGS estimates; unwrought metal and Ni content of ores, concentrates, matte etc., based on known imports into certain countries

(e) Ni-Co content (mainly nickel)

(f) Re-exports

(g) Including mattes, sinters etc.

# Imports of Nickel

Nickel

tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Mattes, sinters etc.	39 891	42 753	38 008	39 957	46 834
Unwrought	13 280	13 948	14 024	17 031	15 248
Unwrought alloys	2 079	2 216	2 060	1 127	2 326
Scrap	2 810	4 137	3 197	4 503	6 332
Oxides	553	1 062	598	2 709	2 695
<b>Belgium-Luxembourg</b>					
Ore	—	—	1 087	2 350	2 273
Mattes, sinters etc.	2 402	1 669	1 943	1 791	4 445
Unwrought	2 079	2 322	3 141	5 418	9 238
Unwrought alloys	971	274	646	1 228	128
Scrap	601	527	304	627	1 390
Oxides	384	142	746	274	126
<b>Denmark</b>					
Unwrought	204	106	178	244	109
Unwrought alloys	156	38	38	5	31
<b>France</b>					
Mattes, sinters etc.	8 649	13 600	13 534	11 697	14 019
Unwrought	18 094	15 415	14 798	22 712	20 374
Unwrought alloys	4 604	4 357	3 755	4 872	4 687
Scrap	917	942	669	580	836
Oxides	283	204	146	61	173
<b>Germany, Federal Republic of</b>					
Mattes, sinters etc.	12 239	12 583	11 186	13 104	14 585
Unwrought (a)	48 284	42 368	46 071	57 342	56 399
Scrap	8 389	7 561	6 062	6 987	11 775
Oxides	383	234	558	280	331
<b>Greece</b>					
Unwrought	73	133	120	203	105
<b>Irish Republic</b>					
Unwrought (a)	220	305	585	398	515
<b>Italy</b>					
Mattes, sinters etc.	4 261	4 426	4 927	6 743	6 976
Unwrought	19 811	17 336	17 254	15 616	16 258
Unwrought alloys	473	583	1 133	849	698
Scrap	81	271	87	220	117
Oxides	2 106	975	1 836	440	110
<b>Netherlands</b>					
Mattes, sinters etc. (e)	7 600*	10 400*	8 600*	5 900*	11 500*
Unwrought	1 604	1 737	2 973	1 834	1 472
Unwrought alloys	30	34	142	83	62
Scrap	3 737	2 943	2 776	2 773	3 138
Oxides	152	314	141	145	196
<b>Portugal</b>					
Unwrought (a)	223	286	347	331	...
<b>Spain</b>					
Mattes, sinters etc.	2 376	1 849	1 591	1 503	530
Unwrought (a)	4 776	3 780	4 863	4 270	7 907
<b>Austria</b>					
Mattes, sinters etc.	1 122	1 207	907	405	672
Unwrought (a)	3 105	2 664	3 030	2 814	2 735
Scrap	608	572	155	949	626
<b>Czechoslovakia</b>					
Unwrought (a)	6 483	6 558	5 473	7 460	5 352
<b>Finland</b>					
Ore	7 325	13 661	10 971	12 516	7 582
Mattes, sinters etc.	8 786	9 759	9 267	4 514	5 778
Unwrought (a)	4 661	5 084	2 735	2 313	3 140
Scrap	2 489	2 681	3 839	3 216	5 761
<b>Norway</b>					
Mattes, sinters etc.	93 459	102 443	101 073	92 110	119 220
Unwrought (a)	146	202	153	64	19
Scrap	73	3	12	11	27
<b>Sweden</b>					
Mattes, sinters etc.	2 934	2 700	3 513	3 515	2 319
Unwrought	12 566	11 874	10 042	10 628	13 800
Unwrought alloys	293	309	306	177	348
Scrap	4 575	5 510	6 709	6 048	11 665

## Nickel

**Imports of Nickel**

tonnes

Country	1984	1985	1986	1987	1988
Switzerland					
Unwrought	(f)901	(f)1 261	(f)1 382	(f)1 157	(a)664
Scrap	70	86	29	29	85
Yugoslavia					
Unwrought (a)	2 659	2 837	2 395	1 627	1 681
South Africa					
Mattes, sinters etc.	577	904	628	469	...
Unwrought	57	41	60	5	...
Canada					
Ores, concentrates & scrap (b)	24 736	31 592	38 331	23 533	27 739
Mattes, sinters etc.	...	...	...	...	4 207
Unwrought (a)	4 100	3 338	3 451	3 348	1 682
Mexico					
Mattes, sinters etc.	2 088	3 538	1 896	2 228	1 702
USA					
Slurry, mattes, sinters etc.	70 900*	55 462	4 518	5 335	7 065
Unwrought (a)	93 456	88 704	91 717	103 314	106 867
Scrap	5 623	5 036	6 164	6 865	8 384
Oxides	5 013	4 618	712	804	806
Argentina					
Unwrought	735	311	538	844	...
Brazil					
Unwrought (a)	341	1 135	1 915	1 710	1 493
Colombia					
Unwrought	309	144	280	...	...
Venezuela					
Unwrought	171	201	493	327	...
Hong Kong					
Unwrought	4 494	3 811	7 052	6 220	7 026
India (c)					
Mattes, sinters etc.	...	3 276	1 120	...	...
Unwrought	...	3 466	2 862	...	...
Unwrought alloys	...	1 299	1 331	...	...
Scrap	1 133	1 101	1 067	...	...
Japan					
Ore	2 834 813	2 976 005	2 885 823	2 926 857	3 265 651
Mattes, sinters etc.	50 510	52 656	58 312	54 610	62 658
Unwrought	31 377	24 690	24 024	42 352	34 093
Unwrought alloys	172	208	325	261	235
Scrap	3 242	2 622	2 219	3 089	3 578
Korea, Dem. P.R. of					
Unwrought (a) (e)	500*	700*	600*	1 900*	600*
Korea, Republic of					
Unwrought	2 306	3 472	5 839	4 961	5 259
Scrap	224	327	284	554	2 077
Malaysia					
Unwrought (a)	398	104	133	111	...
Singapore					
Unwrought	917	2 638	3 726	1 493	4 042
Scrap	182	170	182	284	208
Taiwan					
Mattes, sinters etc.	1 949	2 938	11 514	11 256	17 539
Unwrought (a)	4 497	3 863	6 535	6 364	3 900
Scrap	136	396	1 223	383	155

**Imports of Nickel**

Country	1984	1985	1986	1987	1988
Thailand					
Unwrought (a)	433	387	517	775	567
Australia					
Mattes, sinters etc.	0	121	1 869	84	36
Unwrought	1 133	737	1 082	1 211	330
Unwrought alloys	132	80	41	51	269
Scrap	44	129	211	353	207
New Zealand (d)					
Unwrought (a)	105	131	65	64	...

**Notes**

(1) In this table the term 'unwrought' nickel corresponds to item 683.1 of the Standard International Trade Classification (Revision 3) which excludes all electro-plating anodes

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Including alloys

(b) Ni content

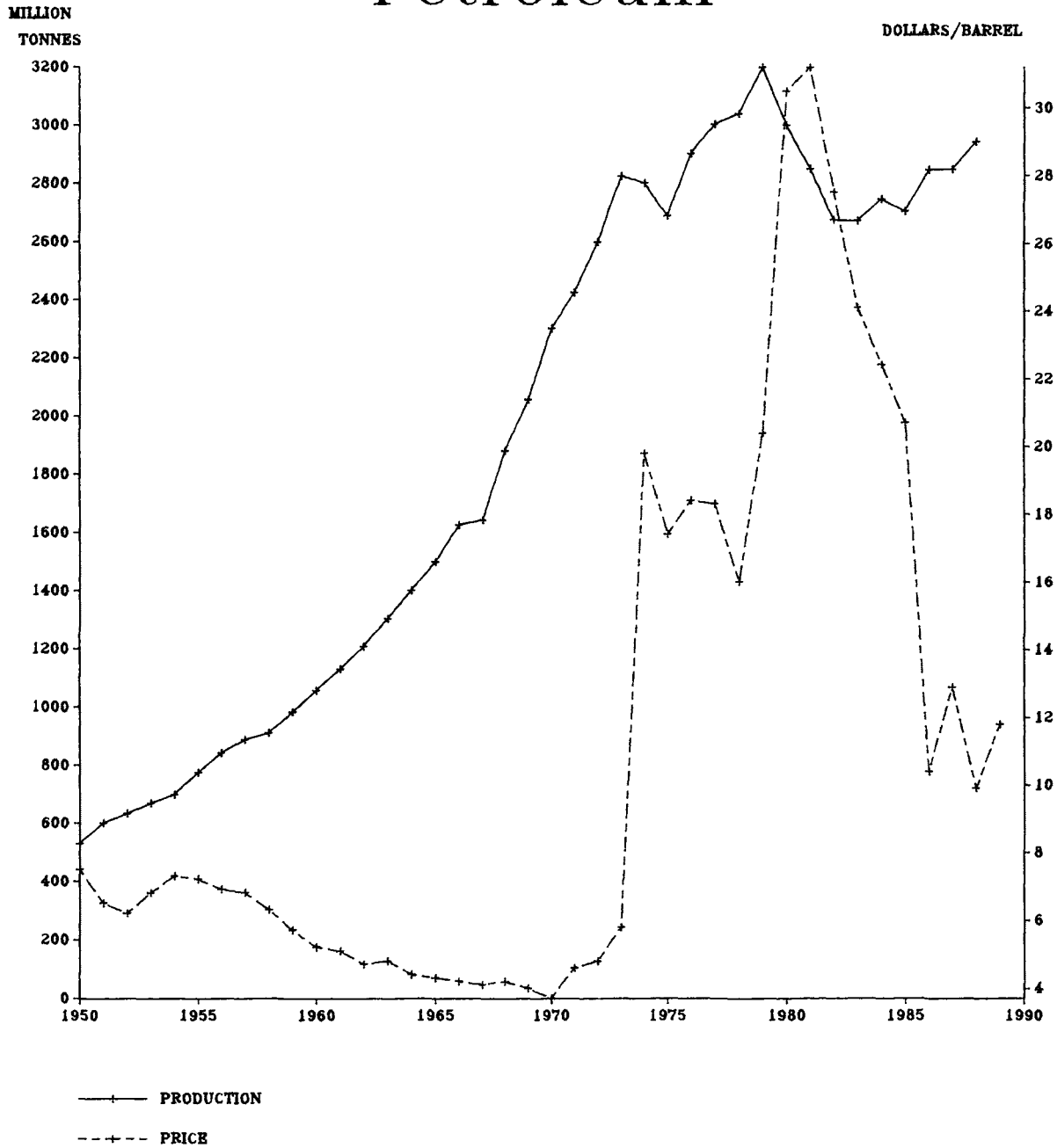
(c) Years ended 31 March following that stated

(d) Years ended 30 June of that stated

(e) BGS estimates, based on known exports from certain countries

(f) Including mattes, sinters etc.

# Petroleum



**Figure 16** World production of crude petroleum compared with the weighted yearly average price f.o.b. OPEC countries of light crude and, from 1986, average US spot price, expressed in constant 1980 US dollars.

*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

## Production of Crude Petroleum

Country	1984	1985	1986	1987	1988
United Kingdom	121 307 000	122 449 000	121 238 000	117 613 000	109 402 000
Denmark (e)	2 219 205	2 853 368	3 238 459	4 552 394	4 700 061
France	2 064 405	2 642 572	2 912 000	3 234 621	3 358 000
Germany, Federal Republic of	4 055 000	4 105 000	4 017 000	3 800 000	3 937 000
Greece	1 332 524	1 330 684	1 347 837	1 210 000	1 106 000
Italy	2 236 203	2 342 545	2 510 564	3 908 036	4 811 523
Netherlands	3 102 000	3 728 000	4 628 000	4 291 000	3 909 000
Spain	2 245 179	2 088 248	1 805 115	1 639 994	1 480 000
Albania	3 000 000*	3 100 000*	3 000 000*	3 000 000*	3 000 000*
Austria	1 205 430	1 146 958	1 115 924	1 060 367	1 175 186
Bulgaria	280 000*	280 000*	280 000*	280 000*	280 000*
Czechoslovakia	91 000	123 000	142 000	147 000	142 000
German Democratic Republic	60 000*	60 000*	60 000*	60 000*	60 000*
Hungary	2 007 000	2 012 000	2 005 000	1 914 000	1 947 000
Norway	34 681 721	38 342 000	42 483 000	49 516 000	56 612 000
Poland	189 000	194 000	167 000	149 000	163 000
Romania	11 453 000	10 718 000	10 125 000	9 504 000	9 400 000
Soviet Union	612 700 000	595 000 000	615 000 000	624 200 000	624 000 000
Turkey	2 086 715	2 109 986	2 393 806	2 629 000	2 563 900
Yugoslavia	4 044 010	4 149 259	4 140 489	3 867 000	3 681 147
Algeria	46 600 000	48 100 000	48 826 000	44 859 000	49 357 000
Angola	10 190 996	11 514 325	14 102 000	17 968 000	24 606 000
Benin	400 000*	350 000*	350 000*	350 000*	250 000*
Cameroon	7 890 000	9 200 000	9 090 000	8 602 000	8 681 000
Congo	6 210 000	5 600 000	5 610 000	5 777 000	6 600 000
Egypt	41 217 000	44 312 000	40 237 000	43 178 000	44 523 000
Gabon	8 730 000	8 626 000	8 384 000	7 980 000	8 840 000
Ivory Coast	1 120 000	1 300 000	1 350 000	1 200 000	750 000
Libya	53 500 000	52 700 000	49 900 000	46 790 000	48 820 000
Nigeria	68 600 000	72 900 000	72 200 000	63 670 000	68 960 000
Tunisia	5 480 000	5 408 000	5 249 000	5 005 000	4 908 000
Zaire	1 598 087	1 670 219	1 619 809	1 559 836	1 400 000
Barbados	87 137	93 219	76 743	68 181	58 617
Canada	76 334 900	77 795 600	77 981 100	81 144 500	85 516 900
Cuba	770 400	867 600	938 000	894 500	718 000
Guatemala	241 474	151 222	255 251	191 167	191 800
Mexico	145 090 791	139 758 862	129 268 989	135 300 000	133 900 000*
Trinidad & Tobago	8 758 037	9 070 986	8 701 325	7 995 579	7 793 355
USA	434 720 000	439 224 000	424 977 000	408 771 000	398 538 000
Argentina	25 318 400	24 342 500	22 982 800	22 800 000*	24 000 000*
Bolivia	1 104 800	1 050 800	930 400	1 000 800	889 000
Brazil	24 482 865	28 889 605	30 286 000	30 100 000*	29 500 000*
Chile	2 040 390	1 892 273	1 770 015	1 583 985	1 295 716
Colombia	8 633 000	9 084 000	15 629 000	19 835 000	19 358 000
Ecuador	13 239 624	14 295 932	14 727 997	8 893 681	16 000 000*
Peru	9 096 000	9 286 924	8 748 524	8 064 014	6 963 000
Suriname	39 415	67 174	114 035	136 518	200 000
Venezuela	94 658 820	88 009 031	93 744 112	95 256 500	99 600 000
Abu Dhabi	36 497 326	34 224 600	50 400 000	57 700 000	61 800 000
Bahrain	2 088 661	2 090 301	2 115 710	2 110 000	2 150 000
Brunei	7 597 000	7 593 000	7 532 000	7 015 000	6 352 000
China (a)	114 640 000	124 900 000	130 600 000	132 940 000	136 870 000
Dubai	17 259 000	16 978 610	18 900 000	19 600 000	19 300 000
India	28 046 000	29 860 000	31 157 000	30 128 000	30 800 000
Indonesia	68 402 999	64 007 442	68 544 356	64 737 568	64 053 415
Iran	109 300 000	110 000 000	94 500 000	114 700 000	113 200 000
Iraq	55 211 419	70 600 000	85 500 000	102 400 000	127 700 000
Israel	17 420	9 396	13 136	15 143	19 522
Japan	433 950	570 135	676 223	645 200	631 180
Kuwait	58 948 000	53 769 000	71 516 000	61 439 000	71 495 000
Malaysia	21 402 997	21 300 000	26 200 000	24 600 000	26 700 000
Myanmar (d)	1 660 220	1 500 000	896 500	900 000	750 000
Neutral Zone (c)	21 100 000	17 000 000	17 900 000	20 200 000	16 600 000

**Production of Crude Petroleum**

tonnes

Country	1984	1985	1986	1987	1988
Oman	20 785 638	24 802 837	27 864 157	28 982 542	30 905 619
Pakistan	891 332	1 669 605	2 008 496	2 030 343	2 213 000
Philippines	513 384	395 000	345 000	289 000	300 000
Qatar	20 100 000	15 900 000	16 600 000	15 900 000	17 000 000
Ras al Khaimah	316 000	350 000	550 000	490 000	550 000
Saudi Arabia	215 413 043	159 446 753	240 253 165	212 200 000	257 100 000
Sharjah	3 051 000	3 090 000	3 130 000	3 130 000	3 150 000
Syria	8 590 418	8 425 305	9 660 000	12 000 000	13 500 000
Taiwan	123 970	107 783	96 000	350 000	350 000
Thailand	797 129	1 123 113	1 430 000	1 600 000	1 900 000
Australia	26 376 971	30 447 317	27 151 450	29 076 240	27 492 622
New Zealand (b)	840 570	1 226 800	1 353 830	1 291 930	1 417 580
World total	2 747 000 000	2 706 000 000	2 848 000 000	2 852 000 000	2 962 000 000

## Notes

(1) The figures shown in this table exclude natural gasoline

(a) Including oil from shale and coal

(b) Petroleum condensate

(c) Neutral zone of Kuwait and Saudi Arabia

(d) Years ended 31 March following that stated

(e) Sales



## Production of Natural Gas

million m<sup>3</sup>

Country	1984	1985	1986	1987	1988
United Kingdom	38 529	42 971	45 304	47 641	45 755
Belgium	47	52	37	38	24
France	6 344	5 419	4 217	3 875	4 000*
Germany, Federal Republic of	15 950	14 459	13 865	15 871	14 783
Irish Republic	2 327	2 413	1 679	1 669	2 017
Italy	13 902	14 158	15 893	16 324	16 634
Netherlands	77 251	80 721	74 037	74 247	65 610
Spain	176	273	384	750	920
Albania	500*	380*	450*	450*	800*
Austria	1 272	1 164	1 112	1 167	1 265
Bulgaria	47	21	17	13	15
Czechoslovakia	758	705	751	785	944
German Democratic Republic	12 370	11 430	11 430	13 000	12 000
Hungary	6 911	7 456	7 022	7 126	6 327
Norway	27 375	26 699	28 102	29 868	29 817
Poland	6 087	6 390	5 824	5 781	5 714
Romania	39 054	38 904	39 371	37 418	33 000
Soviet Union	587 400	643 000	686 000	727 000	770 000
Yugoslavia	1 997	2 400	2 447	2 887	3 015
Algeria	31 000	34 300	34 300	43 170	44 900
Angola	340	343	400	450	500
Egypt	4 060	4 930	5 680	6 280	6 920
Gabon	290	70	60	70	10
Libya	4 600	5 200	5 600	5 000	5 500
Morocco	83	94	91	74	60
Nigeria	2 750	2 800	3 590	3 700	3 800
Tunisia	426	408	423	375	339
Canada	89 993	96 354	91 608	98 725	113 700
Mexico	28 984	26 703	25 848	26 000*	26 046
Trinidad & Tobago	4 133	4 077	4 394	4 569	4 500*
USA (e)	492 480	463 876	452 822	468 253	481 200
Argentina	13 760	14 641	15 903	16 512	19 000*
Bolivia	2 632	2 644	2 691	2 678	2 777
Brazil	1 871	2 346	2 671	2 494	2 799
Chile	1 513	1 431	1 199	1 146	1 390
Colombia	3 840	3 848	3 800*	3 700*	3 800*
Peru	625*	625*	626	522	...
Venezuela	18 788	18 951	21 460	21 187	21 000*
Abu Dhabi	7 660	9 670	10 140	12 610	12 920
Afghanistan (c)	2 700	2 800*	2 900	2 800	3 000*
Bahrain	4 110	4 640	5 804	6 130	5 500
Bangladesh (d)	2 353	2 679	3 020	3 549	4 600
Brunei	8 359	8 149	8 170	8 151	8 544
China	12 430	12 930	13 693	13 802	14 285
Dubai	1 200*	2 120	2 300	2 600	2 440
India	3 236	4 905	6 628	6 334	7 457
Indonesia	43 083	44 741	46 126	49 046	52 297
Iran	13 500	14 600	15 200	16 000	20 000
Iraq	590	850	1 550	3 750	5 730
Israel	53	53	40	45	41
Japan	2 133	2 225	2 105	2 168	2 097
Kuwait (a)	5 199	5 066	5 730	5 300	6 490
Malaysia	9 200	12 380	14 950	15 500	16 450
Myanmar (b)	702	830	1 080	1 190	1 040
Oman	988	1 124	1 383	1 523	1 595

**Production of Natural Gas**million m<sup>3</sup>

Country	1984	1985	1986	1987	1988
Pakistan	9 991	10 370	11 113	11 633	12 594
Qatar	7 900	5 307	5 695	6 136	6 470
Ras al Khaimah	—	130	310	350	300
Saudi Arabia (a)	11 900	18 800	25 200	26 800	29 100
Sharjah	900	1 110	2 270	3 750	2 980
Syria	150	150	220	620	720
Taiwan	1 266	1 125	1 023	1 057	1 163
Thailand	2 421	3 746	3 617	5 059	5 993
Australia	12 600	13 470	(f)14 714	(f)15 023	(f)15 383
New Zealand	2 826	3 596	4 485	4 350	4 754
<b>World total</b>	<b>1 700 000</b>	<b>1 800 000</b>	<b>1 800 000</b>	<b>1 900 000</b>	<b>2 000 000</b>

**Notes**

(1) So far as possible the figures in this table exclude flared or reinjected gas

(a) Including one-half of the output of the Neutral Zone

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Years ended 30 June of that stated

(e) Dry gas

(f) Including ethane

# Exports of Crude Petroleum

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	75 858 236	79 580 673	81 883 124	80 616 236	70 328 076
Belgium-Luxembourg	78 082	11 468	—	6 058	14 946
Denmark	803 941	1 042 763	841 022	1 741 057	1 801 566
France	68 181	681	102	20 644	132 668
Germany, Federal Republic of	1 097 809	1 206 185	1 155 040	1 101 194	1 175 249
Greece	346 181	373 695	739 868	1 055 000	...
Italy	188 093	278 818	187 764	619 306	...
Netherlands	535 170	1 328 149	1 362 432	1 024 625	930 293
Spain	166 423	—	—	—	...
Hungary	2 134 000*	816 000*	845 000*	2 076 000*	...
Norway	30 064 286	32 602 346	35 375 520	41 746 707	48 104 368
Soviet Union (a)	125 779 000*	113 998 000*	122 318 000*	123 891 000*	121 204 000*
Sweden	—	94 000	133 000	140 000	—
Algeria	23 420 053	11 027 997	25 101 495	25 555 165	25 700 000*
Angola	8 753 070	9 934 516	12 440 000	15 600 000	20 540 000*
Benin	406 263	325 000*	365 000*	350 000*	...
Cameroon	1 213 061	1 120 632	194 020	769 858	633 000*
Congo	5 480 152	5 124 850	5 512 859	3 388 758	5 980 000*
Egypt	7 446 667	10 508 550	7 248 746	10 023 000	9 100 000*
Gabon	8 118 000	8 350 000	8 500 000*	8 100 000*	8 500 000*
Ivory Coast	425 670	169 512	230 688	...	—
Libya	44 841 000	43 035 000	48 000 000*	41 000 000*	43 230 000*
Nigeria	55 212 062	63 454 315	56 790 657	53 354 442	55 410 000*
Tunisia	4 005 641	3 892 961	4 049 073	3 711 464	3 186 593
Zaire	1 658 472	1 647 521	1 583 650	1 588 824	...
Bahamas (d)	7 954 446	8 859 264	9 052 524	...	...
Canada	19 041 545	25 438 501	30 665 913	32 635 978	37 376 510
Guatemala	135 278	64 945	252 468	154 569	...
Mexico	78 821 400	74 152 900	68 203 787	69 536 100	67 556 000
Netherlands Antilles	478 000	25 855 000	488 000	552 000	...
Trinidad & Tobago	4 319 975	4 806 133	4 497 870	3 881 794	3 700 000*
USA	775 855	1 009 163	810 248	952 386	629 038
Colombia	—	—	4 523 000	7 499 000	...
Ecuador	8 475 503	8 613 658	8 817 027	3 556 152	4 500 000*
Peru	977 454	1 238 558	654 786	152 963	...
Venezuela	52 440 000	43 240 000	49 666 000	53 757 000	52 900 000
Brunei	8 249 257	7 889 806	6 965 954	6 750 000	6 700 000*
China	22 010 000	30 030 000	28 500 000	27 230 000	26 050 000
India (b)	6 478 383	528 086	—	...	...
Indonesia	50 055 502	39 126 096	44 454 043	39 133 463	36 653 795
Iran (a)	73 316 000*	65 998 000*	57 954 000*	72 257 000*	60 162 000*
Iraq	42 036 000	53 812 000	67 191 000	83 450 000	103 000 000*
Kuwait	33 402 731	24 107 000	40 716 000*	32 285 000*	35 000 000*
Malaysia	16 497 360	16 722 986	19 297 000	18 111 170	20 400 000*
Oman	18 358 000	22 376 000	25 487 000	26 792 000	27 000 000*
Qatar	17 268 000	13 513 000	14 093 000	12 790 000	15 000 000*
Saudi Arabia	159 340 130	108 390 692	164 060 513	121 105 806	153 239 867
Singapore	331 656	198 777	184 347	111 289	1 551 062
of which: Re-exports	330 811	85 202	89 900	97 893	1 476 407
Syria	5 126 778	4 445 449	3 968 469	4 280 051	...
United Arab Emirates	48 857 000*	51 344 000*	58 674 000*	64 458 000*	66 000 000*
Australia	3 095 421	6 229 600	4 015 600	5 670 400	5 596 000
New Zealand (c)	—	115 666	357 491	92 979	...

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

(d) Re-exports

## Imports of Crude Petroleum

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	25 002 401	26 869 737	32 182 351	33 109 328	33 990 212
Belgium-Luxembourg	17 869 509	15 464 760	21 493 630	23 872 531	23 207 014
Denmark	5 296 283	4 806 490	4 302 879	4 286 750	4 477 615
France	72 112 223	68 694 509	66 440 317	63 054 333	66 351 077
Germany, Federal Republic of	66 933 641	64 193 086	66 569 034	63 840 159	72 036 951
Greece	9 988 738	12 966 465	10 455 080	13 800 000	12 700 000*
Irish Republic	1 171 185	1 322 211	1 400 472	1 528 804	1 348 043
Italy	63 408 561	64 880 757	72 403 264	67 023 444	62 600 000
Netherlands	44 976 426	40 342 992	46 940 080	48 512 517	51 394 231
Portugal	7 546 090	7 063 418	8 163 307	7 890 708	...
Spain	36 808 184	39 475 257	40 434 467	44 850 096	45 324 000
Austria	5 906 643	6 205 712	6 187 679	6 232 912	5 630 832
Bulgaria	12 500 000*	12 500 000*	12 500 000*	13 000 000*	13 200 000*
Czechoslovakia	17 200 000	16 900 000	17 800 000	16 990 000	16 960 000*
Finland	9 343 190	9 827 751	9 934 967	9 885 513	8 937 400
German Democratic Republic	23 236 000	22 802 000	22 250 000	20 949 000	20 514 000
Hungary	8 815 537	7 253 254	7 560 547	8 499 143	7 261 969
Norway	2 025 324	1 507 190	2 111 984	2 781 082	1 187 345
Poland	13 612 000	13 712 000	14 139 000	14 169 000	14 966 000
Romania	13 534 000	14 626 000	17 047 000	18 000 000*	16 300 000*
Soviet Union	15 000 000	12 400 000	14 567 000	13 990 000	16 000 000*
Sweden	13 791 116	14 366 621	16 372 054	15 411 383	14 414 761
Switzerland	3 973 667	3 810 036	3 917 551	3 895 006	3 845 408
Turkey	15 466 759	15 505 105	16 742 477	19 691 963	21 636 806
Yugoslavia	9 690 063	8 600 466	10 841 501	10 917 193	12 061 042
Canary Islands	4 973 235	4 283 112	3 903 461	3 935 314	...
Ethiopia	730 674	757 743	749 630	788 513	733 765
Ghana	828 575	897 624	883 000	950 000	...
Ivory Coast	846 518	1 489 727	1 996 728	1 095 000*	1 941 717
Kenya	1 874 257	1 951 997	2 006 049	2 102 564	...
Liberia	360 000*	355 000*	...	...	...
Madagascar	197 104	297 457	113 379	244 099	...
Morocco	4 581 284	5 024 916	4 507 338	4 836 221	5 001 295
Mozambique	130 000*	...	...	...	...
Senegal	1 045 618	621 126	840 337	859 800	1 165 046
Sierra Leone	225 660	196 161	243 000*	236 000*	...
Somalia	180 000	225 000	245 000	248 000*	...
South Africa	17 500 000*	17 500 000*	17 500 000*	16 000 000*	...
Sudan	579 949	691 949	610 000*	610 000*	...
Tanzania	508 908	535 380	534 384	509 773	...
Tunisia	—	22 793	412 867	423 199	4
Zaire	182 636	185 000*	110 000*	115 000*	...
Zambia	582 752	720 547	700 000*	720 000*	...
Bahamas	13 212 183	7 505 512	9 091 436	...	...
Barbados	122 055	113 981	141 339	167 023	185 754
Canada	13 554 747	14 464 163	18 396 615	19 856 397	21 415 133
Costa Rica	366 407	428 291	638 118	560 805	...
Cuba	7 235 300	8 046 400	7 366 000	8 175 000*	8 300 000*
Dominican Republic	1 784 391	1 713 618	1 761 772	1 700 000*	...
El Salvador	1 549 452	633 568	829 927	...	...
Guatemala	1 639 201	1 557 643	202 091	522 043	...
Honduras	201 378	543 191	218 693	315 724	...
Jamaica	653 408	974 052	2 390 222	659 335	739 822
Martinique	335 466	245 529	410 064	551 342	...
Netherlands Antilles	19 257 000	5 662 000	7 729 000	9 867 000	10 000 000*
Nicaragua	422 243	965 173	524 185	530 000*	...
Panama	1 473 428	1 241 975	969 217	1 347 741	951 948
Trinidad & Tobago	50	197 141	34	248 729	...
USA	177 025 821	169 110 946	219 298 518	234 068 069	253 234 119
Brazil	32 243 757	26 798 497	29 777 240	30 946 000	31 700 745
Chile	1 940 656	2 118 303	2 733 994	3 804 000	4 000 000*
Colombia	1 489 240	992 137	—	—	...
Paraguay	162 877	156 848	205 265	255 079	243 108
Uruguay	1 282 000	1 073 624	1 360 237	1 131 831	1 155 122

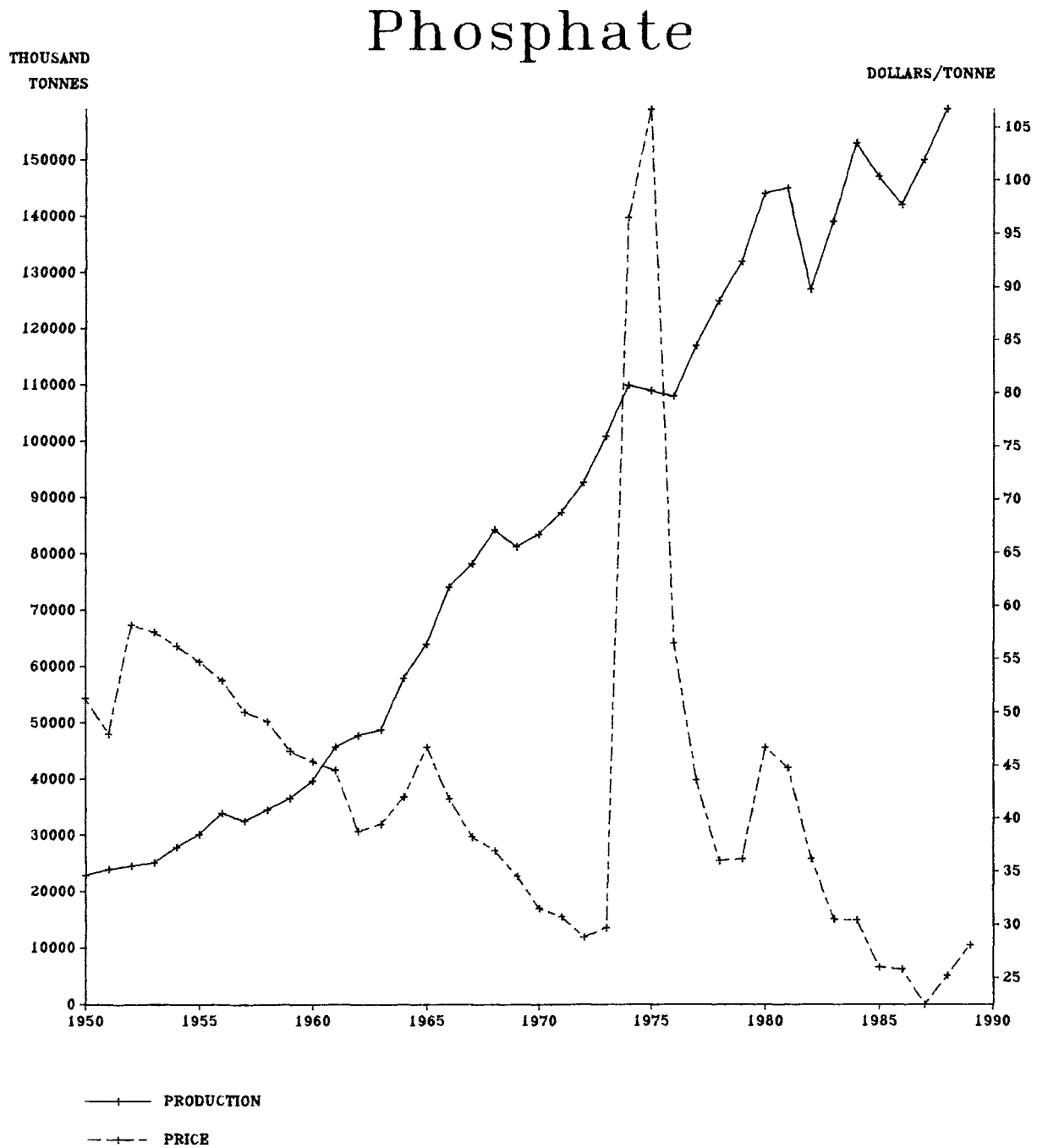
## Imports of Crude Petroleum

tonnes

Country	1984	1985	1986	1987	1988
Bahrain	8 081 000*	7 218 000*	9 958 000	10 054 000	10 500 000*
Bangladesh	1 003 938	992 492	902 000	1 000 000	...
Cyprus	640 411	502 240	602 545	615 889	...
India (b)	13 642 000	15 143 488	15 475 575	18 043 000	17 400 000*
Indonesia	5 607 778	3 675 798	3 826 943	4 184 629	4 309 647
Israel	7 053 000	6 292 000	7 360 000	6 696 000	...
Japan	192 528 887	176 369 002	167 840 928	164 125 425	171 247 941
Jordan	2 442 436	2 264 435	2 285 058	2 537 871	...
Korea, Dem. P.R. of	2 400 000*	2 600 000*	2 700 000*	2 800 000*	...
Korea, Republic of	26 758 353	27 072 058	28 837 773	29 241 798	32 942 770
Lebanon	760 000*	625 000*	1 120 000*	1 250 000*	...
Malaysia	2 553 703	2 252 298	1 933 480	1 563 128	...
Pakistan	4 108 039	4 364 701	3 727 075	3 714 220	3 809 857
Philippines	7 686 117	6 592 038	7 027 203	8 945 688	9 473 386
Singapore	32 381 136	29 753 982	32 385 635	31 489 670	34 885 597
Sri Lanka	1 918 070	1 658 094	1 638 547	1 778 853	1 720 591
Syria	6 223 190	5 067 089	2 283 195	2 786 617	2 000 000*
Taiwan	17 696 377	16 255 485	17 163 675	19 244 855	19 952 499
Thailand	7 258 687	7 291 364	7 703 742	8 160 754	8 040 644
Yemen, People's Dem. Rep. of	37 300	104 800	106 926	9 390	...
Australia	7 690 965	6 032 500	6 714 000	7 254 000	8 197 000
New Zealand (a)	1 734 032	1 683 713	713 958	1 599 407	2 300 000*

(a) Years ended 30 June of that stated

(b) Years ended 31 March following that stated



**Figure 17** World production of phosphate rock compared with the yearly average price of Moroccan phosphate f.a.s. Casablanca expressed in constant 1980 US dollars. Trend-line analysis of the production data indicates a growth rate of approximately 5.5% per annum. Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.

## Production of Phosphate Rock

Country	1984	1985	1986	1987	1988
Finland	477 300	511 500	527 495	553 279	584 000
Soviet Union	33 300 000*	33 755 000*	33 900 000*	34 100 000*	34 400 000*
Sweden	132 700	193 445	186 676	227 844	142 000
Turkey	99 608	38 525	2 700	19 197	74 200
Algeria	1 000 200	1 221 200	1 203 300	1 209 000	1 331 000
Egypt	710 342	748 126	769 160	580 061	207 698
Morocco	21 351 000	20 779 000	21 427 000	21 328 000	24 915 000
Senegal					
Phosphate rock	1 932 000	1 813 280	1 875 628	1 780 836	2 327 262
Aluminium phosphate (a)	279 000	355 266	131 300	79 136	417 090
South Africa	2 496 038	2 433 375	2 922 500	2 623 100	2 776 000
Tanzania	14 500	21 039	10 028	18 386	14 700
Togo	2 695 600	2 451 700	2 313 900	2 543 933	3 464 000
Tunisia	5 319 000	4 505 000	5 800 000	6 215 000	6 027 000
Zimbabwe	134 447	135 061	135 592	154 827	125 156
Mexico	652 651	786 500	746 863	688 973	666 753
Netherlands Antilles (b)	20 219	27 992	22 702	22 291	21 931
USA	49 197 000	50 835 000	40 320 000	40 954 000	45 389 000
Brazil (d)	3 827 223	4 170 680	4 542 317	5 433 175	5 000 000*
Chile					
Phosphate rock	4 606	7 110	6 684	10 389	9 161
Guano	—	3 150	7 546	5 685	4 052
Colombia	11 480	24 249	28 624	29 800	30 000
Peru	12 694	12 216	18 250	19 215	20 000*
Venezuela	3 265	8 567	167 000	104 000	100 000
Cambodia	5 000*	5 000*	—	—	—
China	14 210 000	6 974 000	9 790 000	14 866 000	15 000 000*
Christmas Island (b) (c)	1 257 576	1 187 225	880 115	836 000	—
India	883 258	925 061	667 070	679 419	667 000*
Indonesia	1 917	525	601	2 592	411
Iraq	1 000 000*	1 000 000*	1 000 000*	1 500 000*	1 273 000*
Israel	2 064 500	2 195 300	2 518 000	2 731 000	2 548 000
Jordan	6 213 100	6 067 139	6 249 223	6 845 400	5 628 200
Korea, Dem. P.R. of	500 000*	500 000*	500 000*	500 000*	500 000*
Pakistan	142	8 783	31 094	72 782	...
Philippines					
Phosphate rock	7 488	8 848	1 656	...	7 104
Guano	552	1 318	3 466	...	1 401
Sri Lanka	13 685	17 295	14 977	21 305	23 104
Syria	1 515 000	1 224 000	1 606 000	1 986 000	2 342 000
Thailand	3 075	4 072	4 940	4 502	8 348
Vietnam	200 000*	300 000*	400 000*	500 000*	600 000*
Australia	15 345	33 116	33 659	11 294	13 000
Nauru (b)	1 358 520	1 508 200	1 493 600	1 375 500	1 540 400
World total	153 000 000	147 000 000	142 000 000	151 000 000	158 000 000

(a) Including lime phosphates

(b) Exports

(c) Including phosphate dust

(d) Including beneficiated and directly shipped material

**Exports of Phosphate Rock**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	20 253	607	407	326	356
Belgium-Luxembourg	19 287	26 761	17 604	30 822	19 305
Denmark	1 789	1 713	1 369	10 467	1 449
France	1 931	4 239	3 202	4 065	4 459
Germany, Federal Republic of	2 446	9 824	2 482	2 989	5 189
Netherlands	32 944	57 174	21 876	137 637	158 586
Soviet Union (c)	3 777 000*	3 175 000*	2 451 000*	3 216 000*	2 570 000*
Sweden	91 286	98 426	132 725	142 096	72 363
Algeria	547 230	715 182	785 363	855 520	876 800
Egypt	77 600	141 705	71 770	68 650	102 000*
Morocco	14 951 346	14 789 875	13 696 128	13 061 333	14 260 000
Senegal					
Calcium phosphate	1 449 668	1 260 886	1 319 474	845 789	...
Aluminium phosphate	64 347	70 153	60 489	52 284	...
South Africa	471 723	694 824	775 199	1 061 400	1 268 000
Togo	2 761 000	2 444 800	2 266 300	2 508 500	2 868 300
Tunisia	1 140 360	1 114 864	1 205 752	1 241 277	1 114 055
Netherlands Antilles	20 219	27 992	22 702	22 291	21 931
USA	11 319 562	10 284 000	9 176 000	8 454 000	8 092 000
Christmas Island (a)	1 257 576	1 187 225	880 115	846 800	—
Israel (b)	2 071 012	2 219 084	2 351 399	2 369 093	2 247 000
Jordan	4 695 015	4 609 710	5 197 665	5 543 685	5 611 300
Singapore	5 095	3 499	2 605	898	743
of which: Re-exports	4 723	3 021	2 605	898	743
Syria	951 055	794 246	1 262 299	1 514 336	1 881 000
Australia	26 312	10 034	22 845	15 000	34
Nauru	1 358 520	1 508 200	1 493 600	1 375 500	1 540 400

(a) Including phosphate dust

(b) Figures may be incomplete as value only given in Israeli trade return for exports to some countries

(c) BGS estimates, based on known imports into certain countries



## Imports of Phosphate Rock

Country	1984	1985	1986	1987	1988
United Kingdom	1 340 133	1 159 512	936 153	758 084	746 823
Belgium-Luxembourg	2 472 435	2 482 188	2 286 726	2 522 224	2 386 939
Denmark	315 972	328 663	198 473	234 464	270 370
France	4 652 290	4 254 324	3 566 714	3 754 538	3 655 050
Germany, Federal Republic of	1 933 425	1 943 064	1 579 045	1 444 894	1 157 569
Greece	379 040	202 829	356 999	751 589	308 123
Irish Republic	7 369	7 239	5 105	2 813	1 495
Italy	1 448 556	1 295 729	1 388 856	1 302 576	1 234 000
Netherlands	2 366 108	2 388 066	2 053 253	2 212 428	2 459 808
Portugal	364 752	342 282	307 603	324 888	221 000
Spain	2 887 721	2 775 044	3 700 779	2 832 571	2 866 880
Albania	60 700	58 800	95 200	104 800	87 100
Austria	470 133	424 530	421 837	350 134	328 113
Bulgaria	755 549	722 898	629 255	520 900	732 600
Czechoslovakia (a)	276 000	282 000	273 000	255 000	146 000
Finland	387 694	383 000	190 800	136 200	149 900
German Democratic Republic (a)	425 200	424 000	437 300	368 300	394 000
Hungary	645 820	575 883	585 147	712 200	544 221
Norway	507 213	452 112	445 807	475 426	512 188
Poland	2 965 000	3 261 000	2 970 000	3 482 000	3 401 000
Romania (a)	935 500	947 100	945 000*	890 000*	899 000*
Sweden	774 193	749 688	588 417	739 838	693 265
Switzerland	6 423	6 247	5 063	5 237	2 193
Turkey	727 758	682 049	702 401	813 582	995 330
Yugoslavia	1 438 167	1 312 471	1 439 150	1 373 803	1 741 304
Ivory Coast	4 882	7 793	10 533	...	4 646
Mozambique	3 000	...	...	...	...
Nigeria	17 000	11 000	7 400	...	...
South Africa	143 908	51 770	...	250 650	...
Tanzania	23 000	15 000	...	...	...
Zimbabwe	7 971	—	11 939	6 747	...
Canada	3 142 653	2 621 667	2 355 683	1 968 225	2 157 426
Mexico	1 250 758	2 034 921	1 096 767	1 345 432	1 377 061
USA	23 223	35 049	527 776	466 562	675 626
Brazil	9 449	31 678	119 237	152 675	142 340
Chile	6 066	18 948	13 871	7 100	6 000
Colombia	37 425	40 608	51 127	46 300	29 400
Uruguay	35 967	42 000	35 422	89 700	77 149
Venezuela	54 909	72 545	59 639	54 926	67 600
Bangladesh	93 000	123 000	157 100	162 000	119 200
China	619 000	286 000	338 400	312 800	316 400
India	1 680 000	1 849 121	1 867 600	1 996 400	2 355 300
Indonesia	636 509	817 432	717 571	1 195 638	1 035 831
Japan	2 322 869	2 413 608	2 076 190	2 159 958	1 821 007
Korea, Dem. P.R. of	41 000	50 000	144 400	90 000	132 000
Korea, Republic of	1 651 629	1 770 968	1 606 721	1 702 440	1 653 005
Malaysia	284 629	374 644	283 857	384 588	319 300
Pakistan (b)	280 621	246 979	191 855	115 573	278 845
Philippines	13 574	306 130	1 286 548	1 034 936	717 016
Saudi Arabia	—	9 604	17 177	4 298	4 869
Singapore	9 528	5 219	4 920	3 445	2 358
Sri Lanka	20 110	24 025	13 434	18 718	10 500
Taiwan	367 089	308 858	330 763	361 188	368 630
Australia	1 606 414	1 809 830	1 690 344	1 666 215	2 082 000
New Zealand (b)	898 605	924 638	484 595	338 178	442 300

(a) P<sub>2</sub>O<sub>5</sub> content

(b) Years ended 30 June of that stated

**Mine Production of Platinum Group Metals**

kilograms (metal content)

Country	1984	1985	1986	1987	1988
<b>Finland</b>					
Platinum (a)	33	67	107	69	54
Palladium (a)	34	60	96	120	106
<b>Soviet Union</b>					
Platinum	29 000*	30 000*	31 000*	32 000*	33 000*
Palladium	77 000*	79 000*	81 000*	83 000*	84 000*
<b>Yugoslavia</b>					
Platinum (a)	13	3	0	22	23
Palladium (a)	108	87	85	132	142
<b>Ethiopia (c)</b>	0	0	2	1	1
<b>South Africa</b>	106 557*	115 000*	123 000*	131 000*	133 000*
<b>Zimbabwe</b>					
Platinum	24	19	26	18	28
Palladium	38	30	35	29	45
<b>Canada (b)</b>	10 369	10 534	12 190	10 930	12 541
<b>USA</b>					
Platinum	(d)455	(d)470	(d)500	1 000*	1 300*
Palladium	...	...	...	2 600*	3 800*
<b>Colombia</b>	314	362	447	680	810
<b>Japan</b>					
Platinum (a)	607	691	663	753	647
Palladium (a)	1 051	1 359	1 453	1 417	1 170
<b>Australia</b>					
Platinum	66	95	115	84	73
Palladium	523	476	428	451	360
<b>World total</b>	226 000	238 000	251 000	264 000	271 000

**Notes**

(1) Wherever possible, figures relate to quantities of platinum group metals thought to be recovered from ores originating in the country stated

(2) Figures for metal production are only given for countries where recovery is thought to be based predominantly on domestic materials or on imported materials which have not been recorded as mine production elsewhere in the table

(3) In addition to the countries listed, Bulgaria, China, Indonesia, Papua New Guinea and Philippines are also believed to produce platinum group metals

(a) Metal production

(b) Platinum metals content of concentrates (produced from Ni-Cu ores), residues and matte exported

(c) Years ended 6 July of that stated

(d) Including palladium

## Exports of Platinum Group Metals

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom					
Platinum	31 137	30 605	33 277	27 388	37 487
Palladium	16 530	16 374	20 252	14 865	32 795
Other platinum metals	5 589	7 005	11 311	6 485	5 796
Waste & scrap	7 003	2 188	290	25 925	1 198
Belgium-Luxembourg					
Platinum	2 239	1 931	3 770	2 405	3 646
Platinum metals	6 757	7 206	7 696	6 880	16 201
Waste & scrap	£3 774 000	£2 719 000	£4 400 000	£3 384 000	£4 433 000
Denmark					
Platinum	76	75	95	55	290
Waste & scrap	918	944	285	1 810	373
France					
Platinum	33 513	6 267	3 471	4 417	6 756
Platinum metals	2 742	3 219	4 942	7 066	4 352
Waste & scrap	3 146	29 111	28 203	20 000*	200
Germany, Federal Republic of					
Platinum	9 287	8 654	9 393	13 189	15 183
Palladium	5 057	5 823	4 878	5 192	8 490
Other platinum metals	4 477	5 028	4 824	5 546	2 377
Waste & scrap	43	44 573	999	277	20 545
Irish Republic					
Platinum & platinum metals	415	414	614	997	2 006
Italy					
Platinum	95 527	1 537	2 253	966	...
Platinum metals	766	904	1 968	2 105	...
Netherlands					
Platinum	1 719	1 672	1 263	1 232	1 560
Platinum metals	717	556	571	534	482
Waste & scrap	14 000	4 000	6 000	8 000	18 000
Portugal					
Platinum & platinum metals	192	406	300	399	...
Spain					
Platinum & platinum metals	325	220	149	78	...
Austria					
Platinum & platinum metals	13 295	413	467	740	1 201
Finland					
Platinum & platinum metals	36	15	547	12	3
Norway					
Platinum & platinum metals	1 385	1 549	1 601	1 975	1 579
Soviet Union					
Platinum & platinum metals (a)	58 000*	46 900*	58 500*	77 000*	79 700*
Sweden					
Platinum & platinum metals	£1 382 700	£954 300	£1 334 000	£749 000	£1 305 000
Switzerland					
Platinum & platinum metals	38 988	31 057	28 470	37 741	63 335
Waste & scrap	...	...	...	...	59 614
South Africa					
Platinum & platinum metals (a)	91 100*	95 000*	99 800*	112 000*	123 700*
Waste & scrap (a)	500*	1 100*	800*	3 500*	20 700*
Canada					
Ores & concentrates (b)	8 465	7 174	9 062	7 763	...
Platinum metals	4 260	6 015	3 662	4 506	4 617
of which: Re-exports	353	243	68	166	...
Waste & scrap	5 109	8 527	7 519	6 696	...
USA					
Ores & concentrates (b)	1 331	195	1 157	172	156
Platinum	5 651	6 376	3 773	5 675	9 524
of which: Re-exports	133	700	877	3 114	1 898
Palladium	6 350	7 173	6 608	6 855	9 106
of which: Re-exports	667	466	1 146	1 132	718
Other platinum metals	5 774	2 987	3 679	6 205	4 379
of which: Re-exports	623	258	990	1 847	1 002
Waste & scrap	17 535	12 219	11 730	10 545	12 103

**Exports of Platinum Group Metals**

kilograms

Country	1984	1985	1986	1987	1988
Colombia					
Platinum	908	1 434	1 010	...	...
China					
Platinum & platinum metals (a)	150*	250*	400*	500*	150*
Hong Kong					
Platinum & platinum metals (c)	431	829	619	2 642	2 067
Japan					
Platinum	1 192	1 481	659	388	7 188
Platinum metals	2 449	2 484	1 632	2 268	1 639
Korea, Republic of					
Waste & scrap	24	585	60	8 741	3 979
Australia					
Platinum & platinum metals	18 695	290	1 049	6 723	660
of which: Re-exports	18 131	32	45	85	...

**Notes**

(1) In this table the term 'Platinum' and/or 'Platinum metals' as used here includes unwrought, partly worked and alloys

(a) BGS estimates, based on known imports into certain countries

(b) Platinum metals content

(c) Re-exports

## Imports of Platinum Group Metals

Country	1984	1985	1986	1987	1988
United Kingdom					
Platinum	6 084	13 009	10 322	10 425	26 437
Palladium	3 995	6 361	13 058	10 575	28 438
Other platinum metals	2 127	2 981	3 608	5 004	4 342
Waste & scrap	15 709	17 034	18 858	18 577	35 456
Belgium-Luxembourg					
Platinum	1 564	1 420	1 456	1 268	1 519
Platinum metals	525	445	556	477	719
Waste & scrap	£5 370 000	£7 626 000	£9 254 000	£8 533 000	£11 211 000
Denmark					
Platinum & platinum metals	840	639	691	726	405
France					
Platinum	10 863	6 241	5 375	5 436	6 512
Platinum metals	5 150	5 559	6 182	5 132	5 293
Waste & scrap	1 830	16 237	3 146	2 780	49 900
Germany, Federal Republic of					
Platinum	17 144	19 553	17 750	23 888	21 492
Palladium	17 656	19 333	18 109	17 081	27 461
Other platinum metals	8 410	4 609	5 425	5 127	3 151
Waste & scrap	41 868	74 551	87 922	122 240	86 762
Greece					
Platinum & platinum metals	364	499	492	213	437
Irish Republic					
Platinum & platinum metals	1 249	350	653	2 267	3 842
Italy					
Platinum	2 502	3 003	3 363	3 246	...
Platinum metals	3 372	3 291	3 903	4 025	...
Waste & scrap	514	600	1 339	3 900	...
Netherlands					
Platinum	1 653	1 384	777	892	1 158
Platinum metals	1 213	1 454	1 907	2 356	2 465
Waste & scrap	...	...	...	12 000	14 000
Portugal					
Platinum & platinum metals	249	366	200	690	...
Spain					
Platinum & platinum metals	617	610	1 304	1 165	...
Waste & scrap	868	1 000	1 000	325	...
Austria					
Platinum & platinum metals	453	1 262	1 314	2 420	2 512
Bulgaria					
Platinum & platinum metals (e)	500*	800*	1 100*	700*	700*
Czechoslovakia					
Platinum & platinum metals (e)	20*	250*	250*	100*	500*
Finland					
Platinum & platinum metals	106	96	123	334	954
German Democratic Republic					
Platinum & platinum metals (e)	700*	1 900*	2 200*	1 700*	2 300*
Hungary					
Platinum & platinum metals (e)	300*	300*	400*	300*	400*
Norway					
Platinum & platinum metals	786	679	669	786	728
Poland					
Platinum & platinum metals (e)	400*	300*	900*	1 400*	800*
Romania					
Platinum & platinum metals (e)	150*	50*	160*	250*	450*
Sweden					
Platinum & platinum metals	2 000	3 000	3 000	3 000	2 000
Switzerland					
Platinum & platinum metals	55 501	37 247	36 028	48 225	23 735
Waste & scrap	...	...	...	...	4 617
Turkey					
Platinum & platinum metals	244	350	424	321	227
Yugoslavia					
Platinum & platinum metals	£1 165 000	£1 450 000	£1 082 000	£1 084 000	£1 328 000

**Imports of Platinum Group Metals**

kilograms

Country	1984	1985	1986	1987	1988
Algeria					
Platinum & platinum metals	132	136	22	51	...
Nigeria					
Platinum & platinum metals	107	—	3	...	...
South Africa					
Platinum & platinum metals	2 940	2 310	69	411	...
Canada					
Platinum & platinum metals (c)	2 235	2 034	4 212	3 377	10 893
Costa Rica					
Platinum & platinum metals	332	198	31	5	...
Mexico					
Platinum & platinum metals	76	72	74	13	...
USA					
Ores & concentrates (d)	10	254	74	64	30
Platinum	50 292	48 669	56 582	36 413	46 804
Platinum metals					
Palladium	60 776	46 075	46 710	52 275	52 881
Iridium, osmium & osmiridium	695	928	1 264	613	652
Rhodium	4 842	6 257	5 570	6 603	7 359
Ruthenium	6 167	5 066	5 492	2 625	3 744
Unspecified	275	1 812	655	513	...
Waste & scrap	16 384	16 506	31 522	19 438	12 761
Argentina					
Platinum	27	9	23	...	...
Palladium	100	39	36	...	...
Other platinum metals	406	83	8	...	...
Brazil					
Platinum	124	115	256	154	277
Palladium	357	642	444	863	662
China					
Platinum & platinum metals (e)	150*	500*	800*	1 700*	1 800*
Hong Kong					
Platinum & platinum metals	1 226	1 367	587	1 683	3 318
India (a)					
Platinum	420	403	334	...	...
Indonesia					
Platinum & platinum metals	4	34	2	245	3
Iran (f)					
Platinum & platinum metals	£37 000	£153 000	£106 000	...	...
Israel					
Platinum metals	£915 000	£821 000	£1 415 000	£1 247 000	...
Japan					
Platinum	37 452	40 494	30 935	52 801	68 459
Platinum metals	43 748	39 072	47 824	53 964	58 595
Waste & scrap	1 710	2 664	3 179	6 688	4 537
Jordan					
Platinum	4 593	38	30	40	...
Korea, Republic of					
Platinum & platinum metals	3 385	399	590	465	804
Malaysia					
Platinum & platinum metals	1 969	553	25 963	10 651	...
Qatar					
Platinum & platinum metals	...	54	1 104	1 061	...
Singapore					
Platinum & platinum metals	56	1 065	474	1 055	865
Taiwan					
Platinum & platinum metals	2 482	2 133	599	1 053	1 678
Thailand					
Platinum & platinum metals	865	6	59	443	9 221

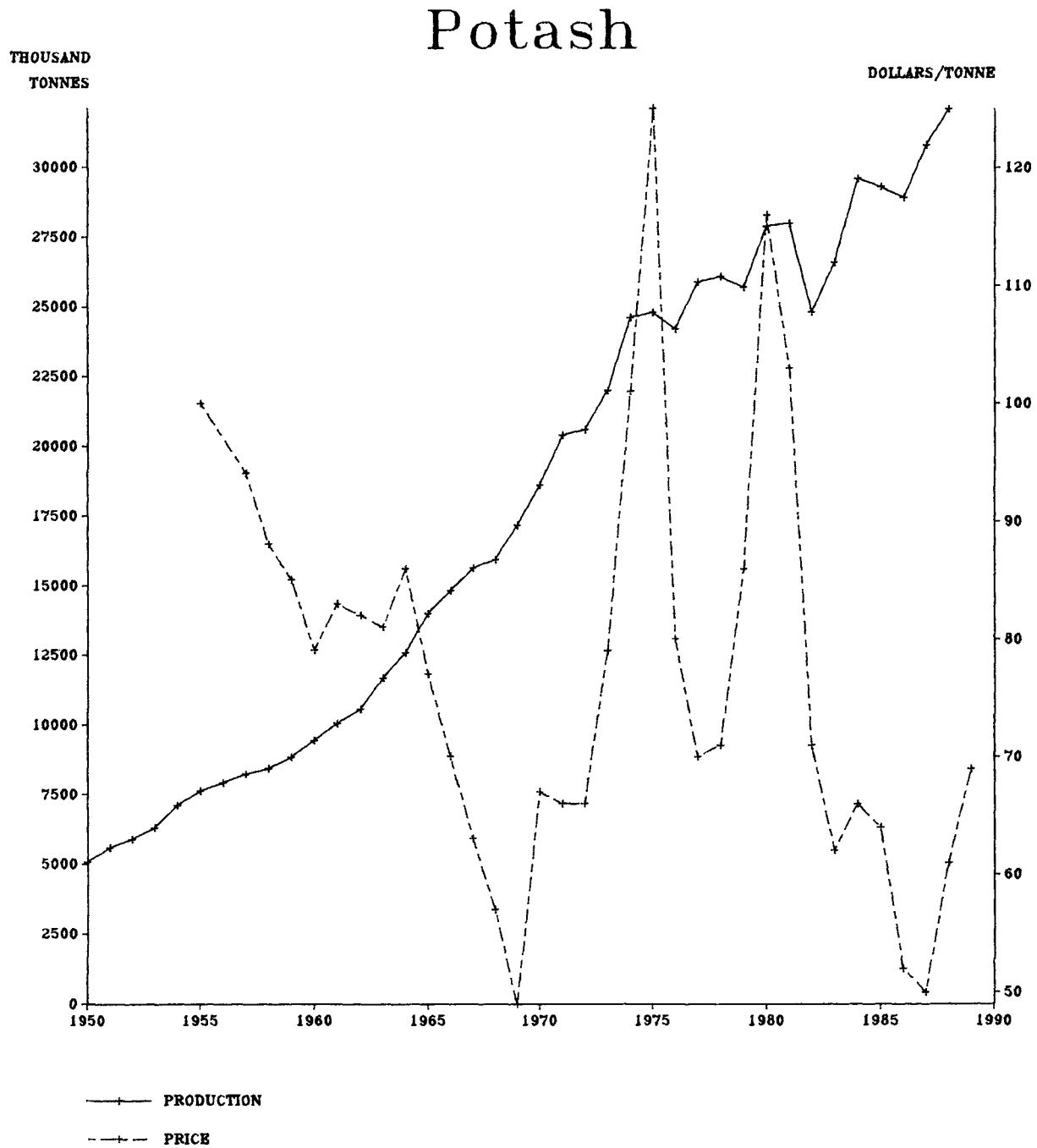
**Imports of Platinum Group Metals**

Country	1984	1985	1986	1987	1988
Australia					
Platinum metals	576	1 216	968	5 848	3 098
New Zealand (b)					
Platinum & platinum metals	116	144	86	61	...

**Notes**

(1) In this table the term 'Platinum' and/or 'Platinum metals' as used here includes unwrought, partly worked and alloys

- (a) Years ended 31 March following that stated
- (b) Years ended 30 June of that stated
- (c) Derived from Canadian ores and concentrates exported for treatment
- (d) Platinum metals content
- (e) BGS estimates, based on known exports from certain countries
- (f) Years ended 20 March following that stated



**Figure 18** World production of potash ( $K_2O$ ) compared with the annual price (Vancouver) expressed in constant 1980 US dollars.

Trend-line analysis of the production data indicates a growth rate of approximately 5% per annum.

Constant commodity prices derived from those quoted in International Financial Statistics Yearbook (1989) published by the International Monetary Fund.



# Production of Potash

Potash  
tonnes (K<sub>2</sub>O content)

Country	1984	1985	1986	1987	1988
United Kingdom					
Chloride	335 440	354 496	416 965	450 345	483 662
France					
Potassic salts	1 873 000	1 882 000	1 748 000	1 719 000	1 502 000
Germany, Federal Republic of					
Potassic salts	2 645 000	2 583 000	2 161 000	2 199 000	2 290 000
Italy					
Potassic salts	162 958	204 177	157 958	177 834	196 762
Spain					
Potassic salts	791 082	761 057	794 586	838 439	766 000
German Democratic Republic					
Potassic salts	3 465 000	3 465 000	3 485 000	3 510 000	3 510 000
Soviet Union	9 776 000	10 367 000	10 200 000	10 900 000	11 300 000
Canada					
Chloride	7 527 000	6 661 077	6 752 709	7 668 384	8 154 000
USA					
Potassic salts	1 564 000	1 296 000	1 202 000	1 262 000	1 521 000
Brazil					
Chloride	—	1 500	10 524	37 311	55 732
Chile					
Nitrate	18 500*	21 000*	20 600*	23 100*	25 300*
China	40 000*	40 000*	40 000*	40 000*	40 000*
Israel					
Chloride	1 100 000*	1 200 000	1 255 000	1 253 000	1 244 000
Jordan	295 000	561 000	660 000	734 000	800 000
World total	29 600 000	29 400 000	28 900 000	30 800 000	31 900 000

## Potash

**Exports of Potash**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Chloride	96 633	78 547	94 929	327 485	...
Other potassic fertilisers	2 305	1 132	900	1 594	1 967
Potassic chemicals	6 116	4 874	4 023	6 214	5 020
Belgium-Luxembourg					
Fertiliser salts	765	382	2 127	1 024	530
Sulphate (b)	248 000*	325 000*	322 900*	383 600*	283 300*
Chloride	...	15 328	29 572	107 714	55 921
Other potassic fertilisers	4 233	4 361	5 519	5 130	3 942
Potassic chemicals	3 131	2 845	2 181	1 994	2 737
France					
Fertiliser salts	3 378	7 889	6 710	7	—
Chloride	425 826	411 129	288 716	419 134	513 900
Other potassic fertilisers	32 049	22 594	20 563	19 779	17 696
Potassic chemicals	1 749	3 166	7 306	5 476	8 744
Germany, Federal Republic of					
Fertiliser salts	42 459	47 006	43 401	47 958	43 017
Potassic fertilisers	2 595 451	2 322 673	2 177 290	2 297 189	2 175 736
Potassic chemicals	42 548	43 278	40 649	39 174	43 393
Greece					
Potassic fertilisers	22 739	33 110	58 175	12 406	2 300*
Italy					
Sulphate	126 802	111 027	66 291	56 733	80 000*
Other potassic fertilisers	3 085	390	285	1 904	...
Potassic chemicals	5 364	2 025	1 951	2 969	...
Netherlands					
Sulphate (a)	97	1 331	276	296	409
Chloride (a)	1 421	2 372	5 999	44 039	63 055
Potassic chemicals	2 708	3 414	3 090	3 603	4 434
Portugal					
Potassic fertilisers	2	752	110	186	...
Spain					
Sulphate	68 502	61 075	86 746	58 479	49 505
Chloride	518 391	501 184	395 562	627 730	627 719
Potassic chemicals	10 190	8 127	9 355	8 423	...
Czechoslovakia					
Potassic chemicals (b)	17 100*	9 600*	3 700*	1 600*	800*
German Democratic Republic					
Fertiliser salts (a)	2 776 000	2 791 000	2 814 000	2 894 000	2 832 000
Poland					
Potassic chemicals	3 026	4 476	4 310	4 268	4 055
Romania					
Potassic chemicals (b)	34 300*	59 200*	51 100*	25 300*	5 500*
Soviet Union					
Fertiliser salts	5 435 118	5 455 746	5 127 007	5 412 162	5 790 077
Sweden					
Potassic chemicals	5 650	4 632	...	...	...
Switzerland					
Potassic chemicals	1 376	1 684	1 061	844	1 594
Yugoslavia					
Potassic chemicals	2 135	632	873	882	3 517
Canada					
Chloride	11 493 879	9 981 058	9 894 211	10 983 658	12 551 990
Other potassic fertilisers	...	...	...	...	43 994
Potassic chemicals	...	...	...	...	15 571
USA					
Sulphate	214 480	273 290	316 673	414 830	382 027
Chloride	621 820	699 770	708 357	511 590	400 831
Other potassic fertilisers	246 067	250 000	...	...	...
Potassic chemicals	10 513	13 389	19 114	22 868	30 306
Chile					
Fertiliser salts	100 509	113 508	108 215	94 478	131 190
China					
Potassic chemicals (b)	1 200*	1 000*	4 100*	5 700*	5 800*
Hong Kong					
Potassic chemicals (c)	555	234	811	1 721	16 505

## Exports of Potash

Potash  
tonnes

Country	1984	1985	1986	1987	1988
Israel					
Chloride (b)	1 196 400*	1 219 900*	1 245 000*	1 382 200*	1 348 300*
Other potassic fertilisers (b)	224 300*	227 000*	186 400*	172 700*	142 300*
Potassic chemicals (b)	101 700*	107 700*	111 400*	118 000*	123 200*
Japan					
Potassic fertilisers	580	82	310	384	1 187
Potassic chemicals	4 751	7 780	8 985	10 485	19 790
Jordan					
Fertiliser salts	458 232	844 773	1 205 056	1 243 928	1 330 000
Korea, Republic of					
Sulphate	24 156	22 544	27 419	19 493	44 800
Other potassic fertilisers	4 310	4 917	9 258	21 679	10 500
Potassic chemicals	6 573	4 871	7 399	9 292	13 802
Singapore					
Sulphate	4 553	5 022	5 143	1 918	3 004
of which: Re-exports	4 553	5 022	5 143	1 918	2 944
Chloride	6 485	16 755	13 625	12 267	85 064
of which: Re-exports	6 405	16 754	13 625	12 265	85 058
Other potassic fertilisers	157 790	152 238	122 600	125 807	137 753
of which: Re-exports	157 675	151 635	122 454	125 607	136 996
Taiwan					
Potassic fertilisers	6 600	12 600	25 855	34 511	52 024
Potassic chemicals	693	997	1 016	1 063	1 636

### Notes

(1) So far as possible the term 'potassic chemicals', as used in this table, relates to items 522.64, 523.3,4,5 and 7 of the S.I.T.C. (Rev.3) and includes caustic potash, carbonate, chlorate, nitrate and sulphate

(a) K<sub>2</sub>O content

(b) BGS estimates, based on known imports into certain countries

(c) Re-exports

## Potash

## Imports of Potash

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Fertiliser salts	36 038	30 424	32 144	25 912	28 038
Chloride	509 166	574 494	470 885	521 274	...
Other potassic fertilisers	12 951	7 728	7 764	7 834	(f)594 482
Potassic chemicals	25 530	26 975	27 377	30 146	...
Belgium-Luxembourg					
Fertiliser salts	32 653	40 155	39 460	38 646	30 540
Sulphate	27 729	31 771	32 799	48 693	34 222
Chloride	...	1 077 430	1 066 949	1 308 403	1 229 633
Other potassic fertilisers	18 418	27 945	155 690	22 912	30 132
Potassic chemicals	11 263	13 725	13 696	12 351	12 268
Denmark					
Fertiliser salts	2 750	3 376	2 761	2 667	3
Sulphate	42 405	53 793	45 612	39 109	31 178
Chloride	245 684	234 532	217 429	240 420	229 558
Potassic chemicals	5 970	6 989	7 508	7 140	8 417
France					
Fertiliser salts	255	1	24 392	84 235	58 260
Sulphate	160 925	170 005	151 572	162 211	106 122
Chloride	702 795	767 872	664 553	1 115 054	1 012 234
Potassic chemicals	21 957	21 817	24 367	29 118	31 255
Germany, Federal Republic of					
Chloride	79 962	75 965	64 364	149 060	179 316
Potassic chemicals	26 055	27 712	18 209	18 840	28 037
Greece					
Sulphate	39 823	37 544	51 818	159 971	86 495
Potassic chemicals	6 159	9 287	5 902	...	...
Irish Republic					
Sulphate	9 917	8 524	4 436	3 600	2 097
Chloride	322 772	318 289	235 034	297 680	219 477
Other potassic fertilisers	126	1 657	310	548	400
Italy					
Fertiliser salts	10 757	9 090	7 112	4 632	...
Sulphate	44 735	44 454	70 665	77 050	80 000*
Chloride	612 727	587 945	606 425	666 059	700 000*
Other potassic fertilisers	13 756	15 296	19 759	21 295	...
Potassic chemicals	31 995	38 883	27 219	30 418	...
Netherlands					
Fertiliser salts (a)	209	297	377	654	708
Sulphate (a)	45 294	47 149	44 979	41 337	20 173
Chloride (a)	175 810	183 428	200 780	285 553	302 227
Potassic chemicals	33 470	40 090	39 776	44 357	52 506
Portugal					
Sulphate	1 000	1 001	1 315	2 573	...
Chloride	58 710	56 746	65 459	78 043	80 000*
Potassic chemicals	3 820	2 759	2 750	3 961	...
Spain					
Potassic chemicals	9 367	13 388	15 846	25 783	...
Austria					
Fertiliser salts	11 628	12 868	12 079	10 424	11 842
Sulphate	24 001	28 152	22 757	20 416	15 286
Chloride	225 143	226 825	185 489	163 225	197 176
Other potassic fertilisers	6 536	17 500	7 340	7 829	4 875
Potassic chemicals	6 437	6 799	6 896	7 136	7 459
Bulgaria					
Fertiliser salts (c)	144 100*	163 000*	188 900*	142 300*	183 400*
Czechoslovakia					
Fertiliser salts (a)	556 000	556 000	572 000	551 000	641 000
Finland					
Chloride	405 553	(c)230 300*	(c)213 100*	(c)212 100*	(c)209 800*
Other potassic fertilisers	311	384	364	182	106
Potassic chemicals	2 985	4 296	4 314	6 278	7 197
Hungary					
Fertiliser salts	4 135	3 349	2 338	2 257	2 132
Potassic fertilisers	1 272 665	1 286 440	1 114 655	1 080 930	1 356 158
Potassic chemicals	942	1 103	1 220	1 509	1 562

# Imports of Potash

Potash  
tonnes

Country	1984	1985	1986	1987	1988
Iceland					
Sulphate	4 528	1 803	5 781	5 041	100
Chloride	5 831	8 194	4 090	4 120	5 850
Norway					
Sulphate	82 057	87 473	97 947	92 449	124 196
Chloride	292 775	255 038	218 791	212 012	227 477
Other potassic fertilisers	820	1 182	926	1 066	1 496
Potassic chemicals	2 158	2 753	3 457	2 189	1 959
Poland					
Chloride	16 736	18 228	17 993	17 350	18 475
Other potassic fertilisers	2 444 000	2 357 000	2 373 000	2 496 000	2 532 000
Potassic chemicals	6 131	5 875	6 027	5 283	5 721
Romania					
Fertiliser salts (a)	363 000	346 000	459 900	359 000	399 100
Sweden					
Fertiliser salts	1 863	2 175	2 099	1 998	4 934
Potassic fertilisers	1 098	823	1 301	2 158	...
Potassic chemicals	3 798	3 494	3 894	4 485	4 875
Switzerland					
Fertiliser salts	111 788	81 381	71 002	68 464	64 546
Potassic chemicals	12 042	12 603	13 482	13 415	15 217
Turkey					
Fertiliser salts	0	23 803	20 634	16 881	...
Sulphate	9 994	11 946	50 958	8 563	...
Other potassic fertilisers	50 533	11 259	39 697	33 519	73 874
Potassic chemicals	5 750	4 372	6 326	7 975	8 519
Yugoslavia					
Sulphate	18 841	22 294	18 899	17 138	32 017
Chloride	506 950	599 574	559 280	523 319	606 000
Potassic chemicals	153 386	160 887	178 226	141 134	7 570
Algeria					
Sulphate	93 228	89 582	71 585	102 669	31 500*
Potassic chemicals	521	386	450	603	...
Cameroon					
Potassic fertilisers	...	...	9 104	41 155	...
Canary Islands					
Potassic fertilisers	5	1 378	4 179	1 532	...
Potassic chemicals	1 698	600	1	741	...
Egypt					
Potassic fertilisers	73 218	29 082	35 402	31 713	...
Gabon					
Fertiliser salts	128	399	459	...	...
Potassic fertilisers	1 207	1 339	1 516	...	...
Ivory Coast					
Sulphate	5 547	8 282	6 980	...	1 370
Chloride	43 407	44 866	22 427	...	36 944
Kenya					
Potassic fertilisers	2 989	2 733	1 540	1 076	2 700*
Liberia					
Potassic fertilisers	890	235	70	...	...
Madagascar					
Potassic fertilisers	6 441	5 133	1 072	4 664	...
Malawi					
Potassic fertilisers	4 918	...	...	...	...
Mauritius					
Potassic fertilisers	21 632	26 367	21 229	27 605	16 717
Morocco					
Sulphate	43 180	43 748	47 079	34 710	...
Chloride	41 129	54 467	41 048	61 176	...
Potassic chemicals	946	990	982	971	...
Mozambique					
Potassic fertilisers	...	2 530	...	...	...
Niger					
Potassic fertilisers	1 161	1 335	2 864	...	...
Nigeria					
Potassic fertilisers	37 451	2 334	6 690	1 519	...

## Potash

## Imports of Potash

tonnes

Country	1984	1985	1986	1987	1988
Reunion					
Potassic fertilisers	50	249	3 700	5 240	...
Senegal					
Potassic fertilisers	14 925	24 941	1 160	6 447	13 472
South Africa					
Potassic fertilisers	294 470	292 296	208 068	220 115	213 000*
Potassic chemicals	5 102	5 762	6 383	7 039	...
Tunisia					
Potassic fertilisers	4 665	10 865	15 021	3 501	45 500
Zimbabwe					
Sulphate	12 751	22 423	15 672	20 740	...
Chloride	32 858	44 802	28 577	47 685	...
Belize					
Potassic fertilisers	660	71	1 030	2 044	2 122
Canada					
Sulphate	15 644	30 837	29 005	11 814	9 801
Chloride	1 772	707	390	967	3 765
Other potassic fertilisers	68 185	33 687	23 991	51 503	45 267
Potassic chemicals	8 079	8 294	9 786	10 159	12 599
Costa Rica					
Potassic fertilisers	29 663	43 293	59 103	57 559	45 000*
Cuba					
Sulphate	19 673	24 281	18 000	22 000	...
Chloride	333 733	390 593	367 000	352 000	335 000*
Dominican Republic					
Sulphate	1 301	1 119	...	...	...
Other potassic fertilisers	17 218	12 657	12 800	25 600	17 800
El Salvador					
Potassic fertilisers	11	14 646	10 665	...	...
Guadeloupe					
Potassic fertilisers	2 670	2 975	3 024	...	...
Guatemala					
Potassic fertilisers	27 454	12 186	23 123	16 808	...
Honduras					
Potassic fertilisers	9 728	6 727	2 376	13 900	19 700
Jamaica					
Potassic fertilisers	15 048	183	3 096	391	11 472
Martinique					
Potassic fertilisers	21 322	19 854	20 033	4 561	...
Mexico					
Sulphate	41 164	37 173	29 181	4 156	...
Chloride	171 177	239 840	144 667	77 436	120 000*
Nicaragua					
Potassic fertilisers	28 355	13 573	...	...	...
Panama					
Potassic fertilisers	8 600	6 444	9 098	2 485	7 918
St. Kitts-Nevis-Anguilla					
Potassic fertilisers	2 591	...	...	...	...
Trinidad & Tobago					
Potassic fertilisers	8 230	669	3 125	1 281	...
USA					
Fertiliser salts	35 106	41 948	46 196	20 100	36 905
Sulphate	55 104	48 788	47 689	57 635	90 787
Chloride	7 775 921	7 468 432	6 836 183	6 613 676	6 795 910
Other potassic fertilisers	150	99	149	296	3 122
Potassic chemicals	...	27 973	38 611	40 588	...
Argentina					
Sulphate	4 562	2 878	8 299	2 652	...
Chloride	12 685	6 714	11 219	16 799	...
Potassic chemicals	5 415	2 630	7 198	...	...
Brazil					
Sulphate	48 824	22 292	42 976	46 963	48 100
Chloride	1 745 156	1 777 567	2 234 374	2 402 788	2 145 575
Potassic chemicals	11 296	7 886	15 263	7 622	62 541

# Imports of Potash

Potash  
tonnes

Country	1984	1985	1986	1987	1988
Chile					
Sulphate (c)	12 300*	20 900*	28 300*	19 000*	28 100*
Chloride (c)	44 000*	36 300*	59 100*	14 200*	182 600*
Colombia					
Sulphate	11 657	16 267	16 470	...	...
Chloride	153 306	157 470	173 707	(e)225 000*	(e)230 000*
Potassic chemicals	1 730	2 883	1 874	...	...
Ecuador					
Chloride	23 301	19 263	4 667	19 272	...
Other potassic fertilisers	4 961	100	2 512	6 944	...
Guyana					
Potassic fertilisers	2 000*	2 000*	2 000*	2 000*	2 000*
Peru					
Sulphate	211	4 059	8 611	8 349	6 827
Chloride	8 042	12 355	24 500	45 678	17 811
Potassic chemicals	852	859	1 367	1 653	1 096
Uruguay					
Potassic fertilisers	5 030	6 339	6 536	5 310	6 307
Potassic chemicals	108	115	368	505	268
Venezuela					
Potassic fertilisers	146 134	256 054	144 569	140 354	165 000*
Potassic chemicals	794	1 293	1 811	1 794	...
China					
Potassic fertilisers (c)	817 000*	350 000*	440 000*	1 242 000*	1 587 000*
Cyprus					
Potassic fertilisers	1 164	1 001	1 061	1 239	...
Dubai					
Potassic fertilisers	996	1 530	984	...	...
Hong Kong					
Potassic fertilisers	4 525	15 000	—	—	—
Potassic chemicals	979	764	1 689	2 181	3 581
India (b)					
Fertiliser salts	13 000	55 006	89 316	...	...
Chloride	...	964 220	988 302	...	...
Other potassic fertilisers	...	125 357	188 168	...	...
Potassic chemicals	...	1 631	3 870	...	...
Indonesia					
Sulphate	2 300	1 000	1 700	5 307	1 400
Chloride	163 640	277 594	88 759	206 641	509 804
Other potassic fertilisers	110 490	33 080	1 665	45	12 053
Potassic chemicals	1 982	1 972	1 870	2 323	3 036
Japan					
Sulphate	238 242	197 876	171 347	222 776	236 268
Chloride	1 032 574	1 138 094	970 042	1 142 162	1 041 940
Other potassic fertilisers	74 929	39 460	58 065	74 872	66 528
Potassic chemicals	5 080	3 902	8 410	11 799	16 644
Jordan					
Potassic fertilisers	18	753	—	—	...
Korea, Dem. P.R. of					
Potassic fertilisers (c)	67 500*	110 100*	23 000*	11 000*	31 600*
Korea, Republic of					
Sulphate	—	6 955	—	—	1
Chloride	358 851	482 105	429 960	697 864	662 936
Potassic chemicals	2 281	1 594	5 174	9 142	6 223
Malaysia					
Fertiliser salts	244	287	10	184	...
Sulphate	11 183	16 890	7 714	9 861	...
Chloride	196 322	178 762	229 231	291 726	...
Other potassic fertilisers	281 964	314 658	229 510	310 158	...
Pakistan (d)					
Potassic chemicals	1 329	2 083	1 678	1 956	2 448
Philippines					
Sulphate	6 058	32 471	19 521	19 543	99 586
Chloride	42 963	24 174	66 109	148 489	93 266
Other potassic fertilisers	2 393	1 624	960	2 105	698
Potassic chemicals	1 600	2 458	2 546	2 538	3 191

**Imports of Potash**

tonnes

Country	1984	1985	1986	1987	1988
<b>Saudi Arabia</b>					
Sulphate	36 773	23 843	2 497	14 239	25 139
Other potassic fertilisers	44 134	34 548	32 772	34 661	30 614
<b>Singapore</b>					
Sulphate	3 501	22 312	6 613	3 800	3
Chloride	10 783	216	8 256	12 037	90 434
Other potassic fertilisers	158 402	166 838	140 667	112 024	179 043
<b>Sri Lanka</b>					
Chloride	26 716	48 287	35 914	55 600	58 502
Other potassic fertilisers	38 615	43 426	24 393	45 599	62 253
<b>Syria</b>					
Potassic fertilisers	19 765	44	10 986	20 277	62 500*
<b>Taiwan</b>					
Chloride	186 908	130 064	212 492	178 217	227 858
Potassic chemicals	8 749	8 645	11 526	16 101	16 616
<b>Thailand</b>					
Sulphate	750	4 050	11 158	19 035	14 501
Chloride	1 039	3 878	6 477	6 960	60 703
Other potassic fertilisers	39 882	34 089	45 334	63 194	10 818
Potassic chemicals	10 519	3 876	10 674	7 543	9 714
<b>Australia</b>					
Sulphate	11 873	10 471	6 567	7 524	19 793
Chloride	247 616	193 283	191 673	263 952	252 356
Other potassic fertilisers	139	879	1 155	3 029	191
Potassic chemicals	11 967	12 881	12 402	11 463	...
<b>Fiji</b>					
Potassic fertilisers	5 835	1 792	3 208	...	...
<b>New Zealand (d)</b>					
Sulphate	973	1 611	1 140	617	...
Chloride	150 811	209 957	107 319	94 883	...
Other potassic fertilisers	28 251	31 899	308	2 776	...
Potassic chemicals	2 041	1 726	1 302	1 277	...

**Notes**

(1) So far as possible the term 'potassic chemicals', as used in this table, relates to items 522.64, 523.3,4,5 and 7 of the S.I.T.C. (Rev.3) and includes caustic potash, carbonate, chlorate, nitrate and sulphate

- (a) K<sub>2</sub>O content
- (b) Years ended 31 March following that stated
- (c) BGS estimates, based on known exports from certain countries
- (d) Years ended 30 June of that stated
- (e) Including sulphate
- (f) Including chloride



## Production of Rare Earth Minerals

Country	1984	1985	1986	1987	1988
Madagascar					
Bastnaesite	25*	9	10*	10*	...
Zaire					
Monazite	2	—	7	97	168
USA					
Bastnaesite (a)	25 311	13 428	11 094	16 710	11 533
Monazite (a) (e)	450*	450*	450*	450*	450*
Brazil					
Monazite	3 622	3 953	3 618	4 332	4 000*
China (a)	8 000*	10 000*	11 860	15 100	17 000*
India					
Monazite (d)	4 000*	4 000*	4 000*	4 000*	4 000*
Malaysia					
Monazite	(b) 1 095	5 808	5 959	2 908	2 920
Xenotime	(b) 68	1 124	145	31	47
Sri Lanka					
Monazite	147	200*	17	100	...
Thailand					
Monazite	298	663	1 609	458	590
Xenotime	28	158	28	30	101
Australia					
Monazite	16 260	18 735	14 822	12 813	10 897
Xenotime	66	46	41	5	0
World total (c)	81 900	74 500	69 300	78 600	71 100
World total (REO content)	49 000*	44 200*	41 400*	47 100*	42 600*

## Notes

(1) With the exception of the data for USA and China, figures in this table refer to gross tonnage of rare earth concentrates

(2) Rare earth minerals are also believed to be produced in the Soviet Union and possibly, on a small scale, in Indonesia, Democratic P.R. of Korea, Mozambique and South Africa

(a) REO content. Assumed to be 60% of concentrates produced

(b) Exports

(c) Expressed as grossed up weight of concentrates produced

(d) Years ended 31 March following that stated

(e) Nominal capacity

**Exports of Rare Earths**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Cerium compounds	...	...	337	351	582
Ferro-cerium & other pyrophoric alloys	12	13	10	6	121
Metals	26	57	40	64	28
Denmark					
Ferro-cerium & other pyrophoric alloys	107	0	0	1	0
France					
Ferro-cerium & other pyrophoric alloys	108	111	102	124	97
Metals	110*	81	59	131	30
Germany, Federal Republic of					
Cerium compounds	157	183	150	201	(d)223
Other rare earth compounds	29	9	13	13	...
Ferro-cerium & other pyrophoric alloys	63	61	78	85	94
Metals	22	34	18	14	6
Italy					
Metals	34	39	14	138	...
Austria					
Metals	675	712	391	351	430
Soviet Union					
Rare earth compounds (b)	500*	900*	1 000*	400*	1 000*
Metals (b)	50*	100*	40*	...	200*
South Africa (a)					
Rare earth compounds	£10 400	£1 400	£4 000	£200	...
USA					
Ores & concentrates	8 033	7 712	6 140	4 534	7 360
Ferro-cerium & other pyrophoric alloys	33	26	35	82	36
Brazil					
Cerium compounds	79	0	—	523	780
Ferro-cerium & other pyrophoric alloys	284	182	307	324	260
Metals	102	233	89	103	107
China					
Rare earth compounds (b)	2 500*	5 200*	4 300*	6 000*	7 300*
Ferro-cerium & other pyrophoric alloys (b)	100*	150*	400*	300*	200*
Metals (b)	10*	10*	90*	250*	400*
Hong Kong					
Ferro-cerium & other pyrophoric alloys (c)	85	103	131	140	112
Japan					
Ferro-cerium & other pyrophoric alloys	54	30	20	25	...
Malaysia					
Ores & concentrates	1 163	2 365	738	1 024	139
Thailand					
Ores & concentrates	1 992	1 350	1 306	428	165
Australia					
Ores & concentrates	18 124	18 024	14 100	10 491	10 000

## Notes

- (1) Rare earths are here taken to include yttrium and scandium
- (a) Values shown are for the common customs area
- (b) BGS estimates, based on known imports into certain countries
- (c) Re-exports
- (d) Including other rare earth compounds

## Imports of Rare Earths

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Cerium compounds	...	...	222	240	655
Other rare earth compounds	...	...	...	884	215
Ferro-cerium & other pyrophoric alloys	5	29	3	4	111
Metals	28	88	61	57	54
<b>Belgium-Luxembourg</b>					
Cerium compounds	77	75	127	127	92
Other rare earth compounds	18	15	17	12	3
Ferro-cerium & other pyrophoric alloys	26	26	6	8	49
Metals	18	64	54	32	54
<b>Denmark</b>					
Rare earth compounds	6	1	2	3	4
Ferro-cerium & other pyrophoric alloys	1	1	12	15	16
<b>France</b>					
Cerium compounds	590	946	962	167	661
Other rare earth compounds	897	2 103	1 366	1 798	3 011
Ferro-cerium & other pyrophoric alloys	90	76	118	62	57
Metals	162	235	203	188	228
<b>Germany, Federal Republic of</b>					
Cerium compounds	599	1 036	1 034	1 133	1 246
Other rare earth compounds	455	816	710	851	1 611
Ferro-cerium & other pyrophoric alloys	16	13	10	17	23
Metals	135	107	113	138	143
<b>Italy</b>					
Ferro-cerium & other pyrophoric alloys	14	10	5	8	...
Metals	54	16	64	67	...
<b>Netherlands</b>					
Cerium compounds	3 758	2 108	1 215	1 382	351
Other rare earth compounds	2 904	1 588	1 639	1 389	1 090
Ferro-cerium & other pyrophoric alloys	6	21	16	11	25
Metals	1	11	28	14	1
<b>Spain</b>					
Rare earth compounds	248	270	247	272	...
Ferro-cerium & other pyrophoric alloys	36	40	43	47	...
Metals	24	11	43	14	156
<b>Austria</b>					
Metals	59	147	88	2	111
<b>Switzerland</b>					
Metals	5	5	1	1	...
<b>South Africa</b>					
Rare earth compounds (a)	£67 000	£156 000	£212 000	£83 000	...
<b>USA</b>					
Ores & concentrates	5 661	5 694	2 960	1 122	1 924
Cerium compounds	710	7	300	209	695
Other rare earth compounds	935	202	294	313	83
Ferro-cerium & other pyrophoric alloys	138	113	94	96	108
Metals	149	237	68	186	198
<b>Argentina</b>					
Cerium compounds	16	27	40	38	...
Other rare earth compounds	5	2	2	3	...
Metals	31	7	2	1	...

**Imports of Rare Earths**

tonnes

Country	1984	1985	1986	1987	1988
<b>Brazil</b>					
Cerium compounds	104	182	156	247	262
Other rare earth compounds	15	20	11	14	14
<b>Hong Kong</b>					
Ferro-cerium & other pyrophoric alloys	122	143	183	217	178
<b>Indonesia</b>					
Ferro-cerium & other pyrophoric alloys	39	42	76	22	17
Metals	35	4	0	0	—
<b>Japan</b>					
Cerium compounds	57	149	411	260	3 089
Other rare earth compounds	6 996	9 829	8 178	8 674	11 466
Ferro-cerium & other pyrophoric alloys	21	31	29	52	...
Metals	131	59	132	278	468
<b>Korea, Republic of</b>					
Cerium compounds	77	67	74	158	2 300
<b>Malaysia</b>					
Ores & concentrates	2 046	2 476	385	878	...
<b>Singapore</b>					
Ferro-cerium & other pyrophoric alloys	24	36	87	75	41
<b>Taiwan</b>					
Metals	5	32	62	34	31
<b>Thailand</b>					
Ferro-cerium & other pyrophoric alloys	59	84	92	75	19

## Notes

(1) Rare earths are here taken to include yttrium and scandium

(a) Values shown are for the common customs area

# Production of Salt

Salt  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Rock salt	1 569 000	2 030 000	2 040 000	1 855 000	877 000
Brine salt	1 423 000	1 552 000	1 510 000	1 554 000	1 426 000
Salt in brine (a)	4 134 000	3 563 000	3 305 000	3 672 000	3 827 000
Denmark	522 892	573 939	573 557	536 951	548 085
France					
Rock salt	1 030 000	1 178 000	976 000	930 000	950 000*
Salt in brine	4 417 000	4 167 000	3 963 000	3 663 000	3 675 000*
Sea salt	1 381 000	1 423 000	1 610 000	1 627 000	1 650 000*
Germany, Federal Republic of					
Rock salt	7 010 000	7 512 000	7 462 000	7 256 000	6 251 000
Brine salt	815 000	885 000	892 000	913 000	946 000
Salt in brine	4 945 991	5 055 285	5 193 884	5 395 544	5 379 475
Greece	126 478	195 103	160 917	190 000*	190 000*
Italy					
Rock salt & brine salt	3 255 421	3 175 734	3 432 696	3 494 028	3 601 381
Sea salt	1 000 000*	1 000 000*	1 000 000*	1 120 000	970 000
Netherlands	3 674 000	4 154 000	3 763 000	3 979 000	3 693 000
Portugal					
Rock salt	455 950	464 362	466 398	525 055	540 437
Sea salt	163 023	213 826	194 392	177 723	200 000*
Spain					
Rock salt	2 155 765	2 160 356	2 100 813	2 250 606	2 200 000*
Sea salt	1 197 715	1 027 383	916 055	848 426	900 000*
Other salt	34 867	52 010	89 876	95 652	100 000*
Albania	70 000*	70 000*	70 000*	75 000*	72 000*
Austria					
Rock salt	1 124	1 363	1 569	1 350	1 020
Salt in brine	239 000	230 000	250 000	240 000	250 000*
Evaporated salt	418 707	437 584	485 513	483 624	412 929
Bulgaria	89 000*	89 000*	91 000*	92 000*	91 000*
Czechoslovakia	343 760	349 174	338 240	337 985	350 152
German Democratic Republic	3 133 400	3 137 700	3 139 000	3 150 000*	3 100 000*
Poland					
Rock salt	1 185 000	1 198 000	1 221 000	1 231 000	1 247 000
Other salt	3 526 000	3 667 000	4 198 000	4 944 000	4 950 000*
Romania	4 874 000	5 019 000	5 355 000	5 395 000	5 400 000*
Soviet Union	16 500 000*	16 100 000*	15 300 000*	15 400 000*	15 500 000*
Switzerland					
Evaporated salt	32 692	31 792	29 862	...	...
Other salt	296 204	300 254	318 111	(1)330 735	(1)264 709
Turkey	1 290 202	1 189 421	1 171 824	1 217 747	1 200 000*
Yugoslavia					
Rock salt	146 552	149 151	234 685	153 067	126 650
Sea salt	44 151	67 897	69 842	67 672	58 286
Other salt	188 839	193 194	199 760	282 650	200 276
Algeria					
Brine salt & sea salt	182 500	171 000	190 500	233 000	237 000
Angola	0	6 000	10 000*	10 000*	10 000*
Cape Verde Islands	9 064	6 163	4 855	...	...
Egypt	845 000	922 707	863 794	1 054 760	922 308
Ethiopia (d)	187 042	213 414	227 799	167 745	135 000*
Ghana	50 000*	50 000*	50 000*	50 000*	50 000*
Kenya	100 825	34 348	71 912	72 000	94 600
Libya	12 000*	12 000*	12 000*	12 000*	12 000*
Madagascar	10 440	40 199	54 721	42 339	52 658
Mali	4 500*	4 500*	4 500*	4 500*	4 500*
Mauritania	5 400*	5 400*	5 400*	5 400*	5 400*
Mauritius (c)	7 000	6 000	7 000	7 500	7 000
Morocco	70 100	105 023	118 814	130 946	132 661
Mozambique	18 600	28 000*	28 000*	28 000*	28 000*
Namibia	88 560	153 637	135 981	124 561	149 681
Senegal	170 000	143 000	145 000	34 100	26 800
Somalia	30 000*	30 000*	30 000*	30 000*	30 000*
South Africa	615 531	722 482	752 440	705 531	678 225
Sudan	16 000	65 000	190 000	83 939	91 000

## Salt

## Production of Salt

tonnes

Country	1984	1985	1986	1987	1988
Tanzania	29 900	21 108	21 868	41 124	30 024
Tunisia (c)	415 000	405 000	450 000	425 000	450 000
Bahamas	870 000	850 000	899 000	736 000	896 000
Canada					
Rock salt	7 030 664	6 608 739	6 867 287	6 670 863	(l)10 687 000
Other salt (e)	3 204 735	3 475 958	3 464 559	3 458 190	...
Costa Rica	110 000*	29 484	30 000*	12 650	...
Cuba	184 500	220 900	266 000	230 500	230 000*
Dominican Republic	47 646	47 159	54 000	54 000	...
El Salvador (c)	50 444	35 548	43 563	36 188	32 591
Guatemala (c)	33 100	34 500	39 100	46 000	41 400
Honduras	30 000*	30 000*	30 000*	30 000*	30 000*
Mexico	6 166 705	6 467 140	6 205 031	6 198 833	6 965 173
Netherlands Antilles (k)	357 019	238 559	257 503	305 877	229 851
Nicaragua (c)	15 000*	15 000*	15 000*	15 000*	15 000*
Panama (c)	18 585	16 101	8 872	17 074	22 797
USA (f)					
Rock salt	12 115 000	13 327 000	11 429 000	10 854 000	11 703 000
Salt in brine	17 843 000	17 334 000	16 257 000	16 442 000	17 782 000
Evaporated salt	5 633 000	5 688 000	5 575 000	5 809 000	5 841 000
Argentina	937 267	1 447 495	1 218 183	950 478	835 000
Brazil					
Rock salt	948 743	994 873	954 062	951 645	1 336 000
Sea salt	3 578 090	1 734 390	1 600 359	3 600 000	3 020 000
Chile	625 760	753 427	1 032 373	865 168	1 042 466
Colombia					
Rock salt	273 292	234 377	226 828	204 665	209 099
Sea salt	468 620	346 276	344 122	450 404	473 482
Peru	253 027	204 992	399 387	400 000	350 000
Venezuela (c)	280 700	338 889	511 421	500 000	500 000*
Afghanistan (g)	10 000*	10 000*	10 000*	10 000*	10 000*
Bangladesh (j)	671 870	489 000	746 000	416 000	400 000*
Cambodia	40 000*	40 000*	40 000*	40 000*	40 000*
China	16 420 000	14 790 000	17 299 000	18 000 000	18 200 000
Cyprus	7 399	10 013	6 051	—	—
India					
Rock salt	4 254	3 941	1 664	970	1 000*
Sea salt	7 725 000	9 875 000	10 116 000	11 000 000	11 200 000
Indonesia	370 000	600 000*	600 000*	600 000*	600 000*
Iran (g)	691 000	703 000	700 000*	700 000*	700 000*
Iraq	80 000*	70 000*	70 000*	70 000*	70 000*
Israel	145 000	150 000*	294 800	302 700	383 000
Japan (i)	1 200 000	1 200 000*	1 370 000	1 397 000	1 363 000
Jordan (b)	21 680	32 192	33 746	18 000	38 000
Korea, Dem. P.R. of	570 000*	570 000*	570 000*	570 000*	570 000*
Korea, Republic of	518 000	643 000	729 000	664 000	1 020 000
Kuwait	22 239	21 000	26 166	35 279	31 753
Laos	10 000*	10 000*	30 000*	30 000*	30 000*
Lebanon	5 000*	5 000*	5 000*	5 000*	5 000*
Mongolia	16 000*	16 000*	16 000*	16 000*	16 000*
Myanmar (b) (c) (h)	301 000	321 000	341 000	340 000*	330 000*
Nepal	...	7 500	7 000	2 000	6 000
Pakistan					
Rock salt	598 810	584 306	544 815	515 782	509 000
Sea salt	198 551	268 914	242 274	302 486	207 200
Philippines	401 008	421 058	442 111	446 532	492 080
Sri Lanka	123 157	75 919	104 278	115 274	101 590
Syria	38 000	106 000	87 000*	81 000	90 000*
Taiwan	218 491	173 898	136 078	99 943	111 341
Thailand					
Rock salt	9 850	12 786	2 000	3 268	5 670
Other salt	165 000*	165 000*	165 000*	165 000*	165 000*

## Production of Salt

Salt  
tonnes

Country	1984	1985	1986	1987	1988
Vietnam	800 000*	379 000	450 000	230 000*	300 000*
Yemen Arab Republic	148 000*	150 000*	300 000	163 000	150 000
Yemen, People's Dem. Rep. of	75 700	66 900	40 300	55 500	60 000*
Australia	5 695 263	5 835 364	6 130 300	6 336 000	6 976 000
New Zealand	57 000	51 500	—	65 000*	65 000*
World total	173 000 000	174 100 000	174 900 000	178 400 000	180 600 000

### Notes

- (1) This table does not include production of refined salt
  - (2) Salt is known to have been produced in many countries for which statistics are not available. Among these are Martinique and Nigeria
- (a) Used for purposes other than salt-making
  - (b) Brine salt
  - (c) Sea salt
  - (d) Years ended 6 July of that stated
  - (e) Including salt in brine
  - (f) Sold or used by producers
  - (g) Years ended 20 March following that stated
  - (h) Years ended 31 March following that stated
  - (i) Government licensed plants
  - (j) Years ended 30 June of that stated
  - (k) Exports
  - (l) Salt; all forms

## Salt

## Exports of Salt

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	484 511	402 946	368 717	404 587	293 028
Belgium-Luxembourg	227 720	205 256	164 861	83 597	77 614
Denmark	232 814	237 286	272 420	240 652	307 547
France	606 316	788 763	747 002	600 747	514 067
Germany, Federal Republic of	2 116 175	2 359 839	2 290 731	2 146 283	2 061 264
Irish Republic	1 042	973	1 556	1 234	754
Italy	314 778	428 591	619 198	613 394	...
Netherlands	2 593 710	2 863 178	2 684 831	2 658 571	2 776 934
Portugal	9 029	11 038	5 559	35 383	...
Spain	537 170	893 928	510 839	435 014	289 081
Austria	925	1 506	1 621	2 727	—
German Democratic Republic	1 501 000	1 604 000	1 721 000	1 653 000	1 826 000
Norway	4 091	2 413	2 487	1 798	1 427
Poland	370 418	380 110	327 246	364 239	424 837
Romania (a)	730 200*	850 800*	872 300*	842 000*	793 100*
Soviet Union	375 181	398 970	418 057	451 609	344 909
Sweden	5 342	2 063	1 835	1 681	1 793
Turkey	29 343	16 343	20 857	17 386	20 311
Algeria	3 744	265	13 938	4 942	...
Cape Verde Islands	9 670	2 140	5 000	—	...
Egypt	9 539	9 551	13 013	180 276	...
Ethiopia	15 153	33 600	...	8 819	79
Ivory Coast	2 846	1 936	5 430	...	151
Kenya	25	32	16 042	20 974	...
Madagascar	7 827	11 150	9 116	8 289	...
Morocco	1 587	26 450	28 400	60 905	34 673
Namibia	77 076	110 814	113 353	125 031	149 681
Senegal	186 731	137 676	116 478	61 628	85 148
South Africa	89 129	91 639	88 761	81 715	79 404
Tanzania	3 552	2 480	4 025	2 164	3 807
Tunisia	261 337	314 566	359 568	340 702	295 682
Bahamas	975 205	1 224 632	1 057 542	...	...
Canada	2 546 690	2 289 275	2 552 532	1 960 130	3 030 024
El Salvador	12 857	7 536	3 680	...	...
Jamaica	3 260	1 925	1 669	2 347	3 377
Mexico	4 629 809	4 561 576	4 440 481	4 994 844	5 097 706
Netherlands Antilles	357 019	238 559	257 503	305 877	229 851
USA	744 275	834 036	1 065 696	501 311	855 718
Argentina	14 172	7 718	12 738	...	...
Brazil	348 114	144 580	37 809	27 416	24 018
Chile	469 109	517 117	921 244	826 387	654 577
Colombia	—	300	61 479	...	...
China	1 040 000	1 070 000	1 170 000	1 069 088	382 177
Hong Kong (c)	1 519	1 039	947	614	1 756
India (b)	172 531	324 880	242 512	...	...
Israel (a)	7 900*	19 600*	9 700*	31 800*	9 000*
Japan	1 250	1 414	1 182	717	656
Jordan	—	222	187	305	...
Korea, Republic of	1 647	6 412	11 689	49 967	14 467
Kuwait	1 738	...	49	...	...
Malaysia	599	604	...	1 245	...
Pakistan (d)	13 150	8 519	17 270	16 495	32 127
Saudi Arabia	5 609	6 433	12 298	6 507	12 189



**Exports of Salt**

Country	1984	1985	1986	1987	1988
Singapore	20 523	13 817	9 216	9 663	13 707
of which: Re-exports	20 016	12 995	7 565	8 961	12 442
Sri Lanka	37 153	1 000	2 000	0	0
Taiwan	1 239	1 472	1 950	3 418	4 800
Thailand	52 971	61 548	54 489	60 579	41 139
Yemen, People's Dem. Rep. of	39 400	30 000	26 565	17 000	...
Australia	4 782 933	5 165 672	5 213 037	5 500 000*	6 088 000
New Zealand (d)	4 862	2 490	2 760	3 891	...

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Re-exports

(d) Years ended 30 June of that stated

Salt

## Imports of Salt

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	115 152	333 373	357 128	222 668	162 057
Belgium-Luxembourg	1 133 678	1 346 543	1 341 250	1 295 472	1 061 158
Denmark	189 271	274 092	298 748	297 250	171 772
France	154 850	151 575	154 332	169 382	181 246
Germany, Federal Republic of	765 110	826 942	782 790	867 951	872 680
Greece	35 679	48 873	68 322	123 990	40 636
Irish Republic	90 400	102 967	107 907	105 570	94 940
Italy	706 712	943 874	934 150	882 193	...
Netherlands	222 924	412 093	336 495	285 188	247 647
Portugal	205	8 025	31 272	33 520	...
Spain	669	324	4 703	12 128	7 882
Austria	153	134	212	643	179
Bulgaria	218 171	239 462	237 618	...	...
Czechoslovakia (a)	120 300*	140 000*	150 300*	148 700*	139 000*
Faeroe Islands	32 556	30 821	34 590	17 983	...
Finland	662 659	598 805	526 692	586 315	645 815
Greenland	3 769	4 678	3 331	3 921	...
Hungary	578 011	672 310	735 959	696 629	664 982
Iceland	48 798	71 526	83 191	103 353	67 923
Malta	£90 000	£81 600	£188 600	£58 100	£139 000
Norway	554 410	561 315	555 602	596 368	470 547
Soviet Union	110 000*	110 000*	...	...	...
Sweden	1 227 833	1 261 550	1 281 459	1 157 390	1 342 480
Switzerland	2 084	1 932	2 225	3 282	4 082
Yugoslavia	83 976	320 812	290 413	329 638	255 485
Algeria	412	953	105	282	...
Botswana	7 871	6 092	7 726	...	...
Burkina Faso	16 100	...	24 154	21 629	...
Burundi	9 181	9 930	19 166	17 892	6 209
Canary Islands	444	294	444	432	...
Central African Republic	5 290	5 100	...	...	...
Congo	5 990	5 495	4 645	3 765	...
Egypt	216	1 037	623	812	...
Gabon	5 145	5 029	4 571	...	...
Ivory Coast	42 882	42 950	41 509	...	34 042
Kenya	10 856	254	321	549	...
Liberia	...	3 157	3 320	3 615	...
Malawi	15 848	...	...	...	...
Mauritius	230	391	5 385	622	972
Niger	35 747	27 187	26 001	...	...
Nigeria	217 162	3 117 989	226 669	453 959	...
Reunion	3 299	2 224	3 495	2 030	...
Rwanda	19 101	13 981	29 845	10 037	10 892
Seychelles	409	196	318	385	575
Sierra Leone	5 409	626	733	...	...
South Africa	114 965	84 479	93 692	91 321	90 000*
Zaire	15 759	58 567	61 094	40 048	37 965
Zambia	138 213	76 858	944	...	...
Zimbabwe	88 874	53 133	51 190	48 329	...
Bahamas	2 898	3 480	2 658	...	...
Barbados	1 374	2 472	1 977	1 954	2 141
Belize	595	566	552	462	621
Canada	1 053 215	1 255 519	1 328 235	1 112 100	1 275 663
Dominica	379	429	534	659	577
Grenada	542	391	507	485	...
Guadeloupe	2 099	2 451	2 294	2 410	...
Guatemala	6 366	11 732	26 195	...	...
Honduras	450	274	363	...	...
Jamaica	46 496	25 058	20 541	23 667	18 225
Martinique	2 547	2 373	2 532	2 380	...
Mexico	572	647	737	583	...
Netherlands Antilles	643	1 620	923	1 493	...
Nicaragua	25 000	...	...	...	...
Panama	1 297	1 037	704	554	193
St. Lucia	704	830	740	797	777

# Imports of Salt

Salt  
tonnes

Country	1984	1985	1986	1987	1988
Trinidad & Tobago	21 710	15 351	22 630	23 453	...
USA	6 844 710	5 630 974	6 046 735	7 165 810	4 950 341
Brazil	37	222 568	783 343	1 231 509	47 743
Chile	4 680	2 088	3 256	...	...
French Guiana	396	504	379	429	...
Guyana	5 619	...	...	...	...
Paraguay	20 824	11 475	3 898	2 011	1 777
Peru	621	345	363	442	297
Suriname	1 991	4 343	2 631	1 710	...
Uruguay	43 275	52 036	76 801	63 841	72 292
Abu Dhabi	5 116	3 438	6 801	2 308	2 016
Bahrain	1 455	2 330	2 143	1 887	...
Bangladesh (b)	522 122	209 281	399 272	153 000	...
Brunei	1 341	1 802	6 017	...	...
Cyprus	1 030	847	1 283	5 706	...
Dubai	8 277	8 448	14 751	...	...
Hong Kong	92 620	106 599	130 537	129 938	131 362
India (c)	7 353	37 704	13 533	...	...
Indonesia	1 050	26 830	60 886	85 463	757
Japan	6 458 125	6 832 551	6 614 250	6 830 128	7 229 250
Jordan	1 306	1 442	620	742	...
Korea, Republic of	757 954	800 109	872 771	1 102 538	1 053 486
Kuwait	7 195	...	12 123	...	...
Macao	1 787	2 081	2 276	2 273	2 135
Malaysia	129 872	146 470	152 962	175 315	...
Oman	11 724	10 259	7 907	...	...
Philippines	65 420	71 131	88 918	93 052	52 620
Qatar	3 368	3 867	4 108	3 135	...
Saudi Arabia	16 880	16 209	14 038	10 694	24 868
Singapore	43 160	36 102	36 700	47 136	66 068
Taiwan	711 505	805 115	859 515	596 704	781 925
Thailand	10 324	846	937	1 160	846
Australia	6 377	5 710	6 895	7 971	7 243
Fiji	3 425	2 769	3 485	...	...
New Caledonia	745	624	741	625	649
New Zealand (b)	50 235	98 669	49 898	94 298	...
Solomon Islands	2 733	1 071	1 490	1 475	1 070
Vanuatu	317	352	373	310	362

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

## Sillimanite

**Production of Sillimanite Minerals**

tonnes

Country	1984	1985	1986	1987	1988
France					
Andalusite	50 100	56 600	50 900	50 000	50 000
Spain					
Andalusite	3 000	2 800	3 304	3 916	4 000*
Soviet Union					
Kyanite (a)	100 000*	100 000*	100 000*	100 000*	100 000*
Sweden					
Kyanite	—	2 200*	5 000*	5 000*	5 000*
South Africa					
Andalusite	143 305	194 693	181 624	217 160	259 555
Sillimanite	1 311	1 337	1 330	1 243	781
Zimbabwe					
Kyanite	874	1 676	1 851	1 834	1 795
USA					
Kyanite (b)	100 000*	100 000*	90 000*	90 000*	90 000*
Brazil					
Kyanite (d)	1 290	2 350	950	510	...
China	2 500*	2 500*	2 500*	2 500*	2 500*
India					
Andalusite	706	500	732	482	500*
Kyanite	38 254	30 574	32 394	37 382	36 951
Sillimanite	15 519	17 123	14 674	14 336	13 925
Korea, Republic of					
Andalusite	209	42	—	—	—
Australia					
Kyanite	1 255	818	768	1 079	500*
Sillimanite (c)	507	650	133	77	70*
World total	459 000	514 000	486 000	526 000	566 000

## Notes

(1) In addition to the countries listed above as producing sillimanite minerals, synthetic mullite is known to have been produced in Denmark, France, Hungary, Japan, Yugoslavia, United Kingdom and the USA

(a) May include other sillimanite minerals

(b) Including related minerals

(c) Excluding sillimanite clay

(d) Including beneficiated and directly shipped material

## Exports of Sillimanite Minerals

Sillimanite  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Sillimanite minerals	5 334	5 172	4 631	4 362	5 618
Belgium-Luxembourg					
Sillimanite minerals	46	21	38	44	—
Denmark					
Sillimanite minerals	157	13	72	23	49
France					
Sillimanite minerals					
Crude	17	93	8	9	...
Other	34	86	107	20	(e)46 525
Germany, Federal Republic of					
Sillimanite minerals					
Crude	2 400	716	533	2 015	...
Calcined	6 300	7 297	6 938	4 884	(e)6 374
Italy					
Sillimanite minerals					
Crude & calcined	48	—	1 021	536	...
Other	754	—	—	895	...
Netherlands					
Sillimanite minerals					
Crude	1 775	1 901	2 099	1 815	...
Other	396	263	432	1 371	(e)927
Austria					
Sillimanite minerals	20 039	15 122	22 374	20 735	1
Czechoslovakia					
Sillimanite minerals (b)	14 100*	16 400*	18 500*	16 800*	...
German Democratic Republic					
Sillimanite minerals (b)	800*	1 400*	1 000*	900*	...
South Africa					
Andalusite	91 574	142 143	113 514	138 843	147 046
Sillimanite	1 340	1 467	748	979	935
USA					
Kyanite & related minerals (a) (b)	77 400*	73 900*	58 800*	61 200*	92 400*
Brazil					
Kyanite	20	381	241	228	82
Japan					
Sillimanite minerals	(d)9 238	(d)11 946	(d)12 473	(d)10 362	5 207
Macao					
Sillimanite minerals	14 832	14 577	20 806	27 102	12 000
New Zealand (c)					
Sillimanite minerals	13 410	14 039	14 259	18 118	...

### Notes

(1) In this table 'Sillimanite minerals' is understood to include any or all of andalusite, kyanite, sillimanite and mullite

(a) May include some chamotte and dinas earth

(b) BGS estimates, based on known imports into certain countries

(c) Years ended 30 June of that stated

(d) Including chamotte and dinas earth

(e) Including crude

## Sillimanite

**Imports of Sillimanite Minerals**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Sillimanite minerals	52 708	49 452	44 609	48 717	52 694
Belgium-Luxembourg					
Sillimanite minerals					
Crude	391	1 220	537	1 320	...
Other	1 264	1 274	813	3 217	(b)3 487
Denmark					
Sillimanite minerals	415	641	661	1 129	1 162
France					
Sillimanite minerals					
Crude	2 376	2 264	2 604	2 528	...
Other	1 845	1 187	2 114	3 207	(b)5 331
Germany, Federal Republic of					
Sillimanite minerals					
Crude	13 181	39 360	35 641	30 583	...
Calcined	75 721	70 813	44 734	49 971	(b)131 409
Greece					
Sillimanite minerals	1 712	201	1 874	812	2
Italy					
Sillimanite minerals					
Crude	22 763	31 245	16 242	13 509	...
Other	13 594	9 914	6 512	7 799	...
Netherlands					
Sillimanite minerals					
Crude	4 870	8 659	7 509	3 980	...
Other	2 903	3 159	2 367	1 037	(b)5 636
Spain					
Sillimanite minerals	3 253	3 327	5 282	5 502	...
Austria					
Sillimanite minerals	75 372	85 497	81 258	76 969	2 213
Norway					
Sillimanite minerals (a)	915	689	1 763	322	377
Canada					
Sillimanite minerals	...	...	...	...	7 222
Mexico					
Mullite	1 544	1 905	1 284	1 524	...
Argentina					
Sillimanite minerals	1 196	18	152	...	...
Japan					
Sillimanite minerals	27 515	28 413	28 653	26 609	35 298
Mullite	(a)22 289	(a)17 981	(a)20 146	(a)20 195	762
Korea, Republic of					
Sillimanite minerals	1 704	3 166	3 141	5 582	4 830
Mullite	2 975	4 206	6 300	7 172	4 710
Australia					
Sillimanite minerals & dinas earth	2 402	4 677	3 912	6 286	6 490

## Notes

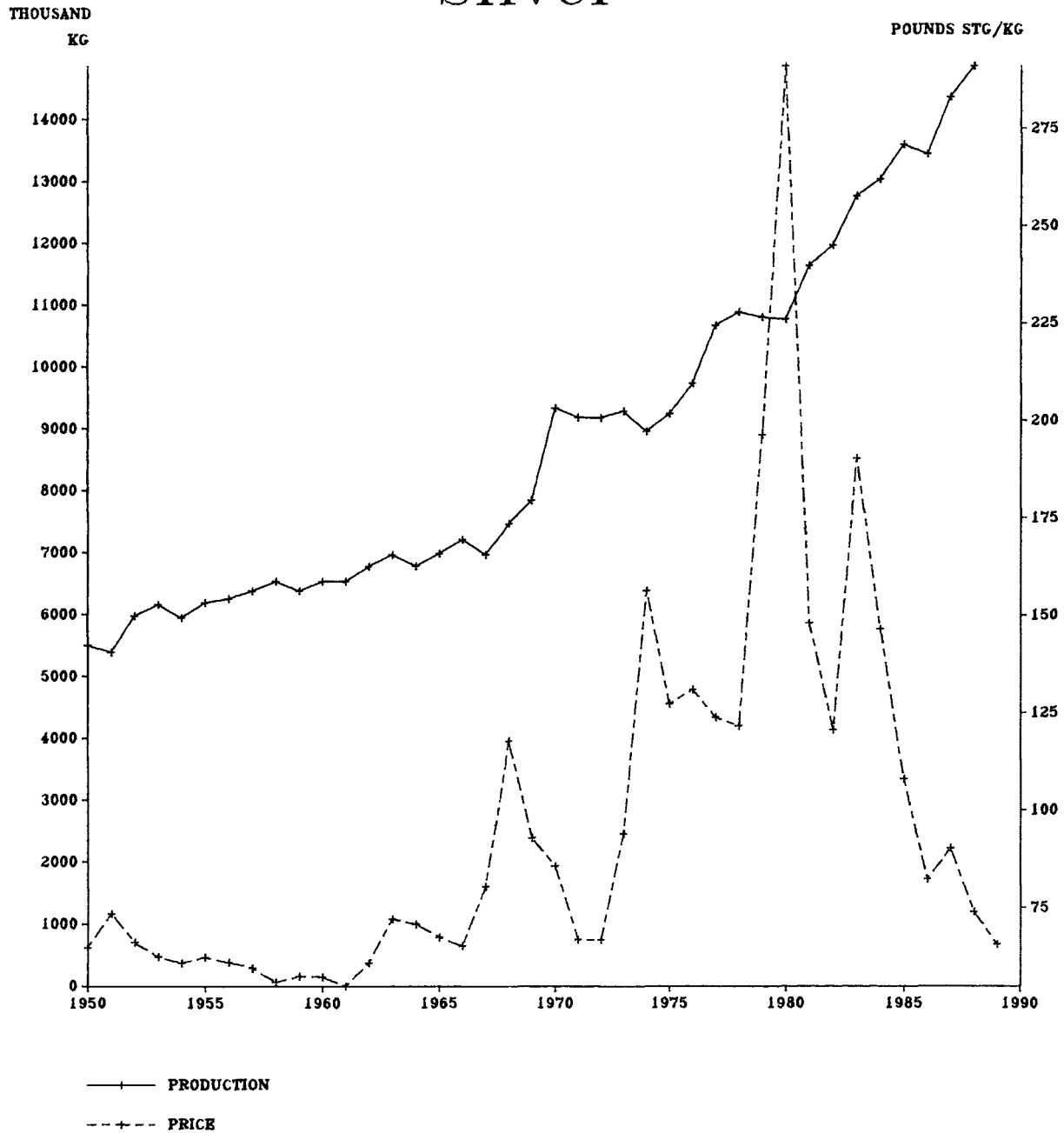
(1) In this table 'Sillimanite minerals' is understood to include any or all of andalusite, kyanite, sillimanite and mullite

(a) Including chamotte and dinas earth

(b) Including crude



# Silver



**Figure 19** World mine production of silver compared with the annual average London spot price expressed in constant 1980 pounds sterling.

Trend-line analysis of the production data indicates a growth rate of approximately 2.5% per annum.

Constant commodity prices derived from those quoted by *Metal Bulletin in Prices and Data* (1989).



## Mine Production of Silver

kilograms (metal content)

Country	1984	1985	1986	1987	1988
United Kingdom	2 558	1 720	1 773	2 031	2 113
France	25 259	26 413	25 884	20 724	22 125
Germany, Federal Republic of	38 100	34 300	27 500	30 900	20 000*
Greece	57 000	50 700	53 700	51 900	61 300
Irish Republic	8 670	8 600	8 150	7 200	5 500
Italy (a)	48 338	71 572	56 338	83 531	91 562
Portugal	693	624	714	887	877
Spain	289 624	366 939	342 389	522 208	530 000*
Bulgaria	26 000	26 000	26 000	26 000	24 500
Czechoslovakia	32 000*	32 000*	33 000*	34 000*	35 000*
Finland	52 610	48 704	28 966	33 216	28 428
German Democratic Republic	40 000*	41 000*	41 000*	41 000*	40 000*
Greenland	10 300	10 400	11 100	13 200	14 300
Hungary	500*	500*	—	—	—
Poland	744 000	831 000	829 000	831 000	1 063 000
Romania	24 000*	25 000*	23 000*	20 000*	21 500*
Soviet Union	1 600 000*	1 620 000*	1 600 000*	1 550 000*	1 580 000*
Sweden	235 262	250 065	262 042	265 000	225 000
Turkey	7 000*	16 800	8 900	8 800	16 000*
Yugoslavia (a)	128 167	156 451	177 446	151 129	138 957
Algeria	3 700*	3 700*	3 700*	3 700*	3 000*
Ghana	435*	435*	435*	435*	100*
Morocco	104 000	108 000	89 000	162 000	221 000
Namibia	96 000	83 000	90 836	95 000	108 000
South Africa	218 981	209 367	223 590	210 366	201 215
Tunisia	1 660	804	809	700	—
Zaire	37 780	42 772	34 328	36 767	45 000*
Zambia	24 736	18 873	26 780	29 879	29 333
Zimbabwe	27 837	24 851	26 126	25 348	21 896
Canada (c)	1 326 720	1 197 072	1 087 989	1 374 946	1 443 000
Dominican Republic	37 557	49 184	42 185	33 995	44 153
El Salvador	677	—	—	—	—
Honduras	89 068	85 936	41 061	23 388	49 483
Mexico	1 986 690	2 152 959	2 303 142	2 414 954	2 358 907
Nicaragua	1 600*	923	800*	888	800*
USA	1 386 988	1 226 531	1 073 838	1 240 950	1 661 452
Argentina	61 698	67 500	66 371	59 665	79 300
Bolivia	141 840	111 352	95 107	141 772	231 766
Brazil	25 796	55 263	59 514	61 095	89 742
Chile	490 365	517 333	500 077	499 761	506 502
Colombia	4 044	4 768	5 822	5 198	6 562
Peru (b)	1 651 000	1 915 002	1 925 798	2 054 463	1 551 600
China	80 000*	100 000*	105 000*	125 000*	145 000*
India	24 886	25 587	35 266	37 943	44 439
Indonesia	33 320	35 431	46 467	49 164	61 538
Iran	20 000*	20 000*	25 000*	28 000*	30 000*
Japan	323 575	339 485	351 270	281 020	251 971
Korea, Dem. P.R. of	285 000*	270 000*	295 000*	300 000*	310 000*
Korea, Republic of	76 353	68 926	142 700	71 000	48 900
Malaysia	14 653	16 249	14 066	15 776	10 775
Myanmar	17 900	17 700	13 800	26 100	9 700
Oman	2 800	1 900	1 600	1 600	1 900
Philippines	48 956	52 416	51 532	52 373	51 709
Taiwan	11 330	11 386	12 613	9 856	8 388
Australia	972 303	1 085 933	1 022 761	1 119 300	1 134 332
Fiji	520	442	785	815	988
Papua New Guinea	45 608	51 967	57 288	62 871	70 423
World total	13 046 000	13 592 000	13 429 000	14 349 000	14 753 000

(a) Smelter and/or refinery production

(b) Recoverable

(c) Including Ag content of ores, concentrates and matte exported

## Silver

## Exports of Silver

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	1 678 700	563 779	2 006 669	1 512 544	1 020 309
Waste & scrap	176 602	574 675	248 999	218 293	...
Belgium-Luxembourg					
Metal	820 581	1 172 995	1 295 591	952 194	1 000 838
Denmark					
Metal	46 060	45 567	48 701	38 537	53 058
of which: Re-exports	42 314	42 889	47 808	37 051	...
France					
Metal	632 765	454 838	558 913	568 832	529 052
Waste & scrap	360 306	329 373	143 873	145 969	137 700
Germany, Federal Republic of					
Metal	1 345 629	1 485 977	1 543 337	1 504 420	1 481 780
Waste & scrap	629 033	406 956	1 176 662	1 271 124	...
Greece					
Metal	42 208	40 636	142 259	47 000	...
Italy					
Metal	81 651	168 100	141 173	28 300	62 000
Netherlands					
Metal	120 668	133 149	152 419	93 457	113 272
Portugal					
Metal	68	40	9	118	...
Spain					
Metal	154 073	151 586	63 799	181 503	...
Austria					
Metal	50 128	53 566	42 090	238 663	171 174
Waste & scrap	1 352	333	437	17	...
Finland					
Metal	34 000	37 000	37 000	43 000	31 000
German Democratic Republic					
Metal (d)	284 100*	290 900*	452 500*	217 100*	133 800*
Norway					
Metal	26 897	28 872	37 336	32 355	27 116
Poland					
Metal	478 000	549 000	404 000	619 000	691 000
Sweden					
Metal	242 000	197 000	283 000	319 000	301 000
Switzerland					
Metal	484 390	543 835	687 604	767 286	779 761
Yugoslavia					
Metal	61 000	92 000	220 000	71 000	79 000
Waste & scrap	400*	1 000	—	—	—
Morocco					
Metal	73 723	86 407	91 079	146 374	158 153
Namibia					
Metal	96 000	98 000	106 000	95 000	108 000
South Africa					
Metal	217 081	217 935	228 010	189 273	190 712
Tunisia					
Metal	1 375	—	—	—	...
Canada					
Ores & concentrates (b)	423 967	338 833	375 312	488 617	...
Metal	1 095 930	1 343 251	1 317 350	556 967	1 138 807
Dominican Republic					
Metal	37 557	49 184	42 185	33 995	44 153
El Salvador					
Metal	730	...	...	...	...
Honduras					
Concentrates (b)	62 893	65 568	70 140	35 645	...
Mexico					
Metal	1 473 880	1 484 243	1 729 233	1 595 000	1 529 000
USA					
Ores & concentrates (b)	20 231	8 394	8 846	472	25 450
Metal	360 478	445 202	406 769	440 287	533 508
Waste & scrap	406 216	403 898	459 587	497 242	553 012

## Exports of Silver

Silver  
kilograms

Country	1984	1985	1986	1987	1988
Bolivia					
Ores & concentrates	384 449	198 600*	1 525 209	766 687	1 015 000*
Chile					
Metal	292 879	312 738	336 669	348 300	...
Colombia					
Metal	2 025	2 225	1 595	...	...
Peru					
Metal	833 600	696 700	606 500	428 678	282 084
Venezuela					
Metal	24 220	108 974	114 952	9 362	...
China					
Metal	(d)40 400*	(d)70 700*	(d)47 400*	(d)33 600*	3 420
Hong Kong					
Metal	37 663	18 999	39 938	35 720	45 332
of which: Re-exports	32 857	15 260	36 514	33 930	43 682
Waste & scrap	421 507	408 507	140 628	224 511	154 151
of which: Re-exports	18 802	281	2 386	642	117 678
Japan					
Metal	132 745	93 413	63 158	71 148	91 303
Waste & scrap	...	...	1 000	2 000	22 000
Korea, Republic of					
Ores & concentrates	86 000	—	—	—	—
Metal	51 830	42 180	31 233	142 752	81 472
Malaysia					
Metal	9 549	3 732	...	4 630	...
Myanmar (c)					
Metal	19 876	8 180	14 992	11 115	...
Philippines					
Metal	2 972	15 476	22 023	4 903	32 566
Singapore					
Metal	3 768	1 852	3 771	8 155	76 105
of which: Re-exports	3 023	784	3 771	8 155	76 105
Taiwan					
Metal	274	950	1 244	544	17 513
Waste & scrap	712	—	2 085	90 182	20 750
Thailand					
Metal	5 638	75	1	2	93
Australia					
Silver-lead bullion	456 063	360 551	435 312	436 396	499 063
Silver in all ores, concentrates etc.	194 139	248 051	330 580	297 007	387 263
Metal	163 620	167 463	191 756	177 500	33 689
Fiji					
Metal	513	460	759	...	...
New Zealand (a)					
Metal	881	1 046	1 241	1 129	...
Papua New Guinea					
Metal	45 608	51 967	57 288	62 899	...

### Notes

- (1) This table excludes silver coin but includes silver shipped for minting
  - (2) In this table the term 'metal' as used here includes both unwrought and partly worked silver and alloys
- (a) Years ended 30 June of that stated  
 (b) Ag content  
 (c) Years ended 31 March following that stated  
 (d) BGS estimates, based on known imports into certain countries

## Silver

## Imports of Silver

kilograms

Country	1984	1985	1986	1987	1988
United Kingdom					
Metal	1 644 617	1 304 497	1 767 806	1 327 114	1 251 280
Waste & scrap	361 752	643 500	393 173	332 705	...
Belgium-Luxembourg					
Metal	920 915	1 468 886	1 367 762	1 250 291	909 309
Denmark					
Metal	100 636	113 278	113 410	96 760	111 733
France					
Metal	600 777	518 581	605 591	549 185	699 202
Waste & scrap	27 930	19 742	77 459	92 650	50 300
Germany, Federal Republic of					
Metal	1 046 696	1 102 366	1 316 429	1 366 252	1 381 466
Waste & scrap	1 228 567	1 428 206	1 143 682	4 003 601	...
Greece					
Metal	14 304	25 961	55 261	41 216	37 538
Italy					
Metal	392 542	275 000	579 720	806 700	657 900
Netherlands					
Metal	141 455	117 298	157 854	126 606	136 982
Portugal					
Metal	27 779	56 475	70 241	78 763	...
Spain					
Metal	16 344	22 638	234 687	223 990	...
Austria					
Metal	165 752	184 899	116 877	197 399	175 794
Bulgaria					
Metal (f)	1 400*	2 100*	2 300*	2 500*	6 400*
Czechoslovakia					
Metal (f)	16 100*	15 900*	1 900*	9 900*	21 400*
Finland					
Metal	84 000	86 000	69 000	104 000	114 000
German Democratic Republic					
Metal (f)	439 800*	483 200*	579 300*	288 000*	263 200*
Iceland					
Metal	412	715	383	900	138
Malta					
Metal	1 596	831	1 606	824	1 116
Norway					
Metal	47 401	61 513	73 057	59 165	54 994
Sweden					
Metal	173 000	167 000	173 000	160 000	174 000
Switzerland					
Metal	1 097 993	903 449	1 748 798	1 646 764	1 211 052
Turkey					
Metal (b)	4 566	6 142	6 130	15 359	10 155
Yugoslavia					
Metal	24 000	32 000	19 000	17 000	14 000
Algeria					
Metal	35 900	4 041	6 887	13 398	...
Egypt					
Metal	...	783	734	...	...
Gabon					
Metal	128	505	37	...	...
Ivory Coast					
Metal	980	2 930	2 819	...	612
Madagascar					
Metal	76	443	121	176	...
Morocco					
Metal	732	876	691	1 000	...
Mozambique					
Metal	20	31	25 283	...	...
Senegal					
Metal	145	107	179	52	...

## Imports of Silver

Country	1984	1985	1986	1987	1988
South Africa					
Metal	25 430	10 152	81 098	23 058	...
Tunisia					
Metal	2 694	1 354	1 343	448	1 966
Zaire					
Metal	237	...	...	...	...
Canada					
Metal	215 214	575 878	165 027	140 970	115 100
Costa Rica					
Metal	414	856	1 629	2 018	...
Jamaica					
Metal	321	952	965	1 065	827
Panama					
Metal (a)	2 961	10 290	1 462	817	818
Trinidad & Tobago					
Metal	2 465	391	...	461	...
USA					
Ores & concentrates (c)	(h)755 487	362 129	347 770	413 730	(h)755 481
Metal	2 910 000	4 661 357	4 337 942	2 399 649	2 260 038
Waste & scrap	84 947	117 389	91 881	129 164	173 674
Argentina					
Metal	29 903	13 392	15 181	...	...
Brazil					
Metal	85 191	124 973	167 725	179 641	157 461
Colombia					
Metal	1 324	898	8 256	...	...
Ecuador					
Metal	215	340	1 100	4 000	...
Peru					
Metal	225	400	168	114	218
Venezuela					
Metal	...	27 571	49 789	39 429	...
Abu Dhabi					
Metal	2 257	1 072	125	20	1 621
Brunei					
Metal	434	493	1 118	...	...
China					
Metal (f)	406 800*	10 500*	557 500*	22 500*	11 100*
Cyprus					
Metal	4 389	6 957	8 570	8 585	...
Dubai					
Metal	14 466	3 015	89 062	...	...
Hong Kong					
Metal	53 779	43 118	56 477	59 655	82 787
Waste & scrap	675	440	1 186	3 441	5 147
India (g)					
Metal	267	719	106	...	...
Indonesia					
Metal	290	27	108	60	235
Iran (d)					
Metal	28 710	17 975	6 185	6 152	...
Israel					
Metal (f)	12 000*	14 500*	25 500*	28 800*	27 100*
Japan					
Ores & concentrates	—	68 000	1 907 000	4 032 000	7 207 000
Metal	502 919	570 787	481 716	657 190	1 014 731
Waste & scrap	1 613	701	819	1 320	20 798
Jordan					
Metal	2 215	271	535	—	...
Korea, Republic of					
Metal	6 697	14 713	11 537	11 276	66 760
Malaysia					
Metal	69 315	52 878	45 609	78 718	...

## Silver

**Imports of Silver**

kilograms

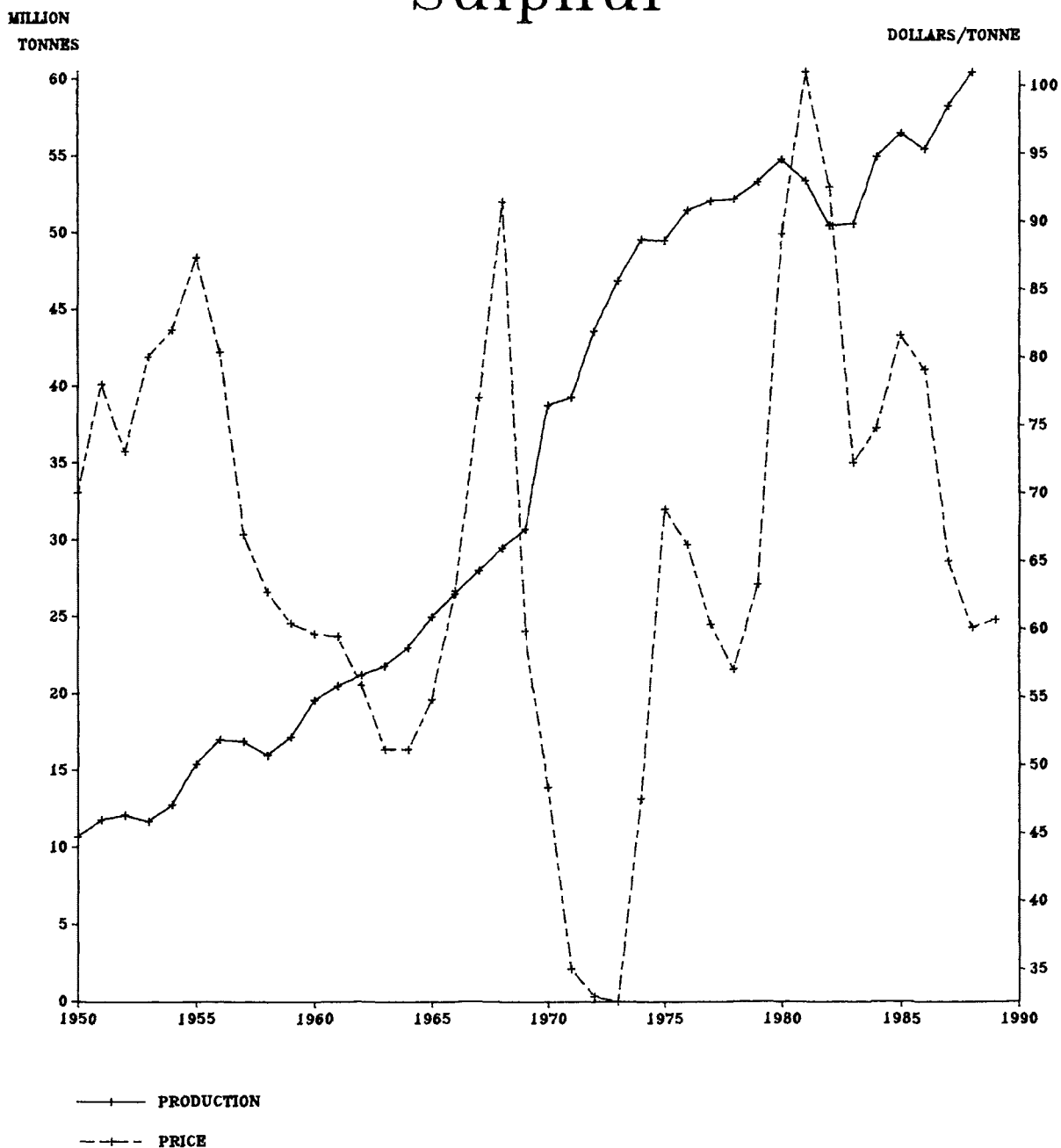
Country	1984	1985	1986	1987	1988
Philippines					
Metal	203	38	15	7	227
Saudi Arabia					
Metal	2 746	12 790	—	—	2 155
Singapore					
Metal	27 733	39 890	97 201	140 172	290 690
Taiwan					
Metal	177 927	47 135	74 739	99 516	139 630
Thailand					
Metal	46 638	93 871	71 808	57 516	63 790
Australia					
Metal	1 466	2 807	955	15	...
New Zealand (e)					
Metal	41 950	39 867	40 598	39 682	...

## Notes

- (1) This table excludes silver coin but includes silver shipped for minting
  - (2) In this table the term 'metal' as used here includes both unwrought and partly worked silver and alloys
- (a) Including waste and scrap
  - (b) Including gilt
  - (c) Ag content
  - (d) Years ended 20 March following that stated
  - (e) Years ended 30 June of that stated
  - (f) BGS estimates, based on known exports from certain countries
  - (g) Years ended 31 March following that stated
  - (h) Including dore and precipitates



# Sulphur



**Figure 20** World production of sulphur in all forms compared with the annual average US price for elemental sulphur, f.o.b. mine, expressed in constant 1980 US dollars.  
 Trend-line analysis of the production data indicates a growth rate of approximately 5% per annum.  
 Constant commodity prices derived from those quoted by USBM in Mineral Facts and Problems (1960 et seq.) and Mineral Commodity Summaries (1984 et seq.).



## Production of Sulphur and Pyrites

tonnes (sulphur content)

Country	1984	1985	1986	1987	1988
United Kingdom					
Recovered (a) (c)	58 169	53 766	58 261	51 398	54 470
Recovered (d)	75 000	80 000	105 000	119 000	129 000
Belgium					
Recovered (c) (d)	245 000*	260 000*	300 000*	300 000*	310 000*
Denmark					
Recovered (d)	10 859	7 376	12 810	10 568	13 571
France					
Recovered (d)	1 752 600	1 561 400	1 149 100	1 280 000	1 232 000
Germany, Federal Republic of					
Recovered (c)	350 000*	320 000*	300 000*	300 000*	310 000*
Recovered (d)	1 041 000*	1 164 000*	1 188 000*	1 240 000*	1 205 000*
Recovered (e)	290 000*	285 000*	285 000*	285 000*	280 000*
Greece					
Pyrites (45%)	74 227	77 968	66 017	70 000*	72 000*
Recovered (d)	125 000*	135 000*	135 000*	135 000*	135 000*
Italy					
Pyrites (43%)	192 121	299 631	309 137	306 905	307 646
Recovered (d)	200 000*	200 000*	185 000*	190 000*	200 000*
Sulphur ore	4 747	1 130	—	2 674	...
Netherlands					
Recovered (c) (d)	245 000*	250 000*	250 000*	245 000*	245 000*
Portugal					
Pyrites (44%)	146 120	156 428	141 466	122 787	110 367
Recovered	4 000*	5 000*	5 000*	5 000*	5 000*
Spain					
Pyrites (47%)	1 292 310	1 231 302	1 191 975	1 010 528	1 060 000
Recovered (c) (d)	137 000*	124 000*	115 000*	120 000*	127 000*
Austria					
Recovered	38 455	35 454	40 334	41 394	47 548
Anhydrite	26 449	26 547	28 837	13 091	—
Bulgaria					
Pyrites (42%)	75 000*	65 000*	80 000*	80 000*	70 000*
Recovered	62 000*	53 000*	62 000*	65 000*	60 000*
Czechoslovakia					
Pyrites (42%)	60 000*	62 000	60 000*	60 000*	60 000*
Recovered	10 000*	41 866	41 127	38 023	50 287
Sulphur ore	5 000*	6 000	6 000*	6 000*	6 000*
Finland					
Pyrites (44%)	214 000	248 500	240 580	273 260	270 570
Recovered (c)	261 000	257 000	260 000	317 357	240 000*
Recovered (d)	44 735	49 076	41 823	51 656	49 163
German Democratic Republic					
Recovered	350 000*	330 000*	315 000*	315 000*	315 000*
Hungary					
Pyrites	2 000*	2 000*	1 000*	1 000*	1 000*
Recovered	9 000*	9 000*	10 000*	10 000*	10 000*
Norway					
Pyrites (50%)	214 791	199 617	190 395	177 843	152 045
Recovered (c) (d)	66 000*	70 000*	80 000*	95 000*	90 000*
Poland					
Frasch (g)	4 990 000	4 876 000	4 894 000	4 966 000	5 000 000*
Recovered (c)	170 000*	170 000*	170 000*	170 000*	150 000*
Recovered (d)	30 000*	30 000*	30 000*	30 000*	20 000*
Anhydrite	20 000*	20 000*	20 000*	20 000*	20 000*
Romania					
Pyrites (42%)	200 000*	200 000*	150 000*	150 000*	150 000*
Recovered	150 000*	150 000*	140 000*	130 000*	120 000*
Soviet Union					
Pyrites (46%)	2 650 000*	2 421 000*	2 090 000*	2 150 000*	2 150 000*
Frasch	900 000*	960 000*	1 100 000*	1 100 000*	1 100 000*
Recovered (c)	1 700 000*	1 700 000*	1 700 000*	1 650 000*	1 700 000*
Recovered (d)	2 200 000*	2 324 000*	2 400 000*	3 300 000*	3 850 000*
Sulphur ore	1 800 000*	1 800 000*	1 900 000*	1 900 000*	1 900 000*

**Production of Sulphur and Pyrites**

tonnes (sulphur content)

Country		1984	1985	1986	1987	1988
Sweden						
Pyrites	(48%)	200 535	195 419	215 161	205 706	170 400
Recovered (c)		122 000*	123 000*	125 000*	125 000*	124 000*
Sulphur ore		26 324	22 916	33 763	38 792	...
Turkey						
Pyrites	(45%)	—	11 557	4 152	22 035	30 000*
Recovered		151 338	159 566	172 928	149 721	156 000
Sulphur ore		41 352	42 671	40 051	39 325	30 024
Yugoslavia						
Pyrites	(42%)	255 658	212 785	318 948	255 723	359 562
Recovered (c) (d)		163 000*	173 000*	178 000*	178 000*	173 000*
Algeria						
Recovered (d)		20 000*	20 000*	20 000*	20 000*	20 000*
Egypt						
Recovered (d)		2 000	10 000	10 000	10 000	10 000*
Libya						
Recovered (d)		14 000*	14 000*	14 000*	14 000*	14 000*
Namibia						
Pyrites	(50%)	104 454	87 182	94 726	60 130	113 341
South Africa						
Pyrites	(48%)	463 878	477 321	498 701	467 531	504 743
Recovered (d)		30 000*	(h)100 000*	(h)110 000*	(h)110 000*	(h)120 000*
Recovered (c)		95 102	89 593	107 716	105 080	111 508
Zaire						
Recovered (c)		37 000*	36 000*	36 000*	36 900*	37 700*
Zambia						
Pyrites	(43%)	18 172	28 288	19 197	19 406	28 817
Recovered		79 000*	79 000*	74 000*	74 000*	74 000*
Zimbabwe						
Pyrites	(42%)	23 934	24 105	26 253	19 575	16 657
Recovered		5 000*	5 000*	5 000*	5 000*	5 000*
Canada						
Recovered (c)		856 000	881 000	810 000	783 115	868 560
Recovered (d)		8 352 978	8 102 163	6 965 775	7 322 791	8 083 400
Cuba						
Recovered (d)		5 000*	5 000*	5 000*	5 000*	5 000*
Mexico						
Frasch		1 363 870	1 550 803	1 588 359	1 805 560	1 628 000
Recovered (c)		160 000*	160 000*	170 000*	180 000*	250 000*
Recovered (d)		461 093	474 928	456 307	500 911	510 160
Netherlands Antilles						
Recovered (d)		(f)69 476	32 000*	30 000*	30 000*	...
Trinidad & Tobago						
Recovered (d)		7 000*	5 000*	5 000*	5 000*	5 000*
USA						
Pyrites	(40%) (i)	283 000	328 000	309 000	173 000	3 000
Frasch		4 193 000	5 011 000	4 043 000	3 202 000	3 174 000
Recovered (c)		962 000	957 000	919 000	1 003 000	1 125 000
Recovered (d)		5 214 000	5 313 000	5 816 000	6 161 000	6 444 000
Bolivia (f)						
Sulphur ore		1 878	2 741	4 730	8 746	6 733
Brazil						
Pyrites		92 579	95 357	97 238	82 446	108 895
Recovered (c)		52 403	79 002	100 033	153 038	152 013
Recovered (d)		71 287	54 591	73 572	77 322	61 396
Chile						
Recovered (c)		32 135	30 073	41 142	40 000*	...
Sulphur ore (b)		53 964	78 747	57 123	37 048	37 649
Colombia						
Recovered (d)		20 151	17 388	13 936	10 203	8 233
Sulphur ore		36 245	41 374	36 038	41 490	42 795

## Production of Sulphur and Pyrites

tonnes (sulphur content)

Country		1984	1985	1986	1987	1988
Ecuador						
Recovered (d)		10 000*	10 000*	10 000*	10 000*	10 000*
Sulphur ore		5 000*	4 000*	4 000*	4 500*	4 500*
Peru						
Recovered (c)		64 256	68 145	66 300*	66 000*	66 000*
Venezuela						
Recovered (d)		86 000*	88 000*	99 380	125 000*	125 000*
Abu Dhabi						
Recovered (d)		50 000	105 000	115 000*	105 000*	110 000*
Bahrain						
Recovered (d)		51 800	35 700	46 000	47 500	48 000
China						
Pyrites (45%)		2 100 000*	2 200 000*	2 500 000*	3 700 000*	3 900 000*
Recovered		350 000*	400 000*	300 000*	500 000*	550 000*
Sulphur ore		200 000*	300 000*	300 000*	300 000*	300 000*
Cyprus						
Pyrites (44%)		10 411	30 624	24 936	50 355	49 784
India						
Pyrites (37%)		13 862	6 442	8 150	10 910	10 000*
Recovered (c)		115 000*	120 000*	120 000*	120 000*	125 000*
Recovered (d)		2 197	305	50	—	1 000*
Indonesia						
Sulphur ore		4 999	4 023	4 525	3 941	3 411
Iran						
Recovered (d)		130 000*	150 000*	250 000*	300 000*	300 000*
Sulphur ore		30 000*	30 000*	30 000*	30 000*	30 000*
Iraq						
Frasch		500 000*	500 000*	600 000*	707 000*	700 000*
Recovered (d)		70 000*	70 000*	200 000*	250 000*	350 000*
Israel						
Recovered (d)		21 900	25 000	29 200	40 200	50 000*
Japan						
Pyrites (49%)		259 000	252 538	158 367	78 957	70 481
Recovered (c) (g)		1 191 000	1 201 245	1 227 442	1 224 207	1 300 000*
Recovered (d)		1 142 000	1 044 000	985 000	1 012 000	1 077 000*
Korea, Dem. P.R. of						
Pyrites (40%)		200 000*	200 000*	200 000*	200 000*	200 000*
Recovered (c)		30 000*	30 000*	30 000*	30 000*	30 000*
Korea, Republic of						
Recovered (c)		54 000*	55 000*	55 000*	55 000*	55 000*
Recovered (d)		36 000*	35 000*	35 000*	35 000*	35 000*
Kuwait						
Recovered (d)		147 461	202 377	268 000	309 000	353 000
Oman						
Pyrites		31 000*	31 000*	31 000*	30 000*	30 000*
Pakistan						
Recovered		26 000*	26 000*	26 000*	26 000*	26 000*
Philippines						
Pyrites (46%)		38 091	76 975	108 597	158 179	174 500
Recovered (c)		95 000*	100 000*	120 000*	140 000*	150 000*
Qatar						
Recovered (d)		12 000	37 000	48 500	53 300	55 000*
Saudi Arabia						
Recovered (d)		833 000	1 100 000	1 446 000	1 432 000	1 450 000*
Singapore						
Recovered (d)		50 000*	50 000*	50 000*	50 000*	50 000*
Syria						
Recovered (d)		35 000*	35 000*	35 000*	40 000*	40 000*
Taiwan						
Recovered		28 705	42 949	62 980	89 082	86 441

**Production of Sulphur and Pyrites**

tonnes (sulphur content)

Country	1984	1985	1986	1987	1988
<b>Australia</b>					
Recovered (c)	386 047	435 313	453 012	536 244	560 000*
Recovered (d)	13 058	11 718	10 200	8 500	9 000*
<b>Total Pyrites</b>	9 200 000	9 200 000	9 100 000	9 900 000	10 200 000
<b>Total Frasch</b>	11 900 000	12 900 000	12 200 000	11 800 000	11 600 000
<b>Total Recovered</b>	31 700 000	32 100 000	31 800 000	34 200 000	36 400 000
<b>Total Sulphur ore</b>	2 200 000	2 300 000	2 400 000	2 400 000	2 400 000
<b>World total (all forms)</b>	55 000 000	56 500 000	55 500 000	58 300 000	60 600 000

**Notes**

(1) Pyrites: nominal sulphur content is shown in parentheses

- (a) Spent oxide
- (b) Including caliche at 45% S content
- (c) From smelter gases
- (d) From petroleum refining and/or natural gas
- (e) Other
- (f) Exports
- (g) Including S content of sulphur ore
- (h) Including production from synthetic fuels
- (i) Including hydrogen sulphide and liquid sulphur dioxide

## Exports of Sulphur and Pyrites

Country	1984	1985	1986	1987	1988
United Kingdom					
Sulphur					
Crude	3 025	1 929	1 584	2 857	3 325
Sublimed & precipitated	247	127	600	169	1 089
Belgium-Luxembourg					
Pyrites	73	46	125	130	265
Sulphur					
Crude	8 787	7 511	10 904	32 078	19 883
Sublimed & precipitated	79	213	189	292	85
Denmark					
Sulphur					
Crude	3 368	3 361	3 222	4 209	7 750
Sublimed & precipitated	327	499	4 642	2 415	2 254
France					
Sulphur					
Crude	717 405	536 711	366 873	472 083	537 359
Refined	1 813	1 163	821	2 258	9 423
Sublimed & precipitated	5 961	5 177	2 223	2 793	556
Germany, Federal Republic of					
Pyrites	1 302	1 217	1 290	1 400	1 318
Sulphur					
Crude	509 636	667 953	686 040	764 327	697 106
Sublimed & precipitated	450	502	361	200	235
Greece					
Sulphur	10 187	13 571	7 023	7 010	743
Italy					
Pyrites	5 005	4 778	4 676	4 883	...
Sulphur					
Crude	4 714	14 455	3 631	450	...
Sublimed & precipitated	82	21	449	49	...
Netherlands					
Sulphur					
Crude	26 415	22 288	29 104	95 299	92 946
Sublimed & precipitated	3	8	24	—	—
Spain					
Pyrites	386 088	312 087	347 216	248 457	162 984
Sulphur					
Crude	1 105	145	425	10 774	29 485
Sublimed & precipitated	135	34	76	47	39
Albania					
Pyrites (c)	31 500*	24 600*	24 900*	20 500*	...
Finland					
Pyrites (c)	110 800*	88 300*	144 200*	161 500*	275 900*
Hungary					
Sulphur	...	15 886	18 856	20 174	34 508
Norway					
Pyrites	167 974	169 308	172 650	108 080	92 688
Sulphur					
Crude	4 307	3 722	2 643	739	800
Sublimed & precipitated	1 904	1 317	2 751	2 799	1 124
Poland					
Sulphur	4 078 000	3 906 000	3 823 000	3 856 000	3 878 000
Soviet Union					
Pyrites	273 000	294 000	315 000	309 000	246 000
Sulphur (c)	34 500*	58 100*	68 300*	41 500*	59 200*
Sweden					
Pyrites	13 452	30	14	58 654	—
Sulphur					
Crude	1 588	1 502	10 246	18 969	15 570
Sublimed & precipitated	116	25	9 286	82	—
Switzerland					
Sulphur					
Crude	8 151	4 634	6 421	16 877	12 389
Sublimed & precipitated	3	27	43	28	1
Yugoslavia					
Pyrites	359 202	156 132	80 463	65 467	36 928

**Exports of Sulphur and Pyrites**

tonnes

Country	1984	1985	1986	1987	1988
South Africa Sulphur	13 781	8 465	—	1 041	—
Canada Pyrites	...	...	...	—	4 585
Sulphur	7 327 178	7 818 672	6 257 290	6 571 800	7 380 496
Mexico Sulphur	1 520 176	1 643 079	1 047 367	1 444 615	1 738 929
Netherlands Antilles Sulphur	69 476	6 585	4 000	23 000	...
USA Sulphur	1 348 404	1 401 511	1 919 495	1 215 832	1 223 357
Bolivia Sulphur	1 940	2 900*	6 050	8 790	6 800*
Colombia Sulphur	3 419	1 354	1 641	4 500	...
Venezuela Sulphur	15 191	24 000	16 000	20 033	...
Bahrain Sulphur	44 286	26 453	38 040	44 843	...
China Sulphur					
Crude (c)	...	11 000*	54 300*	29 800*	44 200*
Sublimed & precipitated (c)	100*	6 800*	3 600*	4 900*	3 900*
Cyprus Pyrites	31 044	65 423	65 938	21 905	...
Iran (a) Sulphur	14 500	(c)86 800*	(c)11 600*	(c)24 600*	(c)17 300*
Japan Sulphur					
Crude	274 095	165 981	77 815	138 133	170 366
Sublimed & precipitated	358	382	1 201	1 692	2 294
Korea, Republic of Sulphur	2 456	2 953	3 399	4 960	5 191
Kuwait Sulphur	666 082	166 000	360 022	...	...
Saudi Arabia Sulphur					
Crude	30	171	266	169 196	148 727
Sublimed & precipitated	1 723 341	988 240	924 676	371 948	831 785
Singapore Sulphur					
Crude	24 269	7 338	(d)15 885	(d)24 815	(d)26 925
Sublimed & precipitated	14 743	7 051	10 600	22 207	23 408
Taiwan Sulphur					
Crude	2 783	1 497	1 192	599	227
Sublimed & precipitated	219	75	153	274	76
Thailand Sulphur					
Crude	38	324	1 563	2 635	592
Sublimed & precipitated	72	10	406	27	45
Australia Zinc concentrates (b)	215 100	214 100	224 300	221 700	...

(a) Years ended 20 March following that stated

(b) Recoverable sulphur

(c) BGS estimates, based on known imports into certain countries

(d) Re-exports

## Imports of Sulphur and Pyrites

Country	1984	1985	1986	1987	1988
United Kingdom					
Pyrites	19 638	15 909	15 540	12 830	...
Sulphur					
Crude	810 963	806 358	684 569	618 984	(e)696 229
Sublimed & precipitated	418	524	563	379	910
Belgium-Luxembourg					
Pyrites	286 067	276 967	260 194	296 979	223 932
Sulphur					
Crude	535 236	492 262	397 666	414 213	449 888
Sublimed & precipitated	982	1 352	1 451	2 298	1 788
Denmark					
Pyrites	74	80	71	26	140
Sulphur					
Crude	63 460	72 939	40 896	48 289	72 788
Sublimed & precipitated	76	122	174	142	87
France					
Pyrites	1 553	1 177	1 144	1 328	1 317
Sulphur					
Crude	552 170	623 421	530 890	642 767	750 055
Refined	1 004	929	2 079	2 959	11 957
Sublimed & precipitated	178	78	141	137	535
Germany, Federal Republic of					
Pyrites	149 274	187 042	203 328	150 525	159 233
Sulphur					
Crude	328 090	252 380	232 639	214 142	176 187
Sublimed & precipitated	929	1 154	2 041	1 434	1 009
Greece					
Pyrites	76 044	41 354	19 082	3 803	10 588
Sulphur					
Crude	82 618	46 749	101 072	137 752	79 573
Sublimed & precipitated	48	43	81	33	122
Irish Republic					
Sulphur					
Crude	271	327	391	318	295
Sublimed & precipitated	47	45	98	39	85
Italy					
Pyrites	186 607	167 574	158 971	102 513	...
Sulphur					
Crude	376 160	399 494	337 251	283 843	297 000
Sublimed & precipitated	1 364	1 215	1 325	1 202	...
Netherlands					
Pyrites	311	204	243	302	411
Sulphur					
Crude	373 997	377 044	289 455	237 546	171 058
Sublimed & precipitated	396	603	213	248	398
Portugal					
Sulphur	18 473	19 825	23 089	22 842	10 000
Spain					
Sulphur					
Crude	46 595	70 862	42 999	42 825	54 840
Sublimed & precipitated	462	42	37	51	59
Austria					
Pyrites	775	854	668	655	746
Sulphur					
Crude	113 304	98 589	90 590	82 590	87 996
Sublimed & precipitated	53	336	255	238	242
Bulgaria					
Pyrites (a)	249 000*	238 000*	210 000*	190 000*	77 000*
Sulphur (a)	68 000*	50 100*	60 000*	53 000*	61 000*
Czechoslovakia					
Sulphur	469 000	505 000	466 000	488 000	486 000
Finland					
Sulphur					
Crude	84 902	78 377	28 183	17 951	42 256
Sublimed & precipitated	10	514	13	20	11
German Democratic Republic					
Sulphur (a)	135 000*	135 000*	135 000*	138 000*	134 000*

**Imports of Sulphur and Pyrites**

tonnes

Country	1984	1985	1986	1987	1988
Hungary					
Pyrites	4 174	37 568	73 563	53 995	28 362
Sulphur	168 066	171 503	167 395	158 061	183 662
Malta					
Sulphur	127	45	93	81	39
Norway					
Sulphur					
Crude	5 599	4 117	6 138	3 371	3 503
Sublimed & precipitated	420	61	11	30	42
Romania					
Pyrites (a)	48 900*	70 300*	...	...	...
Sulphur	(a)203 100*	392 900	(a)275 800*	(a)308 800*	(a)224 300*
Soviet Union					
Sulphur (a)	1 065 600*	1 162 400*	1 719 100*	983 300*	748 000*
Sweden					
Pyrites	14 749	21 970	48 807	65 914	125 843
Sulphur					
Crude	14 995	6 368	8 467	7 885	8 092
Sublimed & precipitated	9 525	12 004	9 898	8 402	7 935
Switzerland					
Pyrites	154	84	131	146	218
Sulphur					
Crude	46 043	48 577	47 320	57 173	54 829
Sublimed & precipitated	138	206	120	146	78
Turkey					
Pyrites	166 070	95 324	31 815	72 135	...
Sulphur					
Crude	20 998	111 006	129 108	108 254	139 114
Sublimed & precipitated	4 844	95	55	59	46
Yugoslavia					
Pyrites	156	61 081	4 584	451	11 197
Sulphur					
Crude	70 486	149 205	164 534	129 365	203 568
Refined	45 419	13 521	7 222	2 481	6 775
Sublimed & precipitated	404	584	498	130	175
Algeria					
Sulphur					
Crude	42 508	118 048	77 978	126 888	115 000
Sublimed & precipitated	3 505	6 294	5	4 104	...
Egypt					
Pyrites	8	16 100	203	4	...
Sulphur					
Crude	195 110	127 132	69 921	110 312	150 000
Sublimed & precipitated	142	26 131	9 060	38	...
Ethiopia					
Sulphur	403	1 237	2 074	70	2
Gabon					
Sulphur	206	5 250	5 501	5 000	4 000
Ivory Coast					
Sulphur	2 085	58	202	...	170
Kenya					
Sulphur					
Crude	666	931	482	6 480	...
Sublimed & precipitated	511	5 471	1 047	1 368	...
Morocco					
Sulphur	1 418 685	1 469 308	1 672 342	2 042 825	2 924 965
Niger					
Sulphur	33 412	20 679	25 951	20 000	26 000
Nigeria					
Sulphur	1 662	3 485	772	4 174	6 000
Senegal					
Sulphur	109 686	119 009	118 679	149 584	155 000
South Africa					
Pyrites	69	38	75	196	...
Sulphur					
Crude	597 145	463 502	319 353	605 563	501 000
Sublimed & precipitated	223	53	100	56	...



## Imports of Sulphur and Pyrites

Country	1984	1985	1986	1987	1988
Tanzania					
Sulphur	82 556	1 230	1 025	4 878	...
Tunisia					
Sulphur	997 536	556 496	1 096 422	1 119 864	1 305 036
Zaire					
Sulphur	2 815	283	117	...	...
Zimbabwe					
Sulphur	38 950	11 484	15 436	29 575	26 000
Canada					
Sulphur	3 020	3 168	10 760	24 712	111 577
Cuba					
Sulphur	142 427	157 061	124 535	156 873	...
El Salvador					
Sulphur	3 181	97	4 044	...	...
Guatemala					
Sulphur	362	1 437	2 901	5 154	...
Jamaica					
Sulphur	3 002	2 947	302	3 005	3
Mexico					
Sulphur					
Crude	493	56 881	329 938	448 566	...
Sublimed & precipitated	361	149	35	75	...
Nicaragua					
Sulphur	1 120	135	1 022	...	...
USA					
Pyrites	13 040	3 299	40 429	32 501	11 435
Sulphur	2 557 429	2 288 304	1 427 881	1 599 125	1 995 524
Argentina					
Sulphur	129 310	35 473	110 571	105 896	...
Brazil					
Sulphur					
Crude	1 174 132	1 084 955	1 155 291	1 189 846	1 145 282
Sublimed & precipitated	499	633	792	748	138
Chile					
Sulphur	117 270	77 339	65 096	70 502	69 441
Colombia					
Sulphur					
Crude	38 003	20 365	25 850	25 700	...
Sublimed & precipitated	187	200	81	...	...
Ecuador					
Sulphur	4 267	1 786	400	1 378	...
Peru					
Sulphur	4 362	4 391	2 784	4 947	6 271
Suriname					
Sulphur	363	768	637	1 064	...
Uruguay					
Sulphur	13 561	11 975	20 144	15 350	21 848
Venezuela					
Sulphur	247	14 048	296	268	...
Bangladesh (b)					
Sulphur	34 935	...	...	27 998	16 000
China					
Sulphur	286 811	163 247	13	56	20 609
Cyprus					
Sulphur	2 513	2 561	2 823	2 384	...
Hong Kong					
Sulphur					
Crude	644	530	5 342	294	345
Sublimed	308	58	294	434	262
India (d)					
Sulphur					
Crude	1 153 089	989 861	1 067 139	1 312 000	1 451 000
Sublimed	221	99	218	...	...
Indonesia					
Sulphur					
Crude	1 975	2 624	10 844	33 620	61 970
Sublimed & precipitated	212 487	182 620	221 404	345 495	283 607

**Imports of Sulphur and Pyrites**

tonnes

Country	1984	1985	1986	1987	1988
Iran (c)					
Sulphur	180	21	26	61	...
Israel					
Sulphur	203 581	245 455	201 387	250 950	259 000
Japan					
Pyrites	0	2 281	28 246	205 020	259 652
Sulphur	—	87	2 023	68	2 305
Jordan					
Sulphur					
Crude	126 426	169 300	127 528	168 387	...
Sublimed & precipitated	102 469	15 682	35 638	20 723	...
Korea, Republic of					
Sulphur					
Crude	567 836	592 867	518 369	520 997	585 328
Sublimed & precipitated	1 292	1 025	1 330	1 902	2 531
Kuwait					
Sulphur	255 238	...	50 004	...	...
Malaysia					
Sulphur					
Crude	6 766	12 290	886	1 631	...
Sublimed & precipitated	8 447	10 798	22 796	20 349	19 000
Pakistan (b)					
Sulphur					
Crude	11 483	39 194	25 986	41 035	36 396
Sublimed & precipitated	1 343	445	1 958	810	113
Philippines					
Sulphur					
Crude	917	309	2 015	17 233	8 564
Sublimed & precipitated	16 245	20 382	17 318	1 704	14 062
Singapore					
Sulphur					
Crude	84	34	142	168	308
Sublimed & precipitated	281	127	510	216	192
Sri Lanka					
Sulphur					
Crude	707	322	363	1 203	712
Sublimed & precipitated	508	309	280	640	153
Syria					
Sulphur					
Crude	17 477	55 560	59 201	99 351	...
Sublimed & precipitated	1 357	9	33	27	...
Taiwan					
Sulphur					
Crude	63 374	74 955	60 515	17 893	59 160
Sublimed & precipitated	243 935	158 334	261 370	153 152	199 815
Thailand					
Sulphur					
Crude	39 941	50 753	57 334	46 703	23 148
Refined	1 439	4 104	2 561	12 310	81 898
Sublimed & precipitated	288	136	120	224	187
Australia					
Sulphur	470 795	392 344	398 101	379 560	555 678
New Zealand (b)					
Sulphur					
Crude	207 380	209 696	176 775	78 208	...
Sublimed & precipitated	282	333	738	687	...

(a) BGS estimates, based on known exports from certain countries

(b) Years ended 30 June of that stated

(c) Years ended 20 March following that stated

(d) Years ended 31 March following that stated

(e) Including pyrites

# Production of Talc

Talc  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	19 413	20 000	12 357	12 529	14 182
France	320 000	314 000	325 000	269 000	280 000
Germany, Federal Republic of	17 300	20 700	21 900	19 800	19 500
Greece	1 712	1 725	17 310	1 507	1 590
Italy	142 727	129 614	151 406	150 718	158 722
Portugal	6 822	4 998	5 908	7 702	7 187
Spain	72 237	88 776	73 914	75 307	85 000*
Austria	134 011	131 454	133 319	129 959	132 974
Finland	384 265	370 491	321 296	417 687	457 410
Hungary	3 223	1 756	1 550	1 685	1 326
Norway	65 124	60 000*	60 000*	60 000*	60 000*
Romania	65 000*	65 000*	65 000*	65 000*	65 000*
Soviet Union	520 000*	520 000*	520 000*	530 000*	530 000*
Sweden	17 882	14 400	11 233	16 981	...
Yugoslavia	28 487	27 534	25 656	30 993	29 204
Egypt	6 406	6 229	5 579	6 105	7 268
South Africa					
Talc	10 561	10 220	8 641	8 005	10 111
Wonderstone (pyrophyllite)	3 851	4 227	4 606	3 467	3 162
Zambia	367	449	266	258	73
Zimbabwe	285	437	532	516	356
Canada	122 992	126 860	123 037	136 000	146 000
Mexico	8 900	29 900	24 301	17 469	20 000*
USA					
Talc	945 000	1 078 000	1 106 000	1 080 000	1 151 000
Pyrophyllite	77 000	73 000	75 000	83 000	97 000
Argentina					
Talc	22 774	15 944	22 353	24 138	20 000*
Pyrophyllite	5 012	2 785	2 812	1 260	...
Brazil					
Talc (b)	348 915	343 647	336 706	423 425	(d)450 000*
Pyrophyllite (b)	64 432	43 401	41 351	51 114	...
Chile	422	1 299	2 257	980	1 070
Colombia	8 760	8 611	9 013	11 927	12 800
Paraguay	150	120	130	180	210
Peru	9 238	500*	9 108	8 500	8 000*
Uruguay	1 658	1 308	1 255	1 648	...
China	950 000*	1 000 000*	1 000 000*	1 000 000*	1 000 000*
India					
Pyrophyllite	84 570	56 199	58 884	51 724	50 000*
Steatite	346 038	344 681	378 683	359 448	382 000
Iran (a)	35 400	30 800	31 000*	31 000*	31 000*
Japan					
Talc	84 056	79 044	74 903	45 346	39 887
Pyrophyllite	1 073 420	1 023 809	962 302	939 165	949 973
Korea, Dem. P.R. of	170 000*	170 000*	170 000*	170 000*	170 000*
Korea, Republic of					
Talc	192 208	194 174	210 631	161 052	146 478
Pyrophyllite	656 442	738 304	587 049	690 819	673 776
Nepal (c)	6 782	6 015	8 780	3 359	4 430
Pakistan	15 568	20 183	23 021	23 278	39 402
Philippines	927	345	—	—	27
Taiwan	18 680	17 560	21 552	22 102	21 603
Thailand	28 479	43 478	39 051	41 850	42 128
Australia					
Talc	179 709	132 074	179 467	206 865	201 740
Pyrophyllite	7 051	7 317	8 588	6 036	4 030
World total	7 300 000	7 400 000	7 300 000	7 400 000	7 500 000

(a) Years ended 20 March following that stated

(b) Including beneficiated and directly shipped material

(c) Years ended mid-July of that stated

(d) Including pyrophyllite

Talc

**Exports of Talc**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	3 583	4 842	2 542	2 354	1 978
Belgium-Luxembourg	38 566	41 241	39 929	53 838	64 113
France	94 011	103 460	99 535	111 685	141 416
Germany, Federal Republic of	5 657	8 534	7 587	8 991	6 482
Greece	174	109	245	263	259
Italy	41 864	41 987	43 076	40 473	...
Netherlands	10 791	7 762	8 817	12 066	12 810
Spain	33 123	31 197	32 910	31 875	17 191
Austria	114 085	110 150	113 369	120 177	115 565
Czechoslovakia (a)	7 200*	6 500*	6 800*	6 700*	6 200*
Finland	47 904	52 634	48 284	75 867	72 537
Norway	48 830	44 435	42 702	45 100	41 090
Sweden	14 619	12 305	8 145	13 916	14 684
Switzerland	126	95	86	144	146
Turkey	1 202	1 739	782	334	651
Yugoslavia	3	54	91	21	18
Egypt	552	665	843	345	...
Canada	...	...	...	...	45 904
USA	232 670	214 711	211 931	283 693	382 557
Brazil	3 141	4 135	2 197	3 454	3 851
China	513 446	521 420	582 220	637 896	746 197
Hong Kong (c)	13 881	13 471	29 250	25 204	50 559
India (b)	12 592	12 443	12 339	...	...
Japan	4 838	4 792	3 518	2 654	2 658
Jordan	5 222	7 310	10 993	6 357	...
Korea, Dem. P.R. of (a)	34 500*	20 400*	23 800*	19 800*	20 600*
Korea, Republic of	40 650	37 987	42 486	36 580	36 073
Singapore	536	832	512	890	2 182
of which: Re-exports	522	816	508	863	2 169
Taiwan	1 007	509	695	357	246
Thailand	8 343	2 889	2 364	3 488	1 709
Australia	163 370	122 306	183 357	129 656	168 758

(a) BGS estimates, based on known imports into certain countries

(b) Years ended 31 March following that stated

(c) Re-exports

# Imports of Talc

Talc  
tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	67 615	(c)59 135	68 408	70 675	...
Belgium-Luxembourg	35 610	58 735	68 617	83 766	100 218
Denmark	9 605	9 964	9 649	9 870	10 364
France	20 976	16 146	17 929	23 331	22 982
Germany, Federal Republic of	143 494	139 082	148 298	155 536	173 702
Greece	2 067	2 036	2 508	2 717	2 614
Irish Republic	2 414	2 143	1 643	1 654	1 647
Italy	26 066	24 963	28 465	32 429	...
Netherlands	37 751	42 241	46 910	59 100	78 801
Portugal	5 808	5 068	6 708	7 757	...
Spain	9 338	11 669	13 614	19 971	28 477
Austria	3 609	2 732	6 198	10 698	8 179
Czechoslovakia (d)	900*	1 400*	1 500*	2 300*	900*
Finland	5 515	577	424	440	568
German Democratic Republic (d)	2 200*	3 200*	1 500*	1 800*	1 700*
Hungary	6 168	3 751	4 368	5 334	6 433
Norway	8 127	8 046	6 302	6 207	11 192
Poland	25 646	20 944	23 154	25 424	30 083
Soviet Union (d)	3 000*	1 000*	1 500*	1 000*	3 000*
Sweden	24 581	26 369	27 289	31 426	32 650
Switzerland	13 368	13 421	14 922	15 059	13 734
Turkey	585	420	549	505	690
Yugoslavia	6 129	4 378	4 856	4 336	5 099
Algeria	1 267	1 631	1 584	956	...
Cameroon	500*	...	300*	300*	200*
Egypt	1 247	1 027	975	1 570	...
Ivory Coast	1 591	2 736	1 720	...	1 505
Kenya	2 738	3 101	4 721	4 670	...
Morocco	1 552	1 060	1 079	1 417	1 914
South Africa	3 198	2 545	4 154	5 490	...
Tunisia	1 536	1 371	1 044	1 191	1 222
Zaire	233	400*	300*	...	...
Canada	38 816	41 132	39 362	49 515	179 653
Costa Rica	913	809	1 096	990	...
Dominican Republic	1 284	859	462	...	...
El Salvador	426	399	452	...	...
Guatemala	412	266	159	197	...
Honduras	154	251	239	...	...
Jamaica	390	463	1 170	449	636
Mexico	102 655	149 220	96 200	93 406	...
Panama	241	204	265	254	374
Trinidad & Tobago	1 172	621	507	592	...
USA	40 509	42 494	50 776	55 607	79 391
Argentina	341	451	382	1 049	...
Chile	6 007	1 580	11 044	...	...
Colombia	1 618	2 244	890	...	...
Ecuador	805	778	559	618	...
Peru	352	400	621	1 070	619
Venezuela	12 594	8 540	8 873	14 877	...
Cyprus	428	265	380	595	...
Dubai	466	622	465	...	...
Hong Kong	15 258	15 972	32 707	30 312	49 804
Indonesia	17 292	13 385	27 722	17 464	28 569
Iran (a)	548	39	...	59	...
Israel (d)	900*	1 400*	700*	1 500*	...
Japan	619 260	573 901	614 422	579 171	660 570
Jordan	220	329	399	471	...
Korea, Republic of	20 981	29 742	41 926	63 937	97 976
Malaysia	5 966	5 473	7 010	6 796	...
Pakistan (b)	56 447	988	1 156	13 635	1 564

Talc

## Imports of Talc

tonnes

Country	1984	1985	1986	1987	1988
Philippines	5 011	5 620	7 147	8 464	9 800
Saudi Arabia	5 379	2 769	2 918	3 004	3 538
Singapore	8 382	3 986	6 205	5 163	7 127
Sri Lanka	1 310	1 789	1 355	1 467	1 777
Syria	442	2 782	1 099	3 318	...
Taiwan	9 915	10 744	12 230	22 726	37 337
Thailand	17 474	18 891	22 118	26 518	29 962
Australia	215	352	151	266	509
New Zealand (b)	2 806	2 495	2 371	2 217	...

- (a) Years ended 20 March following that stated
- (b) Years ended 30 June of that stated
- (c) Excludes a small quantity which is suppressed by Customs and Excise
- (d) BGS estimates, based on known exports from certain countries

## Production of Tantalum and Niobium Minerals

Country		1984	1985	1986	1987	1988
Portugal						
Columbite-tantalite	(25%,25%)	3	2	5	—	—
Spain						
Tantalite	(—,25%)	32	18	13	10*	11*
Mozambique						
Tantalite	(10%,45%)	7	4	3	—	—
Microlite	(5%,50%)	10	6	3	—	—
Namibia						
Tantalite	(—,14%)	5	3	8	14	7
Nigeria						
Columbite	(43%,6%)	126	101	13	48	56
Rwanda						
Columbite-tantalite	(30%,23%)	52	28	28	12	7
Zaire						
Columbite-tantalite	(27%,27%)	100	158	38	57	34
Zimbabwe						
Columbite-tantalite	(11%,28%)	59	40	33	37	66
Canada						
Pyrochlore	(42%,—)	4 600	4 900	4 900	4 400	5 600
Tantalite	(3%,30%)	—	106	107	97	50
Brazil						
Pyrochlore	(42%,—)	30 087	31 311	30 865	18 323	36 200
Columbite-tantalite	(20%,30%)	170	323	414	446	622
Djalmaite	(1%,50%)	14	15	30	17	...
Malaysia						
Columbite	(40%,14%)	50	76	215	228	—
Struverite	(—,10%)	99	120	34	141	42
Thailand						
Columbite-tantalite	(17%,25%)	477	432	121	183	124
Struverite	(—,6%)	30	309	241	423	788
Australia						
Columbite-tantalite	(20%,33%)	145	110	140	121	277
World total concentrates		36 000	38 000	37 000	25 000	44 000
Nb content		15 000*	15 600*	15 400*	9 800*	17 800*
Ta content		300*	400*	300*	400*	400*

## Notes

- (1) Niobium and tantalum minerals are believed to have been produced also in the Soviet Union and China, and minor quantities in Argentina, Burundi, French Guiana and Zambia
- (2) The figures in this table refer to gross tonnage of tantalum and niobium concentrates
- (3) Estimated average niobium and tantalum contents are given in the form (Nb%,Ta%) for each country and each mineral, relating where possible to the later years
- (4) Niobium and tantalum are also recovered from tin slags. This source is particularly important in the case of tantalum and in recent years is believed to have accounted for over 60% of all tantalum recovered
- (5) No detailed information on the production of tantalum bearing tin slags is available but the major producers are Thailand and Malaysia, with small amounts from Australia, Brazil, Nigeria, Portugal, South Africa and Zaire

**Exports of Tantalum and Niobium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Tantalum	18	20	12	18	38
Niobium	22	9	6	16	...
France					
Tantalum	10	32	18	21	24
Germany, Federal Republic of					
Niobium & tantalum ores	1 347	1 895	54	6	95
Tantalum	112	117	93	93	115
Niobium	93	82	90	113	...
Italy					
Tantalum	1	2	11	16	...
Netherlands					
Niobium & tantalum ores	74	154	4	—	—
Tantalum	1	1	27	15	—
Austria					
Tantalum	12	17	21	18	38
Nigeria					
Columbite	70	257	48	126	...
Zaire					
Columbite-tantalite	150	84	146	119	...
Canada					
Niobium & tantalum ores (a)	4 500*	4 900*	4 900*	5 100*	4 000*
Tantalum	...	...	...	...	254
USA					
Tantalum ores & concentrates	71	52	32	54	97
Tantalum	228	303	272	296	357
Niobium	45*	55*	55*	60*	55*
Brazil					
Columbite-tantalite	233	270	273	187	346
Japan					
Tantalum	10	12	11	18	30
Malaysia					
Columbite & tantalite	81	45	25	136	23
Tin slags	10 183	9 709	8 654	14 444	17 884
Singapore					
Tantalum ores & concentrates (b)	20	3	393	12	125
Tin slags	781	1 012	571	1 378	1 463
of which: Re-exports	489	97	488	242	690
Taiwan					
Tantalum	22	22	5	21	140
Thailand					
Columbite & tantalite	274	88	13	61	243
Tin slags	1 516	330	70	935	...
Australia					
Columbite-tantalite	239	268	198	440	208

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) BGS estimates, based on known imports into certain countries

(b) Re-exports



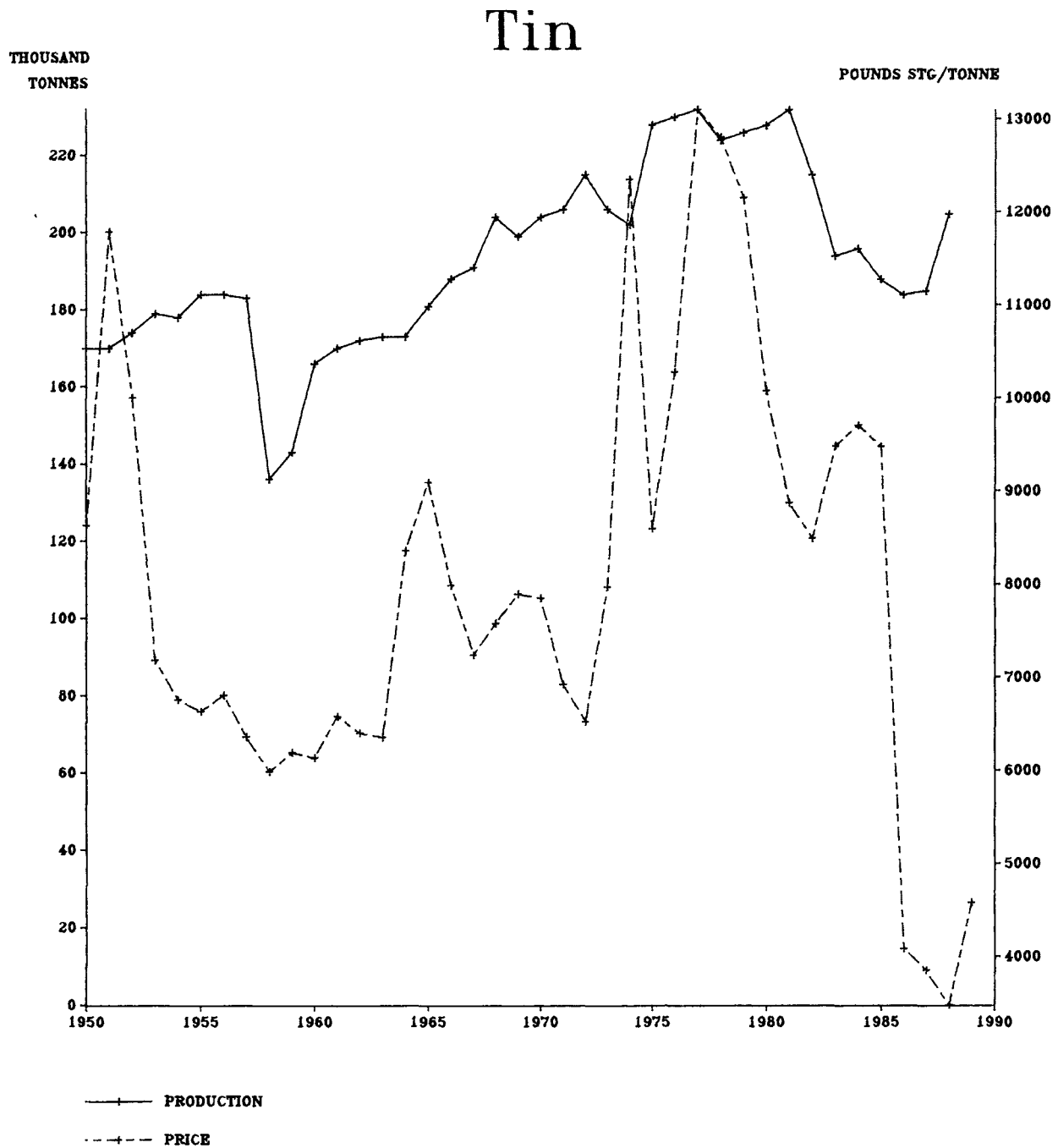
## Imports of Tantalum and Niobium

Country	1984	1985	1986	1987	1988
United Kingdom					
Tantalum	53	38	41	63	66
Niobium	12	25	19	21	...
Belgium-Luxembourg					
Niobium & tantalum ores	1 378	1 949	2 046	1 845	534
Tantalum	43	20	40	36	55
Niobium	1	13	6	3	—
France					
Tantalum	48	49	36	44	44
Niobium	37	73	24	40	...
Germany, Federal Republic of					
Niobium & tantalum ores (a)	641	506	1 089	1 142	...
Tantalum	157	174	148	178	202
Niobium	31	34	30	18	...
Italy					
Tantalum	4	4	4	3	...
Niobium	64	3	33	56	...
Netherlands					
Niobium & tantalum ores	59	93	—	—	—
Tantalum	2	5	0	1	0
Austria					
Tantalum	29	41	19	54	68
USA					
Tantalum concentrates	997	349	355	292	640
Niobium concentrates	1 479	1 295	1 295	2 078	1 689
Tantalum	104	97	237	112	236
Niobium	9	4	6	23	20
Japan					
Tantalum ores & concentrates	275	221	66	35	...
Niobium ores & concentrates	2 042	1 974	1 651	1 336	1 010
Tantalum	75	79	45	48	107
Singapore					
Tantalum ores & concentrates	112	68	0	10	201
Tin slags	9 261	8 481	9 585	9 749	2 993

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Including other ores



**Figure 21** World mine production of tin compared with the mean yearly average LME price and, from 1986, the Metal Bulletin free market price expressed in constant 1985 pounds sterling, using the GDP deflator index for the UK.

*Constant commodity prices derived from those quoted by Metal Bulletin in Prices and Data (1989).*

## Mine Production of Tin

tonnes (metal content)

Country	1984	1985	1986	1987	1988
United Kingdom	5 216	5 204	4 276	4 033	3 419
Portugal	320	263	211	64	53
Spain	438	637	296	77	59
Czechoslovakia	250	250*	200*	500*	600*
German Democratic Republic	2 500*	2 800*	2 800*	3 000*	2 800*
Soviet Union	17 000*	16 000*	16 000*	15 000*	15 000*
Namibia	940	994	880	1 097	1 187
Niger	114	183	124	94	100*
Nigeria	1 338	963	146	156	245
Rwanda	1 561	1 161	42	243	168
South Africa	2 301	2 194	2 075	1 438	1 365
Zaire	2 708	2 907	2 351	2 226	1 943
Zimbabwe	1 209	1 207	1 079	1 037	855
Canada (a)	209	119	2 356	3 397	3 840
Mexico	416	380	585	369	274
USA	100*	100*	100*	100*	100*
Argentina	274	454	379	186	447
Bolivia	19 911	16 136	10 479	8 128	10 504
Brazil	19 957	26 514	26 405	28 523	44 102
Peru (b)	3 314	3 807	4 817	5 263	4 378
China	17 500*	20 000*	25 000*	28 000*	30 000*
Indonesia	23 223	21 759	24 910	26 217	29 589
Japan	486	510	500	86	—
Laos	430	540*	400*	260*	240*
Malaysia	41 307	36 884	29 134	30 388	28 866
Mongolia	1 000	1 000	1 000	1 200	1 200
Myanmar	2 029	1 751	1 495	939	529
Thailand	21 585	16 576	16 775	14 750	14 225
Vietnam	500*	500*	500*	600*	700*
Australia	(c)7 939	6 374	8 515	7 691	7 023
World total	196 000	188 000	184 000	185 000	204 000

(a) Sn in concentrates exported and in tin-lead alloys produced

(b) Recoverable

(c) Excluding content of copper-tin concentrate

Tin

## Smelter Production of Tin

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	7 105	7 548	9 227	12 135	9 014
Netherlands	6 517	6 033	5 104	3 834	3 478
Portugal	409	460	193	22	20
Spain	2 900	3 300	1 965	1 671	806
Czechoslovakia	425	507	240	545	515
German Democratic Republic	3 000*	3 300*	3 300*	3 400*	3 300*
Soviet Union	18 500*	18 500*	18 500*	19 500*	21 500*
Nigeria	1 334	1 079	91	561	427
Rwanda	1 040	948	—	—	—
South Africa	2 371	2 683	2 804	1 688	2 410
Zaire	170	83	56	90	120
Zimbabwe	1 209	1 207	1 079	1 037	855
Mexico	1 595	1 533	1 483	1 730	1 700*
USA	4 000	3 000*	3 213	3 905	1 467
Argentina	160	231	258	146	318
Bolivia (a)	15 842	12 859	7 673	2 667	5 491
Brazil	18 877	24 701	25 152	28 841	41 857
China	25 000*	29 900*	28 000*	27 000*	26 000*
Indonesia	22 493	20 418	22 080	24 200	28 365
Japan	1 354	1 391	1 281	896	846
Korea, Republic of	1 200	1 600	1 500	1 834	2 500
Malaysia	44 416	45 500	43 788	44 363	47 403
Myanmar	700	500	1 000	1 000	1 000
Singapore	3 500	4 000	500	1 000	1 500
Thailand	19 729	17 996	19 672	15 438	14 675
Vietnam	475*	570*	620*	645*	600*
Australia	2 899	2 683	1 399	563	422
World total	207 000	213 000	200 000	199 000	217 000

(a) Refined, including alloys

# Exports of Tin

Tin  
tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Concentrates	3 092	2 641	5 085	3 840	5 424
Unwrought	11 073	7 292	13 640	14 763	13 981
Unwrought alloys	1 993	1 605	2 972	2 818	2 352
Scrap	932	456	688	529	374
<b>Belgium-Luxembourg</b>					
Unwrought	339	240	1 644	2 023	2 122
Unwrought alloys	1 309	2 289	1 594	1 083	1 978
Scrap	50	68	84	64	60
<b>Denmark</b>					
Unwrought	964	1 101	1 084	18	11
Unwrought alloys	857	224	347	107	37
Scrap	67	180	261	200	390
<b>France</b>					
Concentrates	7	7	2 091	42	—
Unwrought	218	347	174	92	167
Unwrought alloys	51	99	22	56	38
Scrap	287	352	321	300	469
<b>Germany, Federal Republic of</b>					
Unwrought	1 457	1 158	1 289	538	521
Unwrought alloys	2 781	2 660	2 215	1 367	1 039
Scrap	144	87	123	276	282
<b>Irish Republic</b>					
Scrap	1 374	1 366	1 416	2 132	1 495
<b>Italy</b>					
Unwrought (a)	141	197	163	131	184
Scrap	94	60	200	72	61
<b>Netherlands</b>					
Concentrates	324	—	223	—	77
Unwrought	3 038	1 116	2 407	1 706	1 103
Unwrought alloys	1 116	1 012	798	782	806
Scrap	225	224	174	197	380
<b>Spain</b>					
Unwrought	245	168	213	0	(a)5
Unwrought alloys	154	34	12	6	...
Scrap	99	56	—	275	84
<b>Sweden</b>					
Unwrought	37	60	38	102	62
Unwrought alloys	27	104	84	81	95
<b>Switzerland</b>					
Unwrought	179	198	161	97	(a)110
Scrap	43	90	28	41	39
<b>Namibia</b>					
Concentrates	1 400	1 483	1 313	1 637	1 772
<b>Niger</b>					
Concentrates (b)	72	126	108	20	63
<b>Nigeria</b>					
Unwrought (a)	1 280	400	215	250	543
<b>Rwanda</b>					
Concentrates	980	685	600	183	...
<b>South Africa</b>					
Concentrates (b)	714	703	203	—	—
Unwrought (a)	828	449	1 007	526	205
<b>Zaire</b>					
Concentrates	3 633	5 095	4 545	3 328	3 000*
Unwrought	245	—	—	—	...
<b>Canada</b>					
Concentrates (b)	318	393	3 725	2 783	4 594
<b>Jamaica</b>					
Scrap	428	538	406	480	355

## Tin

## Exports of Tin

tonnes

Country	1984	1985	1986	1987	1988
USA					
Unwrought (a)	3 184	2 875	3 237	1 915	1 573
of which: Re-exports	1 755	1 397	1 689	597	363
Scrap	20 958	26 185	47 351	28 136	39 102
Argentina					
Tin-silver ore	2 252	1 030	—	185	...
Bolivia					
Concentrates	16 027	16 400*	22 753	20 239	11 500*
Unwrought	15 614	11 424	8 207	1 849	6 071
Brazil					
Unwrought (a)	14 602	20 042	19 152	21 027	33 637
Peru					
Concentrates	3 229	2 567	4 631	4 661	4 123
China					
Unwrought (a)	2 641	7 249	7 421	15 894	10 717
Hong Kong					
Concentrates (d)	—	4 768	3 709	6 912	16 248
Unwrought	766	5 570	1 944	2 176	3 149
of which: Re-exports	458	5 287	1 768	1 819	3 074
Indonesia					
Concentrates	2 789	3 240	4 694	1 545	1 139
Unwrought (a)	22 568	21 104	23 804	24 241	26 990
Japan					
Unwrought (a)	117	96	56	87	119
Malaysia					
Unwrought (a)	39 688	57 482	40 504	50 318	48 922
Scrap	430	495	...	217	...
Myanmar					
Concentrates (c)	2 636	780	9 451	750	...
Singapore					
Concentrates	11 253	9 728	4 892	10 421	7 560
of which: Re-exports	10 852	9 215	4 892	10 421	7 560
Unwrought	17 870	20 339	29 914	29 820	27 673
of which: Re-exports	15 324	14 684	27 934	28 300	26 422
Scrap	465	137	75	77	228
of which: Re-exports	87	98	39	15	144
Thailand					
Unwrought	18 455	17 963	14 784	13 561	9 925
Unwrought alloys	1 083	1 674	245	108	2 792
Australia					
Concentrates	11 855	10 562	14 588	13 794	14 266
Unwrought (a)	469	430	192	271	223

## Notes

(1) In this table the term 'unwrought' tin corresponds to item 687.1 of the Standard International Trade Classification (Revision 3) and comprises ingots, pigs, unwrought bars, sticks, etc.

(a) Including alloys

(b) Sn content

(c) Years ended 31 March following that stated

(d) Re-exports

## Imports of Tin

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Concentrates	21 055	20 713	30 166	26 280	20 239
Unwrought	4 492	3 924	4 249	2 905	2 084
Unwrought alloys	2 506	3 424	3 442	2 327	2 467
Scrap	1 664	563	303	446	517
<b>Belgium-Luxembourg</b>					
Concentrates	2 944	556	102	35	54
Unwrought	2 036	1 562	1 991	1 859	2 549
Unwrought alloys	275	2 291	1 545	289	201
Scrap	172	404	337	238	646
<b>Denmark</b>					
Unwrought	6	50	81	46	68
Unwrought alloys	745	310	1 925	189	182
Scrap	120	3	504	3	25
<b>France</b>					
Unwrought	7 976	6 648	7 889	7 320	8 040
Unwrought alloys	211	477	399	288	484
Scrap	41	15	15	3	4
<b>Germany, Federal Republic of</b>					
Concentrates	1 365	2 351	504	144	3 780
Unwrought	16 745	17 313	17 552	17 937	19 867
Unwrought alloys	2 029	1 825	1 334	1 547	1 642
Scrap	284	224	303	365	351
<b>Greece</b>					
Unwrought	259	365	477	380	—
<b>Irish Republic</b>					
Unwrought (a)	57	54	60	95	70
<b>Italy</b>					
Unwrought	5 559	5 135	5 734	6 123	6 112
Unwrought alloys	403	501	595	458	562
<b>Netherlands</b>					
Concentrates	3 000*	10 677	9 986	5 593	5 608
Unwrought	1 702	2 271	1 302	2 486	2 579
Unwrought alloys	552	899	1 369	627	719
Scrap	368	455	355	444	309
<b>Portugal</b>					
Concentrates	80	218	11	—	...
Unwrought (a)	396	182	655	786	696
<b>Spain</b>					
Concentrates	4 351	4 262	3 071	1 848	1 297
Unwrought (a)	84	252	1 575	1 838	2 313
<b>Austria</b>					
Unwrought	509	501	523	512	501
<b>Czechoslovakia</b>					
Unwrought (a)	2 896	3 058	3 200	2 819	2 558
<b>Finland</b>					
Unwrought (a)	224	112	214	142	111
<b>Hungary</b>					
Unwrought & semi-manufactures	1 654	1 277	1 422	1 674	950
<b>Norway</b>					
Unwrought	402	342	448	396	417
Unwrought alloys	70	141	113	85	85
<b>Poland</b>					
Unwrought	3 634	3 029	3 625	2 713	3 520
<b>Soviet Union</b>					
Concentrates (e)	1 300*	2 200*	800*	2 500*	800*
Unwrought (a) (e)	11 500*	11 600*	10 000*	8 100*	5 500*
<b>Sweden</b>					
Unwrought	372	502	558	458	487
Unwrought alloys	68	68	95	22	62
Scrap	12	90	59	128	153
<b>Switzerland</b>					
Unwrought	791	977	1 369	1 011	(a)994
<b>Turkey</b>					
Unwrought (a)	853	1 007	1 097	1 051	899

Tin

**Imports of Tin**

tonnes

Country	1984	1985	1986	1987	1988
Yugoslavia					
Unwrought (a)	1 122	1 387	1 565	1 068	1 456
Algeria					
Unwrought (a)	618	454	161	310	...
Egypt					
Unwrought & scrap	288	440	265	190	250*
Morocco					
Unwrought (a)	132	156	158	127	122
Canada					
Unwrought	4 105	3 698	3 925	3 791	4 115
Mexico					
Concentrates	3 553	5 503	6 311	7 042	3 410
Scrap	453	156	135	140	...
USA					
Concentrates (b)	3 517	1 639	4 031	2 967	2 837
Unwrought	41 241	33 830	35 768	41 150	43 632
Unwrought alloys	2 607	3 377	1 018	1 610	1 924
Scrap	1 157	737	925	1 453	916
Argentina					
Unwrought	914	469	1 344	727	164
Chile					
Unwrought	517	647	1 063	368	2 503
Colombia					
Unwrought (a)	299	317	378	311	317
Peru					
Unwrought (a)	117	158	324	312	130
Venezuela					
Unwrought (a)	612	967	782	1 015	1 149
Hong Kong					
Concentrates	—	6 100	1 755	7 985	18 308
Unwrought	1 907	3 983	3 568	4 655	6 152
India (f)					
Unwrought (a)	1 922	1 766	3 615	2 667	3 294
Scrap	15 265	12 254	7 211	...	...
Iran (d)					
Unwrought	370	269	313	452	...
Japan					
Unwrought	30 470	28 297	31 769	31 997	32 004
Unwrought alloys	1 425	1 983	542	1 591	3 513
Korea, Republic of					
Concentrates	1 749	2 687	1 532	3 698	4 123
Unwrought (a)	2 402	1 603	3 755	4 296	4 924
Malaysia					
Concentrates	16 364	13 634	23 806	31 408	41 000
Unwrought (a)	854	795	601	805	...
Philippines					
Unwrought (a)	690	360	465	797	733
Singapore					
Concentrates	6 504	8 315	5 501	12 064	8 846
Unwrought	2 347	1 119	12 742	11 021	5 764
Scrap	436	337	281	536	621
Taiwan					
Unwrought (a)	2 265	1 724	4 512	4 409	5 343



**Imports of Tin**

Country	1984	1985	1986	1987	1988
Australia					
Unwrought	105	136	186	177	213
New Zealand (c)					
Unwrought (a)	167	153	139	156	...

**Notes**

(1) In this table the term 'unwrought' tin corresponds to item 687.1 of the Standard International Trade Classification (Revision 3) and comprises ingots, pigs, unwrought bars, sticks, etc.

(a) Including alloys

(b) Sn content

(c) Years ended 30 June of that stated

(d) Years ended 20 March following that stated

(e) BGS estimates, based on known exports from certain countries

(f) Years ended 31 March following that stated

**Production of Titanium Minerals**

tonnes

Country	1984	1985	1986	1987	1988
Portugal					
Ilmenite	164	227	232	141	59
Finland					
Ilmenite	167 000	53 000	—	—	—
Norway					
Ilmenite	651 834	735 842	802 426	852 323	898 035
Soviet Union					
Ilmenite	440 000*	445 000*	450 000*	450 000*	460 000*
Rutile	10 000*	10 000*	10 000*	10 000*	10 000*
Sierra Leone					
Ilmenite	—	—	—	5 600	42 118
Rutile	91 289	80 611	97 101	113 252	126 358
South Africa (e)	228 000	255 000	255 000	317 000	350 000*
Canada (a)					
Ilmenite (d)	1 780 000	2 560 000	2 500 000*	2 400 000*	2 500 000*
USA					
Ilmenite (b)	250 000*	290 000*	290 000*	290 000*	...
Brazil					
Ilmenite	61 227	68 827	61 414	169 303	...
Rutile	682	389	311	392	...
China					
Ilmenite	145 000*	145 000*	145 000*	145 000*	150 000*
India					
Ilmenite	140 000	143 000	140 000*	140 000*	140 000*
Rutile	6 000*	6 800	7 000*	7 000*	7 000*
Malaysia					
Ilmenite	(c)224 042	315 736	414 941	509 202	486 305
Sri Lanka					
Ilmenite	102 048	114 954	133 873	128 500	97 085
Rutile	6 467	8 605	8 443	7 200	13 759
Thailand					
Ilmenite	148	1 078	13 489	26 278	16 455
Leucoxene	388	488	797	800	1 799
Australia					
Ilmenite	1 493 171	1 418 867	1 237 694	1 498 087	1 442 894
Rutile	170 424	211 615	215 774	246 263	246 204
Leucoxene	32 110	13 809	14 143	11 290	12 946
World total					
Ilmenite (Wt. of concs)	6 100 000	7 000 000	6 900 000	7 600 000	7 800 000
Rutile (Wt. of concs)	335 000	374 000	395 000	435 000	460 000
All forms (TiO <sub>2</sub> content)	3 407 000*	3 884 000*	3 855 000*	4 212 000*	4 327 000*

## Notes

(1) The figures in this table refer to gross tonnage of titanium concentrates

(2) Some ilmenite is converted to synthetic rutile in Australia, India, Japan, Taiwan and USA

(a) Canada produces some ilmenite which is sold as such and not processed into slag, but tonnages are small

(b) Including a mixed product containing ilmenite, leucoxene and rutile

(c) Exports

(d) Processed into slag. In 1988, Canada produced 950 000 tonnes (80% TiO<sub>2</sub>)

(e) Ti content of titanium minerals and slag

## Exports of Titanium

Country	1984	1985	1986	1987	1988
United Kingdom					
Ilmenite	27	1 125	—	16 187	33
Metal	...	2 512	2 094	2 036	3 089
Oxides	117 190	120 134	136 715	158 537	165 607
Belgium-Luxembourg					
Metal	185	173	109	213	243
Oxides	62 784	68 898	70 850	71 343	100 548
France					
Titanium minerals	95	247	108	1 785	481
Metal	1 188	1 717	1 189	881	2 138
Oxides	148 788	155 082	161 104	156 571	160 882
Germany, Federal Republic of					
Ilmenite	788	7 556	920	348	1 112
Other titanium minerals	7 551	7 520	4 144	3 494	2 634
Metal	2 325	1 868	1 276	1 415	2 370
Oxides	209 287	220 838	229 431	235 606	236 833
Italy					
Titanium minerals	990	1 906	1 335	31	...
Metal	200	130	211	156	...
Oxides (b)	17 900*	22 700*	25 500*	22 500*	24 200*
Netherlands					
Ilmenite	769	739	525	3 087	2 426
Other titanium minerals	46 890	29 925	35 208	64 248	52 808
Metal	115	73	61	48	104
Oxides	32 863	35 060	35 955	33 891	40 508
Spain					
Oxides	46 813	39 934	23 997	26 836	...
Czechoslovakia					
Oxides (b)	2 800*	2 600*	3 300*	3 500*	2 800*
Finland					
Oxides (b)	46 400*	46 500*	49 800*	50 700*	53 400*
Norway					
Titanium minerals	599 214	641 910	693 265	715 915	692 879
Oxides (b)	8 300*	9 800*	8 900*	14 800*	11 400*
Soviet Union					
Metal (b)	700*	1 200*	700*	700*	3 200*
Sweden					
Metal	628	430	288	402	450
Oxides	671	568	608	651	637
Yugoslavia					
Oxides	16 173	16 209	17 961	19 794	20 932
Sierra Leone					
Rutile	94 677	77 931	120 542	...	...
South Africa					
Titanium minerals & slag (a)	218 000	222 000	243 000	272 000	...
Canada					
Titanium slag	600 000*	750 000*	750 000*	800 000*	850 000*
Metal	(d)363	(d)480	(d)597	(d)495	368
Oxides	(d)23 779	(d)24 151	(d)22 235	(d)15 905	32 267
USA					
Titanium minerals	7 867	25 183	4 842	4 024	10 162
Metal	6 727	9 470	16 151	10 899	11 162
Oxides	98 340	93 639	105 178	120 896	123 326
Brazil					
Titanium minerals	2 002	2 832	5 474	6 600	3
China					
Metal (b)	200*	400*	100*	400*	900*
Oxides (b)	2 400*	3 900*	6 100*	10 100*	24 400*
Hong Kong					
Oxides (c)	1 926	2 743	2 840	4 784	13 210
India (e)					
Ilmenite	7 852	17 956	14 605	...	...

## Titanium

**Exports of Titanium**

tonnes

Country	1984	1985	1986	1987	1988
<b>Japan</b>					
Metal	9 700	7 330	6 143	7 073	10 759
Oxides	59 923	61 662	69 346	78 441	81 495
<b>Korea, Republic of</b>					
Oxides	1 796	2 148	1 497	3 215	3 921
<b>Malaysia</b>					
Ilmenite	224 042	249 218	397 696	302 587	371 400
<b>Sri Lanka</b>					
Ilmenite	96 066	134 550	139 400	105 000	94 700
Rutile	—	6 800	11 860	—	5 982
<b>Taiwan</b>					
Oxides	81	29	395	12	501
<b>Australia</b>					
Ilmenite	1 172 986	1 151 921	1 034 209	1 045 497	1 040 585
Rutile	191 507	211 723	229 665	256 781	244 482
Leucoxene	30 959	16 779	13 474	10 685	12 976
Oxides (b)	27 700*	24 900*	29 500*	28 300*	26 000*

## Notes

(1) So far as possible, the term 'oxides', as used in this table, includes oxides and oxide based pigments classified under Standard International Trade Classification (Revision 3) items 522.56 and 533.1

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Ti content

(b) BGS estimates, based on known imports into certain countries

(c) Re-exports

(d) Exports to the USA only

(e) Years ended 31 March following that stated

## Imports of Titanium

Country	1984	1985	1986	1987	1988
United Kingdom					
Ilmenite	248 110	277 971	283 274	293 474	299 561
Other titanium minerals	72 792	88 900	90 380	122 735	157 342
Titanium slag	...	36 607	38 143	37 666	47 825
Metal	(b)7 900*	7 959	8 854	12 626	16 686*
Oxides	34 248	34 400	37 864	37 193	41 488
Belgium-Luxembourg					
Ilmenite	43 251	71 237	56 604	67 450	72 379
Other titanium minerals	48 251	51 062	50 210	65 255	29 728
Metal	463	1 313	859	877	1 640
Oxides	29 124	29 808	29 579	33 859	35 655
Denmark					
Oxides	9 926	10 569	11 144	11 632	13 348
France					
Ilmenite	90 513	124 164	171 650	62 971	101 729
Other titanium minerals	77 338	108 892	94 086	132 942	144 675
Titanium slag	...	63 686	110 446	115 508	120 457
Metal	2 397	2 701	1 775	2 638	3 712
Oxides	48 828	46 502	46 451	48 200	60 240
Germany, Federal Republic of					
Ilmenite	425 444	467 169	432 551	465 354	449 361
Other titanium minerals	30 242	19 193	18 053	18 075	20 988
Titanium slag	214 318	246 179	229 223	239 572	244 726
Metal	4 223	3 976	2 902	3 126	5 185
Oxides	76 783	81 916	91 228	97 672	121 803
Greece					
Oxides	8 770	9 546	10 215	9 154	...
Irish Republic					
Oxides	3 419	3 071	3 300	1 791	1 553
Italy					
Ilmenite	17 386	141 419	36 524	119 145	...
Other titanium minerals	4 996	4 760	18 324	6 105	...
Titanium slag	42 043	83 365	85 752	77 930	...
Metal	2 806	3 010	3 472	3 409	...
Oxides	54 769	55 216	60 176	62 446	...
Netherlands					
Ilmenite	9 850	4 816	3 717	5 204	4 766
Other titanium minerals	42 018	35 014	43 749	59 251	75 071
Titanium slag	45 419	36 594	45 260	46 919	46 157
Metal	253	215	234	344	353
Oxides	27 333	29 312	28 618	32 187	43 856
Portugal					
Oxides	10 371	9 460	10 646	12 193	...
Spain					
Ilmenite	185 060	186 184	104 153	133 841	...
Other titanium minerals	2 729	2 433	2 767	2 100	...
Metal	1 094	1 128	1 789	449	...
Oxides	10 622	10 419	12 769	13 839	...
Austria					
Oxides	10 637	11 915	11 913	12 708	15 793
Bulgaria					
Titanium minerals (b)	3 100*	2 300*	2 600*	3 800*	3 000*
Oxides (b)	1 900*	3 500*	2 500*	1 800*	2 100*
Czechoslovakia					
Oxides (b)	2 900*	3 800*	3 200*	3 200*	3 000*
Finland					
Titanium minerals (b)	30 400*	...	...	9 200*	...
Oxides	2 261	2 498	2 083	3 580	2 330
German Democratic Republic					
Oxides (b)	20 700*	20 100*	20 900*	22 400*	25 100*
Norway					
Oxides	4 924	6 609	7 601	7 309	7 693
Poland					
Titanium minerals	34 666	—	—	...	...
Romania					
Titanium minerals (b)	4 500*	6 400*	5 000*	8 600*	4 800*
Oxides (b)	5 800*	7 500*	5 600*	2 800*	2 000*

## Titanium

**Imports of Titanium**

tonnes

Country	1984	1985	1986	1987	1988
Soviet Union					
Titanium minerals (b)	110 700*	89 200*	5 000*	...	6 000*
Oxides (b)	2 500*	9 800*	5 300*	11 600*	15 300*
Sweden					
Titanium minerals	3 200	4 636	2 676	2 405	1 376
Metal	802	644	704	500	567
Oxides	22 752	23 899	24 856	25 532	26 731
Switzerland					
Oxides	(a)2 290	(a)2 348	(a)1 693	(a)2 004	18 552
Turkey					
Titanium minerals	...	3 196	9 337	4 527	...
Oxides	(a)2 387	17 165	17 478	22 198	...
Yugoslavia					
Titanium minerals	47 209	27 275	48 147	48 463	46 058
Oxides	3 026	4 294	5 300	4 535	5 014
Algeria					
Oxides	6 946	14 299	15 253	12 206	...
Egypt					
Oxides	1 733	60	424	1 085	...
Kenya					
Oxides	261	678	518	785	...
Morocco					
Oxides	3 145	3 293	2 904	3 716	...
South Africa					
Oxides	4 176	1 104	631	786	...
Zimbabwe					
Oxides	1 052	1 253	1 253	1 192	...
Canada					
Titanium minerals (g)	3 724	1 959	2 894	19 311	32 061
Metal	356	589	480	392	1 637
Oxides	25 557	25 154	27 693	30 618	22 412
Mexico					
Ilmenite	95 518	29 577	47 129	44 562	...
Rutile sand	2 506	2 527	2 173	1 484	...
USA					
Ilmenite	373 374	460 543	423 045	308 524	418 976
Rutile (c)	163 754	162 988	200 118	225 650	231 123
Titanium slag	190 363	264 742	328 285	418 633	434 641
Metal	7 164	5 283	4 812	3 984	6 649
Oxides	174 425	177 671	183 863	174 290	185 758
Argentina					
Titanium minerals	1 568	526	1 994	...	...
Brazil					
Ilmenite	35 729	15 000	15 000	10 000	50 000
Rutile	2 496	2 994	2 614	3 026	3 491
Oxides	3 701	5 107	15 089	17 271	17 516
Chile					
Oxides (b)	3 400*	2 600*	4 900*	3 600*	3 800*
Colombia					
Oxides	7 833	7 623	8 708	...	...
Uruguay					
Oxides	2 986	2 580	5 291	5 958	3 881
Venezuela					
Oxides	14 131	11 541	13 805	19 751	...
China					
Metal (b)	50*	100*	200*	300*	300*
Oxides (b)	9 200*	23 500*	20 300*	19 400*	15 900*
Hong Kong					
Oxides	6 633	7 492	8 283	11 308	20 906
India (d)					
Oxides	10 376	6 231	14 849	...	...
Indonesia					
Oxides	12 589	15 131	14 112	14 182	12 088
Iran (h)					
Oxides	10 323	2 903	2 905	2 529	...

## Imports of Titanium

Country	1984	1985	1986	1987	1988
Israel (f)					
Oxides	1 807	1 537	(b)1 100*	...	...
Japan					
Titanium minerals	645 972	604 044	670 436	570 377	642 209
Titanium slag	62 697	95 476	89 956	88 387	...
Oxides	37 141	39 212	40 034	45 677	48 980
Jordan					
Oxides	2 173	1 921	808	1 922	...
Korea, Republic of					
Rutile sand	4 812	5 270	6 125	6 822	6 940
Titanium minerals	39 259	34 300	43 969	57 096	55 177
Metal	361	111	204	341	486
Oxides	21 861	22 651	28 143	28 688	37 048
Malaysia					
Oxides	7 302	7 623	7 616	8 755	...
Pakistan (e)					
Oxides	2 140	2 437	2 851	3 416	3 677
Philippines					
Titanium minerals	713	487	966	1 305	1 550
Oxides	6 239	5 483	8 218	10 537	7 934
Saudi Arabia					
Oxides	6 637	4 701	4 252	5 775	6 427
Singapore					
Oxides	9 236	6 854	8 725	8 508	11 100
Taiwan					
Oxides	34 115	32 536	43 592	47 505	48 703
Thailand					
Rutile	781	1 867	485	1 400	2 033
Oxides	1 135	1 828	1 708	2 210	15 122
Australia					
Oxides	1 565	1 250	1 213	1 167	742
New Zealand (e)					
Oxides	6 562	6 626	6 357	8 192	...

## Notes

(1) Significant quantities of titanium slag are traded, but it is not always possible to identify this material in national trade accounts

(2) So far as possible, the term 'oxides', as used in this table, includes oxides and oxide based pigments classified under Standard International Trade Classification (Revision 3) items 522.56 and 533.1

(3) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) Excluding oxide based pigments

(b) BGS estimates, based on known exports from certain countries

(c) Including synthetic rutile

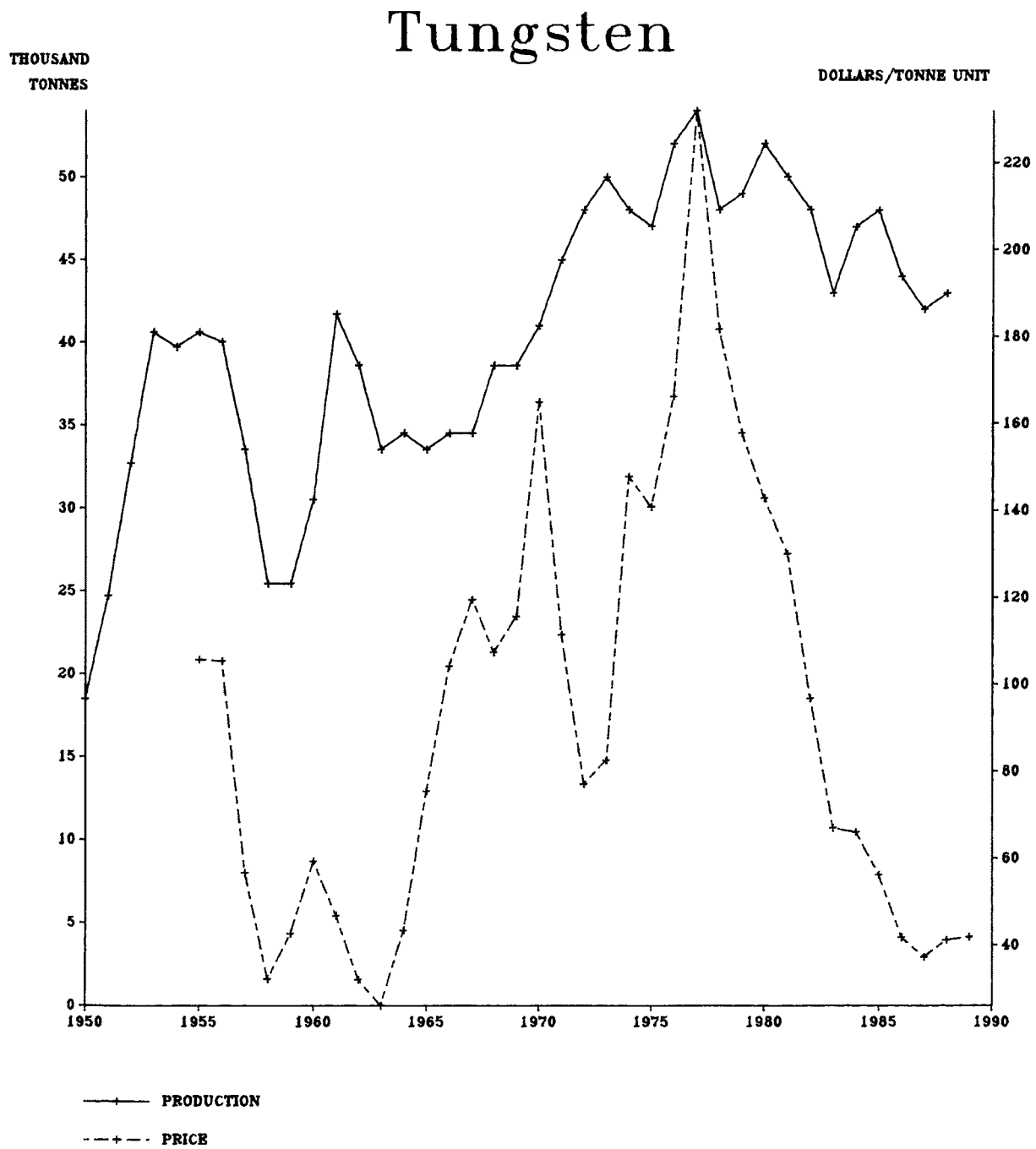
(d) Years ended 31 March following that stated

(e) Years ended 30 June of that stated

(f) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

(g) Ti content

(h) Years ended 20 March following that stated



**Figure 22** World mine production of tungsten compared with the annual average UK price from 1955 of 65% WO<sub>3</sub> concentrate c.i.f. European ports; post-1978 weighted average International Tungsten Indicator price, expressed in constant US dollars per metric ton unit of WO<sub>3</sub>.

*Constant commodity prices derived from Tungsten Statistics (1971 et seq.) published by the United Nations.*



## Mine Production of Tungsten

Country	1984	1985	1986	1987	1988
France	745	735	987	—	—
Portugal (c)	1 509	1 765	1 657	1 209	1 386
Spain	565	458	495	80	80
Austria	1 911	1 967	1 454	970	952
Czechoslovakia	50*	50*	50*	45*	50*
Soviet Union	9 100*	9 200*	9 200*	9 200*	9 200*
Sweden	485	582	443	334	320*
Turkey	394	448	475	384	360*
Rwanda	482	310	24	85	41
Uganda	15	18	15	30	75
Zaire (b)	30	17	27	21	20
Zimbabwe	55	14	2	1	1
Canada (a)	3 328	3 197	1 959	—	—
Mexico	274	282	294	213	206
USA	1 203	996	780	34	230
Argentina	37	17	20	14	20
Bolivia	1 893	1 643	1 094	638	900
Brazil (a)	1 037	1 090	875	672	738
Peru	699	771	742	259	432
China	14 000*	15 000*	15 000*	21 000*	21 000*
India	30	28	23	26	25*
Japan	795	463	482	209	212
Korea, Dem. P.R. of	1 000*	1 000*	1 000*	500*	500*
Korea, Republic of	2 703	2 580	2 455	2 375	1 906
Malaysia	23	21	4	—	...
Mongolia	1 500*	1 500*	1 500*	1 500*	2 000*
Myanmar (b)	1 114	945	715	493	400*
Thailand (c)	742	586	475	652	605
Australia (c)	1 733	1 970	1 600	1 150	1 281
World total	47 000	48 000	44 000	42 000	43 000

(a) Mainly scheelite

(b) Including tin-wolframite concentrates

(c) Wolframite and scheelite

## Tungsten

**Exports of Tungsten**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Tungsten ore	275	184	156	597	449
Metal	579	833	496	483	467
Carbide	799	900	923	623	378
Belgium-Luxembourg					
Metal	139	253	151	197	204
France					
Tungsten ore	522	484	353	242	99
Metal	372	499	427	414	435
Carbide	201	244	218	169	197
Germany, Federal Republic of					
Metal	1 129	1 322	1 244	1 225	1 034
Italy					
Metal	100	186	186	240	...
Netherlands					
Tungsten ore	451	1 166	97	82	165
Metal	460	523	510	813	598
Portugal					
Tungsten ore	2 506	2 604	1 455	2 048	...
Spain					
Tungsten ore	870	714	743	140	87
Austria					
Tungsten ore	25	0	114	60	66
Metal	1 050	1 485	1 085	823	1 119
Sweden					
Tungsten ore	498	193	394	265	688
Metal	111	194	52	84	96
Carbide	70	131	89	70	53
Switzerland					
Metal	70	63	38	33	89
Turkey					
Tungsten ores & concentrates	453	521	680	832	...
Rwanda					
Tungsten ores & concentrates	485	270	305	45	25
Zaire					
Tungsten ore	33	64	60	53	18
Zimbabwe					
Tungsten ore	72	36	—	—	...
Canada					
Tungsten ores & concentrates (a)	3 400*	2 800*	1 400*	—	...
Mexico					
Tungsten ores & concentrates	847	1 093	772	633	459
USA					
Tungsten ores & concentrates	129	175	34	2	153
Metal	1 839	2 844	2 016	1 637	1 810
Ammonium paratungstate (a)	8	72	10	285	174
Carbide	448	683	369	388	619
Bolivia					
Tungsten ore	3 702	2 500*	2 279	1 827	1 500*
Brazil					
Tungsten ore	970	514	137	—	—
Peru					
Tungsten ores & concentrates	1 336	1 500*	1 000*	1 500*	...
China					
Tungsten ores & concentrates	18 860	21 267	23 624	23 117	27 290
Metal	79	156	365	337	408
Hong Kong					
Tungsten ore (c)	—	1 717	2 013	3 692	2 008
Israel					
Metal	669	515	344	...	...

## Exports of Tungsten

Country	1984	1985	1986	1987	1988
Japan					
Metal	195	235	260	269	312
Korea, Dem. P.R. of					
Tungsten ores & concentrates (a)	800*	800*	800*	...	...
Korea, Republic of					
Tungsten ore	859	747	514	466	203
Metal	301	364	261	288	328
Carbide	428	543	582	499	574
Malaysia					
Tungsten ore	346	30	10	—	...
Myanmar (b)					
Tungsten ores & concentrates	1 978	920	1 457	823	...
Singapore					
Tungsten ore	1 695	1 438	732	1 166	708
of which: Re-exports	1 654	1 420	732	1 166	708
Metal	105	68	52	86	165
of which: Re-exports	32	39	3	28	10
Thailand					
Tungsten ore	1 885	1 142	923	1 179	1 069
Australia					
Wolframite ores & concentrates	1 741	1 335	843	146	3
Scheelite ores & concentrates	1 419	1 965	1 683	1 909	2 202

## Notes

(1) Significant amounts of tungsten are traded in the forms of ammonium paratungstate (APT) and carbide. Though statistics are included where available, most countries do not separately distinguish these forms in their trade accounts

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) W content

(b) Years ended 31 March following that stated

(c) Re-exports

**Imports of Tungsten**

tonnes

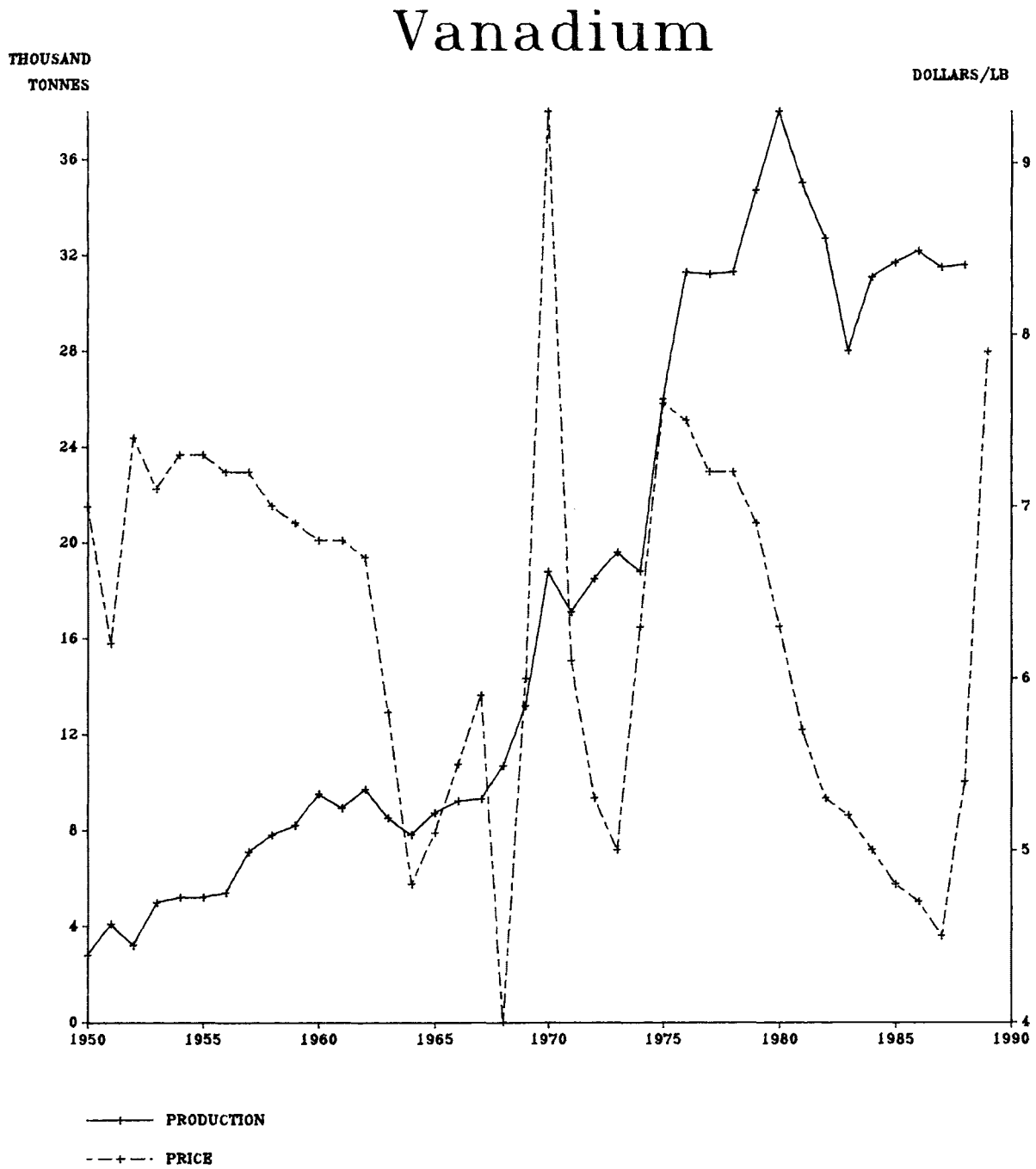
Country	1984	1985	1986	1987	1988
United Kingdom					
Tungsten ore	896	627	549	311	20
Metal	415	632	558	424	792
Carbide	495	554	404	467	584
Belgium-Luxembourg					
Metal	176	263	258	232	345
Carbide	356	574	534	298	309
Denmark					
Carbide	241	205	250	266	...
France					
Tungsten ore	2 632	351	179	38	17 175
Metal	183	331	195	230	253
Carbide	231	242	247	160	289
Germany, Federal Republic of					
Tungsten ore	7 296	3 843	3 184	3 454	4 105
Metal	1 242	1 314	1 194	1 463	1 443
Carbide	380	437	552	501	642
Italy					
Tungsten ore	157	181	145	156	...
Metal	78	130	137	128	...
Carbide	262	377	346	443	...
Netherlands					
Tungsten ore	674	1 145	227	380	436
Metal	342	451	661	555	423
Spain					
Metal	381	481	76	37	33
Austria					
Tungsten ore	3 920	3 810	3 106	2 215	1 249
Metal	640	1 141	941	838	925
Finland					
Metal	20	18	24	29	39
Poland					
Tungsten concentrates	1 150	1 170	2 450	...	...
Soviet Union					
Tungsten concentrates	13 600*	11 600*	14 000*	14 200*	14 200*
Metal (d)	130*	40*	...	...	...
Sweden					
Tungsten ore	813	1 150	1 329	268	756
Metal	154	42	211	172	233
Carbide	294	117	286	310	198
Switzerland					
Metal	75	98	64	61	75
Turkey					
Metal	7	50	37	66	71
Yugoslavia					
Metal	37	17	19	17	38
South Africa					
Tungsten ores & concentrates	363	542	515	366	...
Metal	32	25	...	16	...
Carbide	65	80	55	104	...
Mexico					
Metal	59	110	51	69	67
USA					
Tungsten ore	12 500*	10 476	5 693	7 908	14 262
Metal	1 599	825	792	1 290	1 848
Ammonium paratungstate (a)	1 172	1 351	1 219	1 512	635
Carbide	451	463	416	558	658
Hong Kong					
Tungsten ore	47	3 799	3 626	1 278	1 419
India (e)					
Tungsten ore	212	475	360	...	...
Israel					
Metal (c)	467	804	302	139	...

## Imports of Tungsten

Country	1984	1985	1986	1987	1988
Japan					
Tungsten ore	2 905	2 869	1 769	1 938	2 785
Metal	294	350	256	283	465
Korea, Republic of					
Metal	34	34	169	120	67
Malaysia					
Metal	84	42	146	97	...
Singapore					
Tungsten ore	2 430	1 699	1 235	1 175	764
Metal	82	100	101	105	130
Taiwan					
Metal	48	46	56	118	96
Australia (b)					
Metal	13	17	...	...	...

## Notes

- (1) Significant amounts of tungsten are traded in the forms of ammonium paratungstate (APT) and carbide. Though statistics are included where available, most countries do not separately distinguish these forms in their trade accounts
- (2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) W content
- (b) Years ended 30 June of that stated
- (c) Figures may be incomplete as value only given in Israeli trade return for imports from some countries
- (d) BGS estimates, based on known exports from certain countries
- (e) Years ended 31 March following that stated



**Figure 23** World mine production of vanadium compared with the annual average US price per pound of vanadium in  $V_2O_5$  expressed in constant 1980 US dollars.

*Constant commodity prices derived from those quoted by USBM in Mineral Facts and Problems (1960 et seq.) and Mineral Commodity Summaries (1984 et seq.).*

## Mine Production of Vanadium

Vanadium  
tonnes (metal content)

Country	1984	1985	1986	1987	1988
Finland	1 936	1 660	—	—	—
Soviet Union	9 500*	9 500*	9 600*	9 600*	9 600*
South Africa	12 518	14 021	16 629	15 943	17 632
USA	1 467	1 500*	...	...	...
China	4 500*	4 500*	4 500*	4 500*	4 500*
World total	29 900	31 200	32 200	31 500	33 200

### Notes

(1) This table includes vanadium in slag products but excludes vanadium recovered as a byproduct of the refining and burning of heavy oils

**Exports of Vanadium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Pentoxide	483	80	37	18	17
Metal	62	12	14	142	24
Belgium-Luxembourg					
Vanadiferous residues	4 477	4 685	7 631	3 095	3 080
Pentoxide	598	451	465	291	116
Vanadium-titanium pig iron	33	91	—	46	—
Metal	139	337	95	0	28
Denmark					
Vanadium-titanium pig iron	0	—	0	17	8
France					
Vanadiferous residues	100	181	323	96	529
Pentoxide	12	10	182	11	269
Vanadium-titanium pig iron	10	20	213	196	—
Metal	237	120	94	0	57
Germany, Federal Republic of					
Vanadiferous residues	2 005	4 296	2 735	3 742	195
Pentoxide	...	...	700	504	447
Vanadium-titanium pig iron	—	377	272	75	75
Metal	197	393	209	312	369
Italy					
Vanadiferous residues	2 534	1 901	1 238	657	...
Netherlands					
Vanadiferous residues	87	52	67	—	46
Vanadium-titanium pig iron	2	29	36	—	—
Finland					
Pentoxide (a)	4 300*	2 600*	1 800*	1 500*	...
Soviet Union					
Vanadiferous residues	12 000*	12 000*	10 000*	10 000*	10 000*
South Africa					
Pentoxide (b)	21 798	22 018	29 726	26 251	28 281
USA					
Pentoxide	3 156	1 385	1 401	1 369	1 342
China					
Pentoxide (a)	2 100*	3 100*	4 700*	4 200*	4 300*

## Notes

(1) In this table the term 'pentoxide' also includes vanadium oxides and hydroxides, if any

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) BGS estimates, based on known imports into certain countries

(b) Includes V<sub>2</sub>O<sub>5</sub> content of vanadiferous residues



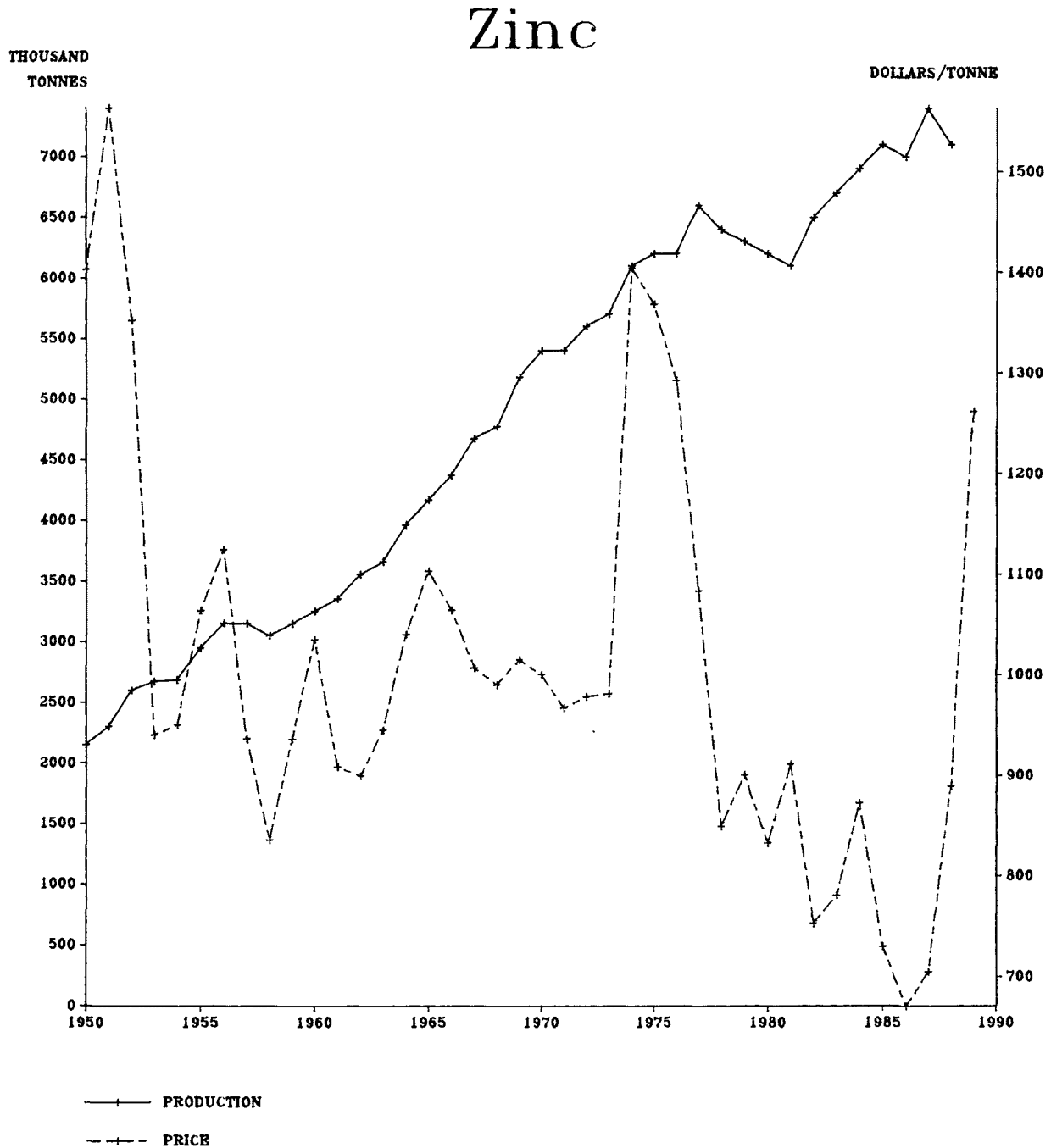
## Imports of Vanadium

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Pentoxide	660	260	373	255	104
Vanadium-titanium pig iron	—	—	13	—	12
Metal	358	129	155	238	235
<b>Belgium-Luxembourg</b>					
Vanadiferous residues	13 579	18 091	9 123	12 087	61
Pentoxide	4 797	4 049	4 056	4 194	3 717
Metal	208	350	96	0	10
<b>France</b>					
Pentoxide	2 501	2 216	1 416	127	88
Vanadium-titanium pig iron	0	8	8	—	75
Metal	52	141	35	111	141
<b>Germany, Federal Republic of</b>					
Vanadiferous residues	35 611	31 635	30 018	32 439	27 933
Pentoxide	1 714	1 870	1 806	1 554	1 623
Vanadium-titanium pig iron	61	—	—	4	—
Metal	2	267	66	40	59
<b>Italy</b>					
Vanadiferous residues	1 511	2 508	2 178	1 538	...
Pentoxide	135	69	15	95	...
Metal	6	35	71	22	...
<b>Netherlands</b>					
Vanadiferous residues	396	1 028	1 957	—	—
Pentoxide	10	7	30	11	13
<b>Spain</b>					
Pentoxide	540	145	117	216	...
<b>Canada</b>					
Pentoxide	1 911	1 130	1 177	1 410	1 468
<b>USA</b>					
Vanadiferous residues	400*	1 466	13 083	22 251	17 853
Pentoxide	241	111	719	463	683
<b>Brazil</b>					
Pentoxide	685	1 210	984	998	979
<b>Japan</b>					
Pentoxide	4 602	3 786	3 101	2 763	5 339

## Notes

(1) In this table the term 'pentoxide' also includes vanadium oxides and hydroxides, if any

(2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys



**Figure 24** World mine production of zinc compared with the yearly average domestic producer price on the New York Market of prime western grade, delivered New York, expressed in constant 1980 US dollars.

Trend-line analysis of the production data indicates a growth rate of approximately 3% per annum.

*Constant commodity prices (to 1980) taken from Commodity Trade and Price Trends published by the Johns Hopkins University Press for the World Bank.*

## Mine Production of Zinc

tonnes (metal content)

Country	1984	1985	1986	1987	1988
United Kingdom	7 159	5 043	5 605	6 522	5 502
France	36 425	40 572	39 534	31 339	31 100
Germany, Federal Republic of	113 000	117 600	103 700	98 900	75 600
Greece	22 550	21 107	22 257	20 700	21 200
Irish Republic	206 000	191 700	181 700	177 000	176 500
Italy	42 300	45 438	26 303	33 200	37 900
Spain	230 378	234 695	233 307	272 556	277 000
Austria	23 797	24 259	17 844	16 983	19 134
Bulgaria	65 000	68 000	70 000*	68 000*	65 000*
Czechoslovakia	7 200	7 200	6 700	6 900	7 000*
Finland	60 192	60 620	58 920	55 104	63 879
Greenland	71 300	70 300	62 000	69 000	77 000
Hungary	1 920	1 606	418	—	—
Norway	28 513	27 352	23 032	22 356	34 369
Poland	190 700	190 900	183 900	185 800	183 400
Romania	39 000*	40 000*	39 000*	37 000*	37 000*
Soviet Union	980 000*	1 000 000*	970 000*	950 000*	960 000*
Sweden	217 254	223 191	229 396	218 600	193 100
Turkey	50 423	39 674	40 574	42 223	41 000
Yugoslavia	85 761	89 347	94 590	74 000	71 200
Algeria	14 600	13 500	13 400	13 000	10 000
Congo	—	2 000*	2 000*	—	—
Morocco	10 730	15 250	17 170	10 165	10 800
Namibia	29 900	30 472	34 069	39 375	37 261
South Africa	106 107	96 943	101 859	112 686	89 551
Tunisia	6 700	5 600	4 500	5 900	9 000
Zaire	73 955	76 245	79 770	84 841	91 000
Zambia	38 793	31 900	31 605	35 400	27 450
Canada	1 207 098	1 172 238	1 290 765	1 504 412	1 347 424
Honduras	44 480	50 916	22 674	16 644	23 475
Mexico	290 236	275 412	271 351	271 480	262 228
USA	277 500	251 900	220 800	232 900	256 400
Argentina	34 909	35 713	39 540	35 648	36 286
Bolivia	37 770	38 110	33 472	39 292	56 957
Brazil	113 691	123 811	123 901	132 962	155 531
Chile	19 168	22 288	10 504	19 618	19 182
Peru (a)	568 300	582 600	597 576	612 477	485 429
China	300 000*	350 000*	395 700	458 200	527 300
India	43 700	53 000	45 000	53 300	59 100
Iran	47 100	50 000	36 000	40 000	42 000
Japan	252 700	253 021	222 071	165 675	147 217
Korea, Dem. P.R. of	150 000*	185 000*	225 000*	220 000*	220 000*
Korea, Republic of	49 232	45 746	37 282	23 530	22 777
Myanmar	5 321	2 900	3 000	1 700	800
Philippines	2 189	1 880	1 569	1 129	1 435
Thailand	27 379	51 228	69 159	63 112	80 700
Vietnam	10 000	10 000	10 000	10 000*	10 000*
Australia	676 532	759 083	711 958	778 386	760 308
World total	6 900 000	7 100 000	7 100 000	7 400 000	7 200 000

(a) Recoverable

**Production of Slab Zinc**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	85 604	74 278	85 902	81 360	76 028
Belgium (a)	285 319	289 562	288 787	308 580	323 758
France	258 514	247 250	257 376	290 812	274 100
Germany, Federal Republic of	356 300	366 900	370 900	377 500	352 400
Italy	166 751	210 075	230 400	247 000	242 117
Netherlands	209 657	201 712	196 156	207 111	211 019
Portugal	6 400	5 900	5 700	5 800	5 500
Spain	207 400	213 300	199 300	213 600	245 400
Austria	25 533	25 585	23 567	24 963	26 321
Bulgaria	93 000	90 000	89 000	95 000	105 000
Finland	141 475	144 553	138 841	158 831	149 758
German Democratic Republic	17 000*	17 000*	17 000*	18 000*	21 000*
Norway	94 248	92 762	90 475	116 593	121 156
Poland	176 000	180 000	179 200	176 500	173 600
Romania	47 800	53 000	53 000	51 000	50 000
Soviet Union	1 050 000*	1 050 000*	1 065 000*	1 020 000*	1 035 000*
Turkey	19 900	22 200	15 400	20 200	22 400
Yugoslavia	92 649	83 398	89 286	118 067	127 524
Algeria	35 000	35 700	29 700	19 000	37 500
South Africa	90 303	93 704	80 803	96 051	85 193
Zaire	66 087	64 046	63 928	54 875	61 086
Zambia	29 177	22 766	22 493	21 025	20 220
Canada	689 841	692 406	570 981	609 909	703 206
Mexico	167 034	175 354	173 724	184 755	191 000
USA	331 245	333 772	316 281	343 934	329 786
Argentina	29 925	32 877	31 523	34 289	32 700
Brazil	114 449	120 737	135 296	148 036	146 667
Peru	148 372	162 904	155 882	144 600	122 600
China	240 000*	280 000*	336 200	383 100	425 400
India	55 356	70 947	73 828	68 899	68 900
Japan	754 445	739 624	708 032	665 618	678 175
Korea, Dem. P.R. of	130 000*	180 000*	210 000*	225 000*	225 000*
Korea, Republic of	108 460	110 961	127 229	186 016	223 200
Thailand	4 000	62 108	58 552	66 868	64 694
Vietnam	10 000*	10 000*	10 000*	10 000*	10 000*
Australia	306 440	293 186	307 615	312 075	306 172
World total	6 600 000	6 800 000	6 800 000	7 100 000	7 300 000

(a) Including alloys

# Exports of Zinc

Zinc  
tonnes

Country	1984	1985	1986	1987	1988
<b>United Kingdom</b>					
Ores & concentrates	955	108	5 225	8 852	9 330
Unwrought	8 094	8 060	11 448	4 197	7 089
Unwrought alloys	6 566	8 556	10 681	9 440	6 610
Scrap	15 246	17 846	17 285	22 461	25 079
<b>Belgium-Luxembourg</b>					
Ore	23 282	17 433	11 086	21 564	52 277
Unwrought	167 720	157 077	137 028	157 485	154 652
Unwrought alloys	29 387	32 433	48 904	55 943	46 392
Scrap	14 585	12 302	10 155	8 408	15 674
<b>Denmark</b>					
Unwrought (a)	286	42	79	279	96
Scrap	4 322	4 078	3 789	5 035	5 482
<b>France</b>					
Ore	117 188	102 056	85 555	49 307	31 139
Unwrought	93 016	68 653	59 715	70 507	66 220
Unwrought alloys	2 172	2 408	5 412	5 628	9 311
Scrap	11 456	11 502	14 102	12 233	23 086
<b>Germany, Federal Republic of</b>					
Ore	178 100*	191 300*	151 900*	174 800*	139 800*
Unwrought	109 313	114 326	97 278	93 628	109 226
Unwrought alloys	16 235	18 800	17 774	16 060	18 733
Scrap	17 523	16 181	18 328	17 993	29 468
<b>Greece</b>					
Ores & concentrates	39 450	43 300	45 250	46 900	40 300
Scrap	359	373	628	362	198
<b>Irish Republic</b>					
Ores & concentrates	403 706	370 754	368 974	352 778	347 856
<b>Italy</b>					
Ore	18 938	25 283	14 908	14 900	21 325
Unwrought	42 456	43 762	45 998	57 892	50 802
Unwrought alloys	2 678	2 010	2 843	2 169	1 546
Scrap	3 755	4 512	4 159	6 540	4 750
<b>Netherlands</b>					
Unwrought	176 927	173 861	174 891	182 548	179 807
Unwrought alloys	9 270	7 539	6 815	2 529	3 834
Scrap	11 500	10 544	11 924	17 542	23 652
<b>Spain</b>					
Ore	83 756	119 509	126 443	79 481	109 613
Unwrought (a)	106 004	127 214	94 198	105 532	146 230
Scrap	2 657	—	1	—	—
<b>Austria</b>					
Unwrought	4 520	4 371	4 035	4 704	7 066
Scrap	832	1 123	1 543	2 338	2 399
<b>Bulgaria</b>					
Unwrought (a) (b)	24 900*	23 600*	22 500*	19 100*	15 500*
<b>Czechoslovakia</b>					
Ore (b)	14 500*	15 700*	14 200*	7 400*	2 800*
<b>Finland</b>					
Ore	5 190	—	—	—	1 608
Unwrought	122 793	127 056	110 945	108 189	122 720
Unwrought alloys	13 444	13 308	16 812	26 160	5 417
Scrap	1 528	436	1 209	1 385	2 595
<b>Greenland</b>					
Ores & concentrates	134 696	121 621	118 839	113 804	...
<b>Hungary</b>					
Scrap	3 755	3 824	1 881	2 045	1 937
<b>Norway</b>					
Ore	10 989	10 959	8 355	7 185	4 796
Unwrought	74 852	71 757	67 058	98 931	94 932
Unwrought alloys	7 039	6 883	10 177	7 265	5 912
Scrap	395	308	539	590	1 083
<b>Poland</b>					
Unwrought	26 838	28 050	22 562	19 080	25 191
<b>Soviet Union</b>					
Unwrought (a) (b)	25 400*	22 600*	22 700*	16 200*	14 600*

## Exports of Zinc

tonnes

Country	1984	1985	1986	1987	1988
Sweden					
Ore	427 582	428 161	440 016	461 033	374 896
Unwrought (a)	613	1 104	973	1 257	833
Scrap	3 067	2 457	2 877	4 574	3 156
Switzerland					
Unwrought	118	137	27	1	(a)411
Scrap	1 184	1 182	1 222	868	1 192
Turkey					
Ores & concentrates	—	5 554	11 207	12 858	...
Unwrought	112	1 664	7 597	1 174	...
Yugoslavia					
Concentrates	5 485	—	314	—	1 735
Unwrought (a)	24 038	14 882	25 268	38 884	22 394
Algeria					
Unwrought	18 735	9 444	28 772	3 236	...
Morocco					
Ore	24 072	30 816	28 789	23 797	23 098
Namibia					
Concentrates	56 500	57 495	65 518	75 722	71 655
South Africa					
Ores & concentrates (c)	35 644	12 840	29 510	15 506	19 648
Unwrought	1 373	7 658	1 171	—	272
Tunisia					
Ore	13 026	4 705	10 600	15 256	17 510
Zaire					
Unwrought	42 204	60 470	73 860	46 115	38 813
Zambia					
Unwrought	29 340	19 880	5 157	19 600	19 100
Canada					
Ore (c)	550 218	396 102	450 252	613 180	850 243
Unwrought	529 724	555 616	427 175	441 220	556 786
Scrap	19 552	18 083	23 157	24 501	16 923
Honduras					
Ores & concentrates (c)	31 253	34 937	36 866	18 129	...
Mexico					
Ores & concentrates	171 863	214 656	197 774	157 516	142 323
Unwrought	84 431	78 100	74 361	71 522	79 324
USA					
Ore (c)	30 579	23 264	11 005	158 803	195 533
Unwrought (a)	1 448	5 273	3 544	3 572	5 605
Scrap (c)	29 223	38 615	63 269	82 280	95 147
Argentina					
Ores & concentrates	470	7 761	7 602	7 679	...
Unwrought	—	8 900	761	—	...
Bolivia					
Ore	75 211	70 700*	74 243	82 297	112 400*
Chile					
Concentrates	29 385	36 765	27 582	39 204	...
Peru					
Concentrates	799 076	746 680	860 706	863 850	693 582
Unwrought (a)	108 984	113 760	108 514	80 480	51 381
China					
Unwrought (a)	1 454	2 368	56 768	95 338	13 838
Hong Kong					
Unwrought (a) (g)	3 436	4 495	31 244	68 391	29 924
Indonesia					
Scrap	682	599	2 478	516	507
Iran (d)					
Ore	31 900	17 650	62 013	58 800	...
Japan					
Unwrought	45 191	33 427	23 382	51 854	21 129
Unwrought alloys	4 276	1 814	1 580	1 383	5 513
Scrap	1 823	1 436	1 880	3 233	5 017

## Exports of Zinc

Zinc  
tonnes

Country	1984	1985	1986	1987	1988
Korea, Dem. P.R. of					
Ores & concentrates (b)	19 200*	11 800*	11 000*	...	2 000*
Unwrought (a) (b)	20 200*	34 600*	41 700*	53 900*	85 600*
Korea, Republic of					
Unwrought (a)	40	533	1 720	38 032	70 657
Malaysia					
Scrap	661	690	...	1 175	...
Myanmar (e)					
Concentrates	9 686	5 685	8 879	9 050	...
Philippines					
Concentrates	5 258	4 487	3 404	2 128	2 885
Scrap	120	179	304	495	622
Saudi Arabia					
Scrap	5 413	9 170	11 132	7 504	2 637
Singapore					
Unwrought	4 685	2 955	3 584	5 576	31 751
of which: Re-exports	4 362	2 535	3 231	4 822	30 980
Scrap	758	662	650	538	926
Thailand					
Unwrought (a)	—	20 057	27 825	17 616	12 967
Australia					
Ores & concentrates	840 271	836 324	875 233	865 984	979 652
Unwrought	220 953	214 549	217 422	240 689	208 000
Scrap	991	881	1 227	1 716	3 605
New Zealand (f)					
Scrap	755	521	707	791	...

### Notes

(1) In this table the term 'unwrought' zinc corresponds to item 686.1 of the Standard International Trade Classification (Revision 3) and comprises blocks, pigs, slabs, etc.

(a) Including alloys

(b) BGS estimates, based on known imports into certain countries

(c) Zn content

(d) Years ended 20 March following that stated

(e) Years ended 31 March following that stated

(f) Years ended 30 June of that stated

(g) Re-exports

## Imports of Zinc

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Ores & concentrates	196 100	185 406	200 898	177 233	187 826
Unwrought	116 308	130 705	101 858	114 248	134 000
Unwrought alloys	4 685	4 763	4 123	7 242	4 957
Scrap	2 237	996	2 673	4 601	6 487
Belgium-Luxembourg					
Ore	577 076	568 469	520 277	588 803	611 709
Unwrought (a)	49 352	51 546	49 090	40 535	41 017
Scrap	9 159	10 081	7 310	14 070	20 247
Denmark					
Unwrought	10 640	12 369	11 889	10 205	12 015
Unwrought alloys	2 664	2 338	2 826	2 472	2 197
Scrap	248	52	86	474	898
France					
Ore	558 386	540 090	513 512	512 825	524 160
Unwrought	64 881	61 332	64 107	70 364	88 297
Unwrought alloys	25 008	27 691	34 702	30 968	22 834
Scrap	6 345	5 590	7 529	8 880	10 028
Germany, Federal Republic of					
Ore	594 353	592 709	620 810	664 024	604 455
Unwrought	167 807	156 436	161 687	159 908	180 163
Unwrought alloys	11 648	11 377	12 528	11 308	12 925
Scrap	18 875	19 823	15 514	16 546	28 916
Greece					
Unwrought (a)	13 412	17 344	16 764	15 025	7 789
Irish Republic					
Unwrought (a)	1 442	1 298	1 359	1 603	1 877
Scrap	310	152	57	393	188
Italy					
Ore	291 425	395 978	443 572	441 883	429 581
Unwrought	90 946	63 325	54 548	63 654	58 737
Unwrought alloys	14 360	15 025	14 018	16 198	12 502
Scrap	13 073	10 563	8 237	5 086	9 649
Netherlands					
Ore	422 732	444 706	396 439	439 522	478 840
Unwrought	20 162	21 332	24 960	26 499	36 072
Unwrought alloys	515	897	1 517	1 449	1 343
Scrap	13 764	12 290	11 686	7 788	4 176
Portugal					
Unwrought (a)	9 385	10 999	11 144	13 549	4 700
Scrap	1 030	2 178	2 199	1 813	...
Spain					
Ore	72 157	34 950	34 614	33 743	33 398
Unwrought (a)	230	1 730	7 173	6 919	6 625
Scrap	564	252	1 322	1 282	2 179
Austria					
Ore	11 804	10 793	10 133	16 688	15 326
Unwrought	9 626	8 686	11 433	10 282	16 243
Scrap	321	198	68	383	355
Bulgaria					
Ore (i)	31 600*	38 900*	35 900*	51 600*	78 000*
Czechoslovakia					
Unwrought (a)	59 000	58 000	61 000	57 000	54 000
Finland					
Ore	167 309	183 143	189 686	195 806	187 411
Unwrought (a)	105	103	79	95	63
German Democratic Republic					
Ore (i)	73 600*	77 300*	67 400*	80 200*	71 800*
Unwrought (a) (i)	19 000*	21 900*	20 500*	29 500*	22 400*
Hungary					
Unwrought (g)	27 995	20 543	28 167	27 567	26 358
Iceland					
Unwrought (a)	63	75	71	92	131
Malta					
Unwrought (a)	140	134	145	109	179



# Imports of Zinc

Zinc  
tonnes

Country	1984	1985	1986	1987	1988
Norway					
Ore	115 477	104 461	110 468	171 939	99 332
Unwrought (a)	928	819	377	855	510
Scrap	5 278	5 551	5 900	3 959	1 722
Poland					
Unwrought	4 615	5 254	2 226	2 994	2 486
Soviet Union					
Ore (i)	98 000*	82 900*	107 600*	88 800*	68 500*
Unwrought (a) (i)	25 300*	29 100*	16 600*	38 800*	49 100*
Sweden					
Unwrought	35 538	32 269	32 943	36 111	39 718
Unwrought alloys	2 780	3 035	3 130	3 502	3 562
Switzerland					
Unwrought	21 441	26 363	30 186	23 386	20 379
Scrap	466	24	141	123	0
Turkey					
Unwrought	18 374	27 573	24 064	33 616	19 871
Yugoslavia					
Concentrates	26 912	58 669	38 590	45 145	45 402
Unwrought (a)	24 682	39 281	18 773	1 425	7 756
Algeria					
Ores & concentrates	0	2 696	83 859	100 820	...
Egypt					
Unwrought (b)	9 812	10 735	11 412	7 158	...
Ivory Coast					
Unwrought (b)	2 873	4 610	3 021	...	2 796
Kenya					
Unwrought (a)	6 327	7 699	8 237	10 015	...
Morocco					
Unwrought (a)	2 944	3 373	2 397	19 177	2 923
Nigeria					
Unwrought (a)	3 204	4 965	1 211	1 875	...
South Africa					
Unwrought	2 846	3 685	5 024	2 429	2 700
Scrap	417	263	40	1 802	...
Sudan					
Unwrought	1 529	89	...	...	...
Tanzania					
Unwrought (a)	2 900	3 528	...	999	...
Tunisia					
Unwrought (b)	1 562	1 674	2 271	1 168	2 348
Canada					
Ores & concentrates (b) (c)	40 454	17 119	36 410	31 949	40 444
Unwrought	6 755	1 816	7 440	11 032	8 027
Costa Rica					
Unwrought (a)	4 435	4 217	3 647	4 093	...
Dominican Republic					
Unwrought	1 047	1 390	2 003	...	...
Guatemala					
Unwrought (a)	2 905	2 352	1 531	2 823	...
Honduras					
Unwrought (a)	1 084	892	1 370	...	...
Jamaica					
Unwrought	1 043	548	629	981	815
Nicaragua					
Unwrought (a)	1 089	1 271	1 031	...	...
Panama					
Unwrought (a)	399	384	323	237	...
Trinidad & Tobago					
Unwrought	152	605	401	298	...

## Zinc

**Imports of Zinc**

tonnes

Country	1984	1985	1986	1987	1988
USA					
Ore (c)	95 569	91 392	197 735	425 516	405 710
Unwrought (a)	632 179	610 762	666 989	705 991	740 868
Scrap	6 259	3 247	4 521	4 025	5 727
Argentina					
Unwrought	3 735	60	4 457	5 867	...
Brazil					
Ores & concentrates	60 098	75 316	76 853	95 246	94 238
Unwrought (a)	5 268	28 584	23 153	49 208	7 486
Chile					
Unwrought (a)	4 613	6 036	5 761	8 300	9 900
Colombia					
Unwrought (a)	15 698	14 917	12 614	...	...
Ecuador					
Unwrought (a)	4 047	4 012	3 867	...	...
Uruguay					
Unwrought	1 167	1 014	1 497	1 950	1 882
Venezuela					
Unwrought	(a)23 376	15 117	11 778	18 633	16 100
Unwrought alloys	...	3 024	5 400	8 237	...
China					
Unwrought (a)	230 178	268 628	116 945	68 153	61 985
Hong Kong					
Unwrought	7 540	10 355	42 596	66 435	20 866
Unwrought alloys	24 263	22 358	27 665	29 217	44 633
Scrap	29	178	539	599	1 176
India (d)					
Ores & concentrates	4 955	12 550	19 714	...	...
Unwrought	(a)61 554	34 138	28 432	...	...
Unwrought alloys	...	40 638	29 397	...	...
Scrap	2 333	3 689	2 695	...	...
Indonesia					
Unwrought (a)	45 080	50 612	48 558	49 176	51 705
Scrap	120	495	392	654	936
Iran (e)					
Unwrought	8 627	9 291	11 981	5 065	...
Israel (h)					
Unwrought (b)	4 643	4 941	6 201	7 833	...
Japan					
Ore	954 676	856 648	916 166	974 026	1 068 407
Unwrought	57 032	64 970	92 753	105 319	112 772
Unwrought alloys	3 765	5 579	8 691	11 566	17 530
Scrap	464	345	57	4	764
Jordan					
Unwrought	499	603	1 128	981	...
Korea, Republic of					
Ores & concentrates	103 172	162 946	179 136	408 138	456 345
Unwrought (a)	18 703	11 399	117 492	36 387	20 453
Scrap	11 867	10 572	13 109	10 007	12 881
Macao					
Unwrought	1 279	1 901	1 423	1 504	4 071
Malaysia					
Unwrought	10 755	10 243	8 987	8 815	...
Unwrought alloys	7 068	7 987	5 907	9 695	...
Pakistan (f)					
Unwrought	7 096	15 357	11 868	14 766	15 385
Philippines					
Unwrought (a)	17 933	13 000	18 897	21 091	27 556
Saudi Arabia					
Unwrought	1 424	6 177	8 762	6 822	9 443
Singapore					
Unwrought	12 290	9 372	11 763	26 496	45 365
Scrap	211	415	221	574	520

## Imports of Zinc

Zinc  
tonnes

Country	1984	1985	1986	1987	1988
<b>Sri Lanka</b>					
Unwrought (a)	607	1 031	1 524	1 422	1 571
<b>Syria</b>					
Unwrought (b)	1 147	198	158	580	...
<b>Taiwan</b>					
Unwrought	39 827	39 410	56 406	64 459	63 574
Unwrought alloys	11 758	15 013	22 594	19 659	18 109
Scrap	13 322	19 837	69 369	110 814	151 681
<b>Thailand</b>					
Unwrought	44 279	13 352	2 764	2 554	1 398
Unwrought alloys	687	616	1 931	2 238	2 435
<b>New Zealand (f)</b>					
Unwrought (a)	19 852	24 675	19 642	20 403	...

Note(s):

(1) In this table the term 'unwrought' zinc corresponds to item 686.1 of the Standard International Trade Classification (Revision 3) and comprises blocks, pigs, slabs, etc.

(a) Including alloys

(b) Including scrap

(c) Zn content

(d) Years ended 31 March following that stated

(e) Years ended 20 March following that stated

(f) Years ended 30 June of that stated

(g) Including semi-manufactures

(h) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

(i) BGS estimates, based on known exports from certain countries

**Production of Zirconium Minerals**

tonnes

Country	1984	1985	1986	1987	1988
Soviet Union	80 000*	85 000*	85 000*	85 000*	85 000*
South Africa (a)	153 123	160 533	160 000*	160 000*	160 000*
USA	60 000*	70 000*	85 000*	90 000*	114 651
Brazil (b)	6 375	21 039	15 116	18 140	28 029
China	15 000*	15 000*	15 000*	15 000*	15 000*
India	12 000*	15 000*	16 000*	16 000*	16 000*
Malaysia	(c)2 344	11 652	12 633	17 828	25 671
Sri Lanka	3 708	4 061	910	2 500	...
Thailand	290	1 292	1 705	1 532	5 898
Australia	457 599	501 440	451 824	456 590	505 888
World total	790 000	885 000	843 000	863 000	959 000

**Notes**

(1) In this table the term 'zirconium minerals' is understood to mean zircon, unless otherwise stated

(a) Including baddeleyite (ZrO<sub>2</sub>)

(b) Including caldasite rock containing zircon and baddeleyite

(c) Exports

**Exports of Zirconium**

Country	1984	1985	1986	1987	1988
United Kingdom					
Concentrates	434	491	315	376	345
Metal	...	179	123	92	94
Belgium-Luxembourg					
Concentrates	163	102	0	28	509
Metal	22	6	14	25	273
France					
Concentrates	61	175	415	967	3 291
Germany, Federal Republic of					
Concentrates	18 885	15 051	15 621	15 287	7 913
Metal	102	88	104	75	78
Italy					
Concentrates	5 112	5 073	8 137	11 137	...
Netherlands					
Concentrates	39 582	40 008	36 548	23 788	14 742
Spain					
Concentrates	307	300	110	135	...
Zirconium sand	2 072	1 841	2 393	1 677	...
Sweden					
Metal	114	79	126	101	82
South Africa					
Concentrates	148 451	161 339	120 000*	...	...
USA					
Concentrates	8 655	15 334	15 868	20 103	22 966
Metal	745	1 122	1 111	1 297	1 288
Malaysia					
Concentrates	2 344	2 499	4 015	11 930	26 539
Australia					
Concentrates	437 770	495 891	445 690	465 003	471 614

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

## Zirconium

**Imports of Zirconium**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom					
Concentrates	43 077	48 827	33 275	37 308	43 411
Metal	113	103	178	314	159
Belgium-Luxembourg					
Concentrates	4 476	5 954	3 112	2 522	3 719
Metal	151	174	242	208	198
France					
Concentrates	36 624	51 305	38 932	49 120	45 761
Metal	165	166	154	255	305
Germany, Federal Republic of					
Concentrates	75 486	78 929	83 002	58 895	...
Metal	327	489	395	425	402
Italy					
Concentrates	71 099	84 627	48 175	78 234	...
Netherlands					
Concentrates	45 424	40 856	38 464	29 927	27 707
Portugal					
Concentrates	1 623	1 858	1 895	2 285	...
Spain					
Concentrates	34 909	37 210	25 813	35 300	...
Zirconium sand	653	599	2 004	4 600	...
Bulgaria					
Concentrates (a)	1 300*	1 700*	1 000*	2 500*	...
Czechoslovakia					
Concentrates (a)	1 700*	2 300*	2 200*	2 400*	1 500*
Finland					
Concentrates	1 046	2 495	3 540	1 519	—
Soviet Union					
Concentrates (a)	...	...	3 800*	4 000*	...
Sweden					
Concentrates	3 272	3 113	4 269	1 139	232
Metal	176	256	296	253	264
Turkey					
Concentrates	263	387	644	757	...
Zirconium sand	...	2 660	3 141	5 252	...
Algeria					
Concentrates	100	20	24	...	...
Canada					
Concentrates	...	...	...	...	7 623
Metal	227	239	225	269	282
Mexico					
Zirconium sand	4 749	4 678	1 217	770	...
USA					
Concentrates	60 271	39 724	68 764	67 918	76 332
Metal	513	408	317	382	351
Argentina					
Concentrates	351	131	61	...	...
Zirconium sand	3 453	1 258	2 814	...	...
Brazil					
Concentrates	8 301	12 135	12 699	7 172	15 058
Japan					
Concentrates	217 648	238 321	171 709	177 474	197 592
Metal	627	638	498	415	510
Korea, Republic of					
Concentrates	7 097	5 928	10 844	19 002	24 430
Malaysia					
Concentrates	425	518	474	880	...
Philippines					
Zirconium sand	418	234	357	593	589
Taiwan					
Zirconium sand	1 911	1 053	792	1 829	6 732

## Notes

(1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys

(a) BGS estimates, based on known exports from certain countries

**Production of Beryl**

tonnes

Country	1984	1985	1986	1987	1988
Portugal	10	2	—	35	—
Soviet Union	1 900*	1 900*	2 000*	2 000*	2 000*
Madagascar	46	130	50*	0	15*
Mozambique	7	3	1	—	—
Rwanda	44	27	—	—	—
South Africa	1	5	3	0	0
Zambia	—	0	1	1 131	1 343
Zimbabwe	19	38	103	85	32
USA	5 470	5 205	5 927	5 499	5 313
Argentina	72	31	50	46	40*
Brazil (a)	1 021	878	812	693	594

## Notes

(1) In addition to the countries listed, China is believed to produce a significant quantity of beryl and Namibia a small amount

(a) Exports

**Production of Borates**

tonnes

Country	1984	1985	1986	1987	1988
Finland	6 974	7 119	8 540	8 125	...
Soviet Union	200 000*	200 000*	200 000*	200 000*	200 000*
Turkey	894 606	954 359	928 010	980 150	717 000
USA (a)	1 240 000	1 151 000	1 135 000	1 256 000	1 149 000
Argentina	142 880	158 252	191 871	184 796	156 000
Chile	3 985	4 773	6 440	13 438	32 122
Peru	10 000*	10 000*	22 557	20 000	10 000*
China	27 000*	27 000*	27 000*	27 000*	27 000*

## Notes

(1) In addition to the countries listed, the Federal Republic of Germany and Iran are also believed to produce borates

(a) Sold or used by producers

**Production of Germanium Metal**

tonnes

Country	1984	1985	1986	1987	1988
Austria	5	5	6	7	6
Soviet Union	11*	11*	11*	11*	12*
USA (a)	20*	22*	22*	25*	21*
China	6*	6*	6*	6*	6*
Japan	8	10	9	5	4

## Notes

(1) Significant quantities of germanium are also believed to be recovered from imported or domestic material in Belgium, France, Federal Republic of Germany and to a lesser extent in Italy

(a) Including production of secondary metal

**Production of Primary Magnesium Metal**

tonnes

Country	1984	1985	1986	1987	1988
France	12 825	13 639	13 361	13 605	13 773
Italy	8 184	7 862	7 245	7 626	5 589
Norway	49 301	54 704	56 864	56 853	50 300
Soviet Union	85 000*	85 000*	86 000*	86 000*	90 000*
Yugoslavia	5 139	4 918	4 897	5 932	6 176
Canada	7 588	8 446	8 748	9 373	8 000
USA	144 430	135 728	125 639	124 396	141 983
Brazil	1 195	2 615	4 356	5 488	5 866
China	8 500*	9 000*	9 000*	9 000*	14 000*
Japan	7 144	8 500	8 100	8 200	10 000

**Production of Nepheline Syenite**

tonnes

Country	1984	1985	1986	1987	1988
Norway	225 731	227 465	218 421	244 789	262 000
Soviet Union	1 600 000*	1 615 000	1 638 000	1 660 000	1 670 000*
Canada	520 640	467 186	467 491	506 000	540 000

**Production of Perlite**

tonnes

Country	1984	1985	1986	1987	1988
Greece	451 931	400 929	541 495	530 000*	550 000*
Italy	80 000*	80 000*	73 000*	70 000*	71 000*
Czechoslovakia (a)	44 000*	44 000*	41 443	42 305	43 390*
Hungary	94 360	94 460	109 360	112 410	120 562
Soviet Union	600 000*	600 000*	600 000*	600 000*	600 000*
Turkey	64 920	60 146	103 129	143 958	183 628
Mexico	31 515	37 261	46 170	39 428	36 000*
USA	592 000	615 000	667 000	706 000	753 000
Argentina	13 722	16 131	19 960	...	...
Japan	75 000*	75 000*	75 000*	75 000*	75 000*
Philippines	15 641	3 883	24 400	3 600*	3 600*
Australia	3 708	2 740	3 838	5 054	4 736
New Zealand	0	—	—	—	2 938

## Notes

(1) In addition to the countries listed, Algeria, Bulgaria, China, Iceland, Mozambique and Yugoslavia are also believed to produce perlite

(a) Expanded



**Production of Selenium Metal**

tonnes

Country	1984	1985	1986	1987	1988
Belgium	180*	230*	250*	230*	250*
Finland	26	19	24	20	25
Sweden	68	46	24	31	30*
Yugoslavia	45	44	54	66	61
Zambia	21	13	22	27	24
Canada (a)	467	360	345	300	275
Mexico	44	42	23	29	13
USA	254	195	161	227	286
Chile	25	50	47	46	44
Peru	21	15	12	11	5
Japan	465	497	427	481	471
Australia	41	37*	...	...	...

## Notes

(1) In addition to the countries listed, Federal Republic of Germany, India, and Soviet Union are also believed to produce selenium metal

(a) From 1985 primary recoverable only

**Production of Strontium Minerals**

tonnes

Country	1984	1985	1986	1987	1988
United Kingdom	16 079	23 039	14 739	22 655	25 553
Italy	—	4 611	4 667	177	100*
Spain	24 840	39 100	31 740	26 558	27 000*
Turkey	35 000*	35 000*	35 000*	35 000*	54 000*
Algeria	5 400*	5 400*	5 400*	5 400*	5 400*
Mexico	31 991	32 320	24 042	47 739	38 794
Argentina (a)	400	983	1 133	1 010	1 100*
Cyprus	—	1 400	7 365	6 300	—
Iran	23 000	20 000	22 000	22 000*	22 000*
Pakistan	564	688	997	1 114	941

## Notes

(1) In addition to the countries listed, China, Federal Republic of Germany, Poland and Soviet Union are also believed to produce strontium minerals

(a) May contain unbeneficiated material

**Production of Tellurium Metal**

tonnes

Country	1984	1985	1986	1987	1988
Belgium	90	70	...	...	...
Canada (a)	14	19	17	15*	10*
USA	75*	75*	75*	75*	75*
Peru	14	15	10	7	4
Japan	65	66	56	53	55

## Notes

(1) In addition to the countries listed, Australia, Federal Republic of Germany and Soviet Union are also believed to produce tellurium metal

(a) From 1985 primary recoverable only

**Mine Production of Uranium**

tonnes (metal content)

Country	1984	1985	1986	1987	1988
Belgium	50	44	50	54	50
France	3 117	3 248	3 237	3 318	3 390
Germany, Federal Republic of	33*	31*	22*	20*	20*
Portugal	103	105	99	126	160
Spain	191	201	214	223	260
Yugoslavia	40	29	68	70	65*
Gabon	918	939	917	794	930
Namibia	3 800	3 400	3 500	3 540	3 460
Niger	3 273	3 181	3 113	2 968	2 964
South Africa	5 732	4 877	4 630	3 965	3 799
Canada	10 272	10 441	11 502	13 612	12 066
USA	5 700	4 300	5 200	5 000	5 000
Argentina	129	126	173	95	176
Brazil	117	85	26	104	14
India	100	115	125	127	120*
Australia	4 324	3 206	4 154	3 780	3 531
World total	37 900	34 300	37 000	37 800	36 000
World total (U <sub>3</sub> O <sub>8</sub> equivalent)	44 700	40 500	43 700	44 600	42 500

## Notes

(1) In addition to the countries listed, China, Czechoslovakia, Israel and Soviet Union are also believed to produce uranium

**Production of Vermiculite**

tonnes

Country	1984	1985	1986	1987	1988
Egypt	177	52	93	317	236
Kenya	872	1 515	2 544	3 887	3 707
South Africa	173 759	184 070	193 657	228 863	209 177
Zimbabwe	97	60	60	325	884
Mexico	505	350	220	161	191
USA (a)	286 000	285 000	288 000	275 000	276 000
Argentina	4 451	4 887	5 207	952	...
Brazil (b)	9 157	9 291	14 150	16 825	16 000
India	1 934	1 805	4 933	2 439	2 500*
Japan	17 000*	17 000*	15 000*	15 000*	15 000*
Australia	423	615	657	1 409	1 165

## Notes

(1) In addition to the countries listed, Malawi is also believed to produce vermiculite

(a) Sold or used by producers

(b) Including beneficiated and directly shipped material

**Production of Wollastonite**

tonnes

Country	1984	1985	1986	1987	1988
Finland	14 669	16 917	16 797	20 571	26 000
Mexico	9 251	13 512	9 356	10 993	...
USA	72 000*	72 000	65 000	72 000	81 000*
India	27 004	26 040	23 819	31 021	...

## Notes

(1) In addition to the countries listed, Japan, Namibia and Turkey are also believed to produce wollastonite

## APPENDIX

A brief explanation of the tables in the following pages is given in the *Explanatory Notes* at the beginning of this volume (page v). However, it must be stressed that the totals arrived at in the trade reconstructions are necessarily conservative, since country breakdown details are not released by every trading partner. Each table, therefore, shows only the data that can be extracted from published sources and no estimates are made for countries that suppress information.

Countries shown in this issue are listed alphabetically.



## Chromium ores &amp; concentrates

## Albania Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
France	8 665	3 960	2 028	3 635	19 264
Germany, Federal Republic of	96 831	84 236	23 022	10 645	33 494
Greece	16 845	14 703	38 764	5 994	10 754
Italy	140 944	92 936	63 840	106 900	* 100 000
Netherlands	-	-	-	150	-
Spain	73 279	38 780	43 419	23 349	20 548
Czechoslovakia	11 000	17 000	19 000	22 000	19 000
Poland	10 028	5 312	5 143	4 954	3 000
Sweden	* 140 000	* 82 000	* 82 000	* 68 000	* 27 000
Yugoslavia	131 174	136 870	152 114	141 671	113 107
USA	-	17 200	-	-	-
China	* 100 000				
Japan	58 251	94 123	37 659	24 957	78 584
Total	787 017	587 120	466 989	412 255	424 751

## Ferro-chrome

## Albania Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	60	-	-	-	-
Belgium-Luxembourg	3 538	1 521	5 935	204	1 182
France	717	24	704	124	-
Germany, Federal Republic of	676	44	11 213	6 831	9 113
Greece	-	-	-	-	998
Italy	2 172	850	2 202	950	-
Netherlands	4 309	1 589	13 561	6 212	-
Spain	3 984	1 311	2 318	935	3 000
Austria	800	-	250	221	391
Finland	998	-	-	-	-
Sweden	9 116	3 209	1 416	4 404	3 817
USA	-	-	-	-	1 228
Japan	-	-	-	4 032	4 113
Total	26 370	8 548	37 599	23 913	23 842

Unroasted pyrites

Albania Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Italy	27 315	17 854	5 852	* 6 000	
Hungary	4 174	6 738	14 500	14 021	-
Yugoslavia	-	-	4 500	451	
Total	31 489	24 592	24 852	20 472	

## Asbestos

## Albania Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Greece	-	16	-		
Italy	56	-	19	-	
Yugoslavia	1 643	1 483	1 526	1 168	200
Total	1 699	1 499	1 545	1 168	200

## Coal

## Albania Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	22 842	1 260	-	-	-
Netherlands	-	-	-	-	1 135
Poland	68 000	63 000	52 000	78 000	64 000
USA	179 718	210 838	86 328	75 554	165 841
Colombia	-	-	20 262		
Total	270 560	275 098	158 590	153 554	230 976

## Fluorspar

## Albania Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
France	-	670	962	1 000	190
Italy	300	-	-	-	
Total	300	670	962	1 000	190

Iron ore

Albania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Italy	40	-	-	-	
Algeria	29 000	-	-	18 448	
Morocco	42 062	3 000	3 700		
Total	71 102	3 000	3 700	18 448	

Ferro-alloys

Albania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
France	-	14	-	-	-
Bulgaria	-	311	73	* 100	
Yugoslavia	1 557	1 994	2 788	2 202	2 427
Zimbabwe	-	-	-	6	
Total	1 557	2 319	2 861	2 308	2 427



## Unwrought aluminium &amp; alloys

## Bulgaria Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	-	-	214	-	-
Greece	-	-	-	62	-
Italy	686	652	806	447	81
Netherlands	464	-	-	-	-
Austria	201	-	251	-	-
Yugoslavia	13	-	-	-	-
Dubai	-	36	-	-	-
Japan	3 632	3 271	2 787	3 042	2 663
Total	4 996	3 959	4 058	3 551	2 744

## Aluminium scrap

## Bulgaria Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	1 972	2 217	3 913	2 666	3 155
Greece	-	23	-	-	-
Italy	732	819	1 115	2 135	2 118
Sweden	-	-	89	102	130
Japan	56	-	-	-	-
Total	2 760	3 059	5 117	4 903	5 403

## Cadmium metal

## Bulgaria Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	10	5	-	18	-
France	-	-	-	5	15
Netherlands	-	-	-	-	5
Czechoslovakia	54	42	40	20	16
Total	64	47	40	43	36

## Unwrought copper &amp; alloys

## Bulgaria Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	505	100	150	400	201
France	-	-	-	-	1 133
Germany, Federal Republic of	179	-	29	119	154
Greece	-	-	20	102	
Italy	197	238	-	19	
Sweden	-	8	-	-	-
Yugoslavia	329	253	294	141	416
Total	1 210	599	493	781	1 904

## Unwrought lead &amp; alloys

## Bulgaria Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Greece	-	-	-	1 168	3 296
Italy	-	-	500	548	
Spain	-	-	-	200	
Czechoslovakia	-	1 000	2 000	4 000	1 000
Hungary	697	-	500	-	1 050
Turkey	870	200	693		
Yugoslavia	-	1 224	2 355	821	1 011
China					999
<b>Total</b>	<b>1 567</b>	<b>2 424</b>	<b>6 048</b>	<b>6 737</b>	<b>7 356</b>

## Manganese ore

## Bulgaria Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Czechoslovakia	36 000	10 000			8 000

## Unwrought zinc &amp; alloys

## Bulgaria Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
France	1 735	2 741	-	-	-
Germany, Federal Republic of	-	-	-	-	73
Greece	-	25	570	108	
Italy	260	50	20	-	
Czechoslovakia	11 000	10 000	14 000	15 000	10 000
Hungary	3 119	670	4 371	3 551	2 378
Sweden	25	-	-	-	-
Switzerland	-	-	-	51	-
Turkey	6 478	598	25		
Yugoslavia	1 295	9 500	3 537	412	3 074
Syria	976	-	-		
Total	24 888	23 584	22 523	19 122	15 525

## Unwrought aluminium &amp; alloys

## Bulgaria Imports

Exporting Countries	tonnes				
	1984	1985	1986	1987	1988
United Kingdom	68	-	-	18	74
France	1	1	2	43	19
Germany, Federal Republic of	-	-	-	-	40
Spain	-	999	-	-	-
Austria	346	250	260	509	113
Hungary	10 315	4 996	4 455	5 485	5 284
Norway	696	-	98	-	-
Yugoslavia	6 507	13 305	9 981	6 829	2 892
Brazil	-	-	-	1 499	21 196
Dubai	-	1 249	-	-	-
Japan	-	-	-	-	17
<b>Total</b>	<b>17 933</b>	<b>20 800</b>	<b>14 796</b>	<b>14 383</b>	<b>29 635</b>

## Unwrought copper &amp; alloys

## Bulgaria Imports

Exporting Countries	tonnes				
	1984	1985	1986	1987	1988
Belgium-Luxembourg	1 299	-	-	-	-
Italy	2	-	-	-	-
Poland	-	40	-	837	-
Yugoslavia	1 315	-	863	-	-
Zaire	-	-	-	1 000	-
Chile	-	2 000	-	1 900	-
<b>Total</b>	<b>2 616</b>	<b>2 040</b>	<b>863</b>	<b>3 737</b>	

Diamond

Bulgaria Imports

	carats				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	57 065	45 327	6 000	-
Belgium-Luxembourg	86 162	119 066	93 192	19 206	18 629
Germany, Federal Republic of	1 183	3 034	-	-	-
USA	-	-	-	-	94
Total	87 345	179 165	138 519	25 206	18 723

Fluorspar

Bulgaria Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	758	830	207	270	670
Italy	-	20	-	-	-
Total	758	850	207	270	670

Graphite

Bulgaria Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	1 968	1 178	540	1 639	950
Austria	-	867	873	80	-
Total	1 968	2 045	1 413	1 719	950

## Kaolin

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	1 290	3 497	3 954	3 321	2 155
Germany, Federal Republic of	-	-	2	2	-
Italy	4	-	-	-	-
Hungary	-	5 907	-	-	-
Yugoslavia	-	-	-	-	731
India	20	-	-	-	-
<b>Total</b>	<b>1 314</b>	<b>9 404</b>	<b>3 956</b>	<b>3 323</b>	<b>2 886</b>

## Lead ore

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Greece	206	-	-	-	-
Irish Republic	-	-	-	2 091	-
Italy	-	-	4 000	2 000	3 418
Spain	-	-	-	-	1 950
Poland	-	-	-	5 768	7 832
Turkey	-	-	-	1 390	-
Yugoslavia	1 857	-	384	727	-
Morocco	-	-	1 650	-	-
Thailand	-	2 000	-	-	-
<b>Total</b>	<b>2 063</b>	<b>2 000</b>	<b>6 034</b>	<b>11 976</b>	<b>13 200</b>

Magnesite

Bulgaria Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Czechoslovakia	24 000	25 000	6 000	8 000	7 000
Yugoslavia	126	109	140	140	120
Total	24 126	25 109	6 140	8 140	7 120

Platinum & platinum metals

Bulgaria Imports

	kilograms				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	1	-	17	25
Belgium-Luxembourg	-	-	-	-	23
France	432	640	812	402	306
Germany, Federal Republic of	74	155	280	309	315
Italy	-	-	11	-	-
Switzerland	22	11	7	14	-
Japan	-	-	-	-	1
Total	528	807	1 110	742	670

Fertiliser salts (potassic)

Bulgaria Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Soviet Union	144 100	163 000	188 900	142 300	183 400



## Silver metal

## Bulgaria Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	933	-	-	-
Belgium-Luxembourg	-	10	-	-	-
France	-	26	-	-	-
Germany, Federal Republic of	1 219	1 005	1 935	2 234	1 661
Austria	-	175	325	180	121
Switzerland	152	-	-	65	576
Yugoslavia	-	-	-	-	4 000
Japan	-	-	17	-	-
<b>Total</b>	<b>1 371</b>	<b>2 149</b>	<b>2 277</b>	<b>2 479</b>	<b>6 358</b>

## Unroasted pyrites

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Soviet Union	249 000	238 000	210 000	190 000	77 000

## Sulphur

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
France	-	-	-	-	2
Germany, Federal Republic of	-	10	-	-	-
Greece	-	1 100	-	-	-
Poland	68 000	49 000	60 000	53 000	61 000
<b>Total</b>	<b>68 000</b>	<b>50 110</b>	<b>60 000</b>	<b>53 000</b>	<b>61 002</b>

## Titanium minerals

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	2 608	1 789	398	460	-
Netherlands	500	530	2 240	3 338	3 010
<b>Total</b>	<b>3 108</b>	<b>2 319</b>	<b>2 638</b>	<b>3 798</b>	<b>3 010</b>

## Titanium oxides

## Bulgaria Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	-	226	787	268
Belgium-Luxembourg	55	76	251	12	52
France	-	139	758	350	210
Germany, Federal Republic of	1 287	2 516	606	289	798
Netherlands	9	220	520	200	510
Spain	464	530	122	-	-
Switzerland	-	-	-	-	6
Yugoslavia	40	-	-	-	50
USA	-	6	-	-	-
Japan	-	-	-	158	158
<b>Total</b>	<b>1 855</b>	<b>3 487</b>	<b>2 483</b>	<b>1 796</b>	<b>2 052</b>

## Zinc ore

## Bulgaria Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	-	-	-	6 050	-
Spain	-	-	-	-	4 719
Sweden	5 250	-	-	-	-
Turkey	-	2 900	6 000	8 043	-
Yugoslavia	609	-	314	-	-
Canada	* 6 600	-	* 11 100	* 6 500	* 57 300
USA	* 5 500	-	-	-	-
Peru	13 596	36 004	18 516	31 045	16 001
Total	31 555	38 904	35 930	51 638	78 020

## Zirconium concentrates

## Bulgaria Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	160	1 183	466	925	-
Netherlands	1 108	490	574	581	-
Malaysia	-	-	-	1 001	-
Total	1 268	1 673	1 040	2 507	-

## Unwrought aluminium &amp; alloys

## Czechoslovakia Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
France	-	-	218	-	-
Germany, Federal Republic of	2 661	943	2 203	496	575
Italy	398	-	6	3	2
Netherlands	-	-	-	50	-
Poland	2 292	2 066	2 063	1 967	2 755
Sweden	100	44	-	-	-
Yugoslavia	22	-	-	-	-
USA	-	71	-	-	-
Japan	12 701	17 946	10 769	8 685	11 449
Total	18 174	21 070	15 259	11 201	14 781

## Barytes

## Czechoslovakia Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	-	-	25	-	25
France	-	-	-	-	42
Austria	2 030	2 003	1 441	369	254
Total	2 030	2 003	1 466	369	321

## Diatomite

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
Austria	3 062	4 050	4 841	4 938	5 331
Syria	-	189	-		
Total	3 062	4 239	4 841	4 938	5 331

## Graphite

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	-	-	-	-	404
France	-	-	-	1	-
Greece	20	22	20	20	
Italy	1	-	-	-	
Poland	1 500	1 724	1 427	1 561	1 532
Yugoslavia	1 245	1 328	1 391	1 482	946
Total	2 766	3 074	2 838	3 064	2 882

## Ferro-chrome

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	603	-	-	-	-
Belgium-Luxembourg	27	910	-	-	-
France	-	-	-	26	-
Germany, Federal Republic of	496	1 261	422	-	590
Italy	23	-	-	-	-
Portugal	-	8	-	-	-
Austria	2 761	511	297	399	-
Sweden	-	97	-	-	57
Yugoslavia	-	-	17	-	-
Total	3 910	2 787	736	425	647

## Ferro-manganese

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	1 493	2 011	1 004	1 842	-
Belgium-Luxembourg	-	-	-	11	-
France	-	-	-	488	76
Germany, Federal Republic of	9 787	11 822	10 531	11 032	9 016
Italy	1 246	1 229	1 805	1 876	* 1 000
Austria	-	-	-	-	2 051
Hungary	-	-	3 680	550	-
Sweden	-	360	1 854	-	-
Turkey	-	-	-	966	-
Total	12 526	15 422	18 874	16 765	12 143

## Other ferro-alloys

## Czechoslovakia Exports

		tonnes				
Importing Countries	1984	1985	1986	1987	1988	
France	-	28	-	6	6	
Germany, Federal Republic of	1 267	814	739	1 195	1 750	
Italy	90	144	-	-	-	
Austria	3 445	4 150	3 512	3 170	99	
Hungary	-	1 358	552	-	-	
Sweden	12	-	-	-	-	
Switzerland	-	-	-	529	147	
Peru	2	-	-	-	-	
India	-	-	93	-	-	
Thailand	37	-	-	-	-	
<b>Total</b>	<b>4 853</b>	<b>6 494</b>	<b>4 896</b>	<b>4 900</b>	<b>2 002</b>	

## Iron &amp; steel scrap

## Czechoslovakia Exports

		tonnes				
Importing Countries	1984	1985	1986	1987	1988	
United Kingdom	-	-	3	-	-	
France	-	59	-	10	-	
Germany, Federal Republic of	14 902	15 094	22 298	11 864	11 486	
Italy	95 700	84 363	41 222	55 969	* 40 000	
Netherlands	-	13	-	-	-	
Austria	47 784	32 549	26 495	21 117	29 245	
Poland	1 857	-	-	-	-	
Sweden	-	-	-	-	17	
Switzerland	203	-	333	-	-	
Yugoslavia	25 119	8 070	11 126	2 615	2 293	
India	-	20	-	-	-	
Indonesia	-	-	-	-	259	
Syria	1	-	-	-	-	
Thailand	-	-	-	5 228	33 085	
<b>Total</b>	<b>185 566</b>	<b>140 168</b>	<b>101 477</b>	<b>96 803</b>	<b>116 385</b>	

## Lead ores &amp; concentrates

## Czechoslovakia Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	5 757	5 943	6 141	5 596	5 823

## Potassic chemicals

## Czechoslovakia Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	65	66	15	90	135
Denmark	20	24	17	-	-
France	15	7	23	35	40
Germany, Federal Republic of	90	74	-	87	98
Irish Republic	9	-	-	-	-
Italy	65	50	65	-	-
Netherlands	52	36	83	38	52
Sweden	80	100	-	-	-
Turkey	-	25	-	-	-
Yugoslavia	16 684	9 225	3 479	1 295	448
Argentina	2	2	-	-	-
Chile	-	1	-	-	-
Venezuela	-	-	-	11	-
Hong Kong	-	-	5	-	-
India	-	20	43	-	-
Pakistan	17	17	13	5	10
Thailand	-	-	-	5	10
<b>Total</b>	<b>17 099</b>	<b>9 647</b>	<b>3 743</b>	<b>1 566</b>	<b>793</b>



## Sillimanite minerals

## Czechoslovakia Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Greece	-	20	-	-	
Austria	14 125	16 351	18 490	16 799	-
Total	14 125	16 371	18 490	16 799	

Talc

## Czechoslovakia Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Portugal	-	-	23	-	
Poland	7 080	6 489	6 555	6 435	6 083
Yugoslavia	120	60	212	246	142
Total	7 200	6 549	6 790	6 681	6 225

## Titanium oxides

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	497	297	467	544	380
France	200	222	260	60	40
Germany, Federal Republic of	674	632	986	954	778
Italy	1 041	720	963	940	* 900
Austria	20	115	45	91	99
Sweden	-	40	-	-	-
Switzerland	-	-	-	10	5
Turkey	30	190	200	257	* 200
Yugoslavia	220	380	400	400	350
Algeria	29	11	-	-	-
Egypt	52	-	-	213	-
Brazil	-	-	10	-	-
Abu Dhabi	-	-	-	-	23
Total	2 763	2 607	3 331	3 469	2 775

## Zinc ore

## Czechoslovakia Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
France	-	-	-	-	728
Germany, Federal Republic of	1 725	-	-	1 761	1 871
Austria	672	-	-	-	-
Yugoslavia	12 044	15 651	14 167	5 628	180
Saudi Arabia	105	-	-	-	-
Total	14 546	15 651	14 167	7 389	2 779

## Alumina

## Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	14	5	9	7	-
France	17	79	20	13	38
Germany, Federal Republic of	131	124	108	815	330
Italy	-	-	19	-	-
Hungary	17 446	16 546	15 061	15 792	1 006
Yugoslavia	10 462	8 085	10 209	13 844	1 758
USA	-	-	-	23	-
China					8 530
Japan	3	3	3	5	46
Total	28 073	24 842	25 429	30 499	11 708

## Diamond

## Czechoslovakia Imports

carats

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	8 520	5 006	-	-	-
Belgium-Luxembourg	95 019	47 851	55 598	30 150	29 197
Austria	-	-	-	150 000	-
Total	103 539	52 857	55 598	180 150	29 197

## Diatomite

## Czechoslovakia Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
France	-	492	332	60	-
Germany, Federal Republic of	-	19	-	-	-
Italy	-	-	22	-	-
Austria	296	158	197	516	603
Iceland	2 161	2 209	1 299	649	* 1 000
Yugoslavia	-	-	-	-	169
<b>Total</b>	<b>2 457</b>	<b>2 878</b>	<b>1 850</b>	<b>1 225</b>	<b>1 772</b>

## Graphite

## Czechoslovakia Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	-	-	25	85
Germany, Federal Republic of	169	176	109	167	156
Italy	-	6	-	-	-
Japan	162	125	248	72	90
<b>Total</b>	<b>331</b>	<b>307</b>	<b>357</b>	<b>264</b>	<b>331</b>

Ferro-chrome & ferro-silico-chrome

Czechoslovakia Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	1 037	2 627	382	1 037	843
Italy	-	542	528	684	* 500
Sweden	164	-	-	-	-
Total	1 201	3 169	910	1 721	1 343

Ferro-titanium & ferro-silico-titanium

Czechoslovakia Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	636	1 059	524	458	628
Belgium-Luxembourg	-	-	7	-	-
France	94	-	-	-	-
Germany, Federal Republic of	100	156	-	-	-
Italy	-	16	-	-	-
Netherlands	-	-	178	318	145
Total	830	1 231	709	776	773

## Other ferro-alloys

## Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	-	-	14	9
France	143	256	202	230	82
Germany, Federal Republic of	40	-	36	61	60
Italy	92	-	71	-	-
Netherlands	-	-	-	40	-
Norway	32	36	-	33	40
Soviet Union	* 100 000	* 119 000	118 000	115 000	120 000
Yugoslavia	950	405	-	-	132
Zimbabwe	-	-	607	-	-
<b>Total</b>	<b>101 257</b>	<b>119 697</b>	<b>118 916</b>	<b>115 378</b>	<b>120 323</b>

## Iron &amp; steel scrap

## Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	32 209	37 002	39 563	14 393	8 517
Austria	484	1 670	626	-	-
Soviet Union	51 600	5 200	3 000	5 300	5 400
Yugoslavia	46	-	16	-	-
<b>Total</b>	<b>84 339</b>	<b>43 872</b>	<b>43 205</b>	<b>19 693</b>	<b>13 917</b>

## Kaolin

## Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	1 968	1 426	1 491	1 336	766
France	40	40	-	25	-
Germany, Federal Republic of	19	14	-	-	-
Netherlands	27	-	-	-	-
Austria	-	-	-	201	-
Hungary	5 280	6 609	6 172	5 725	5 550
Yugoslavia	5	-	-	25	-
<b>Total</b>	<b>7 339</b>	<b>8 089</b>	<b>7 663</b>	<b>7 312</b>	<b>6 316</b>

## Mercury

## Czechoslovakia Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	6	-	-	130	-
Netherlands	9 000	-	-	-	-
Algeria	17 250	8 625	* 10 000	-	-
<b>Total</b>	<b>26 256</b>	<b>8 625</b>	<b>* 10 000</b>		

Molybdenum ores & concentrates

Czechoslovakia Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	294	288	615	538	220
Germany, Federal Republic of	197	41	60	87	125
Netherlands	111	286	270	129	778
Austria	-	-	-	-	673
Sweden	-	-	-	-	78
Total	602	615	945	754	1 874

Platinum & platinum metals

Czechoslovakia Imports

					kilograms
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	9	127	49	8	124
Germany, Federal Republic of	13	115	186	72	332
Netherlands	-	-	-	-	6
Switzerland	-	-	-	-	15
Japan	-	8	-	-	-
Total	22	250	235	80	477



Salt

## Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	-	-	17	-	-
Italy	9	-	-	-	-
Poland	-	19 890	-	-	-
Soviet Union	120 340	120 065	150 320	148 726	138 972
<b>Total</b>	<b>120 349</b>	<b>139 955</b>	<b>150 337</b>	<b>148 726</b>	<b>138 972</b>

Silver metal

## Czechoslovakia Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	49	0	-	-	-
Belgium-Luxembourg	-	3 023	-	-	-
France	-	-	-	599	-
Germany, Federal Republic of	-	323	1 776	1 059	9 262
Netherlands	3 000	505	-	-	-
Austria	-	-	-	143	-
Poland	-	3 000	-	-	-
Switzerland	67	93	79	85	129
Yugoslavia	13 000	9 000	13	8 000	12 000
Japan	-	1	4	-	-
<b>Total</b>	<b>16 116</b>	<b>15 945</b>	<b>1 872</b>	<b>9 886</b>	<b>21 391</b>

Talc

Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	38	30	-	-	-
Belgium-Luxembourg	417	422	421	434	-
Germany, Federal Republic of	124	-	145	153	138
Austria	364	967	913	1 722	720
Finland	-	-	-	20	-
India	-	-	4		
<b>Total</b>	<b>943</b>	<b>1 419</b>	<b>1 483</b>	<b>2 329</b>	<b>858</b>

Titanium oxides

Czechoslovakia Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	421	600	625	530	579
Belgium-Luxembourg	-	28	56	-	-
Denmark	-	-	-	-	10
France	245	453	221	125	63
Germany, Federal Republic of	743	757	730	783	784
Netherlands	1 540	1 917	1 577	1 492	1 499
Austria	-	-	-	293	30
Switzerland	-	-	-	-	16
Yugoslavia	-	8	-	-	-
<b>Total</b>	<b>2 949</b>	<b>3 763</b>	<b>3 209</b>	<b>3 223</b>	<b>2 981</b>

## Zirconium concentrates

## Czechoslovakia Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	1 577	2 209	1 908	2 341	1 300
Italy	120	98	322	46	* 50
Netherlands	-	-	-	23	128
Total	1 697	2 307	2 230	2 410	1 478

## Unwrought aluminium &amp; alloys

## German Democratic Republic Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	229	167	204	195	49
Belgium-Luxembourg	332	10	99	-	475
France	-	-	1 013	-	199
Germany, Federal Republic of	24 396	18 004	19 634	23 778	20 776
Italy	75	-	59	1	-
Netherlands	121	-	70	74	220
Austria	403	305	176	-	-
Poland	3 001	3 043	5 019	5 001	4 988
El Salvador	-	-	101	-	-
Japan	1 863	1 421	2 003	1 615	1 794
Singapore	22	-	-	-	-
<b>Total</b>	<b>30 442</b>	<b>22 950</b>	<b>28 378</b>	<b>30 664</b>	<b>28 501</b>

## Aluminium scrap

## German Democratic Republic Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	126	-	-	-	-
Belgium-Luxembourg	471	1 530	659	301	331
Denmark	45	1 100	544	239	-
France	974	769	567	148	493
Germany, Federal Republic of	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
Italy	60	-	42	36	-
Netherlands	1 865	2 679	2 543	902	2 852
Spain	-	77	37	-	-
USA	-	-	-	60	1 127
Pakistan	30	55	-	1 306	-
<b>Total</b>	<b>6 571</b>	<b>9 210</b>	<b>7 392</b>	<b>5 992</b>	<b>7 803</b>

## Barytes

## German Democratic Republic Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	-	100	100	-	20
Germany, Federal Republic of	1 571	543	-	-	-
Yugoslavia	-	-	100	-	-
Tunisia	-	10			
Total	1 571	653	200		20

## Bromine

## German Democratic Republic Exports

kilograms

Importing Countries	1984	1985	1986	1987	1988
France	288 000	333 800	356 800	557 200	601 200
Germany, Federal Republic of	198 200	824 500	955 300	1 046 200	1 524 200
Italy	83 000	180 000	-	-	
Hungary	149 000	20 000	179 000	223 000	291 000
Total	718 200	1 358 300	1 491 100	1 826 400	2 416 400

## Unwrought copper &amp; alloys

## German Democratic Republic Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	325	381	192	1 401	166
Belgium-Luxembourg	-	-	-	200	-
France	854	1 635	2 072	4 097	4 898
Germany, Federal Republic of	6 827	5 843	7 902	7 125	7 524
Italy	-	-	100	-	25
Netherlands	4 568	3 322	3 607	470	-
Portugal	-	21	-	-	-
Austria	-	-	791	-	-
Hungary	-	-	-	40	62
Sweden	25	-	18	-	-
USA	-	-	7	-	-
Total	12 599	11 202	14 689	13 333	12 675

## Fluorspar

## German Democratic Republic Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	1 675	1 019	1 066	1 294	855
Denmark	444	383	299	213	-
Germany, Federal Republic of	17 599	15 679	16 316	15 521	12 123
Italy	4 218	3 317	-	1 809	-
Netherlands	-	-	9 157	7 540	6 135
Austria	5 981	5 816	1 102	58	-
Norway	7 022	7 211	-	-	-
Poland	6 103	5 268	5 454	4 885	5 593
Sweden	2 293	1 859	1 343	738	-
Yugoslavia	1 208	1 202	1 246	1 440	789
Total	46 543	41 754	35 983	33 498	25 495

## Ferro-silicon

## German Democratic Republic Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	122	-	98	-	73
France	227	-	-	15	45
Germany, Federal Republic of	6 314	5 904	7 550	5 240	9 871
Netherlands	302	-	-	-	-
Turkey	297	-	-	-	-
<b>Total</b>	<b>7 262</b>	<b>5 904</b>	<b>7 648</b>	<b>5 255</b>	<b>9 989</b>

## Other ferro-alloys

## German Democratic Republic Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	64	-	-	-	-
Belgium-Luxembourg	125	-	-	-	-
France	-	24	-	15	23
Germany, Federal Republic of	230	13	1 096	1 257	441
Austria	-	46	-	-	-
Finland	-	-	390	-	-
Gabon	-	-	10	-	-
USA	-	* 310	-	-	-
India	-	-	73	-	-
<b>Total</b>	<b>419</b>	<b>393</b>	<b>1 569</b>	<b>1 272</b>	<b>464</b>

## Iron &amp; steel ingots, blooms, billets

## German Democratic Republic Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	-	8	290	306	512
Belgium-Luxembourg	15 699	14 339	20 150	28 274	48 741
Denmark	59	140	57	-	-
France	2 819	5 828	3 092	4 070	3 840
Germany, Federal Republic of	249 909	433 740	482 619	577 574	674 009
Italy	50 077	71 987	68 755	92 090	* 80 000
Netherlands	-	26	-	-	-
Spain	-	2 752	5 136	2 885	127
Austria	580	841	451	948	929
Malta	549	-	-	-	-
Switzerland	-	-	-	-	2 927
Turkey	2 799	2 704	6 322	70 329	* 10 000
Yugoslavia	1 355	2 689	2 579	1 162	335
Nigeria	2 324	-	-	-	-
El Salvador	-	-	1 100	-	-
Nicaragua	38	7	2 060	-	-
Hong Kong	10 002	-	-	-	-
Japan	-	-	-	4 938	8 518
Jordan	-	-	500	-	-
Philippines	-	-	-	13 196	12 893
Sri Lanka	-	-	-	1 204	409
Taiwan	-	-	-	-	132 562
Thailand	-	-	-	1 002	19 246
<b>Total</b>	<b>336 210</b>	<b>535 061</b>	<b>593 111</b>	<b>797 978</b>	<b>995 048</b>



## Iron &amp; steel scrap

## German Democratic Republic Exports

						tonnes
Importing Countries	1984	1985	1986	1987	1988	
Belgium-Luxembourg	-	4	24	23	-	
Denmark	-	75	-	-	-	
France	-	-	-	-	7	
Germany, Federal Republic of	10 364	5 112	5 979	5 220	70 134	
Greece	-	-	90	-	-	
Italy	43	1 571	640	-	-	
Netherlands	-	-	41	5 277	6 175	
Spain	4 500	-	-	0	-	
Sweden	-	-	1 688	-	-	
Yugoslavia	245	343	249	145	-	
Hong Kong	-	-	849	-	-	
India	-	430	-	-	-	
Japan	-	-	20	-	-	
Pakistan	-	-	-	11 209	-	
Thailand	2 305	16 533	15 063	12 484	9 624	
Total	17 457	24 068	24 643	34 358	85 940	

## Sillimanite minerals

## German Democratic Republic Exports

						tonnes
Importing Countries	1984	1985	1986	1987	1988	
Austria	795	1 449	1 027	913	-	

## Silver metal

## German Democratic Republic Exports

	kilograms				
Importing Countries	1984	1985	1986	1987	1988
United Kingdom	281 457	289 726	451 772	216 664	133 651
Germany, Federal Republic of	1 874	1 171	663	356	152
Italy	779	-	109	-	-
Jamaica	-	-	-	58	-
Total	284 110	290 897	452 544	217 078	133 803

## Alumina

## German Democratic Republic Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
France	16	12	24	17	21
Germany, Federal Republic of	74 629	70 657	76 203	73 420	57 715
Netherlands	86	7	-	-	-
Hungary	29 077	26 767	23 928	27 476	24 975
Japan	10	1	1	-	0
Total	103 818	97 444	100 156	100 913	82 711

## Unwrought aluminium &amp; alloys

## German Democratic Republic Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	50	-	34	178	36
Belgium-Luxembourg	-	-	-	-	176
France	-	-	1 012	1 000	-
Germany, Federal Republic of	250	3 185	865	1 601	2 165
Italy	-	-	25	-	-
Netherlands	95	-	48	57	141
Austria	-	-	130	403	353
Hungary	16 987	8 089	8 625	3 402	2 147
Norway	-	38	-	-	-
Yugoslavia	37 619	31 291	23 280	23 816	24 110
Total	55 001	42 603	34 019	30 457	29 128

Antimony oxide

German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
France	224	111	54	47	55
Netherlands	1	-	-	-	-
Total	225	111	54	47	55

Bentonite

German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	-	72	120	-	-
Bulgaria	7 020	7 001	6 640	* 6 000	* 5 000
Hungary	8 032	5 195	6 232	5 701	7 380
Total	15 052	12 268	12 992	11 701	12 380

Fuller's earth

German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	20	-	-	-	-
Germany, Federal Republic of	860	736	1 434	1 720	934
Total	880	736	1 434	1 720	934

## Cadmium metal

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	-	-	-	-	10
Germany, Federal Republic of	81	-	-	-	-
Netherlands	25	-	-	-	-
Sweden	-	15	-	-	-
Japan	36	96	184	131	27
Total	142	111	184	131	37

## Cobalt metal

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	-	-	-	-	2
Finland	83	83	58	53	-
Total	83	83	58	53	2

## Copper ores &amp; concentrates

## German Democratic Republic Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Spain	3 055	-	-	-	
Norway	-	-	-	3 026	-
Sweden	3 014	5 180	-	10 850	20 840
Morocco	6 157	5 480	9 700		
Total	12 226	10 660	9 700	13 876	20 840

## Unwrought copper &amp; alloys

## German Democratic Republic Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	40	-	-	46	-
Belgium-Luxembourg	99	69	3 012	43	6
Germany, Federal Republic of	31 969	35 812	33 534	38 520	28 740
Italy	24	-	-	-	-
Netherlands	1 394	-	-	-	-
Austria	-	-	103	-	-
Finland	1 821	1 832	2 540	3 733	713
Norway	-	-	-	112	141
Poland	2 483	3 655	4 162	4 790	4 160
Sweden	26	-	-	-	-
Yugoslavia	1 320	1 781	1 770	1 670	1 879
Zambia	2 505	500	-		
Zimbabwe	817	531	-		
Canada	-	-	-	-	460
USA	-	-	-	-	29 422
Chile	7 941	6 742	6 307	8 000	6 000
Total	50 439	50 922	51 428	56 914	71 521

## Copper scrap

## German Democratic Republic Imports

						tonnes
Exporting Countries	1984	1985	1986	1987	1988	
United Kingdom	76	41	185	107	-	
Belgium-Luxembourg	374	239	962	1 722	269	
Denmark	123	126	353	922	435	
France	-	-	26	-	-	
Germany, Federal Republic of	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000	
Irish Republic	85	-	-	124	-	
Italy	-	21	-	-	-	
Netherlands	550	702	1 406	892	979	
Austria	-	-	23	139	889	
Switzerland	395	709	1 018	1 337	1 206	
Canada	-	-	-	-	1 096	
Jamaica	-	34	59	-	20	
Trinidad & Tobago	24	-	-	-	-	
Chile	2 484	3 974	-	-	-	
Total	24 111	25 846	24 032	25 243	24 894	

## Diamond

## German Democratic Republic Imports

						carats
Exporting Countries	1984	1985	1986	1987	1988	
United Kingdom	-	-	4 577	1 399	-	
Belgium-Luxembourg	35 034	25 732	64 295	37 617	76 425	
Germany, Federal Republic of	28	12	36	305	-	
Netherlands	-	-	-	-	13 435	
Total	35 062	25 744	68 908	39 321	89 860	

## Diatomite

## German Democratic Republic Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
France	1 023	1 082	1 627	1 718	1 893
Germany, Federal Republic of	255	-	-	-	-
Iceland	256	-	-	-	-
Total	1 534	1 082	1 627	1 718	1 893

## Feldspar

## German Democratic Republic Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Portugal	-	-	-	11 428	-
Norway	9 950	18 795	6 506	8 869	9 082
Sweden	7 070	3 000	4 100	-	2 045
Yugoslavia	1 722	886	-	-	-
Total	18 742	22 681	10 606	20 297	11 127



## Unwrought lead &amp; alloys

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	500	-	-	-	-
Belgium-Luxembourg	1 830	1 012	-	1 447	1 676
France	-	848	-	300	248
Germany, Federal Republic of	816	3 357	3 325	1 700	5 995
Italy	292	1 646	852	-	-
Netherlands	-	-	-	50	-
Sweden	702	-	7 361	7 435	9 378
Total	4 140	6 863	11 538	10 932	17 297

## Lead scrap

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	303	186	389	2 137	1 688
Belgium-Luxembourg	548	1 613	-	3 835	2 000
Denmark	3 234	2 342	-	885	-
Netherlands	617	3 166	1 355	2 853	-
Finland	-	-	-	-	1 763
Switzerland	210	316	-	-	-
Australia	29	-	-	-	-
Total	4 941	7 623	1 744	9 710	5 451

Magnesite

German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Greece	900	-	-	-	
Netherlands	-	-	-	-	59
Czechoslovakia	52 000	53 000	32 000	31 000	33 000
Turkey	10 250	5 190	-		
Total	63 150	58 190	32 000	31 000	33 059

Mercury

German Democratic Republic Imports

					kilograms
Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	17 300	-	-	-	-
Netherlands	38 000	2 000	-	-	-
Spain	-	34 000	-	-	
Algeria	277 725	338 100	50 025	334 650	
Total	333 025	374 100	50 025	334 650	

## Platinum &amp; platinum metals

## German Democratic Republic Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	10	13	37	0	-
Germany, Federal Republic of	525	1 890	2 139	1 728	2 270
Italy	-	-	20	-	-
Canada	-	-	-	-	79
USA	182	-	-	-	-
<b>Total</b>	<b>717</b>	<b>1 903</b>	<b>2 196</b>	<b>1 728</b>	<b>2 349</b>

Silver metal

## German Democratic Republic Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	2 700	290	4 372	1 950	2 333
France	-	-	-	7	-
Germany, Federal Republic of	437 058	482 893	574 234	285 640	260 599
Italy	-	-	666	-	-
Netherlands	-	-	-	434	301
<b>Total</b>	<b>439 758</b>	<b>483 183</b>	<b>579 272</b>	<b>288 031</b>	<b>263 233</b>

## Sulphur

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Italy	40	-	-	-	
Poland	135 000	135 000	135 000	138 000	134 000
Japan	-	-	-	5	-
Total	135 040	135 000	135 000	138 005	134 000

## Talc

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	20	4	6	32	4
Germany, Federal Republic of	1 280	1 535	189	1 150	994
Austria	345	963	695	485	726
Egypt	522	630	603	157	
India	-	39	-		
Total	2 167	3 171	1 493	1 824	1 724

## Titanium oxides

## German Democratic Republic Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	21	56	18	29
Belgium-Luxembourg	-	-	-	-	30
France	105	-	-	-	281
Germany, Federal Republic of	3 862	4 313	4 403	5 226	6 697
Netherlands	-	-	-	-	13
Finland	3 915	3 090	2 446	3 200	3 401
Switzerland	-	-	-	-	4
Yugoslavia	12 704	12 707	13 925	13 926	14 621
USA	153	-	73	-	-
<b>Total</b>	<b>20 739</b>	<b>20 131</b>	<b>20 903</b>	<b>22 370</b>	<b>25 076</b>

## Zinc ore

## German Democratic Republic Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Germany, Federal Republic of	* 65 200	* 74 900	* 58 600	* 76 100	* 71 800
Sweden	8 400	2 400	8 764	4 110	-
<b>Total</b>	<b>73 600</b>	<b>77 300</b>	<b>67 364</b>	<b>80 210</b>	<b>71 800</b>

## Unwrought zinc &amp; alloys

## German Democratic Republic Imports

					tonnes
Exporting Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	200	-	501	-	-
France	1 000	-	-	226	-
Germany, Federal Republic of	4 291	15 787	12 850	5 457	10 445
Italy	667	1 614	592	-	-
Netherlands	1 000	-	-	-	-
Spain	999	-	-	-	-
Finland	4 500	-	1 300	3 800	6 256
Norway	-	-	50	-	-
Poland	-	500	-	-	-
Yugoslavia	6 378	4 042	5 209	19 823	5 718
Hong Kong	-	-	-	199	-
Total	19 035	21 943	20 502	29 505	22 419

## Asbestos

## Hungary Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg				1 015	930
Germany, Federal Republic of				-	332
Netherlands				-	535
Total				1 015	1 797

## Diatomite

## Hungary Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Belgium-Luxembourg	10	-	1 943	-	-
France	-	24	20	-	-
Germany, Federal Republic of	82	-	-	-	-
Greece	388	138	108	21	
Italy	110	-	-	-	
Austria	2 588	2 667	2 938	1 654	1 848
Total	3 178	2 829	5 009	1 675	1 848

Platinum & platinum metals

Hungary Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	7	7	1	-	12
Germany, Federal Republic of	302	305	296	349	345
Netherlands	-	-	3	-	-
Switzerland	-	-	62	0	-
Japan	29	-	-	-	-
<b>Total</b>	<b>338</b>	<b>312</b>	<b>362</b>	<b>349</b>	<b>357</b>



Barytes

Barytes

## Poland Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	30	-	-	-
Turkey	-	5 000	5 500	13 452	
Hong Kong	-	-	-	20	-
<b>Total</b>	-	5 030	5 500	13 472	

Bentonite

## Poland Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	1	10	-	7	-
Italy	594	-	-	-	
Bulgaria	9 678	11 745	21 880	* 15 000	* 10 000
Hungary	4 850	5 020	5 191	5 059	5 093
Yugoslavia	-	-	-	4 628	2 204
India	-	101	1		
<b>Total</b>	15 123	16 876	27 072	24 694	17 297

## Diatomite

## Poland Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Denmark	140	230	-	198	-
France	-	20	40	-	-
USA	582	1 915	1 495	2 117	1 964
Total	722	2 165	1 535	2 315	1 964

## Mercury

## Poland Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	156	-	-	-
Netherlands	18 000	-	-	-	15 000
Total	18 000	156	-	-	15 000

## Platinum &amp; platinum metals

## Poland Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	133	180	11	34	2
Belgium-Luxembourg	-	12	1	2	-
Germany, Federal Republic of	89	80	165	69	5
Switzerland	149	-	722	1 268	764
Total	371	272	899	1 373	771

## Unwrought aluminium &amp; alloys

## Romania Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
United Kingdom	1 486	1 782	2 457		
Belgium-Luxembourg	-	76	2 049		
France	17 279	7 652	11 058		
Germany, Federal Republic of	12 283	20 776	19 406		
Greece	50	500			
Italy	22 929	2 540	7 239		
Netherlands	15 330	18 128	11 196		
Portugal	-	501			
Spain	3 454	99	12 368		
Austria	601	599	425		
Finland	-	2 551	1 548		
Norway	1 405	16 748	37 441		
Sweden	1 599	1 274	2 172		
Switzerland	-	-	25		
Turkey	-	12 581			
Algeria	-	49			
USA	15 910	17 325	150		
China			2 812		
Japan	5 683	10 533	6 080		
Pakistan	-	33	-		
<b>Total</b>	<b>98 009</b>	<b>113 747</b>	<b>116 426</b>		

Barytes

## Romania Exports

tonnes

Importing Countries	1984	1985	1986	1987	1988
France	725	220	440	-	-

## Gypsum

## Romania Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
Hungary	16 872	12 225	12 283	12 730	11 134
Algeria	-	30	-	-	
Saudi Arabia	-	6 250	-	-	
Total	16 872	18 505	12 283	12 730	11 134

## Iron &amp; steel ingots, blooms, billets

## Romania Exports

	tonnes				
Importing Countries	1984	1985	1986	1987	1988
Spain	-	-	-	15	
Turkey	21 094	7 152	2 418	5 952	
Yugoslavia	1 807	1 539	10 262	90	-
Egypt	-	109			
Nigeria	-	-	-	1 964	
USA	-	4 883	-	-	-
Syria	4	-			
Taiwan	-	-	-	-	51 047
Thailand	-	-	-	-	5 076
Total	22 905	13 683	12 680	8 021	56 123

## Potassic chemicals

## Romania Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
France	-	-	-	20	21
Germany, Federal Republic of	-	430	229	148	699
Italy	-	1 297	1 833	1 826	* 1 500
Austria	60	-	100	295	288
Poland	848	1 078	941	556	740
Turkey	-	-	50	695	
Yugoslavia	33 398	55 747	47 958	21 713	2 257
Egypt	-	650			
Indonesia	10	-	-	-	
Pakistan	-	-	5	-	5
Syria	1	-			
Total	34 317	59 202	51 116	25 253	5 510

## Salt

## Romania Exports

					tonnes
Importing Countries	1984	1985	1986	1987	1988
Bulgaria	141 894	178 125	169 786	* 150 000	* 150 000
Hungary	416 861	449 733	464 345	444 364	453 591
Yugoslavia	171 452	222 016	238 110	247 611	189 491
Egypt	-	-	12		
Nigeria	-	938	-		
Total	730 207	850 812	872 253	841 975	793 082

## Bauxite

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Greece	468 089	410 637	349 768	331 674	250 261
Hungary	-	-	34 872	10 101	-
Yugoslavia	201 109	274 564	225 646	141 159	181 924
China					31 150
India	-	-	17 000		
<b>Total</b>	<b>669 198</b>	<b>685 201</b>	<b>627 286</b>	<b>482 934</b>	<b>463 335</b>

## Alumina

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	28	12	5	3	-
France	3	1	1	-	-
Germany, Federal Republic of	888	96	4 222	15 295	7 569
Greece	-	-	10 000	50 700	6 180
Italy	-	-	-	3 000	
Netherlands	4 877	3 448	1 176	-	-
Hungary	2 025	11 591	11 755	2 028	1 912
Switzerland	2	6	-	-	-
Yugoslavia	12 713	26 004	15 000	1 123	1 112
Japan	5	-	5	-	-
<b>Total</b>	<b>20 541</b>	<b>41 158</b>	<b>42 164</b>	<b>72 149</b>	<b>16 773</b>

## Asbestos

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Italy	-	-	1 096	-	
Zimbabwe	1 998	3 973	2 952	3 414	
Canada	816	727	54	-	-
Total	2 814	4 700	4 102	3 414	

## Barytes

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Bulgaria	45 587	41 308	52 166		
Turkey	2 000	-	1 000		
Yugoslavia	-	3 750	11 295		
Total	47 587	45 058	64 461		

## Chromium ores &amp; concentrates

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Finland	124		-	-	
Turkey	42 126		47 373	70 548	
Total	42 250		47 373	70 548	

## Unwrought copper &amp; alloys

## Romania Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	-	10	-	10	0
Italy	21	-	-	-	
Spain	-	999	999	-	
Poland	11 568	3 151	-	-	
Turkey	-	500	2 943	2 408	
Yugoslavia	-	-	511	-	-
Zaire	-	-	-	1 476	
Chile	5 900	6 000	5 900	-	
Total	17 489	10 660	10 353	3 894	

## Diamond

## Romania Imports

	carats				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	332 171	222 069	194 484	187 154	219 640
Belgium-Luxembourg	189 374	165 083	182 239	426 953	339 450
Netherlands	-	-	-	-	1 080
Total	521 545	387 152	376 723	614 107	560 170



## Diatomite

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Denmark	1	1	-	-	-
France	609	961	933	240	508
Germany, Federal Republic of	21	22	-	-	-
Austria	64	-	64	121	-
Iceland	89	-	93	-	-
Total	784	984	1 090	361	508

## Fluorspar

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Italy	4 844	12 585	2 200	4 800	-
Spain	-	-	2 019	-	-
Total	4 844	12 585	4 219	4 800	-

## Kaolin

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	4 301	4 293	4 818	4 933	4 147
Germany, Federal Republic of	59	15	22	7	-
Netherlands	-	-	-	52	-
Spain	800	-	-	-	-
Bulgaria	20 321	21 295	28 196	* 20 000	* 20 000
<b>Total</b>	<b>25 481</b>	<b>25 603</b>	<b>33 036</b>	<b>24 992</b>	<b>24 147</b>

## Magnesite

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
France	-	-	-	-	9
Greece	6 000	1 500	-	3 500	-
Czechoslovakia	39 000	44 000	24 000	29 000	25 000
Turkey	31 971	21 173	25 682	21 640	* 20 000
Yugoslavia	1 331	-	504	-	-
USA	-	-	-	-	221
<b>Total</b>	<b>78 302</b>	<b>66 673</b>	<b>50 186</b>	<b>54 140</b>	<b>45 230</b>

## Mercury

## Romania Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
Netherlands	-	-	3 000	-	-
Spain	114 000	17 000	-	-	-
Algeria	139 725	196 650	* 200 000	69 000	
Total	253 725	213 650	203 000	69 000	

## Platinum &amp; platinum metals

## Romania Imports

kilograms

Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	50	-	156	248	452
France	-	45	1	-	0
Germany, Federal Republic of	86	-	-	-	-
Netherlands	5	-	-	-	-
Total	141	45	157	248	452

## Unroasted pyrites

## Romania Imports

tonnes

Exporting Countries	1984	1985	1986	1987	1988
Yugoslavia	48 867	70 285	-	-	-

## Sulphur

## Romania Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
France	-		-	109	380
Germany, Federal Republic of	2 561		2 140	795	930
Greece	5 000		2 500		
Poland	116 000		159 000	171 000	113 000
Canada	60 800		-	-	-
Mexico	-		112 118	115 913	* 110 000
USA	18 750		-	20 979	-
Japan	14		-	-	-
<b>Total</b>	<b>203 125</b>		<b>275 758</b>	<b>308 796</b>	<b>224 310</b>

## Titanium minerals

## Romania Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
Netherlands	4 500	6 425	4 975	8 576	4 765

## Titanium oxides

## Romania Imports

	tonnes				
Exporting Countries	1984	1985	1986	1987	1988
United Kingdom	145	54	422	406	-
Belgium-Luxembourg	-	-	4	-	-
France	315	333	880	525	500
Germany, Federal Republic of	1 871	3 328	3 095	1 212	1 026
Spain	1 216	1 668	400	-	-
Austria	-	-	173	-	-
Yugoslavia	1 595	1 224	-	-	120
Japan	650	900	608	706	370
Total	5 792	7 507	5 582	2 849	2 016





