



British Geological Survey

# World Mineral Statistics

## 1986-90

### Volume 2: Industrial Minerals

The background of the page is filled with a dense, repeating pattern of mineral names and chemical symbols, such as 'Fluorspar Fuller', 'Germanium Gold Graphite Gypsum Iodine Iron', 'Kaolin Lead Lithium Magnesium Magnesium Manganese Mercury Mica Molybdenum Natural gas', 'Nepheline syenite Nickel Niobium Perlite Petroleum Phosphates Platinum Potash Pyrites Rare earths Salt Selenium Sillimanite Silver Strontium Sulphur Talc', 'Vanadium Vanadium Vermiculite Wollastonite Zinc Zirconium Alumina Aluminium Antimony Arsenic Asbestos Barytes Bauxite Bentonite Beryl Bismuth Borates Bromine Cadmium Chromium Coal Cobalt Copper Diamond Diatomite Feldspar Ferro-alloys Fluorspar Fuller's earth Germanium Gold Graphite Gypsum Iodine Iron ore Iron and steel Kaolin Lead Lithium Magnesium Magnesium Manganese Mercury Mica Molybdenum Natural gas Nepheline syenite Nickel Niobium Perlite Petroleum Phosphates Platinum Potash Pyrites Rare earths Salt Selenium Sillimanite Silver Strontium Sulphur Talc', and 'Tungsten Uranium Vanadium Vermiculite Wollastonite Zinc Zirconium Alumina Aluminium Antimony Arsenic Asbestos Barytes Bauxite Bentonite Beryl Bismuth Borates Bromine Cadmium Chromium Coal Cobalt Copper Diamond Diatomite Feldspar Ferro-alloys Fluorspar Fuller's earth Germanium Gold Graphite Gypsum Iodine Iron ore Iron and steel Kaolin Lead Lithium Magnesium Magnesium Manganese Mercury Mica Molybdenum Natural gas Nepheline syenite Nickel Niobium Perlite Petroleum Phosphates Platinum Potash Pyrites Rare earths Salt Selenium Sillimanite Silver Strontium Sulphur Talc'. The text is oriented vertically and horizontally, creating a complex, textured background.



BRITISH GEOLOGICAL SURVEY

**WORLD MINERAL STATISTICS  
1986-90**

**Volume 2: Industrial minerals**

**Production: Exports: Imports**

Compiled by G J Lofty, J A Hillier, S A Cooke, K A Linley, and H R Singh  
Research and Graphics by C D G Black

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## BRITISH GEOLOGICAL SURVEY

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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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### *Compilers*

Staff of the Minerals Group  
British Geological Survey, Keyworth

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## PREFACE

This volume is the fifteenth 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 mineral industry world-wide 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 78 years.

In response to the wishes of many of our subscribers, the current edition of *World Mineral Statistics* is being published in two volumes: **Metals and Energy** and **Industrial Minerals**. It is hoped that this will enable the book to serve better those with specific interests in the minerals field. A precise split between the two categories has not been possible; consequently some materials are featured in both volumes. These are bauxite, alumina, chromite, lithium minerals, rare earths and titanium minerals.

Production data for 1991 will be made available on microfiche towards the end of this year but the production supplement will not be published. The British Geological Survey is carrying out customer trials with a view to putting the entire World Mineral Statistics data on-line as a dial-up subscription service.

Comparing the total world production of individual minerals with previous years provides an insight into the way in which the mineral industry has responded to the recession affecting the major economies.

Industrial minerals have, with some notable exceptions, fared better than metallic minerals and many showed increases in production in 1990. For the first time diamond production passed 100 million carats. The decline has continued, however, in total world production of potash and sulphur.

The base metals maintained their production levels and both primary magnesium and gold continued to rise. Gold attained an annual production of 2000 tonnes in 1990. Cadmium, mercury and uranium, recorded further drops in production possibly reflecting environmental concerns. Iron ore production, which had been rising steadily since 1983, fell during 1990, as did the alloying metals, probably in response to the general recession. Also of significance is the decline in coal mine production; the first appreciable year-on-year fall to register since 1967. On the other hand crude petroleum production in 1990 reached 3 billion tonnes; a level not attained since 1980.

An appendix showing reconstructed trade data, which was a feature of previous volumes, has not been included this year. However, the research required to produce this data is on-going and the reconstructed figures do appear in the commodity tables where they are shown as estimates.

The reader should be aware that this publication is compiled from a more comprehensive data set maintained by the staff of the Minerals Group 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 it will be evident to the reader 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 complete information from primary sources, that is from 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.

The political changes of recent years in the countries of the former Communist bloc present to the observer of the mining industry rapidly shifting patterns in the nature of world trade in minerals. Although there was never total isolation between 'western world' and 'eastern bloc' economies, a much greater degree of interdependence is expected to develop quickly. Countries of the old eastern bloc are expected to become net exporters to the west of many commodities, especially metals, with consequent effects on supply and prices.

For many years it has been the remit of the British Geological Survey to make available to our customers a reliable, comprehensive and continuous set of data covering most of the minerals which enter into manufacturing and international trade. It is our view that such a time series is a pre-requisite for informed analysis by those who are concerned with the current somewhat volatile situation and future developments in the mineral industry. Funding constraints make it progressively more difficult to do this but nonetheless it is our hope that the service will be maintained at its present high standard.

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

Peter J Cook  
*Director*

British Geological Survey  
Keyworth  
Nottingham NG12 5GG

8 September 1992

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## EXPLANATORY NOTES

### Coverage

*World Mineral Statistics: Volume 2* covers the majority of economically important, and internationally traded, industrial minerals. It should be noted that prior to this year both metallic and non-metallic minerals were included in one volume of the same title. 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 Minerals Group files and is available for consultation. Historical data (1913–1970) can be obtained from the predecessor of this series entitled the *Statistical Summary of the Mineral Industry*.

### 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 data

*Canada* With effect from 1987, Canadian production figures, previously shown throughout as 'shipments', are shown as mine production where the data are available.

### Trade data

*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 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.

#### *Commodity production—price graphs*

These have been inserted adjacent to the relevant 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 prices 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 1985, have been derived by applying the US producer price index to the actual US dollar prices. Exceptionally the sterling kaolin prices have been indexed to 1985 using the GDP deflator for the UK. These indexes are quoted in the *International Financial Statistics Yearbook* published by the IMF.

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 Cathy Melia of the NERC Computer Services and run on the NCS VAX cluster at BGS, Keyworth.

#### *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 industry. 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 Fertilizer Industry Association 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 *Annales des Mines*, *Realities Industrielles*; *International Mining*, *Yearbook*; *Mining Journal*, *Mining Annual Review*; 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  
1 metric ton unit = 10 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	1986	1987	1988	1989	1990
France	1 379 000	1 388 200	977 700	550 427	489 800
Greece	2 314 962	2 455 988	2 460 782	2 550 015	2 495 940
Italy	—	16 557	17 125	11 761	338
Spain	3 000	1 050	2 500	—	—
Albania	10 006	16 002	37 669	35 343	23 489
Hungary	3 022 297	3 101 000	2 593 000	2 644 000	2 559 100
Romania	343 000	337 000	356 000	313 000	204 000
Soviet Union (a)	*6 275 000	*5 700 000	*5 900 000	*5 750 000	*5 350 000
Turkey	280 401	259 075	269 437	534 273	772 673
Yugoslavia	3 458 917	3 394 000	3 033 794	3 252 468	2 952 000
Ghana	204 000	195 000	287 300	347 100	381 273
Guinea	14 961 000	16 413 000	17 859 000	17 547 000	17 524 000
Mozambique	4 248	5 114	6 548	5 501	7 186
Sierra Leone	1 244 300	1 390 600	1 379 200	1 561 800	1 445 120
Zimbabwe	24 284	—	—	—	—
Dominican Republic	—	186 671	167 800	150 813	85 164
Jamaica	6 953 000	7 702 000	7 316 000	9 487 000	10 920 830
USA (b)	510 000	576 000	588 000	670 000	*495 000
Brazil (c)	5 418 259	6 376 650	7 388 000	7 893 800	9 875 600
Guyana	2 073 918	2 351 496	2 154 847	...	...
Suriname	3 731 000	2 522 000	3 434 000	3 457 348	3 266 800
Venezuela	1 275	245 157	521 504	701 770	771 422
China	*2 900 000	*3 200 000	*4 600 000	2 055 200	3 655 200
India	2 662 200	2 778 678	3 960 799	4 344 936	4 340 000
Indonesia	649 881	635 309	505 804	835 085	1 205 697
Iran (d)(e)	—	—	92 537	*100 000	*100 000
Malaysia	566 170	482 125	360 798	355 174	398 180
Australia	32 383 773	34 101 721	36 192 000	38 584 000	41 391 000
World total	91 400 000	95 800 000	102 500 000	105 900 000	112 900 000

## Note(s):

(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

(d) Alunite

(e) Years ended 20 March following that stated

**Production of Alumina**

Country	1986	1987	1988	1989	1990
United Kingdom	109 940	109 800	114 000	116 200	120 000
France (a)	740 000	712 000	551 000	478 000	466 540
Germany, Federal Republic of	1 559 804	1 312 828	1 162 786	1 173 993	1 172 808
Greece	307 092	338 833	336 373	331 007	378 595
Irish Republic	685 490	777 974	842 800	864 510	926 500
Italy	404 200	457 600	460 500	472 000	491 400
Spain	489 000	524 000	576 000	620 000	655 000
Czechoslovakia	153 345	149 917	182 651	204 615	209 229
German Democratic Republic (a)	46 350	50 880	64 000	69 000	27 000
Hungary (a)	856 333	857 612	873 232	881 505	826 000
Romania (a)	555 000	584 000	458 000	426 000	354 000
Soviet Union	*4 400 000	*4 400 000	*4 600 000	*4 800 000	*4 000 000
Turkey	144 396	95 232	181 670	200 560	177 144
Yugoslavia	1 116 716	1 113 000	1 060 041	1 170 463	1 086 000
Guinea	555 400	543 000	590 000	617 000	642 100
Canada	1 015 000	952 690	992 576	1 048 432	1 087 029
Jamaica	1 578 000	1 622 000	1 520 000	2 221 070	2 868 844
USA	*3 105 000	*4 150 000	*4 770 000	*5 000 000	*5 230 000
Brazil	1 196 800	1 365 000	1 487 850	1 632 000	1 653 000
Suriname	1 471 000	1 363 000	1 632 200	1 567 051	1 531 500
Venezuela	1 268 745	1 360 012	1 284 036	1 293 219	1 404 769
China	*1 400 000	*1 320 000	*1 900 000	1 318 000	1 463 800
India	586 000	650 000	1 188 000	1 419 000	1 334 000
Japan	644 000	465 000	508 000	564 000	458 893
Australia	9 423 220	10 109 290	10 510 514	10 823 000	11 231 000
World total	33 800 000	35 400 000	37 800 000	39 300 000	39 800 000

## Note(s):

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

(a) Calcined

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1986	1987	1988	1989	1990
<b>United Kingdom</b>					
Bauxite	1 221	2 148	4 120	10 951	4 774
Alumina	8 793	8 031	7 453	9 614	11 735
Alumina hydrate	38 213	34 335	41 695	45 492	42 105
Unwrought	50 409	69 108	79 378	73 816	60 795
Unwrought alloys	66 348	64 447	75 672	95 379	95 804
Scrap	89 886	87 372	114 286	99 334	94 452
<b>Belgium-Luxembourg</b>					
Bauxite	2 873	2 416	3 648	1 713	1 725
Alumina	1 237	1 102	1 202	2 143	1 079
Unwrought	9 134	8 278	4 996	4 566	3 162
Unwrought alloys	15 727	19 277	27 922	30 785	29 735
Scrap	51 888	60 186	77 770	74 729	67 769
<b>Denmark</b>					
Unwrought	10	73	309	574	469
Unwrought alloys	10 213	12 581	10 703	7 629	9 045
Scrap	20 545	25 186	26 645	28 003	29 068
<b>France</b>					
Bauxite	116 060	187 433	13 487	28 916	13 143
Alumina	113 046	93 276	84 106	104 355	96 287
Alumina hydrate	81 280	101 992	127 969	138 981	131 590
Unwrought	59 515	41 028	36 704	49 703	53 067
Unwrought alloys	83 760	78 254	76 436	71 932	82 767
Scrap	99 522	109 206	160 811	155 886	150 037
<b>Germany, Federal Republic of</b>					
Bauxite	25 979	33 385	57 050	71 666	86 019
Alumina	324 858	312 760	330 355	287 282	239 600
Alumina hydrate	248 489	252 435	270 136	269 317	306 068
Unwrought	71 378	91 826	68 866	53 299	64 734
Unwrought alloys	230 370	241 764	254 938	272 717	254 705
Scrap	104 453	134 983	141 019	164 157	198 958
<b>Greece</b>					
Bauxite	1 133 487	1 224 490	416 811	518 723	401 648
Alumina	135 565	348 700	178 762	222 450	286 046
Unwrought (a)	45 855	73 494	51 415	57 041	61 186
Scrap	317	1 466	3 625	4 130	2 378
<b>Irish Republic</b>					
Alumina	669 362	741 487	901 093	915 349	915 888
Unwrought (a)	1 478	1 475	1 902	2 574	1 970
Scrap	8 093	8 468	11 147	11 028	12 210
<b>Italy</b>					
Bauxite	4 502	21 141	14 333	23 134	15 617
Alumina	308 006	561 315	388 535	410 382	412 368
Alumina hydrate	30 354	29 509	14 078	14 967	15 451
Unwrought	9 611	11 298	5 069	6 155	10 135
Unwrought alloys	24 696	40 338	33 341	23 660	18 150
Scrap	4 240	6 049	8 061	10 365	7 132
<b>Netherlands</b>					
Bauxite	3 983	9 283	17 913	22 351	25 048
Alumina	46 404	61 934	87 557	101 045	98 806
Alumina hydrate	89	105	1 497	2 379	2 441
Unwrought	144 277	156 306	90 836	101 842	119 967
Unwrought alloys	156 983	158 083	238 950	246 992	242 497
Scrap	96 045	105 385	138 871	149 824	132 672
<b>Portugal</b>					
Scrap	3 899	5 705	8 052	6 923	5 378
<b>Spain</b>					
Bauxite	1 120	1 849	2 066	2 987	1 182
Alumina	21 953	124 132	283 368	207 186	233 102
Alumina hydrate	20 790	35 655	26 863	48 521	48 559
Unwrought	86 118	34 436	31 666	14 348	8 515
Unwrought alloys	60 268	72 043	58 223	96 966	98 303
Scrap	556	810	2 807	3 348	3 736
<b>Austria</b>					
Unwrought (a)	31 317	39 447	44 894	42 985	52 057
Scrap	43 387	63 587	46 911	35 508	26 881
<b>Bulgaria</b>					
Unwrought (a)(f)	*4 100	*3 600	*2 700	*3 600	*2 200
Scrap (f)	*5 100	*4 900	*5 400	*1 900	*2 300

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1986	1987	1988	1989	1990
Czechoslovakia					
Unwrought (a)(f)	*15 300	*11 200	*14 800	*16 400	*14 900
Finland					
Unwrought (a)	16 974	24 286	25 291	24 023	23 285
German Democratic Republic					
Unwrought (a)(f)	*28 400	*30 700	*28 500	*24 500	*30 700
Scrap (f)	*7 400	*6 000	*8 000	*8 900	*3 000
Hungary					
Bauxite	461 473	437 987	378 533	338 428	280 338
Alumina	664 845	665 226	715 214	676 892	613 163
Alumina hydrate	4 200	2 729	1 513	—	—
Unwrought	61 200	63 354	59 135	76 479	121 761
Scrap	7 002	8 748	9 868	9 534	11 312
Iceland					
Unwrought (a)	77 490	89 081	81 071	89 657	86 392
Norway					
Alumina	12 642	17 764	16 241	27	104
Unwrought	298 122	326 307	241 612	240 743	211 412
Unwrought alloys	348 417	431 308	513 051	529 603	565 864
Scrap	31 126	38 156	50 536	52 079	28 678
Poland					
Unwrought (a)	3 023	2 595	2 647	2 638	15 200
Romania					
Unwrought	156 200	157 300	193 700	108 100	...
Scrap (f)	*2 100	*2 800	*500	*3 200	*1 600
Soviet Union					
Unwrought (a)(f)	*654 400	*610 300	*641 200	*709 900	*675 300
Scrap (f)	*43 300	*57 600	*43 200	*33 100	*15 900
Sweden					
Alumina	8 226	676	356	210	452
Unwrought	4 345	8 056	25 654	25 125	14 427
Unwrought alloys	35 008	35 509	34 233	33 689	49 713
Scrap	13 459	11 259	11 069	13 691	20 882
Switzerland					
Alumina	423	459	1 313	830	1 432
Unwrought (a)	(i)54 583	(i)60 991	32 872	32 476	30 618
Scrap	...	...	35 776	39 143	36 846
Turkey					
Bauxite	57 325	104 525	79 997	58 243	83 015
Alumina	23 900	17 746	66 450	77 483	63 016
Unwrought (a)	1	320	6 326	8 945	9 890
Yugoslavia					
Bauxite	765 127	584 714	639 528	600 084	506 966
Alumina	561 153	389 531	457 136	587 188	584 741
Alumina hydrate	21 137	29 231	58 966	99 890	115 827
Unwrought	123 507	130 242	129 829	144 122	196 275
Unwrought alloys	20 808	29 515	23 914	22 965	34 444
Scrap	1 560	1 702	1 594	1 427	591
Cameroon					
Unwrought & scrap	41 739	47 356	63 100	62 400	67 700
Ghana					
Bauxite	226 461	229 415	299 939	374 646	382 173
Unwrought (a)	107 819	140 000	125 700	118 500	127 500
Guinea					
Bauxite	11 600 000	(f)*13 200 000	(f)*13 700 000	(f)*14 200 000	(f)*13 200 000
Alumina	500 000	500 000	600 000	600 000	600 000
Sierra Leone					
Bauxite	1 550 608	1 280 000	1 428 000	1 557 000	1 429 000
South Africa					
Unwrought (a)	94 695	94 000	68 000	53 415	71 835
Scrap (f)	*7 700	*2 600	*2 500	*2 300	*2 300
Canada					
Alumina	(b)45 434	(b)45 624	139 094	128 256	134 334
Unwrought	(a)1 163 875	(a)1 171 887	659 922	615 238	664 549
Unwrought alloys	...	...	495 096	544 445	617 647
Scrap	125 018	127 181	165 216	164 493	188 363
Cuba					
Scrap (e)	4 100	3 778	2 498	1 524	412

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1986	1987	1988	1989	1990
Dominican Republic					
Bauxite	—	(h)328 046	(h)199 933	(h)174 871	76 529
Jamaica					
Bauxite	2 939 593	3 711 396	3 494 440	4 189 739	3 885 758
Alumina	1 580 462	1 557 008	1 561 349	2 140 885	2 885 131
Mexico					
Unwrought & scrap	12 116	9 649	19 126	11 860	...
USA					
Bauxite	99 161	203 711	68 252	65 022	90 723
of which: Re-exports	30 056	2 214	5 321	21 278	17 214
Alumina	475 360	1 108 975	1 021 372	1 295 075	1 216 084
Alumina hydrate	18 925	29 004	24 160	51 404	52 664
Unwrought	158 964	249 563	362 559	481 293	510 513
Unwrought alloys	52 125	35 345	40 111	112 116	173 557
Scrap	347 946	369 745	487 714	575 890	537 994
Argentina					
Unwrought	74 000	73 009	83 473	80 600	...
Brazil					
Bauxite	3 059 736	2 813 587	4 660 509	4 636 700	5 455 921
Alumina	41 994	52 903	70 429	175 995	172 114
Unwrought (a)	323 703	426 893	514 898	470 266	591 982
Guyana					
Bauxite	1 345 000	1 315 000	1 209 000	...	...
Suriname					
Bauxite	897 000	340 900	7 460	—	...
Alumina	1 343 000	1 342 100	1 629 980	1 445 088	...
Unwrought	29 000	3 200	7 620	26 111	...
Venezuela					
Alumina	508 971	516 969	366 856	152 932	107 100
Unwrought	277 877	302 515	287 925	379 641	389 575
Bahrain					
Unwrought (a)	182 342	122 551	94 817	96 043	108 000
China					
Bauxite (j)	(f)*632 800	785 003	1 250 502	1 491 702	680 315
Unwrought (a)	(f)*500	60 680	130 378	13 411	65 125
Scrap (f)	...	*3 100	*7 200	*5 000	*4 900
Dubai					
Unwrought (a)	148 841	146 000	154 000	165 100	171 000
Scrap	3 635	...	...	...	...
Hong Kong					
Bauxite (g)	19 987	25 971	15 010	16 654	14 461
Alumina (g)	678	788	20 077	132 560	—
Alumina hydrate (g)	3	405	60	1 169	38
Unwrought	26 085	36 181	77 616	26 412	17 381
of which: Re-exports	26 085	36 131	77 252	26 291	17 281
Scrap	22 081	27 656	31 929	30 240	32 999
India (c)					
Bauxite	85 148	147 402	93 547	...	187 782
Alumina	42 079	10 637	404 170	...	317 218
Indonesia					
Bauxite	525 811	583 900	466 517	843 476	813 637
Unwrought (a)	174 048	163 337	125 628	142 885	125 162
Israel					
Unwrought (a)(f)	*4 100	*2 600	*4 500	*5 900	*6 800
Scrap (f)	*600	*2 600	*2 800	*2 400	*2 200
Japan					
Alumina	282 714	101 057	126 353	151 192	158 656
Alumina hydrate	101 759	96 789	71 917	98 273	119 991
Unwrought	971	854	665	307	547
Unwrought alloys	1 050	1 073	2 768	2 640	4 267
Scrap	1 914	8 707	7 334	9 893	7 751
Jordan					
Scrap	3 240	3 133	7 162	4 241	1 207
Korea, Dem. P.R. of					
Unwrought (a)(f)	*11 400	*7 400	*5 800	*5 800	*3 800
Korea, Republic of					
Unwrought (a)	782	2 850	7 643	3 819	6 307
Malaysia					
Bauxite	412 400	199 000	222 100	321 750	407 670
Scrap	8 993	6 548	11 249	5 127	...

**Exports of Bauxite, Alumina and Aluminium**

Country	1986	1987	1988	1989	1990
Saudi Arabia					
Scrap	20 603	27 552	52 266	54 544	...
Singapore					
Alumina	119 180	31 102	32 414	29 300	20 581
of which: Re-exports	118 947	30 090	32 297	28 617	20 468
Unwrought	6 444	13 107	106 582	65 907	21 890
of which: Re-exports	5 886	11 193	104 842	63 571	19 362
Scrap	12 434	15 770	20 386	21 779	20 591
Taiwan					
Alumina	6 384	3 721	562	3 459	3 833
Unwrought	12 504	17 254	(a)34 753	(a)30 204	(a)47 687
Scrap	3 096	7 969	5 211	4 412	5 557
Australia					
Bauxite	*4 260 000	*4 500 000	*4 900 000	*5 000 000	*5 500 000
Alumina	7 687 099	8 299 277	8 558 000	8 426 000	8 782 000
Unwrought (a)	579 528	710 425	815 500	924 000	925 000
Scrap (d)	30 618	43 801	44 205	48 777	50 046
New Zealand (d)					
Unwrought (a)	207 761	211 521	227 259	243 992	230 556
Scrap	3 681	5 659	10 013	8 299	9 207

## Note(s):

- (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
- (i) Including scrap
- (j) Including alumina

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1986	1987	1988	1989	1990
<b>United Kingdom</b>					
Bauxite, uncalcined	185 719	292 340	330 572	280 896	263 755
Bauxite, calcined	170 511	137 050	160 908	162 641	177 160
Alumina	546 330	609 630	601 850	655 396	625 284
Alumina hydrate	12 714	19 549	17 646	21 409	17 204
Unwrought	62 435	65 257	119 757	129 134	130 688
Unwrought alloys	119 731	110 566	115 263	106 317	110 318
Scrap	7 811	12 621	18 664	24 138	16 864
<b>Belgium-Luxembourg</b>					
Bauxite	29 130	26 534	37 841	25 077	37 310
Alumina	8 824	8 029	9 032	10 650	11 025
Alumina hydrate	20 066	28 842	23 858	30 841	47 101
Unwrought	231 442	238 168	208 265	196 711	225 569
Unwrought alloys	75 979	77 346	146 873	161 407	141 923
Scrap	71 291	90 872	112 805	120 849	117 184
<b>Denmark</b>					
Bauxite	554	1 024	1 414	1 675	2 667
Alumina	411	1 606	688	648	814
Alumina hydrate	4 173	3 350	4 866	5 196	4 515
Unwrought	1 172	872	914	984	1 926
Unwrought alloys	33 108	26 961	29 235	28 202	28 046
Scrap	5 321	7 162	8 790	4 575	6 082
<b>France</b>					
Bauxite	909 241	894 330	1 069 102	1 348 886	1 388 476
Alumina	103 056	121 762	230 645	371 255	373 484
Alumina hydrate	21 592	24 030	36 502	38 924	78 103
Unwrought	217 803	186 105	203 915	208 744	248 642
Unwrought alloys	210 252	221 015	257 960	275 506	292 455
Scrap	58 818	70 185	96 994	122 986	137 528
<b>Germany, Federal Republic of</b>					
Bauxite	3 658 891	2 879 377	2 576 992	2 879 675	3 076 544
Alumina	717 930	857 845	851 658	1 033 220	970 227
Alumina hydrate	3 768	7 201	106 588	22 865	35 750
Unwrought	492 912	448 670	467 538	569 135	545 143
Unwrought alloys	290 751	285 363	339 184	374 056	355 557
Scrap	215 152	205 285	283 217	271 198	229 002
<b>Greece</b>					
Bauxite	102	5 616	—	5 028	800
Alumina	505	261	235	381	419
Unwrought (a)	7 180	14 259	5 506	13 180	11 843
Scrap	70	32	1 734	1 898	1 257
<b>Irish Republic</b>					
Bauxite	1 079 908	1 440 106	1 746 828	1 606 158	1 746 337
Alumina	4 414	4 234	4 355	5 142	3 852
Unwrought (a)	3 789	2 252	2 812	3 711	7 705
<b>Italy</b>					
Bauxite	1 395 994	1 380 836	1 394 092	1 465 981	1 680 619
Alumina	298 607	266 522	240 880	243 024	210 232
Alumina hydrate	78 294	69 951	88 875	148 762	146 823
Unwrought	214 678	215 962	270 397	306 670	339 639
Unwrought alloys	133 012	160 962	147 721	154 334	198 994
Scrap	182 088	159 707	184 202	207 982	174 198
<b>Netherlands</b>					
Bauxite	162 760	141 702	160 273	142 971	142 916
Alumina	600 988	612 071	642 945	530 875	459 077
Alumina hydrate	40 597	35 066	44 301	40 697	43 689
Unwrought	105 830	97 818	105 308	114 755	138 298
Unwrought alloys	45 301	47 718	62 423	62 563	51 926
Scrap	76 325	81 662	105 655	138 241	126 757
<b>Portugal</b>					
Bauxite	2 282	1 793	1 836	1 658	1 786
Alumina	8 195	8 562	8 066	7 557	7 943
Unwrought	13 664	5 825	(a)45 127	(a)47 105	15 320
Unwrought alloys	26 239	38 225	...	...	34 157
<b>Spain</b>					
Bauxite	1 431 284	1 663 191	1 389 690	1 725 327	1 922 855
Alumina	22 296	27 295	30 885	35 560	38 527
Unwrought	14 410	5 623	38 638	6 629	15 400
Unwrought alloys	7 363	7 772	11 235	7 378	15 771
Scrap	19 129	16 103	16 088	22 339	24 198



## Imports of Bauxite, Alumina and Aluminium

Country	1986	1987	1988	1989	1990
Austria					
Bauxite	36 889	32 661	49 223	54 922	34 466
Alumina	275 911	282 983	298 833	224 419	222 498
Alumina hydrate	7 483	8 227	8 139	8 226	8 552
Unwrought (a)	93 413	81 133	108 266	130 428	150 097
Scrap	61 863	54 621	56 043	47 231	41 628
Bulgaria					
Unwrought (a)(f)	*14 800	*14 400	*29 600	*11 000	*6 000
Czechoslovakia					
Bauxite	399 000	453 000	445 000	478 000	...
Alumina (f)	*25 400	*30 500	*3 200	*400	*700
Unwrought (a)	78 000	76 000	108 000	106 000	...
Finland					
Bauxite	1 687	5 633	2 043	236	7 070
Alumina	1 285	1 372	1 447	1 717	3 317
Alumina hydrate	28 863	32 186	26 207	32 296	21 513
Unwrought	18 564	18 825	18 127	17 528	20 754
Unwrought alloys	3 037	4 697	5 452	6 208	5 382
Scrap	46 177	57 677	69 811	70 477	27 004
German Democratic Republic					
Bauxite	178 100	141 600	148 300	152 900	...
Alumina (f)	*100 200	*100 900	*83 000	*56 900	*25 500
Unwrought (a)(f)	*124 000	*120 500	*119 200	*113 900	*102 000
Hungary					
Unwrought	205 007	189 961	197 577	204 974	204 070
Iceland					
Alumina	138 028	142 335	140 525	160 763	160 290
Norway					
Bauxite	5 871	5 792	14 746	9 463	14 185
Alumina	1 458 718	1 604 669	1 287 319	1 334 530	1 861 687
Alumina hydrate	36 931	40 467	277 169	232 489	35 809
Unwrought	3 374	19 444	71 541	86 300	71 411
Unwrought alloys	31 743	37 702	18 654	15 804	9 548
Scrap	3 211	1 417	2 085	4 371	23 732
Poland					
Bauxite	49 311	52 248	51 891	44 236	...
Alumina	225 216	221 042	193 457	185 179	130 000
Unwrought	88 207	88 631	88 755	96 415	45 000
Romania					
Bauxite (f)	*657 300	*529 100	*463 300	*495 000	*428 200
Alumina (f)	*42 200	*72 100	*16 800	*10 000	*8 500
Soviet Union					
Bauxite (f)	*4 908 600	*4 823 500	*4 563 600	*5 300 700	*3 819 800
Alumina (f)	*1 168 400	*928 500	*736 800	*1 140 200	*1 319 700
Sweden					
Bauxite	50 056	46 425	51 108	56 593	48 822
Alumina	127 453	184 283	189 820	189 798	165 454
Alumina hydrate	60 130	86 615	63 896	63 709	53 972
Unwrought	33 639	21 725	28 191	27 030	15 607
Unwrought alloys	20 652	21 399	30 628	29 111	31 060
Scrap	1 621	2 526	3 592	5 223	6 779
Switzerland					
Bauxite	512	2 625	3 852	1 747	691
Alumina	160 374	156 382	140 614	146 529	150 483
Unwrought	(b)88 274	(b)90 239	59 738	78 598	63 586
Unwrought alloys	...	...	35 088	39 003	41 010
Scrap	...	...	4 042	5 734	4 110
Turkey					
Bauxite	43 366	40 461	55 684	51 367	44 790
Alumina	1 004	1 499	2 293	1 165	1 851
Unwrought (a)	38 355	89 638	59 193	48 243	100 961
Yugoslavia					
Bauxite	184 697	132 797	364 761	691 925	439 702
Alumina	152 210	118 165	128 230	264 843	245 465
Unwrought	33 060	33 981	17 587	14 945	18 180
Unwrought alloys	1 320	147	3 253	1 376	4 564

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1986	1987	1988	1989	1990
Algeria					
Alumina	795	186	253	...	...
Unwrought (a)	6 636	7 665	7 946	...	...
Cameroon					
Alumina	150 744	161 945	170 000	...	...
Ghana					
Alumina	225 284	182 461	198 000	...	...
Kenya					
Alumina	2 943	1 984	3 926	...	...
Morocco					
Bauxite	4 000	4 575	5 118	10 651	9 102
Alumina	2 081	2 885	3 029	2 798	4 761
Unwrought (a)	1 645	1 139	1 717	2 151	2 461
Nigeria					
Unwrought (a)	1 234	11 306	5 000	...	...
South Africa					
Bauxite	10 804	21 765	4 983	5 587	7 294
Alumina	307 253	322 058	339 264	351 415	321 733
Scrap	490	536	273	312	1 699
Tanzania					
Unwrought (a)	254	3 909	1 061	1 023	...
Tunisia					
Alumina	23 707	18 847	24 904	33 333	24 560
Alumina hydrate	3 152	2 438	3 803	4 440	5 562
Unwrought	1 956	936	1 296	2 189	(a)1 583
Canada					
Bauxite	2 112 874	2 019 119	2 351 595	2 540 694	2 310 461
Alumina	1 724 569	2 068 390	1 875 546	2 040 947	1 982 952
Unwrought	(a)64 459	(a)53 479	23 973	20 037	27 300
Unwrought alloys	...	...	35 342	44 941	57 358
Scrap	69 945	56 959	62 161	58 203	52 603
Costa Rica					
Unwrought (a)	1 544	506	3 436	3 496	7 707
Mexico					
Bauxite	35 086	40 264	53 040	51 247	46 018
Alumina	70 139	137 192	150 178	147 089	...
Alumina hydrate	39 860	27 668	44 441	47 512	...
Unwrought & scrap (a)	48 410	38 065	48 155	49 912	47 474
Panama					
Unwrought (a)	1 366	1 989	546	1 013	761
USA					
Bauxite, crude dried	6 854 063	9 819 080	10 502 783	11 346 182	12 628 163
Bauxite, calcined	303 783	338 589	393 699	531 000	558 000
Alumina	3 613 263	4 078 048	4 647 390	4 330 405	4 087 503
Unwrought	766 220	706 200	514 037	422 416	438 543
Unwrought alloys	580 110	539 385	512 786	502 970	523 194
Scrap	162 276	188 614	200 498	206 380	214 853
Argentina					
Bauxite	25 739	31 525	20 457	*25 000	...
Alumina	345 794	226 437	261 862	291 938	...
Alumina hydrate	11 044	12 787	9 137	...	...
Brazil					
Bauxite	1 020	2 998	2 028	129 259	349 678
Alumina	285 470	393 438	378 243	311 348	419 838
Unwrought	106	118	33	1 287	329
Unwrought alloys	1 308	2 192	67	1 259	4 806
Scrap	3 119	4 931	759	2 579	4 751
Chile					
Unwrought	3 420	3 010	3 728	3 834	6 371
Colombia					
Bauxite	5 071	*4 500	6 733	8 384	...
Alumina	4 151	*2 500	3 908	5 039	...
Unwrought (a)	21 290	17 901	8 690	13 791	15 578
Ecuador					
Unwrought	5 144	4 773	4 947	4 256	...
Peru					
Bauxite	283	1 874	2 504	3 021	...
Alumina	1 302	1 636	2 301	735	...
Unwrought	5 290	5 082	4 190	759	...

## Imports of Bauxite, Alumina and Aluminium

Country	1986	1987	1988	1989	1990
Uruguay					
Bauxite	3 951	8 455	4 071	...	...
Alumina	1 202	1 102	1 120	...	...
Unwrought	1 991	2 693	2 306	...	...
Venezuela					
Bauxite	2 855 125	3 023 945	3 086 130	3 158 812	...
Alumina	5 068	6 832	7 818	6 435	...
Alumina hydrate	1 290	2 249	2 167	798	...
Unwrought	3 725	1 816	3	106	...
Abu Dhabi					
Scrap	2 418	5 017	9 197	...	8 625
Bahrain					
Alumina	332 417	346 191	363 151	351 694	...
China					
Alumina	(f)*107 800	322 149	159 535	298 006	582 390
Unwrought (a)	266 241	148 130	75 381	175 510	71 771
Scrap (f)	*1 100	*1 600	*4 100	*8 000	*14 700
Dubai					
Alumina	294 626	284 000	315 000	...	...
Hong Kong					
Bauxite	20 526	25 815	16 471	17 289	12 497
Alumina	—	474	84 000	181 969	—
Alumina hydrate	57	469	29	881	60
Unwrought	46 950	70 480	111 187	52 889	46 208
Scrap	1 301	3 072	5 512	5 660	5 693
India (c)					
Unwrought (a)	81 227	52 276	12 145	35 900	16 148
Indonesia					
Alumina	251 225	226 509	287 585	372 591	303 594
Alumina hydrate	52 271	36 499	44 590	59 238	54 469
Unwrought (a)	9 551	12 086	6 818	7 324	24 777
Iran (e)					
Alumina	81 532	26 980	27 100	43 275	...
Unwrought	13 600	9 500	3 532	1 005	...
Israel					
Alumina (f)	*1 700	*1 800	*1 100	*1 100	*900
Unwrought (a)	15 899	18 180	17 698	15 932	18 244
Japan					
Bauxite	2 307 459	1 872 020	2 148 590	2 269 477	2 302 206
Alumina	63 489	26 984	44 092	28 294	19 008
Alumina hydrate	2 564	14 791	27 956	48 667	54 448
Unwrought	1 076 353	1 435 037	1 716 070	1 745 362	1 983 773
Unwrought alloys	289 662	400 253	575 926	617 828	669 290
Scrap	358 813	430 642	399 154	400 226	352 699
Jordan					
Alumina	455	11 529	22 174	20 820	22 871
Unwrought	4 536	5 319	3 883	3 651	3 588
Korea, Dem. P.R. of					
Alumina (f)	*11 500	*7 600	*30 600	*6 600	*9 400
Unwrought (a)(f)	*3 300	*150	*400	*1 300	*500
Korea, Republic of					
Bauxite	15 571	30 359	24 733	31 320	34 536
Alumina	36 008	38 603	43 242	42 144	14 328
Alumina hydrate	57 119	68 406	75 233	96 032	100 765
Unwrought	159 860	480 535	217 744	442 379	301 611
Unwrought alloys	24 652	32 955	48 831	43 179	60 315
Scrap	8 799	43 240	27 840	55 601	39 576
Malaysia					
Alumina	12 300	12 030	18 661	16 298	...
Unwrought	10 576	11 724	15 072	19 700	...
Unwrought alloys	15 873	19 812	18 636	22 410	...
Scrap	1 339	849	3 462	2 448	...
Pakistan (d)					
Alumina	2 586	2 487	2 500	...	2 360
Unwrought	5 250	8 921	14 471	...	8 630
Scrap	16 421	26 688	26 451	...	27 017
Philippines					
Bauxite	5 379	933	4 637	7 669	1 962
Alumina	5 380	8 257	5 775	7 798	7 155
Unwrought (a)	6 271	10 808	10 222	13 771	14 631

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1986	1987	1988	1989	1990
Saudi Arabia					
Bauxite	162 837	77 602	147 531	214 534	...
Unwrought	14 300	18 625	14 405	14 662	...
Singapore					
Alumina	52 877	12 093	1 215	1 064	1 426
Alumina hydrate	50 260	63 131	84 780	69 124	62 258
Unwrought	15 653	40 628	125 646	38 576	46 158
Scrap	845	1 525	3 101	4 452	3 357
Syria					
Unwrought & scrap	1 077	537	...	...	...
Taiwan					
Bauxite	47 261	36 235	39 635	31 297	48 025
Alumina	2 219	4 888	9 097	23 065	33 085
Alumina hydrate	3 506	7 215	11 685	13 579	22 191
Unwrought	155 956	195 095	136 553	162 521	170 088
Unwrought alloys	...	...	56 851	60 304	75 269
Scrap	13 055	23 211	64 115	71 711	70 265
Thailand					
Bauxite	11 491	21 714	30 426	32 131	25 102
Alumina	3 258	7 842	6 151	9 853	10 008
Alumina hydrate	14 347	12 117	19 592	26 570	17 800
Unwrought	42 206	43 804	1 036 106	66 030	75 581
Unwrought alloys	5 606	9 932	26 601	32 234	52 555
Scrap	420	1 499	4 716	4 570	2 012
Australia					
Bauxite	3 800	10 107	21 429	35 000	19 000
Alumina	4 966	5 639	10 939	12 000	10 000
Unwrought (a)	754	1 060	2 800	3 400	1 000
Scrap (d)	2 820	1 397	1 834	2 552	2 574
New Zealand (d)					
Alumina	475 486	472 601	520 223	471 467	511 261
Unwrought (a)	534	1 565	6 942	5 172	8 341

## Note(s):

- (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) Including alloys and scrap  
(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

## Production of Asbestos

Country	1986	1987	1988	1989	1990
Greece	51 355	60 135	71 114	73 300	65 993
Italy	115 208	101 834	94 549	44 348	*20 000
Bulgaria	300	400	300	300	*300
Czechoslovakia	247	194	196	147	...
Soviet Union	*2 500 000	2 555 000	*2 600 000	*2 600 000	*2 300 000
Turkey	30 981	10 097	500	—	—
Yugoslavia	8 596	10 964	17 030	9 111	6 578
Egypt	476	209	166	312	367
South Africa					
Amosite	36 009	26 026	20 325	26 124	26 566
Crocidolite	63 203	20 682	11 885	23 689	31 521
Chrysotile	91 001	101 722	113 468	115 452	103 407
Swaziland					
Chrysotile	24 475	25 925	22 804	27 291	35 938
Zimbabwe					
Chrysotile	163 600	193 295	186 581	187 066	160 500
Canada					
Chrysotile	662 381	650 000	664 000	732 000	704 000
USA (a)	51 437	50 600	18 233	17 427	*20 000
Argentina	1 697	332	2 328	225	*300
Brazil	205 806	231 543	227 118	206 195	232 332
Colombia (c)	129 155	132 723	152 896	159 149	159 600
China	150 712	144 673	157 478	181 500	191 800
Cyprus					
Chrysotile	13 011	18 070	14 586	—	—
India					
Amphibole	26 713	27 019	31 123	36 502	*37 000
Iran (b)	*3 000	3 300	3 410	*3 500	*3 500
Japan					
Chrysotile	3 593	3 143	*3 000	21 727	5 184
Korea, Republic of	2 983	2 518	2 428	2 361	*2 300
World total	4 300 000	4 400 000	4 400 000	4 500 000	4 100 000

## Note(s):

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

(a) Sold or used by producers

(b) Years ended 20 March following that stated

(c) Crude

**Exports of Unmanufactured Asbestos**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	432	463	289	274	291
Belgium-Luxembourg	660	141	551	222	310
France	438	406	557	411	101
Germany, Federal Republic of	777	1 219	1 193	293	608
Greece	44 468	38 491	53 906	57 465	56 963
Italy	44 459	51 541	50 936	37 302	4 893
Netherlands	177	238	—	—	—
Spain	194	23	302	76	127
Austria	9	1	28	247	675
Hungary	*1 900	(a)*1 000	(a)*1 800	1 934	5 784
Soviet Union (a)	*268 500	*271 400	*275 500	*228 800	*203 700
Yugoslavia	1 526	1 179	204	1 119	73
South Africa	157 541	154 061	169 091	171 892	178 750
Swaziland	25 055	27 929	22 565	...	...
Zimbabwe	167 970	195 828	197 597	...	172 206
Canada	717 703	648 843	684 905	707 816	649 485
USA	47 282	60 092	31 545	27 096	28 875
Brazil	32 550	35 725	41 568	58 711	53 142
China	(a)*600	473	571	1 889	...
Cyprus	11 781	22 340	15 776	56	...
Japan	163	121	72	50	142
Saudi Arabia	28	480	9 829	1 586	...
Singapore	4 276	848	263	250	2 181
of which: Re-exports	4 276	848	263	250	2 180

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

## Imports of Unmanufactured Asbestos

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	26 766	23 865	24 266	19 702	16 022
Belgium-Luxembourg	25 017	27 357	20 507	24 139	26 514
Denmark	10 269	4 381	1 078	1 109	800
France	65 067	70 206	76 365	66 556	63 672
Germany, Federal Republic of	64 944	55 411	44 585	37 161	15 692
Greece	1 271	964	1 773	1 393	2 299
Irish Republic	5 546	5 045	5 752	4 529	5 533
Italy	47 896	48 864	46 315	60 594	63 438
Netherlands	7 087	8 718	6 594	9 148	6 252
Portugal	9 208	14 247	14 742	13 575	12 284
Spain	43 873	45 652	47 408	48 509	39 609
Albania (d)	*1 500	*1 200	*600	*1 200	*250
Austria	15 148	17 749	14 858	15 750	6 167
Bulgaria	24 406	...	...	...	...
Czechoslovakia	46 203	46 879	43 664	40 360	32 776
Finland	2 165	962	853	1	—
German Democratic Republic	55 700	53 200	55 200	41 200	...
Hungary	31 059	28 440	27 681	29 663	33 375
Poland	81 038	71 983	63 366	56 026	...
Romania (d)	*4 100	*3 400	*3 100	*4 400	*3 000
Sweden	1 069	937	972	967	595
Switzerland	3 923	5 778	5 894	2 877	1 341
Turkey	34 112	33 340	38 058	35 581	26 259
Yugoslavia	44 212	45 603	38 456	36 613	28 323
Algeria	11 125	18 260	17 047	...	...
Burundi	163	400	285	342	68
Egypt	1 949	9 300	12 230	...	...
Ghana	3 693	14	...	...	...
Kenya	387	478	713	...	...
Morocco	4 991	1 885	5 691	3 944	7 157
Mozambique	890	25	...	...	...
Nigeria	8 640	38 156	...	...	...
Senegal	341	742	573	584	...
South Africa	11 289	11 437	12 903	12 150	12 354
Tunisia	9 207	7 057	5 825	6 181	7 179
Zaire	*200	*600	...	...	...
Zambia	2 263	1 267	1 595	...	2 472
Canada	325	238	365	1 174	879
Cuba (c)	2 374	1 212	1 024	2 013	500
Dominican Republic	344	...	...	...	...
El Salvador	1 536	2 382	2 805	1 135	904
Guatemala	1 105	80	725	504	24
Honduras	1 619	784	2 277	1 375	...
Mexico	28 339	38 450	34 055	35 428	40 224
Nicaragua	1 212	...	...	...	...
Panama	303	164	121	210	352
USA					
Crocidolite	1 988	1 692	1 252	593	835
Chrysotile	102 418	88 821	78 967	51 514	34 308
Other unmanufactured	3 948	3 828	5 108	3 199	6 188
Argentina	12 701	14 324	8 109	6 647	...
Brazil	3 658	4 134	5 566	...	11 373
Chile	(d)*7 700	(d)*7 700	10 557	8 831	7 749
Colombia	16 155	...	16 392	14 370	...
Ecuador	5 682	3 743	7 036	3 000	1 151
Peru	6 083	9 922	3 506	1 172	...
Uruguay	1 003	1 193	1 320	...	...
Venezuela	9 519	15 560	8 572	1 505	...
China	(d)*300	1 243	466	500	...
Dubai	4 768	...	...	...	...
India (e)	73 633	79 454	104 033	...	93 165
Indonesia	11 185	12 205	18 698	20 986	28 599
Iran (a)	14 590	20 612	13 285	32 238	...
Israel	4 158	5 111	2 889	3 214	2 955

**Imports of Unmanufactured Asbestos**

tonnes

Country	1986	1987	1988	1989	1990
Japan	255 732	277 238	320 393	295 168	287 659
Korea, Republic of	68 017	77 595	87 470	77 475	74 549
Kuwait	1 999	1 299	...	1 597	...
Malaysia	16 947	20 153	21 050	28 276	...
Pakistan (b)	3 685	5 606	7 258	...	4 525
Philippines	1 151	1 911	2 074	2 111	1 869
Saudi Arabia	4 457	1 810	2 780	2 941	...
Singapore	3 987	2 194	1 701	1 733	4 741
Sri Lanka	5 586	8 156	9 898	...	7 002
Syria	2 486	3 860	...	...	...
Taiwan	39 735	36 469	32 680	29 464	15 165
Thailand	49 663	71 407	109 103	118 520	116 652
Australia (b)	10 597	6 294	2 072	2 128	1 706
New Zealand (b)	1 553	154	2	—	2

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) Exports from Canada

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

(e) Years ended 31 March following that stated



## Production of Barytes

Country	1986	1987	1988	1989	1990
United Kingdom	86 754	77 000	76 253	70 026	67 551
Belgium	*40 000	*40 000	*35 000	*40 000	*40 000
France	116 350	104 500	104 400	111 840	92 600
Germany, Federal Republic of	201 565	173 356	165 317	144 106	147 776
Greece	2 227	4 799	1 316	1 247	1 617
Irish Republic	127 500	70 000	83 500	82 000	101 000
Italy	112 540	82 181	77 273	60 331	44 345
Portugal	120	660	1 740	1 730	1 480
Spain	49 678	7 776	6 585	6 745	*7 000
Bulgaria	126 124	214 990	171 798	269 357	192 881
Czechoslovakia	67 400	57 300	60 794	62 438	*60 000
Finland	8 690	11 000	10 993	1 614	*1 500
German Democratic Republic	*90 000	87 400	92 100	89 400	*85 000
Poland	97 993	59 300	53 000	57 900	25 300
Romania	*75 000	*72 000	*72 000	*70 000	*65 000
Soviet Union	*540 000	*540 000	*540 000	*540 000	*500 000
Turkey	330 758	291 913	405 017	425 519	366 995
Yugoslavia	42 789	19 270	23 350	23 558	40 329
Algeria	60 300	43 900	42 797	49 000	53 078
Egypt	3 385	4 530	5 651	7 295	*7 000
Kenya	34	50	48	210	105
Morocco	179 881	126 817	321 562	341 743	*364 000
South Africa	8 653	8 617	8 735	8 570	2 490
Tunisia	14 400	18 000	31 300	36 800	33 600
Zimbabwe	298	191	3 400	1 900	320
Canada	40 335	41 000	49 000	47 000	54 000
Guatemala	750	1 202	2 415	3 995	421
Mexico	321 186	401 336	534 954	326 000	310 000
USA (b)	269 000	406 000	404 000	290 000	445 000
Argentina	58 617	33 462	48 972	57 558	*50 000
Bolivia	129	1 337	—	—	300
Brazil (d)	103 072	158 083	*100 000	*100 000	...
Chile	53 121	2 109	43 135	59 873	3 038
Colombia	4 198	3 792	4 550	5 460	5 380
Peru (e)	28 163	20 019	47 731	55 012	...
Afghanistan (c)	*2 000	*2 000	*2 000	*2 000	*2 000
China	*820 000	*900 000	*1 400 000	1 510 100	1 462 000
India	336 858	211 726	445 604	548 103	*550 000
Iran (c)	42 430	44 309	59 660	45 000	54 000
Japan	53 547	30 379	...	22 886	18 336
Korea, Republic of	3 768	2 942	2 573	3 735	*3 800
Malaysia	16 105	17 008	17 280	16 250	*20 000
Myanmar (a)	11 578	17 242	12 678	11 459	9 145
Pakistan	39 047	10 031	21 926	29 718	23 329
Philippines	—	371	349	348	*500
Thailand	142 232	33 370	40 587	87 052	107 707
Australia	5 819	10 363	20 649	*20 000	*22 000
World total	4 700 000	4 500 000	5 700 000	5 700 000	5 600 000

## Note(s):

- (1) This table may include small quantities of witherite
- (2) In addition to the countries listed, Cuba is 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
- (e) Exports

**Exports of Barytes**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	6 720	8 214	17 104	14 572	25 365
Belgium-Luxembourg	55 378	64 985	51 297	72 044	52 167
France	98 185	82 963	93 888	89 037	78 032
Germany, Federal Republic of	39 947	32 180	36 829	35 460	36 854
Greece	22 109	40	30	50	...
Irish Republic	121 585	77 707	69 969	74 767	100 772
Italy	3 992	1 741	10 018	8 740	9 948
Netherlands	42 091	62 765	80 545	75 756	73 133
Spain	41 892	22 346	2 334	2 822	2 762
Bulgaria	138 188	...	...	...	...
Czechoslovakia (b)	*1 500	*500	*500	*700	*2 800
Norway	10 053	22 613	10 574	3 699	16 563
Turkey	193 667	231 026	233 899	301 096	177 017
Yugoslavia	10 200	9 277	10 095	9 136	4 295
Algeria	1 000	1 000	17 500	...	...
Ivory Coast	1 290	...	—	...	...
Morocco	257 381	254 463	398 090	358 909	373 857
Tunisia	—	4 822	3 851	1 116	930
Canada	6 621	6 052	9 312	6 214	9 945
Mexico	29 792	65 939	44 633	54 243	41 155
USA	12 502	14 005	288	17 120	12 511
Bolivia	239	1 445	—	—	300
Brazil	6 000	125	6 445	6 334	12 498
Chile	26 553	...	25 076	26 929	...
Peru	28 163	20 019	47 731	55 012	...
China	531 195	813 800	1 095 854	1 031 302	1 442 877
Hong Kong (c)	120	2 396	5 941	5 400	4 150
India (a)	25 614	123 508	433 068	...	304 150
Indonesia	—	1 716	2 178	7 695	5 246
Malaysia	9 664	7 171	1 438	1 268	...
Singapore	12 939	12 870	17 624	8 401	18 562
of which: Re-exports	11 485	10 878	6 835	5 806	8 195
Thailand	79 680	47 704	74 561	99 316	105 232
Australia (d)	504	1 409	436	80	1 179

## Note(s):

(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

(d) Years ended 30 June of that stated

## Imports of Barytes

Country	1986	1987	1988	1989	1990
United Kingdom	90 386	112 042	157 892	113 018	217 427
Belgium-Luxembourg	8 439	7 084	7 694	9 565	9 666
Denmark	14 556	17 379	13 030	7 934	16 917
France	35 552	34 620	34 250	45 440	42 058
Germany, Federal Republic of	198 558	188 872	216 526	218 489	232 327
Greece	5 175	1 234	1 375	1 071	2 249
Irish Republic	875	2 652	4 737	2 379	2 668
Italy	24 615	42 985	40 300	61 779	74 217
Netherlands	62 341	88 147	107 033	150 665	94 774
Portugal	1 466	1 428	627	1 428	1 042
Spain	1 237	7 243	10 657	17 492	23 121
Albania (b)	*6 800	*3 100	*8 000	*8 500	*8 000
Austria	9 067	3 112	6 555	2 668	2 948
Finland	1 769	1 883	1 845	2 036	1 864
Hungary	10 184	12 333	15 958	9 753	91
Norway	116 489	111 194	162 357	219 642	194 465
Poland	(b)*5 500	(b)*13 500	(b)*5 100	7 616	14 053
Romania (b)	*64 500	...	...	...	...
Soviet Union (b)	*181 800	*198 800	*118 600	*158 500	*81 900
Sweden	6 858	6 489	5 440	5 016	3 809
Switzerland	885	985	3 068	4 228	1 548
Yugoslavia	2 366	328	2 979	7 069	181
Cameroon	347	301	...	...	...
Gabon	2 716	...	...	...	2 802
Ivory Coast	124	...	1 071	...	...
South Africa	2 000	2 093	2 761	2 041	1 542
Tunisia	90	20	147	0	117
Canada	10 525	4 573	4 736	5 577	7 995
Trinidad & Tobago	19 081	18 027	28 684	48 304	20 687
USA	695 778	759 331	1 146 422	1 034 150	1 044 301
Argentina	259	1 577	212	...	...
Colombia	10 847	...	12 093	16 029	...
Ecuador	132	3 007	91	51	...
Venezuela	102 679	35 970	92 731	84 105	...
Abu Dhabi	6 367	12 983	16 993	...	25 986
Dubai	3 592	...	...	...	...
Hong Kong	425	3 060	6 450	6 703	4 783
Indonesia	57 959	15 364	33 197	61 484	82 394
Japan	30 962	68 996	91 355	129 383	115 684
Korea, Republic of	1 436	3 241	3 533	4 148	47 839
Malaysia	10 437	15 992	737	700	...
Philippines	43	2 257	1 298	757	366
Saudi Arabia	475	664	567	3 922	...
Singapore	14 382	12 766	14 488	10 056	30 830
Syria	3 072	239	...	...	...
Taiwan	6 636	1 586	1 619	1 719	11 960
Australia (a)	2 265	1 541	1 222	14 164	10 151
New Zealand (a)	3 337	2 029	3 279	1 880	1 929

## Note(s):

(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	1986	1987	1988	1989	1990
United Kingdom					
Fuller's earth (a)	202 033	213 055	213 000	210 000	205 000
France					
Bentonite	*10 000	*8 000	*8 000	*8 000	*10 000
Germany, Federal Republic of					
Bentonite	179 000	167 000	197 000	200 000	223 000
Fuller's earth	680 000	677 000	670 000	636 000	653 000
Greece					
Bentonite	743 976	681 101	730 501	1 096 177	592 684
Italy					
Bentonite	305 622	319 127	321 121	234 212	228 153
Fuller's earth	30 960	38 150	38 955	43 550	45 800
Spain					
Bentonite	114 972	103 420	103 753	141 283	*104 000
Attapulgite	67 820	40 818	43 585	23 990	*40 000
Sepiolite	369 351	374 758	383 649	384 449	...
Czechoslovakia					
Bentonite	25 081	152 656	157 284	156 719	...
Hungary					
Bentonite	79 888	102 000	65 000	58 000	25 000
Poland					
Bentonite	94 200	88 600	100 000	93 098	68 600
Romania					
Bentonite	*185 000	*180 000	*180 000	*180 000	*175 000
Soviet Union					
Bentonite	*2 900 000	*2 900 000	*2 900 000	*2 900 000	*2 700 000
Turkey					
Bentonite	62 367	89 262	80 218	93 256	135 557
Yugoslavia					
Bentonite	141 726	154 288	125 069	139 693	102 681
Algeria					
Bentonite	32 300	24 600	26 000	39 200	41 600
Fuller's earth	*3 500	*3 500	*3 500	*3 500	*3 500
Egypt					
Bentonite	5 129	3 978	3 166	3 629	4 904
Morocco					
Bentonite	3 834	2 948	3 445	3 970	*3 900
Fuller's earth (f)	35 100	46 271	52 697	40 820	45 230
Mozambique					
Bentonite	1 112	936	986	126	—
Senegal					
Attapulgite	77 108	117 873	323 470	98 882	*100 000
South Africa					
Bentonite	48 265	48 953	66 750	62 987	66 059
Attapulgite	10 125	6 026	7 161	6 609	7 628
Canada					
Bentonite	72 026	70 281	88 800	...	...
Guatemala					
Bentonite	3 836	24 781	976	8 236	*9 000
Mexico					
Bentonite	136 478	129 596	163 916	123 927	143 922
Fuller's earth	52 200	49 112	37 226	24 603	24 000
Nicaragua					
Bentonite	3 761	3 545	3 907	1 915	2 112
USA					
Bentonite (c)	2 551 950	2 545 772	2 870 971	3 112 365	3 473 595
Fuller's earth (c)	1 732 703	1 865 890	1 792 232	1 881 511	2 307 475
Argentina					
Bentonite	146 191	108 595	173 930	150 000	*150 000
Fuller's earth	*2 000	*2 000	*2 000	*2 000	*2 000
Brazil					
Bentonite	229 371	216 591	147 149	146 550	*175 000
Colombia					
Bentonite	2 200	2 048	2 458	2 950	3 100
Peru					
Bentonite	33 080	16 194	50 741	*20 000	*30 000

## Production of Bentonite and Fuller's Earth

tonnes

Country	1986	1987	1988	1989	1990
Cyprus					
Bentonite	55 000	79 600	90 300	59 744	81 800
India					
Bentonite	104 671	119 000	226 000	...	...
Fuller's earth	32 000	20 000	26 000	...	...
Indonesia					
Bentonite	5 730	7 962	8 266	3 862	5 914
Iran (g)					
Bentonite	*27 000	*27 000	37 028	*37 000	47 000
Israel					
Bentonite (e)	*6 000	*6 000	*6 000	*6 000	*6 000
Japan					
Bentonite	408 864	415 806	455 137	526 131	549 414
Korea, Republic of					
Bentonite	16 800	12 600	16 600	24 400	...
Myanmar (d)					
Bentonite	853	297	418	733	*500
Pakistan					
Bentonite	1 362	2 537	4 370	5 466	3 235
Fuller's earth	15 228	17 945	15 282	15 436	16 489
Philippines					
Bentonite	1 800	2 021	2 030	2 782	16 484
Australia					
Bentonite	39 933	30 392	35 671	*35 000	*35 000
Fuller's earth	*15 000	10 960	*15 000	*15 000	*20 000
New Zealand					
Bentonite	3 140	—	1 255	1 342	1 393
World total Bentonite	8 780 000	8 850 000	9 450 000	9 990 000	9 710 000
World total Fuller's earth (b)	3 330 000	3 480 000	3 620 000	3 410 000	3 880 000

## Note(s):

- (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 and Tanzania are 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
- (g) Years ended 20 March following that stated

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

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Bentonite	33 695	35 605	39 027	49 012	62 097
Fuller's earth	22 577	24 824	31 091	33 663	33 747
Belgium-Luxembourg					
Bentonite	280	86	453	553	1 498
Fuller's earth	661	82	547	1 220	1 758
France					
Bentonite	8 019	7 419	9 006	19 315	23 044
Fuller's earth	2 546	2 507	3 971	4 113	5 425
Germany, Federal Republic of					
Bentonite	33 063	31 097	43 388	59 087	55 326
Fuller's earth	5 301	5 093	4 735	2 970	1 421
Greece					
Bentonite	460 875	511 351	391 781	85 390	73 045
Italy					
Bentonite	20 780	24 155	37 919	59 523	42 954
Netherlands					
Bentonite	30 405	28 045	39 936	35 010	40 936
Fuller's earth	575	991	—	502	670
Spain					
Bentonite	33 258	36 914	49 814	59 789	65 850
Fuller's earth	3 336	2 702	3 956	6 087	7 624
Bulgaria					
Bentonite	113 005	...	...	...	...
Hungary					
Bentonite	11 423	10 875	12 496	...	912
Turkey					
Bentonite	42 199	24 740	26 227	40 248	29 401
Yugoslavia					
Bentonite	79	4 799	2 792	11 633	7 521
Morocco					
Bentonite	—	—	3 000	5 500	17 600
Fuller's earth (a)	30 495	42 002	75 000	76 200	89 100
Senegal					
Fuller's earth (b)	2 022	8 171	71 714	10 350	...
South Africa					
Bentonite	1 609	580	808	505	878
Canada					
Bentonite	(e)1 795	(e)1 522	1 120	2 398	1 170
Mexico					
Bentonite	11 488	11 846	3 075	5 345	...
USA					
Bentonite	527 767	489 209	569 071	671 437	698 904
Fuller's earth	109 604	96 991	112 265	96 897	46 901
Argentina					
Bentonite	12 821	6 489	6 375	8 753	...
Colombia					
Bentonite	1 350	...	796	395	...
China					
Bentonite (c)	*20 000	*1 400	*8 600	*18 600	*19 100
Fuller's earth (c)	*800	*1 000	*1 800	*200	*1 900
India (d)					
Bentonite	6 843	39 312	68 472	...	49 011
Fuller's earth	125	148	382	...	109

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

Country	1986	1987	1988	1989	1990
Indonesia					
Bentonite	4 206	25 832	5 544	12 114	7 708
Korea, Republic of					
Bentonite	346	1 682	4 608	3 727	6 119
Singapore					
Bentonite	7 376	11 985	19 365	21 327	23 284
of which: Re-exports	7 376	11 985	19 365	21 327	20 472
Fuller's earth (f)	2 105	960	6 179	3 636	2 556
Australia					
Bentonite (g)	...	...	...	5 803	21 325

## Note(s):

- (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
- (e) Imports into the USA
- (f) Re-exports
- (g) Years ended 30 June of that stated

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

tonnes

Country	1986	1987	1988	1989	1990
<b>United Kingdom</b>					
Bentonite	102 648	98 133	115 114	117 483	154 133
Fuller's earth	1 437	1 284	3 068	3 582	6 114
<b>Belgium-Luxembourg</b>					
Bentonite	20 007	19 893	37 102	28 112	31 876
Fuller's earth	1 173	800	481	307	1 132
<b>Denmark</b>					
Bentonite	4 779	5 608	7 884	10 280	12 306
Fuller's earth	749	540	691	599	738
<b>France</b>					
Bentonite	88 061	77 629	114 725	125 749	127 278
Fuller's earth	2 978	1 405	1 142	2 618	5 966
<b>Germany, Federal Republic of</b>					
Bentonite	116 903	119 114	187 642	252 864	225 056
Fuller's earth	9 769	10 809	11 672	14 875	13 067
<b>Greece</b>					
Bentonite	371	566	353	415	581
<b>Italy</b>					
Bentonite	31 615	39 228	38 493	72 727	84 091
Fuller's earth	2 575	2 143	3 631	5 167	6 801
<b>Netherlands</b>					
Bentonite	85 191	67 407	85 396	99 267	108 305
Fuller's earth	4 882	5 451	11 534	8 283	5 428
<b>Portugal</b>					
Bentonite	21 767	23 064	16 259	12 963	12 237
Fuller's earth	883	436	201	18	177
<b>Spain</b>					
Bentonite	27 460	28 692	35 913	34 675	44 776
<b>Austria</b>					
Bentonite	5 250	6 361	12 620	15 042	12 722
Fuller's earth	...	...	538	604	795
<b>Finland</b>					
Bentonite	...	...	9 412	5 674	7 841
<b>German Democratic Republic</b>					
Bentonite (c)	*13 000	*11 700	*12 400	*11 000	...
Fuller's earth (c)	*1 400	*1 700	*900	*1 500	*1 000
<b>Norway</b>					
Bentonite	33 683	28 446	23 362	16 778	16 616
Fuller's earth	10 286	12 022	197	126	544
<b>Poland</b>					
Bentonite (c)	*27 100	*24 700	*17 700	*14 500	*11 900
<b>Sweden</b>					
Bentonite	9 228	11 958	7 693	9 961	11 788
Fuller's earth	...	...	7 570	6 595	6 435
<b>Switzerland</b>					
Bentonite	...	...	8 566	12 288	10 668
Fuller's earth	...	...	609	1 329	1 624
<b>Algeria</b>					
Bentonite (b)	1 019	33	...	...	...
<b>Morocco</b>					
Bentonite	20	547	62	22	112
<b>Senegal</b>					
Bentonite	710	1 684	603	1 570	...
<b>Tunisia</b>					
Bentonite	4 891	563	1 102	1 562	2 226
<b>Zimbabwe</b>					
Fuller's earth (b)	2 748	1 413	...	...	...
<b>Canada</b>					
Bentonite	326 024	318 071	334 872	294 267	229 959
Fuller's earth	5 438	10 787	6 477	7 377	6 643
<b>Mexico</b>					
Bentonite	612	1 319	2 950	2 900	...
<b>USA</b>					
Bentonite	2 509	3 665	3 200	2 427	2 045
Fuller's earth	75	239	487	16	69



## Imports of Bentonite and Fuller's Earth

tonnes

Country	1986	1987	1988	1989	1990
Brazil					
Bentonite	21 185	13 519	16 989	29 290	35 589
Chile					
Bentonite	4 936	(c)*5 200	3 843	10 065	(c)*3 000
Colombia					
Bentonite	3 700	...	9 074	3 743	...
Peru					
Bentonite	806	915	294	583	...
Uruguay					
Bentonite	199	417	221	...	...
Venezuela					
Bentonite	25 340	10 897	12 447	3 947	...
Indonesia					
Bentonite	23 005	2 157	13 532	11 707	30 462
Fuller's earth	529	18	35	15	1
Israel					
Bentonite (c)	*3 900	*2 600	*3 000	*1 900	*500
Japan					
Bentonite	...	...	128 280	169 298	202 908
Fuller's earth	...	...	4 781	6 321	8 776
Korea, Republic of					
Bentonite	5 414	3 749	10 728	6 892	11 549
Kuwait					
Bentonite	...	24 878	37 742	17 596	...
Malaysia					
Bentonite	83 798	56 192	27 278	64 748	...
Fuller's earth	803	2 145	14 180	7 402	...
Pakistan (a)	7 486	1 522	15 854	...	2 871
Philippines	1 883	2 322	4 601	7 461	8 500
Singapore					
Bentonite	36 360	9 431	44 902	27 750	54 723
Fuller's earth	5 301	1 467	5 848	4 531	22 937
Taiwan					
Bentonite	18 624	20 051	23 712	26 533	49 133
Thailand					
Bentonite	3 243	5 369	11 474	12 043	32 390
Australia					
Bentonite (a)	30 765	26 591	15 193	21 344	28 476

## Note(s):

- (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

## Bromine

**Production of Bromine**

kilograms

Country	1986	1987	1988	1989	1990
United Kingdom	26 000 000	26 184 000	27 128 000	29 907 000	26 800 000
France	*19 000 000	*18 500 000	*18 000 000	*18 000 000	*18 000 000
Germany, Federal Republic of	*2 000 000	*2 000 000	2 000 000	2 000 000	1 500 000
Italy	*450 000	*450 000	*450 000	*400 000	*400 000
Spain	*280 000	*300 000	*300 000	*300 000	*300 000
Soviet Union	*65 000 000	*65 000 000	*65 000 000	*65 000 000	*60 000 000
USA (a)	140 600 000	152 000 000	163 300 000	174 600 000	177 000 000
India	1 229 400	1 181 600	1 241 900	1 272 200	1 505 000
Israel	*105 000 000	*110 000 000	*118 000 000	*135 000 000	127 000 000
Japan	*15 000 000	*15 000 000	*15 000 000	*15 000 000	*15 000 000
World total	374 600 000	390 600 000	410 400 000	441 500 000	427 500 000

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

## Exports of Bromine

Bromine  
kilograms

Country	1986	1987	1988	1989	1990
United Kingdom	2 307 258	2 556 122	2 146 979	2 690 302	3 161 019
Belgium-Luxembourg	5 000	17 800	17 200	33 200	52 800
Germany, Federal Republic of	3 200	219 200	7 100	69 000	22 700
Italy	86 056	4 900	7 000	12 000	25 000
Netherlands	616 000	686 000	724 000	691 000	586 000
German Democratic Republic (a)	*1 491 000	*1 826 000	*2 416 000	*1 956 000	*1 214 000
USA	8 119 000	3 348 000	4 328 000	3 557 291	2 943 290
Israel	(a)*25 000 000	(a)*29 200 000	(a)*32 200 000	43 119 000	31 885 000

Note(s):

(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

## Bromine

**Imports of Bromine**

kilograms

Country	1986	1987	1988	1989	1990
United Kingdom	8 453 307	8 968 048	9 725 931	9 592 918	7 196 864
Belgium-Luxembourg	1 660 500	1 842 700	2 121 700	2 273 200	1 801 800
Denmark	76 500	104 500	52 000	95 400	24 100
France	4 800 000	5 799 500	6 967 000	8 314 000	7 514 000
Germany, Federal Republic of	7 026 100	6 959 700	6 677 300	6 917 100	5 487 100
Italy	2 612 707	2 140 000	2 232 500	1 787 000	1 439 000
Netherlands	7 627 000	8 267 000	9 332 000	8 125 000	10 640 000
Spain	45 000	59 000	107 000	59 000	85 000
Hungary	655 000	843 000	521 000	...	...
Turkey	230	2 029	344	...	...
Yugoslavia	99 000	72 000	54 000	12 000	6 000
South Africa	50 000	31 500	59 781	28 740	20 930
Canada	...	...	1 331 828	1 417 596	1 505 136
Mexico	119 920	146 000	*180 000	(c)*350 000	(c)*180 000
USA	154 926	248 306	256 696	459 881	755 631
Argentina	19 000	24 000	20 000	...	...
Brazil	13 431	17 099	30 397	...	11 381
Colombia	626	...	19 078	62	...
Peru	549	92	339	...	...
Venezuela	2 443	5 775	319	3 445	...
India (a)	94 280	—	469 792	...	118 330
Israel (c)	*97 800	*62 700	*91 300	*90 800	*98 600
Korea, Republic of	228 360	162 856	285 682	192 125	195 761
Pakistan (b)	11 088	2 016	4 032	...	15 991
Taiwan	121	796	80	259	20 517

## Note(s):

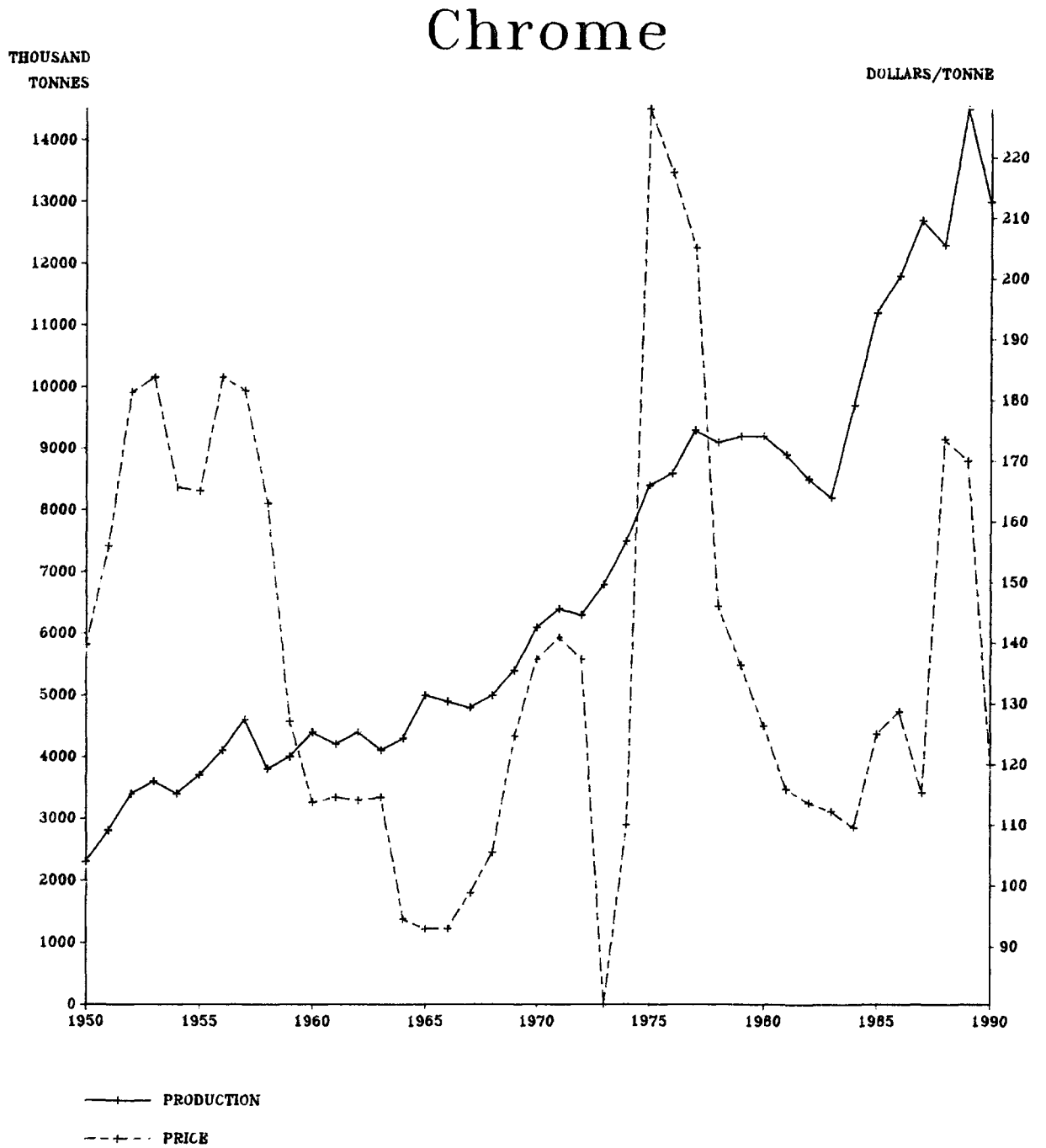
(1) In general, trade in bromine compounds is not separately distinguished from other halogen salts and has therefore not been included in this table

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

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





**Figure 1** World production of chrome ore compared with the price of Turkish (48% Cr<sub>2</sub>O<sub>3</sub>) ore f.o.b. US ports expressed in constant 1985 US dollars.

**Production of Chromium Ores and Concentrates**

Country	1986	1987	1988	1989	1990
Greece	60 063	63 825	49 335	47 324	*50 000
Albania	1 159 000	1 072 000	1 109 000	1 101 000	910 000
Finland (b)	492 094	503 159	536 309	573 715	461 277
Soviet Union	3 640 000	3 570 000	3 700 000	3 800 000	*3 800 000
Turkey (a)	617 652	762 071	851 425	1 415 038	*850 000
Madagascar	89 300	106 773	171 484	165 397	122 276
South Africa	3 907 473	3 784 402	4 244 632	4 950 854	4 489 124
Sudan	18 000	10 000	25 000	30 000	35 000
Zimbabwe	553 106	570 298	561 630	627 500	562 600
Cuba	50 000	52 400	52 200	50 600	*50 000
Brazil (a)	222 990	191 033	229 912	*225 000	...
India	629 671	623 591	820 863	1 002 659	*995 000
Iran (c)	*54 000	*55 000	60 289	*62 000	(b)79 000
Japan	10 642	11 815	9 508	11 674	8 075
Oman	4 820	*4 000	*4 000	12 810	...
Pakistan	8 299	9 963	4 924	*10 000	18 191
Philippines (b)	202 214	188 647	165 710	379 521	234 600
Vietnam	*4 000	*4 000	*4 000	*3 500	*3 500
New Caledonia	72 207	61 832	70 341	60 281	*60 000
World total	11 800 000	11 600 000	12 700 000	14 500 000	13 000 000

## Note(s):

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

(a) Including beneficiated and direct shipping ore

(b) Including foundry sand and/or lumpy ore

(c) Years ended 20 March following that stated

## Chromium

**Exports of Chromium**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Ores & concentrates	405	217	207	64	36
Metal	3 828	3 733	3 469	3 409	3 301
Belgium-Luxembourg					
Ores & concentrates	0	85	1 484	290	12 484
Metal	121	123	133	82	65
France					
Ores & concentrates	951	1 368	3 113	9 676	2 395
Metal	1 797	1 659	2 205	2 358	3 900
Germany, Federal Republic of					
Ores & concentrates	12 061	11 392	14 419	16 237	13 466
Metal	132	143	189	364	1 184
Greece					
Ores & concentrates	10 964	7 089	6 484	17 510	7 967
Italy					
Ores & concentrates	3 710	2 053	13 475	2 999	3 940
Metal	211	307	28	817	157
Netherlands					
Ores & concentrates	30 070	28 005	31 902	39 777	37 703
Metal	75	6	5	65	50
Albania					
Ores & concentrates	755 000	677 000	639 000	605 000	503 000
Austria					
Ores & concentrates	555	—	213	94	131
Finland					
Ores & concentrates	161 387	144 017	200 693	109 976	9 106
Soviet Union					
Ores & concentrates	474 000	521 000	632 000	741 000	...
Metal (b)	...	...	*300	*800	*1 300
Turkey					
Ores & concentrates	451 384	569 733	843 116	882 627	676 499
Yugoslavia					
Ores & concentrates	7 919	10 589	2 459	3 124	—
Madagascar					
Ores & concentrates	130 244	83 842	148 500	152 591	125 558
South Africa					
Ores & concentrates	1 133 625	1 442 747	1 461 713	1 541 011	1 200 919
Sudan					
Ores & concentrates	24 000	...	...	...	...
Cuba					
Ores & concentrates	37 771	49 664	...	...	...
USA					
Ores & concentrates	84 820	5 982	4 964	42 820	10 373
of which: Re-exports	1 322	4 837	1 033	2 375	4 052
Metal	293	379	322	1 503	345
Brazil					
Ores & concentrates	—	8	29 931	41 863	34 995
China					
Metal (b)	*1 100	*1 300	*1 200	*1 100	*2 500
India (a)					
Ores & concentrates	119 084	185 196	588 700	...	179 580
Iran					
Ores & concentrates (b)	...	*13 500	*7 500	*30 500	*30 700
Japan					
Ores & concentrates	283	309	298	2 429	495
Metal	...	...	2 014	2 322	2 822
Philippines					
Ores & concentrates	130 164	105 676	163 499	201 683	198 366



**Exports of Chromium**

Country	1986	1987	1988	1989	1990
New Caledonia Ores & concentrates	61 104	72 112	71 646	64 651	13 523

## Note(s):

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

(a) Years ended 31 March following that stated

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

## Chromium

**Imports of Chromium**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Ores & concentrates	138 572	124 318	199 043	170 461	154 919
Metal	367	504	391	709	854
Belgium-Luxembourg					
Ores & concentrates	3 846	2 581	3 404	3 861	19 926
Metal	536	406	374	392	570
Denmark					
Ores & concentrates	1 473	667	697	6 481	14 770
France					
Ores & concentrates	24 610	24 771	80 910	81 288	88 144
Metal	232	253	264	506	1 047
Germany, Federal Republic of					
Ores & concentrates	275 307	258 912	272 541	343 779	245 513
Metal	180	1 144	1 347	2 147	3 236
Greece					
Ores & concentrates	65 152	27 354	42 600	73 812	47 284
Irish Republic					
Ores & concentrates	29	3 010	13	22	47
Italy					
Ores & concentrates	152 169	218 974	304 149	383 158	179 711
Metal	197	223	376	289	649
Netherlands					
Ores & concentrates	38 247	17 229	34 477	42 777	54 066
Metal	67	82	155	137	261
Portugal					
Ores & concentrates	1 098	779	1 136	1 055	1 571
Spain					
Ores & concentrates	92 194	76 902	104 254	87 766	54 695
Metal	40	143	80	104	110
Austria					
Ores & concentrates	47 867	39 282	58 712	60 936	43 752
Czechoslovakia					
Ores & concentrates	188 000	188 000	171 000	171 000	...
German Democratic Republic					
Ores & concentrates (b)	49 600	41 000	47 400	41 600	...
Hungary					
Ores & concentrates	(a)*15 200	(a)*20 100	(a)*27 500	18 315	16 169
Norway					
Ores & concentrates	520	760	558	64 663	159 457
Poland					
Ores & concentrates	145 790	190 731	168 081	159 110	...
Romania					
Ores & concentrates	155 100	130 100	115 500	146 700	...
Sweden					
Ores & concentrates	377 786	314 495	432 148	397 178	191 722
Metal	321	216	220	271	315
Switzerland					
Ores & concentrates	...	...	1 211	2 404	2 682
Metal	...	...	112	115	184
Yugoslavia					
Ores & concentrates	286 965	225 856	290 212	334 479	283 601
Canada					
Ores & concentrates	(b)23 348	(b)19 797	32 529	33 843	21 309
Mexico					
Ores & concentrates	27 781	45 016	39 019	29 376	...
USA					
Ores & concentrates	444 753	489 900	625 490	525 044	565 357
Metal	4 069	3 957	4 104	4 184	6 713
Argentina					
Ores & concentrates	15 572	27 558	14 776	26 060	...
Brazil					
Ores & concentrates	10 756	14 380	8 649	17 908	6 568
Chile					
Ores & concentrates	4 490	6 084	12 233	22 111	9 148
Peru					
Ores & concentrates	4 144	2 658	3 246	2 006	...
Venezuela					
Ores & concentrates	7 041	20 149	7 072	11 958	...

**Imports of Chromium**

Country	1986	1987	1988	1989	1990
China					
Ores & concentrates	385 156	230 375	429 808	595 783	641 267
Japan					
Ores & concentrates	670 625	674 743	976 168	1 043 468	789 225
Metal	...	...	725	830	571
Korea, Dem. P.R. of					
Ores & concentrates (a)	*25 000	*24 000	*21 000	*25 700	...
Korea, Republic of					
Ores & concentrates	3 274	41 147	7 408	3 250	528
Philippines					
Ores & concentrates	17	12 000	52 111	46 541	20
Singapore					
Ores & concentrates	...	...	4 045	7 010	1 073
Taiwan					
Ores & concentrates	19 048	20 899	12 238	35 709	4 492
Thailand					
Ores & concentrates	2 755	174	4 492	7 359	5 872
Australia					
Ores & concentrates (c)	5 229	4 395	2 579	8 154	5 302
Metal (c)	57	84	61	79	91

## Note(s):

(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) Years ended 30 June of that stated

## Diamond

**Production of Diamond**

carats

Country	1986	1987	1988	1989	1990
Soviet Union	*14 800 000	*14 800 000	*15 000 000	*15 000 000	*15 000 000
Angola	266 184	871 391	1 044 551	1 320 000	1 280 000
Botswana	13 138 000	13 225 344	15 229 000	15 252 000	17 351 000
Central African Republic	356 707	413 087	359 752	447 676	414 789
Ghana	559 200	442 000	215 900	290 945	383 393
Guinea	187 960	195 000	146 440	148 000	127 286
Ivory Coast (a)	13 581	67 365	116 543	...	...
Liberia (a)	242 152	294 996	167 030	154 554	*100 000
Namibia	1 009 600	1 030 092	974 565	926 765	762 837
Sierra Leone	330 000	310 000	30 000	2 000	10 000
South Africa	10 226 963	9 050 992	8 504 016	9 115 880	8 708 231
Swaziland	39 144	*40 000	72 676	55 264	42 488
Tanzania	173 972	122 824	81 883	80 000	90 000
Zaire	23 232 663	19 650 310	18 162 555	17 652 206	19 427 551
Brazil	*625 000	*500 000	*530 000	*500 000	*500 000
Guyana	9 379	7 469	4 357	8 054	15 279
Venezuela	211 731	112 812	128 405	213 264	336 976
China	*1 000 000	*1 000 000	*1 000 000	*1 000 000	*1 000 000
India	16 116	18 915	14 191	15 451	*15 000
Indonesia	*28 000	*29 000	*29 000	*32 000	*30 000
Australia	29 232 453	30 331 701	34 826 000	35 079 000	34 662 000
World total	95 700 000	92 500 000	96 600 000	97 400 000	100 400 000

Note(s):

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

(a) Exports

## Exports of Diamond

carats

Country	1986	1987	1988	1989	1990
United Kingdom					
Rough	36 418 563	43 165 362	51 482 512	52 538 712	34 676 265
Cut	769 436	350 798	1 205 380	824 100	362 307
Industrial	7 835 713	9 811 635	15 218 700	23 245 260	27 054 112
Dust	...	...	9 507 960	13 095 360	25 069 200
Belgium-Luxembourg					
Rough	55 514 230	61 175 323	69 309 541	73 010 340	60 624 921
Cut	3 889 064	4 297 277	4 716 709	4 683 881	4 425 511
Industrial	10 908 673	12 297 579	17 715 358	20 844 348	19 131 379
Dust	6 855 000	6 985 440	9 620 000	14 506 840	20 113 060
France					
Rough	3 878	6 675	7 932	12 298	9 285
Cut	24 083	45 342	31 013	43 982	30 106
Industrial	248 381	184 013	178 948	142 454	53 345
Dust	896 390	773 915	837 265	1 193 995	2 324 495
Germany, Federal Republic of					
Industrial	236 063	321 105	302 117	296 042	337 547
Other	174 259	173 268	186 461	188 724	130 629
Irish Republic					
Industrial	—	—	685 000	9 760 000	9 860 000
Italy					
Industrial	1 108	5 083	10 784	...	404 237
Other	2 341	250	18 928	...	127 179
Netherlands					
Rough	249 931	417 832	231 191	150 773	211 275
Cut	142 686	97 536	163 343	77 318	60 478
Industrial	1 183 953	1 023 087	898 393	783 373	526 887
Portugal	19 678	87 155	112 375	...	84 599
Spain					
Industrial	...	...	5 960	117 859	257 189
Other	...	...	1 305	1 376	3 087
Austria					
Industrial	5 000	240 000	65 000	100 000	285 000
Other	25 000	5 000	150 000	25 000	35 000
Malta	£2 312 000	£2 189 000	£1 068 000	£1 521 000	...
Soviet Union					
Diamond (e)	*1 033 000	*1 096 200	*894 600	*838 800	*563 700
Dust (e)	*3 453 000	*2 781 200	*7 983 600	*6 810 200	*7 899 000
Sweden					
Industrial	£33 000	£47 000	£53 000	£43 000	£86 000
Other	£1 243 000	£1 736 000	£1 360 000	£1 112 000	£7 028 000
Switzerland					
Industrial	...	...	145 000	175 000	480 000
Other	...	...	13 770 000	12 970 000	10 025 000
Central African Republic					
Gem	353 316	410 938	356 852	362 934	334 462
Industrial	685	—	—	80 806	78 496
Ghana					
Industrial	561 618	397 000	306 000	...	...
Ivory Coast	13 581	67 365	116 543	...	...
Kenya	17 500	25 000	20 090	...	...
Liberia	242 152	294 996	167 030	154 554	...
Mauritius					
Industrial	—	£1 148	£1 572 900	£1 230 900	...
Other	£8 216 000	—	£12 936 100	£12 929 400	...
Namibia	1 471 557	1 058 586	924 998	923 407	779 395
Sierra Leone					
Industrial	136 905	(b)300 000	(b)20 000	(b)130 000	(b)89 600
Other	168 377	...	...	...	...
South Africa (c)					
Industrial	£1 292 000	£1 776 000	£238 209 000	£138 727 000	£25 438 000
Other	£714 917 000	£890 847 000	£449 250 000	£719 143 000	£875 220 000
Tanzania	194 635	120 390	101 417	46 915	...
Tunisia					
Industrial	265 000	255 000	295 000	310 000	145 000
Other	780 000	655 000	805 000	680 000	755 000
Zaire	23 304 000	19 651 000	18 445 000	...	...

## Diamond

## Exports of Diamond

carats

Country	1986	1987	1988	1989	1990
Canada					
Cut	49 414	47 669	59 740	175 352	65 513
of which: Re-exports	49 414	47 669	47 264	126 074	53 584
Industrial	539 194	187 413	249 981	195 252	43 105
of which: Re-exports	539 194	187 413	209 539	71 310	28 122
Dust	648 844	1 748 415	2 714 739	2 801 820	3 720 527
of which: Re-exports	647 138	1 738 250	2 244 108	2 794 020	3 315 615
USA					
Rough	1 800 589	1 684 400	1 367 803	1 877 191	1 707 593
of which: Re-exports	1 797 509	1 684 200	1 367 597	1 866 832	1 543 797
Cut	726 420	845 868	767 275	778 548	1 003 760
of which: Re-exports	168 441	258 671	176 863	88 601	797 209
Industrial	3 563 727	2 539 863	2 993 356	2 755 240	3 320 638
of which: Re-exports	1 894 607	1 538 122	1 163 513	1 233 902	2 010 845
Dust	...	...	...	5 433 109	2 983 475
of which: Re-exports	...	...	...	1 539 757	489 801
Brazil					
Rough	205 385	233 325	95 265	251 900	...
Gem	19 380	36 335	50 365	47 480	51 375
Venezuela					
Rough	190 000	—	—	430 000	...
China					
Industrial	(e)*163 800	(e)*100 100	9 365	110 535	...
Other	(e)*196 300	(e)*311 400	280 135	233 300	...
Hong Kong	858 030	883 666	1 370 457	1 708 062	2 088 551
of which: Re-exports	855 556	878 732	1 367 357	1 701 741	2 078 535
India (d)					
Gem	£1 050 679 000	£1 156 637 000	£1 656 391 000	...	£1 508 306 000
Israel					
Cut	3 827 000	4 376 000	...	4 378 000	...
Japan					
Industrial	89 188	89 000	38 820	109 076	120 509
Dust	...	...	9 187 305	20 775 195	13 011 974
Other	15 513	9 267	3 797	2 411	2 973
Korea, Republic of	£1 133 000	£356 000	£520 000	£572 000	£508 000
Malaysia					
Cut	(b)£8 314 000	£15 386 000	£4 528 000	£17 927 000	...
Other	...	£702 000	£12 003 000	£11 353 000	...
Singapore					
Rough	£21 000	£57 000	£401 000	£469 000	£969 000
of which: Re-exports	—	£57 000	£401 000	£469 000	£969 000
Cut	£5 800 000	£11 676 000	£11 393 000	£20 669 000	£29 436 000
of which: Re-exports	£5 314 000	£11 234 000	£9 841 000	£19 555 000	£28 952 000
Industrial	£180 000	£134 000	£177 000	£6 885 000	£558 000
of which: Re-exports	£180 000	£104 000	£165 000	£6 669 000	£483 000
Sri Lanka					
Industrial	331 715	—	—	2 722	27 807
Other	348 915	316 288	268 622	343 286	948 674
Taiwan					
Industrial	12 440 000	32 060 000	12 710 000	57 225 000	—
Other	12 340 000	29 660 000	10 625 000	13 170 000	60 000
Thailand					
Industrial	—	—	126 628	52 632	72 514
Dust	...	...	2 573 115	9 409 400	35 807 500
Other	133 692	228 251	260 406	484 856	747 744
Australia					
Gem (a)	1 563 129	25 333	631 392	1 242 000	911 000
Industrial	1 813 194	145 137	1 572 718	144 000	110 000

## Note(s):

(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) Excluding unsorted rough diamonds

(b) Including other diamonds

(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

## Imports of Diamond

carats

Country	1986	1987	1988	1989	1990
United Kingdom					
Industrial	...	3 939 407	7 370 042	9 471 872	8 700 514
Other	...	43 364 474	53 882 723	55 936 537	35 865 608
Belgium-Luxembourg					
Rough	55 831 368	66 204 960	66 154 145	74 616 865	62 928 645
Cut	3 508 531	3 543 728	4 060 064	4 402 608	4 270 948
Industrial	18 232 730	18 592 351	21 943 039	24 380 043	22 491 771
Dust	14 400 000	15 560 140	16 545 000	26 218 635	27 476 800
France					
Rough	15 025	15 173	48 512	29 709	40 446
Cut	300 679	372 972	443 950	314 179	314 213
Industrial	253 252	280 955	360 430	554 106	219 801
Dust	5 598 255	5 863 980	7 140 455	8 947 820	7 581 500
Germany, Federal Republic of					
Rough	11 325	9 224	14 104	10 798	18 339
Cut	479 011	563 920	601 688	650 622	577 768
Industrial	1 180 203	1 155 651	983 250	1 255 480	1 067 101
Dust	...	...	61 195 000	38 205 000	39 650 000
Greece					
Industrial	29 413	38 608	99 903	69 350	149 400
Other	19 202	23 645	78 809	78 409	113 815
Irish Republic					
Industrial	2 930 000	110 000	185 000	925 000	2 725 000
Other	...	...	1 475 000	1 365 000	1 100 000
Italy					
Industrial	153 921	169 003	316 734	283 038	490 569
Dust	...	...	33 575 000	39 911 380	35 416 890
Other	222 140	231 400	1 476 352	2 170 329	304 087
Netherlands					
Rough	332 423	485 550	421 154	227 864	331 724
Cut	161 756	135 534	314 466	162 003	158 022
Industrial	1 130 572	1 325 000	848 112	773 027	380 351
Dust	...	...	729 325	1 350 635	1 089 380
Portugal	155 718	139 144	...	199 474	157 241
Spain					
Rough	...	...	92	246	3 438
Industrial	...	...	143 921	43 807	113 482
Other	...	...	169 205	96 252	320 395
Austria					
Industrial	50 000	10 000	10 135 000	5 060 000	205 000
Dust	...	...	4 505 000	5 440 000	5 940 000
Other	80 000	110 000	60 000	45 000	110 000
Bulgaria (a)	*138 500	*25 200	*18 700	*16 000	*107 700
Czechoslovakia (a)	*55 600	*180 200	*47 800	*21 800	...
Finland					
Industrial	425 000	15 000	210 000	245 000	190 000
Other	30 000	640 000	125 000	20 000	25 000
German Democratic Republic (a)	*68 900	*39 300	*90 400	*39 700	...
Hungary					
Industrial	30 386	29 149	120 487	21 647	4 103
Malta					
Rough	£2 892 000	£2 094 000	£1 638 000	£2 600 000	...
Industrial	£225 000	£4 000	£36 000	£1 000	...
Norway					
Industrial	245 000	15 000	15 000	25 000	105 000
Other	15 000	80 000	30 000	20 000	20 000
Romania (a)	*376 700	*614 100	*560 200	*591 400	*557 700
Sweden					
Industrial	£414 000	£347 000	£545 000	£499 000	£1 092 000
Other	£5 193 000	£7 344 000	£5 742 000	£5 957 000	£5 030 000
Switzerland					
Industrial	...	...	465 000	310 000	270 000
Other	...	...	15 850 000	11 195 000	9 810 000
Turkey					
Industrial	270 000	140 000	65 000	240 000	1 245 000
Other	75 000	50 000	35 000	5 460 000	585 000
Yugoslavia					
Industrial	£762 000	£461 000	£506 000	£640 000	£590 000
Other	£201 000	£231 000	£125 000	£462 000	£63 000

## Diamond

## Imports of Diamond

carats

Country	1986	1987	1988	1989	1990
Algeria					
Industrial	£235 000	£151 000	£171 000	...	...
Mauritius					
Industrial	—	£23 700	£1 029 000	£2 222 000	...
Other	—	£7 112 000	£9 995 000	£2 082 000	...
South Africa					
Rough	258 000	343 500	418 420	244 075	2 089 925
Cut	20 000	22 500	3 845	42 700	19 895
Industrial	1 450 000	596 500	802 105	452 035	888 270
Tunisia					
Industrial	35 000	5 000	115 000	1 465 000	145 000
Dust	100 000	30 000	1 120 000	775 000	715 000
Other	720 000	625 000	750 000	860 000	610 000
Zambia					
Industrial	2 040 000	70 000	1 280 000	30 000	50 000
Canada					
Cut	296 740	273 018	91 934	104 501	197 029
Industrial	1 733 857	3 348 200	2 110 586	1 331 724	2 016 843
Dust	4 128 282	2 457 987	6 394 797	2 653 848	243 957
Costa Rica					
Industrial	160 000	210 000	5 000	45 000	55 000
Mexico					
Industrial	365 000	...	240 000	...	...
Dust	2 685 000	...	3 405 000	...	...
USA					
Rough	1 288 018	1 369 360	1 644 298	1 818 742	1 285 664
Cut	7 884 765	7 752 028	8 752 889	8 870 080	6 304 959
Industrial	8 947 358	3 833 816	6 908 427	12 661 094	12 478 222
Bort	251 608	326 548	515 145	...	...
Dust	7 260 957	12 677 384	12 479 416	12 086 560	12 200 699
Argentina					
Industrial	115 000	870 000	115 000	...	...
Dust	455 000	600 000	260 000	...	...
Brazil					
Cut	1 870	100	—	...	...
Industrial	132 250	128 370	171 455	...	...
Dust	4 221 980	4 698 335	6 068 840	...	...
Colombia					
Industrial	95 000	...	105 000	295 000	...
Other	85 000	...	65 000	50 000	...
Venezuela					
Industrial	415 000	725 000	1 790 000	925 000	...
Abu Dhabi	30 000	110 000	60 000	...	80 000
China					
Industrial	759 872	106 148	1 044 235	408 415	...
Other	(a)*123 700	119 183	342 575	478 320	...
Cyprus	£847 000	£1 053 000	...	£1 576 000	£1 688 000
Dubai	16 440	...	...	...	...
Hong Kong					
Rough	105 825	99 698	216 690	267 007	478 921
Cut	1 984 785	2 472 936	2 791 158	2 848 252	2 451 193
Industrial	427 305	355 698	653 788	227 070	88 423
India (c)					
Rough	58 620 165	58 813 329	72 452 779	...	52 750 651
Industrial	590 000	5 170 000	125 000	...	—
Israel					
Rough	9 717 000	10 757 000	12 521 000	10 296 000	...
Cut	478 000	601 000	810 000	851 000	...
Industrial	6 778 000	8 529 000	...	...	...
Japan					
Rough	151 272	23 431	40 279	108 629	38 348
Cut	1 571 921	2 356 713	3 344 661	3 243 934	3 266 006
Industrial	737 530	519 349	631 311	654 918	691 293
Dust	1 305 535	1 541 830	1 810 015	2 072 354	1 883 547
Korea, Republic of					
Cut	£959 000	£435 000	£532 000	...	...
Industrial	£772 000	£1 083 000	£1 535 000	£1 700 000	£1 610 000
Dust	106 335	96 590	1 243 200	153 750	111 625
Other	£521 000	£193 000	£325 000	£1 781 000	£3 319 000



## Imports of Diamond

carats

Country	1986	1987	1988	1989	1990
Kuwait	8 305 000	4 315 000	1 780 000	1 750 000	...
Malaysia					
Rough	£7 351 000	£13 335 000	£17 075 000	£31 094 000	...
Cut	£9 037 000	£6 945 000	£7 060 000	£9 685 000	...
Industrial	£17 000	£44 000	£883 000	£226 000	...
Philippines					
Industrial	1 067 311	226 862	132 950	107 751	59 350
Qatar	125	1 500	...	205 000	7 915 000
Saudi Arabia					
Industrial	6 090 000	2 340 000	380 000	105 000	...
Other	60 000	305 000	1 895 000	165 000	...
Singapore					
Rough	£136 000	£62 000	£240 000	£173 000	£1 515 000
Cut	£27 022 000	£30 724 000	£40 463 000	£49 729 000	£72 567 000
Industrial	£439 000	£223 000	£454 000	£2 610 000	£7 152 000
Sri Lanka					
Industrial	251 980	81 169	166 231	...	532 671
Other	303 194	329 633	437 343	...	443 803
Taiwan					
Industrial	1 580 000	5 085 000	265 000	490 000	25 000
Dust	4 455 000	7 085 000	9 825 000	27 925 000	17 070 000
Other	1 250 000	25 000	...	250 000	4 940 000
Thailand					
Rough	511 943	612 143	3 542 997	870 670	1 180 871
Cut	259 998	443 824	6 405 575	1 843 326	3 501 382
Industrial	7 255	6 927	787 404	317 915	423 385
Dust	...	...	1 316 400	1 918 155	6 718 070
Australia					
Rough	—	90 554	313 343	8 000	*33 000
Gem	112 121	113 639	127 555	148 000	152 000
Industrial	2 249 893	2 749 365	2 176 931	1 577 000	1 542 000
New Zealand (b)					
Industrial	£220 000	£182 000	£129 000	£63 000	£43 000
Other	£2 434 000	£4 670 000	£3 934 000	£4 375 000	£5 179 000

## Note(s):

- (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) Years ended 31 March following that stated

**Production of Diatomite**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	300	350	320	270	240
Denmark (a)					
Moler (d)	92 975	94 995	*95 000	*100 000	*90 000
France (b)	269 000	*250 000	*250 000	*250 000	*250 000
Germany, Federal Republic of	49 500	47 200	47 200	46 800	49 800
Italy	*27 000	*27 000	*28 000	*25 000	*25 000
Portugal	2 120	2 890	2 070	2 990	2 270
Spain (b)	128 050	66 217	81 331	83 943	*81 000
Iceland	22 897	23 345	25 142	24 900	24 856
Romania	*55 000	*55 000	*55 000	*50 000	*50 000
Soviet Union	*250 000	*255 000	*260 000	*260 000	*250 000
Turkey	*3 000	5 149	—	—	—
Yugoslavia	10 749	5 458	5 364	6 081	6 119
Algeria	4 000	3 300	3 087	4 400	4 156
Kenya	1 450	616	712	783	944
South Africa	1 800	194	199	133	2 798
Canada	*3 000	*3 000	*3 000	*3 000	*3 000
Costa Rica	4 200	5 200	5 200	6 000	6 000
Mexico	36 022	34 708	36 524	44 920	55 207
USA (c)	570 000	596 000	629 000	617 000	631 000
Argentina	14 362	5 098	7 122	6 301	*7 000
Brazil (e)	11 856	16 011	14 387	16 400	13 300
Chile	2 684	3 218	2 919	3 315	3 877
Colombia	—	2 800	3 000	3 600	3 100
Peru	8 905	20 916	29 650	*20 000	*20 000
Korea, Republic of	54 841	64 783	71 852	75 019	55 000
Thailand	204	177	470	1 424	4 593
Australia	9 048	10 263	11 279	*11 000	*10 000
World total	1 630 000	1 600 000	1 670 000	1 660 000	1 650 000

## Note(s):

(1) In addition to the countries listed, Czechoslovakia, Hungary and Japan are 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) Including beneficiated and directly shipped material

**Exports of Diatomite**

Country	1986	1987	1988	1989	1990
United Kingdom	521	484	679	707	2 556
Belgium-Luxembourg	...	537	730	3 480	2 202
Denmark					
Diatomite	74 267	77 890	81 552	81 866	85 978
Moler bricks	19 125	15 795	23 705	...	...
France	31 730	31 741	36 309	36 767	41 661
Germany, Federal Republic of	1 247	1 409	2 274	2 401	2 509
Italy	3 014	2 942	2 543	2 894	2 765
Netherlands	486	831	586	860	866
Spain	4 087	7 780	8 739	8 096	4 658
Austria	2 203	2 653	2 811	3 671	5 780
Czechoslovakia (a)	*4 800	*4 900	*5 300	*5 400	*5 100
Hungary (a)	*5 000	*1 700	*1 800	*1 400	*500
Iceland	23 423	23 214	25 840	23 553	24 251
Sweden	46	95	125	112	188
Switzerland	50	60	70	23	76
Turkey	4	2 692	513	314	968
Yugoslavia	655	369	712	687	1 340
Kenya	428	414	530	...	...
Mexico	5 460	5 824	6 145	7 986	...
USA	119 298	126 394	147 324	137 131	144 459
Chile	613	*700	721	857	1 461
Hong Kong (b)	442	624	1 440	1 972	1 403
Japan	1 506	1 400	1 986	2 541	1 863
Korea, Republic of	167	422	100	228	623
Singapore (b)	115	223	661	543	778
Taiwan	34	731	22	136	195
Australia (c)	145	483	311	235	260

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

(b) Re-exports

(c) Years ended 30 June of that stated

## Imports of Diatomite

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	26 412	25 689	42 718	39 211	35 718
Belgium-Luxembourg	8 304	13 252	13 670	16 015	16 011
Denmark	5 575	5 669	5 867	5 547	4 505
France	5 756	10 568	11 688	14 130	20 160
Germany, Federal Republic of	38 856	39 326	37 903	38 857	46 043
Greece	2 145	1 529	1 793	2 609	2 771
Irish Republic	146	224	149	269	214
Italy	8 916	5 883	6 662	7 475	7 487
Netherlands	77 143	22 034	20 749	22 435	25 398
Portugal	3 807	4 352	3 780	4 361	4 528
Spain	3 338	3 173	3 448	4 435	4 073
Austria	14 721	13 049	14 342	14 080	13 657
Bulgaria (b)	*1 100	*600	*1 900	*1 800	*2 200
Czechoslovakia (b)	*1 900	*1 200	*1 700	*1 500	*2 000
Finland	5 506	4 910	2 785	3 443	3 610
German Democratic Republic (b)	*1 600	*1 700	*1 900	*2 100	*1 000
Norway	1 986	2 020	1 835	2 067	1 922
Poland (b)	*1 500	*2 300	*2 300	*3 200	*1 900
Romania (b)	*1 100	*400	*500	*400	*1 100
Sweden	2 318	2 884	2 810	2 656	2 186
Switzerland	6 303	6 308	7 196	7 047	6 877
Turkey	147	147	131	232	383
Yugoslavia	1 199	1 160	1 372	1 051	1 422
Algeria	79	54	233	...	...
Cameroon	*400	*600	*700	*500	*300
Gabon	384	...	...	...	212
Ivory Coast	214	...	142	...	...
Morocco	98	126	341	416	697
South Africa	4 399	1 568	2 671	2 422	2 667
Tunisia	167	436	795	763	3 183
Zaire	*400	*100	*10	...	...
Zambia	277	100	242	184	401
Zimbabwe	437	291	486	...	970
Canada	26 338	24 482	19 592	21 041	20 951
Costa Rica	264	291	186	315	316
Dominican Republic	785	...	...	...	...
El Salvador	488	199	527	215	255
Guatemala	184	289	340	297	296
Honduras	555	646	314	501	...
Mexico	546	422	594	2 095	...
Nicaragua	277	...	...	...	...
Panama	433	575	316	471	748
USA	710	6 022	2 761	838	689
Argentina	2 300	1 822	2 038	...	...
Brazil	1 310	1 750	1 200	...	4 557
Colombia	1 585	...	1 471	1 406	...
Ecuador	501	688	355	221	...
Peru	1 460	2 631	1 097	292	...
Venezuela	4 656	14 664	7 330	2 587	...
China (b)	*900	*2 200	*2 500	*2 700	*3 100
Cyprus	203	186	...	360	239
Hong Kong	984	1 227	2 330	2 716	2 149
India (d)	300	776	1 303	...	1 185
Indonesia	769	1 323	2 045	1 298	2 071
Iran (c)	1 545	431	343	181	...
Israel (b)	*800	*700	*1 200	*1 100	*1 000
Japan	3 901	5 006	6 860	5 327	4 501
Korea, Republic of	77	96	345	417	414
Malaysia	788	688	937	1 062	...
Pakistan (a)	254	194	408	...	257

**Imports of Diatomite**

Country	1986	1987	1988	1989	1990
Philippines	408	795	628	405	738
Saudi Arabia	2 586	698	1 867	4 785	...
Singapore	963	1 139	1 956	1 645	1 943
Sri Lanka	83	60	41	...	89
Taiwan	4 296	4 623	7 150	11 039	6 117
Thailand	153	373	105	143	275
Australia (a)	6 332	5 367	6 285	7 710	6 452
New Zealand (a)	1 353	1 870	2 466	2 549	2 654

(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

(d) Years ended 31 March following that stated

**Production of Feldspar**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	7 304	5 692	6 422	6 470	6 257
France	274 000	216 000	322 000	360 500	395 840
Germany, Federal Republic of	246 500	310 400	308 800	332 600	337 600
Greece	24 471	8 260	37 531	28 903	17 608
Italy	1 141 542	1 188 700	1 367 546	1 336 375	1 605 431
Portugal	35 281	40 917	51 903	65 855	54 873
Spain (c)	135 526	161 631	195 668	191 238	*150 000
Austria	2 850	4 692	8 222	7 351	8 788
Finland	55 750	45 817	54 170	51 743	50 905
Norway (d)	87 257	80 016	90 338	59 709	63 440
Poland	57 200	57 600	*50 000	*50 000	*50 000
Romania	*86 000	*82 000	*82 000	59 960	*55 000
Soviet Union	*330 000	*330 000	*330 000	*330 000	*300 000
Sweden (e)	35 160	34 226	38 180	38 437	*40 000
Turkey	12 180	30 336	82 225	84 932	182 266
Yugoslavia	47 909	45 000	35 614	48 276	43 000
Egypt	18 020	15 963	6 131	5 527	21 299
Kenya	—	—	—	1 112	1 290
Morocco	*1 000	*1 000	*1 000	*1 000	*1 000
Nigeria	803	535	75	945	714
South Africa	41 232	50 930	61 440	52 964	56 124
Zambia	214	45	120	20	60
Zimbabwe	2 027	2 962	3 730	2 697	2 197
Guatemala	5 446	7 079	7 200	7 000	11 895
Mexico	85 019	106 490	86 258	113 438	124 497
USA	665 000	655 000	650 000	655 000	630 000
Argentina	24 087	29 282	39 469	23 688	*24 000
Brazil (f)	120 572	118 608	109 534	*110 000	*110 000
Chile	2 275	705	4 569	8 081	2 980
Colombia	35 722	33 760	30 500	40 850	38 675
Ecuador	5 192	7 876	10 562	7 463	*8 000
Peru	19 467	14 552	*20 000	*20 000	*20 000
Uruguay	1 632	3 016	2 787	2 680	*3 000
Venezuela	35 698	43 214	96 744	83 557	100 779
Hong Kong	35 208	22 853	11 050	5 152	3 820
India	48 264	49 663	57 656	56 690	*58 000
Iran (b)	*32 000	*32 000	*32 000	*32 000	20 000
Japan	483 948	480 584	539 048	506 594	544 118
Jordan	...	63	200	10 300	9 200
Korea, Republic of	130 895	180 269	241 511	232 607	*240 000
Myanmar (a)	3 077	5 620	4 938	1 812	*2 500
Pakistan	11 575	6 675	9 510	7 703	10 249
Philippines	6 661	11 996	9 199	*6 000	*8 000
Sri Lanka	7 270	7 442	7 278	1 282	9 750
Taiwan	26 290	28 116	19 101	9 806	7 321
Thailand	115 163	168 881	293 686	515 206	311 249
Australia	10 006	11 499	25 373	*15 000	*16 000
World total	4 600 000	4 700 000	5 400 000	5 600 000	5 800 000

## Note(s):

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

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) Including pegmatite

(d) Unground: production of ground withheld

(e) Sold or used by producers

(f) Including beneficiated and directly shipped material

## Exports of Feldspar

Country	1986	1987	1988	1989	1990
United Kingdom	357	450	823	2 350	2 447
France	46 847	62 775	77 857	119 843	123 367
Germany, Federal Republic of	26 313	27 329	29 131	32 335	33 010
Italy	29 413	29 632	34 557	29 989	29 132
Netherlands	1 114	1 364	1 216	1 608	1 840
Portugal	(a)7 267	(a)22 706	14 501	10 537	6 999
Spain	(a)2 578	(a)3 382	2 413	3 060	9 361
Czechoslovakia (b)	*2 600	*6 700	*2 200	*4 000	...
Finland	(a)40 301	(a)32 964	34 050	32 328	32 770
Norway	74 185	74 953	69 059	71 763	71 265
Sweden	(a)22 273	(a)16 047	26 386	20 070	24 202
Turkey	17 050	17 898	20 094	(a)(c)43 751	(a)(c)96 546
Yugoslavia	2 228	3 026	3 576	4 635	6 356
South Africa	913	3 475	4 514	5 797	6 029
Guatemala (a)(c)	2 731	3 946	3 665	4 067	4 993
Mexico	688	3 845	5 591	11 764	...
USA	(a)11 596	(a)8 773	(a)12 510	9 705	24 795
Brazil	10	2 500	6 925	2 242	6 660
China (a)(b)(c)	*52 400	*89 200	*108 300	*145 400	*192 200
Hong Kong (c)	50 555	77 515	79 524	105 673	146 487
of which: Re-exports	28 165	51 805	56 324	84 473	112 687
India (d)	20 033	44 811	28 593	...	38 182
Japan	32 822	31 281	28 841	34 369	31 331
Korea, Republic of	16 759	19 258	24 101	6 611	24 566
Singapore (a)	3 585	1 597	4 002	7 950	7 524
of which: Re-exports	3 585	1 597	4 002	7 950	7 522
Thailand	46 064	96 644	263 370	380 217	333 739
Australia (e)	...	...	...	9 214	12 548

(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

(e) Years ended 30 June of that stated

## Feldspar

## Imports of Feldspar

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	59 337	53 985	50 756	46 375	49 010
Belgium-Luxembourg	18 372	19 853	23 799	25 607	19 035
Denmark	4 932	3 837	4 595	3 938	4 083
France	23 627	28 331	29 021	32 008	32 340
Germany, Federal Republic of	55 193	62 299	66 710	78 046	76 606
Greece	4 446	3 357	3 497	4 365	15 527
Irish Republic	(a)(c)8 119	(a)(c)3 668	3 262	71	43
Italy	7 019	10 917	23 020	70 866	100 470
Netherlands	19 749	14 425	11 203	9 157	12 739
Portugal	322	424	630	1 582	7 340
Spain	(a)19 829	(a)32 607	42 837	70 048	81 353
Austria	(a)4 466	(a)4 716	4 767	4 386	4 944
German Democratic Republic (a)(b)	*10 600	*20 300	*18 100	*16 200	*3 300
Hungary	352	625	545	590	304
Norway	187	82	1 362	751	233
Poland	11 630	15 578	12 401	12 182	...
Sweden	(a)13 392	(a)12 431	10 035	8 410	5 907
Switzerland	(a)11 691	(a)14 994	16 207	16 459	14 266
Yugoslavia	490	1 676	2 373	1 139	1 393
Algeria (a)	3 000	1 627	...	...	...
Egypt (a)(c)	8 331	9 079	15 345	...	...
Morocco (a)	358	1 022	1 095	648	836
Tunisia	1 561	1 462	2 041	2 049	2 177
Canada	(e)3 497	(e)1 691	13 235	3 961	2 589
Costa Rica (c)	2 954	3 907	3 521	4 702	4 621
Mexico	610	206	522	1 445	...
Panama (a)(c)	3 400	209	1 517	38	3 164
USA	1 136	4 384	6 705	12 003	11 318
Venezuela	981	1 841	1 077	704	...
Hong Kong (c)	37 396	69 976	85 947	126 087	178 243
Indonesia (a)	12 504	14 193	16 000	18 977	16 723
Israel (a)(b)	*3 500	*6 200	*2 500	*2 700	*3 300
Japan	(a)6 766	(a)17 977	11 709	4 298	12 636
Jordan (a)(c)	928	805	1 382	549	669
Korea, Republic of	771	1 905	2 849	2 329	8 728
Malaysia	(a)(c)20 867	(a)(c)25 846	31 668	41 821	...
Philippines (a)(c)	1 535	6 516	3 423	7 724	6 258
Saudi Arabia (a)(c)	275	560	619	617	...
Singapore (a)	4 413	1 613	5 686	13 385	20 889
Syria (a)(c)	1 879	937	...	...	...
Taiwan	(a)(c)158 131	(a)(c)224 733	(a)(c)338 580	479 824	533 896
Thailand (a)	531	2 910	879	1 158	1 679
New Zealand (d)	(a)(c)832	(a)(c)758	(a)(c)912	354	146

(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

(e) Exports from the USA



**Production of Fluorspar**

Country	1986	1987	1988	1989	1990
United Kingdom	133 420	120 000	103 797	122 057	118 498
France	238 500	184 300	185 400	208 200	202 100
Germany, Federal Republic of	88 800	85 200	77 700	73 800	85 400
Greece	150	112	604	450	*150
Italy	145 537	135 550	140 885	118 692	125 467
Spain	282 460	151 427	142 575	172 325	*125 000
Czechoslovakia	*95 000	*95 000	*95 000	*95 000	*95 000
German Democratic Republic	*100 000	115 600	111 400	99 200	*80 000
Romania	*20 000	*18 000	*18 000	*16 000	*15 000
Soviet Union	410 500	*410 500	*410 500	*410 000	*410 000
Sweden	265	220	—	—	—
Turkey	1 604	*10 000	13 240	*13 000	*13 000
Egypt	80	502	1 849	1 611	1 249
Kenya	50 851	60 190	67 351	95 181	112 295
Morocco	83 000	78 500	100 500	105 000	87 000
Namibia	—	—	3 989	25 679	27 107
South Africa	333 885	316 606	328 421	368 340	311 032
Tunisia	36 300	43 300	56 000	53 700	40 974
Canada	—	*10 000	*40 000	*50 000	*25 000
Mexico	766 822	817 635	838 000	861 000	695 000
USA	*70 800	*63 500	*63 500	*66 000	*63 500
Argentina	39 076	54 975	18 052	23 317	*20 000
Brazil (a)	83 680	88 944	89 998	111 568	70 100
China	*900 000	*1 000 000	*1 400 000	1 680 000	1 650 000
India	18 574	18 457	20 392	28 065	*22 900
Iran (b)	*6 000	7 352	6 483	*6 000	5 000
Korea, Dem. P.R. of	*40 000	*40 000	*40 000	*40 000	*40 000
Korea, Republic of	243	63	261	856	*900
Mongolia	780 000	843 000	919 000	999 000	884 000
Pakistan	4 353	3 673	375	4 741	5 312
Thailand	167 909	102 398	76 321	98 375	94 757
World total	4 900 000	4 900 000	5 400 000	5 900 000	5 400 000

## Note(s):

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

(a) Including beneficiated and directly shipped material

(b) Years ended 20 March following that stated

## Fluorspar

**Exports of Fluorspar**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	5 137	4 732	8 115	8 439	3 983
Belgium-Luxembourg	20	—	3 069	3 715	4 130
France	45 701	47 046	38 564	57 842	40 204
Germany, Federal Republic of	13 100	20 463	24 897	27 207	41 232
Italy	11 743	37 732	19 674	1 381	4 958
Netherlands	408	461	1 863	964	1 704
Spain	174 148	90 970	72 720	51 600	54 787
German Democratic Republic (b)	*36 000	*33 500	*27 700	*15 500	*15 800
Sweden	557	1 458	2 108	1 600	1 514
Kenya	41 132	45 681	98 105	...	...
Morocco	79 944	87 708	89 694	108 664	81 748
South Africa	288 070	281 427	313 186	323 410	245 695
Tunisia	6 100	8 536	15 000	11 070	1 945
Canada	(c)223	(c)5 596	38 301	40 123	22 620
Mexico	437 591	474 774	509 444	554 390	379 002
USA	14 730	2 679	3 163	6 486	16 261
China	700 130	775 848	911 976	1 183 533	1 093 847
Japan	(a)157	(a)245	1 558	506	338
Thailand	137 619	114 542	25 487	73 864	79 695

(a) May include some leucite and nepheline

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

(c) Imports into the USA

## Imports of Fluorspar

Country	1986	1987	1988	1989	1990
United Kingdom (b)	*28 200	*17 900	*32 700	*72 300	*32 800
Belgium-Luxembourg	7 662	10 643	17 663	17 109	20 442
Denmark	486	491	420	445	453
France	12 990	14 554	14 220	21 852	18 440
Germany, Federal Republic of	208 860	190 138	242 761	254 641	225 582
Greece	11 720	13 839	4 597	1 050	20 287
Italy	82 274	67 317	65 528	104 246	115 071
Netherlands	23 148	30 330	35 963	26 045	30 520
Portugal	437	2 716	2 230	2 049	1 963
Spain	43	1 387	7 628	4 924	5 015
Albania (b)	*1 000	*1 000	*200	...	...
Austria	12 356	13 919	11 387	16 779	19 756
Bulgaria (b)	*200	*300	*700	*500	...
Finland	6 382	8 260	7 548	7 851	8 654
Hungary	6 481	5 912	4 124	5 454	1 706
Norway	47 021	46 804	48 942	44 238	47 070
Poland	23 907	22 898	17 685	4 695	...
Romania (b)	*4 200	*4 800	...	...	...
Soviet Union (b)	*51 000	...	...	...	...
Sweden	10 648	10 956	11 832	13 915	11 407
Switzerland	...	...	696	860	998
Turkey	100	80	436	446	595
Yugoslavia	9 223	8 280	10 349	4 838	6 036
Algeria	1 900	26	...	...	...
Egypt (a)(c)	8 331	9 079	15 345	...	...
Tunisia	6 629	2 840	2 798	1 805	6 575
Canada	164 114	134 567	194 057	162 664	151 255
Costa Rica (c)	2 954	3 907	3 521	4 702	4 621
Panama (a)(c)	3 400	209	1 517	38	3 164
USA	483 208	542 319	693 412	655 410	502 971
Chile (b)	*100	*4 300	*3 400	...	...
Peru	2 268	279	382	184	...
Venezuela	302	1 203	1 209	659	...
Hong Kong (c)	37 396	69 976	85 947	126 087	178 243
India (e)	24 921	19 431	23 346	...	41 266
Japan	527 236	527 545	609 113	708 957	567 023
Jordan (a)(c)	928	805	1 382	549	669
Korea, Republic of	28 598	61 752	50 453	74 503	52 936
Malaysia	(a)(c)13 399	(a)(c)16 799	1 660	1 784	...
Philippines (a)(c)	1 535	6 516	3 423	7 724	6 258
Saudi Arabia (a)(c)	275	560	619	617	...
Syria (a)(c)	1 879	937	...	...	...
Taiwan	(a)(c)158 131	(a)(c)224 733	(a)(c)338 580	14 587	25 431
Thailand	392	754	2	—	42
Australia (d)	23 117	29 923	22 726	16 725	28 223
New Zealand (d)	(a)(c)832	(a)(c)758	(a)(c)912	91	304

(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

## Graphite

**Production of Graphite**

tonnes

Country	1986	1987	1988	1989	1990
Germany, Federal Republic of (b)	13 200	9 900	9 700	10 600	10 400
Austria (a)	36 167	39 391	7 577	15 307	22 705
Czechoslovakia	13 686	12 763	14 304	14 676	*15 000
Norway	—	—	—	1 800	6 930
Romania	*12 000	*12 000	*12 000	10 000	*20 000
Soviet Union	*83 000	84 000	*84 000	*84 000	*80 000
Turkey	3 586	11 760	12 911	11 873	18 712
Madagascar	16 188	13 569	14 564	15 865	18 036
Zimbabwe	15 004	13 530	11 441	16 888	16 383
Mexico	37 856	38 461	43 831	40 246	24 916
Brazil (d)	47 660	41 919	52 789	45 600	*46 000
China	*185 000	*185 000	*200 000	494 400	678 900
India	40 483	26 864	57 325	47 731	50 000
Korea, Dem. P.R. of	*25 000	*25 000	*25 000	*35 000	*35 000
Korea, Republic of	97 218	107 345	108 445	101 468	93 839
Myanmar (c)	722	—	—	—	—
Sri Lanka	7 453	6 718	6 394	3 993	5 558
World total	634 000	628 000	660 000	949 000	1 142 000

## Note(s):

- (1) This table includes all forms of amorphous and crystalline graphite but excludes synthetic material
- (2) In addition to the countries listed, Canada, Egypt, Namibia and the USA are 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

## Exports of Graphite

Country	1986	1987	1988	1989	1990
United Kingdom	3 739	3 184	3 250	3 416	2 888
France	497	567	616	726	562
Germany, Federal Republic of	9 844	10 287	9 981	13 175	9 101
Italy	244	342	426	913	456
Netherlands	87	514	1 283	1 890	1 880
Spain	126	72	296	749	628
Austria	10 284	8 330	8 926	8 723	8 376
Czechoslovakia (a)	*2 800	*3 100	*2 900	*3 200	*3 000
Norway	954	56	24	818	6 686
Madagascar	13 707	11 141	...	15 049	6 875
South Africa (a)	*300	*400	*1 200	*1 600	*1 900
Zimbabwe	14 700	12 503	9 934	...	13 930
Canada	...	...	6 101	999	10 530
Mexico	18 918	19 598	22 843	18 645	...
USA	13 089	11 700	28 201	21 583	11 863
Brazil	9 213	9 986	12 706	13 006	8 491
China (a)	*80 900	*88 200	*105 200	*142 200	*131 500
Hong Kong (c)	3 036	3 781	3 930	3 840	1 576
India (b)	1 027	312	247	...	2 790
Japan	2 666	2 019	1 767	2 059	1 314
Korea, Dem. P.R. of (a)	*4 600	*6 600	*9 200	*12 400	*9 900
Korea, Republic of	30 969	56 827	51 537	52 629	48 697
Sri Lanka	9 824	10 388	8 958	4 338	4 654
Taiwan	204	178	70	144	16

## Note(s):

(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

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	23 101	19 729	23 437	28 447	24 767
Belgium-Luxembourg	951	824	578	1 288	700
Denmark	1 388	1 068	1 599	1 445	1 748
France	5 572	5 864	5 707	6 424	5 203
Germany, Federal Republic of	37 793	30 504	30 264	43 061	35 828
Greece	791	741	656	1 351	1 243
Italy	6 867	7 465	6 792	10 840	12 271
Netherlands	1 204	1 726	2 306	3 392	4 467
Portugal	148	541	241	281	202
Spain	3 993	4 692	4 108	5 161	4 413
Austria	4 966	2 083	3 291	8 362	2 933
Bulgaria (d)	*1 400	*1 700	*1 000	*1 100	*150
Czechoslovakia (d)	*400	*300	*300	*400	*200
Finland	82	115	77	301	188
German Democratic Republic	5 289	4 947	5 338	5 643	...
Hungary	1 302	2 270	4 690	1 602	1 282
Norway	441	233	61	146	180
Poland	3 929	4 066	4 957	4 108	...
Sweden	570	789	599	456	627
Switzerland	237	187	158	150	210
Turkey	440	509	453	725	1 436
Yugoslavia	2 235	2 415	2 560	2 458	1 802
Algeria	161	25	77	...	...
Egypt	165	1 365	859	...	...
Mauritius	714	...	1 813	737	416
South Africa	2 751	3 182	3 894	4 287	5 094
Canada	(e)3 645	(e)8 621	9 237	6 047	6 278
USA	38 817	43 334	53 830	69 597	50 213
Argentina	391	435	553	...	...
Venezuela	681	1 014	1 560	637	...
Hong Kong	3 685	4 104	2 995	4 593	1 394
India (c)	389	423	457	...	315
Indonesia	968	704	448	766	1 687
Iran (a)	734	653	144	133	...
Japan	58 645	94 268	96 611	119 251	126 527
Korea, Republic of	3 180	3 784	5 942	6 341	23 692
Kuwait	120	650	632	784	...
Malaysia	510	734	697	718	...
Pakistan (b)	845	2 630	2 433	...	2 627
Philippines	122	365	328	213	231
Singapore	407	314	587	715	1 002
Taiwan	8 513	8 390	14 890	10 106	7 393
Thailand	827	1 138	665	1 275	984
Australia (b)	1 293	1 551	2 176	2 773	2 086
New Zealand (b)	108	121	75	23	91

## Note(s):

(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

(e) Exports from the USA

# Production of Gypsum

Gypsum

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Gypsum	3 363 000	*3 500 000	*3 700 000	*4 000 000	*3 500 000
Anhydrite	53 000	...	...	...	...
France	5 259 000	5 409 000	5 628 000	5 684 000	5 796 000
Germany, Federal Republic of					
Gypsum	1 482 600	1 397 300	1 451 300	1 367 300	1 427 500
Anhydrite	505 000	309 700	291 400	*300 000	*300 000
Greece	556 098	665 144	599 011	540 637	450 149
Irish Republic	288 700	284 200	326 500	314 400	394 800
Italy	1 219 823	1 215 000	1 300 000	1 230 544	1 262 228
Luxembourg	*400	*400	*400	*400	*400
Portugal	265 301	323 035	338 029	*300 000	*300 000
Spain	5 062 941	6 684 653	7 468 618	*5 500 000	*5 000 000
Austria					
Gypsum	586 432	578 614	624 101	693 711	633 054
Anhydrite	115 317	86 437	97 644	111 943	118 591
Bulgaria					
Gypsum	395 000	306 000	*350 000	(a)499 600	(a)494 391
Anhydrite	99 000	103 000	*100 000	...	...
Czechoslovakia (a)	743 100	770 998	774 133	796 000	744 000
German Democratic Republic	*1 200 000	1 134 000	1 155 000	1 062 000	*1 150 000
Hungary	*20 000	100 400	117 845	115 000	189 933
Poland (a)	1 107 000	1 127 000	1 110 000	1 416 000	915 000
Romania	*1 600 000	*1 500 000	*1 600 000	*1 600 000	*1 500 000
Soviet Union	4 599 000	4 781 000	*4 902 000	*4 900 000	*4 700 000
Switzerland	*200 000	*230 000	*230 000	*230 000	*230 000
Turkey	128 051	301 743	231 218	213 731	171 518
Yugoslavia	595 000	553 000	555 231	543 819	*550 000
Algeria	*275 000	*275 000	*275 000	*275 000	*275 000
Angola	*20 000	*20 000	*57 000	*57 000	*57 000
Egypt (f)	905 688	1 088 472	1 337 000	1 309 426	1 279 000
Ethiopia	*900	*1 800	*1 800	*1 800	*1 800
Kenya	11 060	38 819	37 565	36 478	2 700
Libya	*180 000	*180 000	*180 000	*180 000	*180 000
Mauritania	12 642	19 402	6 033	6 350	3 600
South Africa	404 205	349 079	372 169	406 743	390 765
Sudan	50 000	8 500	10 000	28 000	30 000
Tanzania	14 144	29 646	19 570	5 895	36 000
Tunisia	*100 000	*100 000	*100 000	*100 000	*100 000
Canada (a)	(d)8 802 805	9 949 000	9 430 000	9 179 000	8 693 000
Cuba	*130 000	*130 000	*130 000	*130 000	*130 000
Dominican Republic	132 000	59 777	66 261	*70 000	78 146
El Salvador	*4 000	*4 500	*4 500	*4 500	*4 500
Guatemala	30 608	53 323	34 448	57 268	65 560
Honduras	*22 000	*22 000	*22 000	*22 000	*22 000
Jamaica	117 000	176 300	145 500	78 010	82 210
Mexico	4 232 805	4 575 416	4 779 827	5 390 391	6 000 955
Nicaragua	*8 000	7 299	*7 000	*7 000	13 444
USA	13 973 000	14 163 000	14 869 000	15 988 000	14 883 000
Argentina	462 195	618 817	520 153	402 399	*400 000
Brazil (e)	628 479	659 217	637 714	*650 000	*650 000
Chile	192 847	235 173	315 904	277 276	253 744
Colombia	295 042	302 100	307 236	553 025	608 328
Ecuador	4 127	30 666	8 118	10 670	24 122
Paraguay	2 800	3 100	3 600	4 500	4 500
Peru	172 619	34 218	*150 000	*160 000	*150 000
Uruguay	114 162	142 629	145 105	*145 000	*145 000
Venezuela	257 136	247 312	221 532	318 521	248 522

**Production of Gypsum**

tonnes

Country	1986	1987	1988	1989	1990
Afghanistan	*3 000	*3 000	*3 000	*3 000	*3 000
China	*6 500 000	*7 200 000	*8 100 000	9 010 000	10 420 000
Cyprus	30 000	45 700	32 710	10 980	37 000
India	1 640 443	1 733 720	1 424 674	1 539 276	*1 600 000
Iran (c)	*8 400 000	*8 400 000	7 648 470	*8 000 000	9 030 000
Iraq	*300 000	*350 000	*350 000	*450 000	*470 000
Israel	45 999	35 000	31 181	*30 000	*38 000
Jordan	70 083	114 560	84 866	132 400	92 700
Laos	*30 000	*70 000	80 000	104 000	*115 000
Lebanon	*3 000	*2 000	*2 000	*2 000	*2 000
Mongolia	*32 000	*32 000	*32 000	*32 000	*32 000
Myanmar (b)	25 858	22 895	31 716	31 435	31 026
Pakistan (a)	373 096	449 013	384 000	466 969	477 671
Philippines	13 080	16 299	2 250	2 500	2 000
Saudi Arabia	140 736	134 976	151 722	160 766	*160 000
Syria	*160 000	248 000	*179 000	*180 000	*180 000
Taiwan	2 447	1 378	2 438	3 904	1 743
Thailand	1 665 557	3 030 919	4 549 010	5 477 237	5 753 351
Vietnam	*25 000	*25 000	*25 000	*25 000	*25 000
Yemen Arab Republic	53 000	150 000	160 000	*160 000	(g)*160 000
Australia	1 671 001	1 580 331	1 655 956	*1 800 000	*1 800 000
World total	82 200 000	88 500 000	92 100 000	94 900 000	95 100 000

(a) Including anhydrite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Excluding shipments to Canadian cement manufacturers

(e) Including beneficiated and directly shipped material

(f) Years ended 30 June of that stated

(g) Yemen Arab Republic and People's Dem. Rep. of Yemen were unified on 22 May 1990 as the Republic of Yemen



## Exports of Gypsum

Country	1986	1987	1988	1989	1990
United Kingdom					
Crude	2 569	1 951	1 378	1 903	2 015
Calcined	14 852	10 195	12 176	15 128	14 496
Belgium-Luxembourg					
Crude	17 077	37 366	25 970	20 551	11 053
Calcined	77 128	94 073	102 402	98 677	116 974
Denmark					
Crude & calcined	3 134	3 886	4 716	1 349	5 059
of which: Re-exports	2 858	3 189	3 994	164	1 737
France					
Crude	1 083 869	941 296	915 105	769 463	759 277
Calcined	225 556	228 276	241 979	235 425	255 497
Germany, Federal Republic of					
Crude	115 991	188 384	184 425	164 413	235 071
Calcined	163 929	189 072	227 885	270 880	241 219
Greece	24	99 430	4 928	2 069	36 432
Irish Republic					
Crude	1 387	5 557	20 239	33 864	46 839
Calcined	54 809	46 359	35 776	35 268	34 707
Italy					
Crude	7 378	8 488	658	2 654	5 563
Calcined	6 425	4 799	12 735	13 133	15 320
Netherlands					
Crude	35 874	97 978	74 852	44 191	66 037
Calcined	17 788	11 945	9 759	44 085	6 658
Spain					
Crude	2 472 154	2 579 764	2 785 429	2 429 382	2 647 446
Calcined	14 115	15 608	29 108	39 792	93 173
Austria					
Crude	64 024	64 217	66 137	74 290	79 072
Calcined	55 271	53 062	61 612	77 047	80 867
German Democratic Republic					
Calcined	97 812	83 596	95 051	76 646	...
Poland	(a)*4 000	...	...	32	1 667
Romania (a)	*12 300	*12 700	*11 100	...	...
Soviet Union (a)	*13 700	*18 300	*21 900	*19 500	*4 500
Sweden					
Crude & calcined	409	326	281	636	814
Switzerland					
Crude & calcined	15 143	18 972	13 827	15 283	13 265
Turkey					
Crude & calcined	5 539	1 280	14 227	611	2 127
Yugoslavia	10 556	9 145	16 158	8 183	47 137
Kenya	1 623	72	4 003	...	...
Morocco					
Crude	183 770	(d)130 368	203 250	236 950	164 202
Calcined	2 636	...	662	2 892	649
South Africa	663	—	—	—	78
Tunisia					
Crude & calcined	...	1 200	1 571	2 654	1 252
Zimbabwe					
Crude	1 380	6 000	...	...	...
Canada					
Crude	5 942 849	5 723 359	5 680 756	5 195 621	5 804 951
Calcined	...	...	20 037	18 637	769
Dominican Republic	23 079	71 887	105 739	88 020	42 134
Guatemala	16 141	33 186	15 252	17 623	11 058
Jamaica	100 143	117 577	89 497	37 584	59 473
Mexico	2 337 521	2 183 696	2 241 219	2 603 744	1 519 589
USA					
Crude	13 155	3 417	4 423	98 152	170 926
Calcined	127 758	111 899	241 718	96 611	85 514
Argentina	10 065	12 350	20 334	13 404	...
Venezuela	—	—	1	13 100	...
Abu Dhabi					
Crude & calcined	546	3 513	2 167	...	430
China (a)	*19 400	*30 500	*32 200	*34 500	*36 100

## Gypsum

**Exports of Gypsum**

tonnes

Country	1986	1987	1988	1989	1990
Cyprus					
Crude	10 659	11 749	17 500	2 901	30 114
Calcined	1 565	4 158	...	237	64
Hong Kong (c)	4 709	4 960	2 928	19 859	7 736
India (b)	724	5 879	5 785	...	8 903
Indonesia					
Crude	83 935	80 421	116 213	110 753	81 639
Japan					
Crude	694	866	1 061	780	1 553
Calcined	4 143	4 166	4 835	5 166	4 253
Korea, Republic of					
Crude	34	12	11 205	16 220	11 032
Calcined	35	70	83	345	463
Laos	90 490	...	...	...	...
Philippines					
Crude	5 250	61 227	60 790	94 638	53 443
Saudi Arabia					
Crude & calcined	14 414	18 593	25 228	31 394	...
Singapore					
Crude & calcined	2 739	5 040	7 279	9 215	4 968
of which: Re-exports	2 543	4 656	6 386	7 515	4 253
Syria	76 713	72 606	...	...	...
Taiwan	726	741	1 747	3 068	3 299
Thailand					
Crude	1 226 606	1 147 271	3 833 944	8 735 772	11 727 007
Calcined	90 766	324 888	20 734	26 637	31 324
Australia					
Crude & calcined (e)	394 277	382 400	127 102	83 646	10 072

## Note(s):

- (1) In this table the term 'crude' 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
- (d) Including calcined
- (e) Years ended 30 June of that stated

## Imports of Gypsum

Country	1986	1987	1988	1989	1990
United Kingdom					
Crude	34 148	88 461	169 119	132 501	262 557
Calcined	52 043	55 645	64 501	71 304	169 051
Belgium-Luxembourg					
Crude	345 419	436 366	516 063	459 122	489 572
Calcined	162 542	148 755	179 578	217 474	213 077
Denmark					
Crude	199 781	248 719	293 946	323 213	272 216
Calcined	9 026	10 357	23 836	19 764	49 253
France					
Crude	60 572	120 361	169 547	138 025	116 614
Calcined	30 177	38 765	59 784	47 525	31 321
Germany, Federal Republic of					
Crude	760 252	698 306	590 642	483 064	416 793
Calcined	94 389	86 260	154 656	206 096	196 191
Greece					
Crude	125	164	156	129	214
Calcined	1 298	780	742	1 039	1 466
Irish Republic					
Crude	3 832	4 896	1 550	562	3 419
Calcined	7 124	3 348	5 335	5 624	6 041
Italy					
Crude	777	4 875	12 258	11 272	27 203
Calcined	14 692	11 782	15 122	28 551	45 820
Netherlands					
Crude	251 780	316 316	340 126	330 515	263 521
Calcined	202 425	192 993	207 383	248 017	245 234
Portugal					
Crude	47 619	48 095	(c)63 997	(c)75 732	(c)85 763
Calcined	1 566	5 675	...	...	...
Spain					
Crude	2	7	143 431	39 778	11 939
Calcined	702	1 100	1 513	13 396	33 189
Austria					
Crude	6 471	5 160	5 002	4 758	4 853
Calcined	6 279	7 222	5 515	7 149	8 368
Czechoslovakia	23 000	20 000	24 000	23 000	...
Finland					
Crude	183 044	218 806	203 648	258 410	242 744
Calcined	2 729	3 374	4 786	7 094	6 580
Hungary					
Calcined	77 830	69 686	76 984	...	38 292
Iceland	4 555	6 683	9 993	5 739	6 408
Norway					
Crude	146 727	130 280	38 208	13 245	5 853
Calcined	64 591	100 525	221 321	247 905	285 631
Sweden					
Crude	284 810	406 680	492 098	521 192	500 848
Calcined	6 858	11 532	9 969	10 277	11 120
Switzerland					
Crude	30 456	132 730	65 281	59 933	56 594
Ground & calcined	38 751	48 379	49 923	62 025	72 064
Turkey	20 523	35 173	35 890	35 873	23 358
Algeria					
Crude & calcined	1 927	1	...	...	...
Cameroon					
Crude & calcined	12 417	36 491	...	...	...
Egypt	1 759	1 126	...	...	...
Gabon					
Crude & calcined	808	...	...	...	199
Ghana	20 175	18 468	...	...	...
Ivory Coast					
Crude	19 703	...	27 622	...	...
Calcined	1 869	...	3 897	...	...
Kenya	2 140	2 148	18 803	...	...
Liberia					
Crude & calcined	439	5 049	...	...	...
Madagascar					
Crude & calcined	4 001	—	...	60	58

## Gypsum

## Imports of Gypsum

tonnes

Country	1986	1987	1988	1989	1990
Reunion					
Crude & calcined	10 151	11 660	8 121	...	...
Senegal					
Crude	14 210	8 574	12 282	15 930	...
Calcined	500	1 160	1 575	1 013	...
South Africa					
Crude & calcined	6 407	12 215	38 338	34 828	22 256
Tunisia					
Crude & calcined	520	478	679	393	562
Zaire					
Crude & calcined	*5 900	*13 300	*5 600	...	...
Zimbabwe					
Crude & calcined	765	31	6 338	...	11
Bahamas					
Crude & calcined	930	404	2 925	511	...
Canada					
Crude	221 647	217 624	275 362	291 033	303 395
Calcined	21 307	25 898	*30 000	32 901	33 401
Costa Rica					
Crude & calcined	20 574	15 420	26 880	29 697	28 289
El Salvador					
Crude & calcined	22 390	21 029	11 547	16 151	9 761
Guadeloupe					
Crude & calcined	10 690	10 918	17 651	9 192	...
Martinique					
Crude & calcined	9 749	12 459	17 833	11 039	16 995
Mexico					
Crude	4 810	1 581	29 449	10 203	...
Calcined	3 735	4 079	4 874	4 822	...
Panama					
Crude & calcined	9 757	9 532	13 045	...	14 899
Trinidad & Tobago					
Crude & calcined	10 973	6 815	12 224	8 892	19 650
USA					
Crude	8 671 930	8 815 373	8 780 753	8 440 848	7 916 468
Ground & calcined	22 011	2 344	2 638	2 346	1 324
Colombia					
Crude & calcined	65 043	...	34 822	32 121	...
Ecuador					
Crude & calcined	16 700	31 874	65 820	30 790	8 475
Paraguay					
Crude & calcined	8 858	...	...	...	...
Uruguay					
Crude & ground	960	1 225	8 929	...	...
Venezuela					
Crude & calcined	76 289	50 785	94 885	63 203	...
Abu Dhabi					
Crude & calcined	1 212	2 947	3 684	...	9 167
Bahrain					
Crude & calcined	180 473	2 891	8 719	7 742	...
Hong Kong					
Crude & calcined	110 865	124 717	113 482	132 623	77 441
Indonesia					
Crude & calcined	197 521	122 373	92 531	141 394	248 631
Israel (a)					
Crude & calcined	*2 100	*1 800	*5 200	*3 400	*5 500
Japan					
Crude	775 279	1 468 129	2 909 802	3 245 275	3 632 538
Calcined	1 070	2 693	4 244	13 755	4 735
Jordan					
Crude & calcined	1 248	2 701	686	1 887	2 524
Korea, Republic of					
Crude & calcined	227 812	198 680	395 178	203 261	234 443
Kuwait					
Crude & calcined	56 684	86 558	71 726	105 034	...
Macao					
Crude & calcined	19 060	28 162	30 521	27 355	...
Malaysia					
Crude & calcined	152 529	137 416	178 213	223 265	...
Oman					
Crude & calcined	33 206	1 630	1 629	1 357	1 363
Philippines					
Crude	145 945	122 681	170 764	210 390	157 634
Calcined	5 007	5 222	7 613	6 934	7 978
Qatar					
Crude & calcined	2 801	4 186	5 540	6 689	8 150
Saudi Arabia					
Crude & calcined	66 335	21 367	61 963	69 858	...
Singapore					
Crude & calcined	56 130	77 647	53 960	51 702	67 949
Sri Lanka					
Crude & calcined	12 446	23 621	20 858	...	12 202
Taiwan					
Crude	322 403	155 631	412 782	480 927	460 567
Calcined	78 715	30 215	16 843	2 859	2 068
Thailand					
Crude & calcined	933	22 231	1 862	35 739	21 357

## Imports of Gypsum

Gypsum

tonnes

Country	1986	1987	1988	1989	1990
Australia (b)	1 497	2 559	1 906	1 960	1 760
Fiji	3 028	3 166	...	...	...
New Caledonia					
Crude & calcined	4 076	4 227	4 067	6 204	5 122
New Zealand (b)					
Crude	139 083	136 846	176 869	83 374	127 461
Calcined	309	218	83	0	0

Note(s):

(1) In this table the term 'crude' 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

## Iodine

**Production of Iodine**

kilograms

Country	1986	1987	1988	1989	1990
Soviet Union	*2 000 000	*2 000 000	*2 000 000	*2 000 000	*2 000 000
USA	*1 000 000	*1 000 000	998 000	1 508 000	1 973 000
Chile	3 127 000	3 181 000	4 035 000	4 881 000	5 129 000
China	*500 000	*500 000	*500 000	*500 000	*500 000
Indonesia	5 790	8 227	9 753	14 275	59 820
Japan	7 389 000	7 014 000	7 451 000	7 592 000	7 581 000
World total	14 000 000	13 700 000	15 000 000	16 500 000	17 200 000

## Exports of Iodine

Country	1986	1987	1988	1989	1990
United Kingdom	197 053	145 488	149 883	74 951	288 723
Belgium-Luxembourg	26 000	21 100	36 700	100	26 100
Denmark	133 600	144 400	—	3 100	300
France	98 000	75 000	68 500	30 000	37 000
Germany, Federal Republic of	47 100	71 500	123 500	138 900	295 000
Italy	14 300	3 600	10 100	63 000	140 000
Netherlands	12 000	6 000	7 000	168 000	214 000
Portugal	...	100	1 000	...	...
Spain	6 000	5 362	7 000	865 000	8 000
Switzerland	...	...	7 376	7 753	7 131
Chile	3 041 640	3 099 750	3 954 342	4 639 700	3 980 490
Hong Kong (b)	1 706	2 475	15 201	12 763	2 076
Indonesia	—	—	—	12 500	18 550
Japan	(a)6 640 532	(a)6 091 360	6 120 490	6 136 161	5 192 230
Taiwan	1 400	3 350	3 601	611	—

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

(b) Re-exports

## Iodine

## Imports of Iodine

kilograms

Country	1986	1987	1988	1989	1990
United Kingdom	1 546 232	1 665 688	1 602 149	1 487 554	1 440 525
Belgium-Luxembourg	103 800	129 300	16 000	83 300	32 100
Denmark	6 200	26 700	4 300	26 400	7 200
France	866 500	1 142 700	859 700	931 000	881 000
Germany, Federal Republic of	1 703 600	1 087 800	916 500	1 112 000	1 414 400
Greece	2 000	1 000	750	1 000	1 000
Italy	557 320	726 700	991 200	1 107 000	848 000
Netherlands	376 000	355 000	547 000	809 000	502 000
Portugal	15 800	14 300	22 000	24 000	24 000
Spain	227 638	335 000	318 000	373 000	351 000
Austria	...	...	3 500	4 200	3 000
Finland	...	...	6 000	7 000	3 000
Hungary	26 600	47 500	35 400	...	...
Norway	...	...	943 000	602 000	559 000
Romania (c)	*16 000	*7 600	*22 900	*25 900	...
Soviet Union (c)	*64 900	*85 800	*35 000	*34 000	*38 000
Sweden	...	...	5 000	10 000	3 000
Switzerland	...	...	37 554	61 496	100 024
Turkey	5 766	5 638	3 603	...	...
Yugoslavia	51 000	5 000	12 000	14 000	7 000
Algeria	2 623	1 406	...	...	...
Morocco	666	...	485	1 138	405
South Africa	...	...	14 270	13 542	12 352
Tunisia	1 443	—	950	1 319	1 446
Canada	397 000	89 000	36 734	44 722	103 699
Dominican Republic	1 343	...	...	...	...
Mexico	140 983	207 000	173 974	260 903	...
USA	2 576 068	3 143 411	3 228 608	3 313 556	2 847 621
Argentina	20 000	16 000	13 000	...	...
Brazil	253 431	179 031	182 039	...	176 431
Colombia	17 502	...	9 439	1 851	...
Ecuador	2 750	4 000	...	...	...
Peru	2 845	1 530	1 752	1 000	...
Uruguay	1 200	10 900	900	...	...
Venezuela	9 611	24 364	21 667	5 791	...
Hong Kong	1 500	2 426	15 800	11 940	2 780
India (a)	544 588	593 843	726 338	...	888 437
Indonesia	13 449	16 397	20 620	20 008	5 127
Japan	...	...	58 915	291 352	289 076
Korea, Republic of	14 451	13 213	10 805	12 782	13 571
Pakistan (b)	15 358	12 284	29 627	...	39 465
Taiwan	22 811	33 241	27 555	32 680	24 545
Thailand	3 022	5 429	2 987	5 968	6 337
Australia (b)	26 625	18 150	22 710	21 536	18 567
New Zealand (b)	...	...	5 176	11 062	12 413

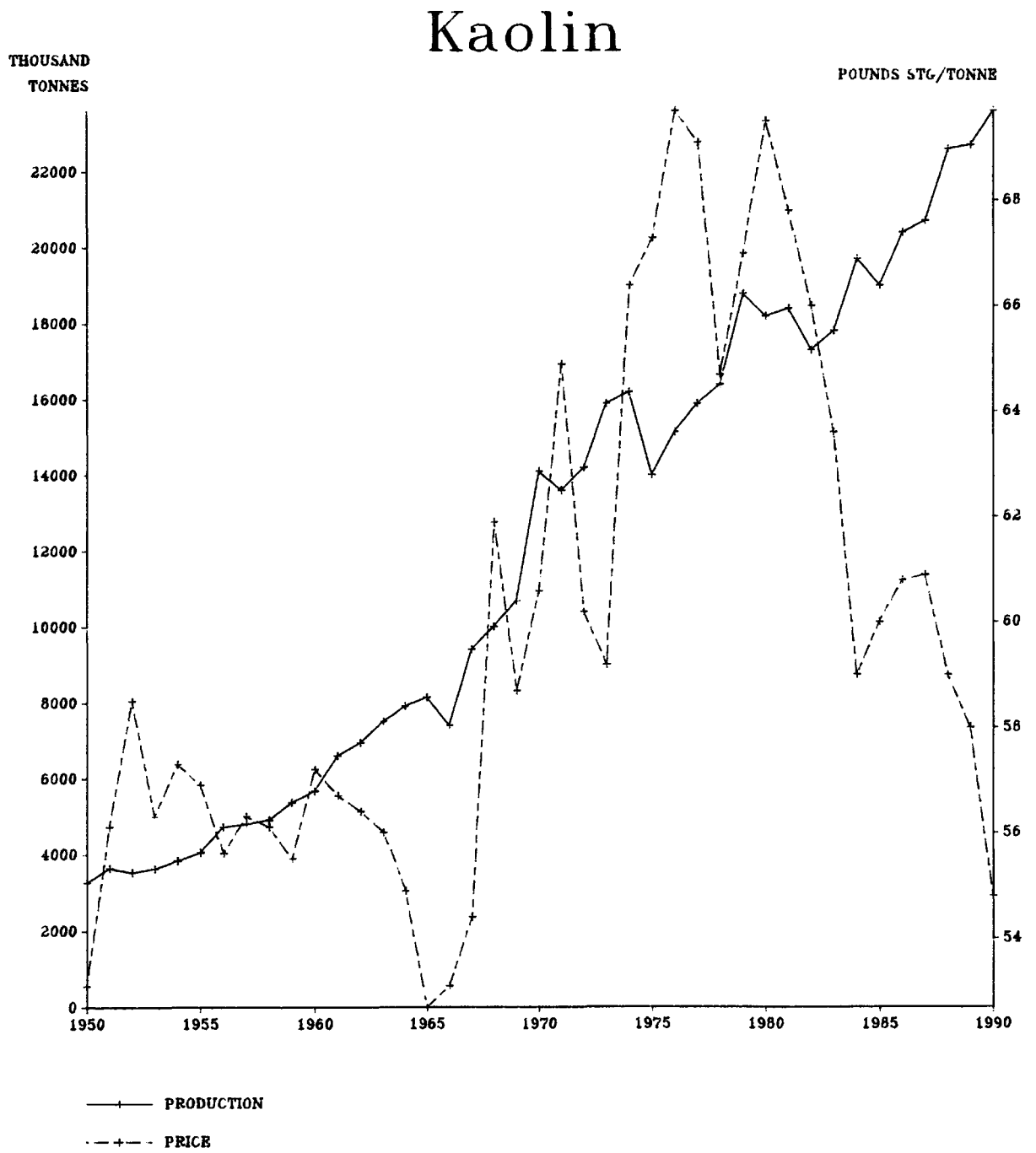
(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

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







**Figure 2** World production of kaolin compared with the export price f.o.b. UK, expressed in constant 1985 pounds sterling.

## Production of Kaolin

Country	1986	1987	1988	1989	1990
United Kingdom (a)	2 912 607	3 058 821	3 276 795	3 139 672	3 037 486
Belgium	*40 000	*45 000	*40 000	*35 000	...
Denmark	10 404	9 304	39 554	16 029	17 423
France	356 000	309 000	337 000	281 000	370 130
Germany, Federal Republic of (g)	477 000	553 000	612 000	673 000	601 000
Greece	142 210	144 634	127 395	67 234	169 986
Italy	35 132	57 074	71 522	64 196	67 321
Portugal	70 567	116 687	101 365	101 029	71 151
Spain (c)	573 666	450 968	589 000	380 636	...
Albania	8 858	7 960	8 200	10 053	8 256
Austria	97 136	91 537	89 491	85 310	81 265
Bulgaria	265 000	281 000	220 000	203 000	186 467
Czechoslovakia (h)	546 000	581 000	579 000	557 000	533 000
Finland	4 017	4 754	5 494	5 718	7 026
German Democratic Republic	*165 000	*150 000	*165 000	*150 000	...
Hungary (c)	35 869	38 468	34 901	28 612	22 000
Poland	55 500	60 300	69 530	61 604	48 100
Romania	*410 000	*400 000	*400 000	*400 000	...
Soviet Union	*2 000 000	*2 000 000	*2 000 000	*2 000 000	...
Turkey	91 893	126 119	204 478	238 251	251 182
Yugoslavia	214 561	255 772	218 673	254 949	198 513
Algeria	14 200	15 700	17 800	18 000	18 000
Burundi	5 113	5 290	4 021	4 305	5 287
Egypt (d)	127 800	125 256	124 122	121 515	149 000
Kenya	560	40	42	—	—
Madagascar	*6 000	1 427	365	1 315	485
Nigeria	169	187	55	242	92
South Africa	126 129	151 730	152 500	139 711	132 421
Tanzania	2 270	1 446	1 600	1 600	6 300
Zimbabwe	901	780	95	17	...
Mexico	276 427	151 104	162 415	141 519	151 967
USA (e)	7 755 961	8 007 911	8 973 089	8 973 668	9 761 775
Argentina	117 378	100 128	93 871	45 598	...
Brazil (b)	706 017	742 825	867 902	*900 000	*850 000
Chile	42 170	44 533	54 464	58 512	32 416
Colombia (j)	346 580	366 300	408 141	540 000	*540 000
Ecuador	6 189	7 120	3 399	11 018	15 580
Paraguay	55 000	72 000	76 000	74 000	*74 000
Peru	6 328	626	8 849	*7 000	*6 000
Venezuela	14 962	29 604	24 357	16 076	14 636
Bangladesh (d)	2 695	12 272	10 097	7 092	7 223
China	*500 000	*500 000	*500 000	*500 000	*500 000
Hong Kong	850	—	—	—	—
India (i)	100 647	93 720	107 381	110 505	*100 000
Indonesia	132 240	122 046	147 109	170 000	112 423
Iran	*70 000	*70 000	*70 000	*80 000	*80 000
Israel	*27 000	*27 000	*27 000	*27 000	*27 000
Japan	131 563	112 477	120 389	132 742	136 924
Jordan	15 697	11 336	23 452	38 600	38 800
Korea, Republic of	791 000	587 000	774 000	1 134 000	1 345 000
Malaysia	85 052	96 882	116 869	108 347	152 972
Pakistan	37 056	32 208	40 422	39 907	61 630
Philippines	16 620	5 370	4 730	...	...
Sri Lanka	6 260	6 769	7 097	15 760	7 734
Taiwan	63 228	67 525	81 879	98 115	105 084
Thailand (h)	116 037	184 179	223 252	176 558	208 348

## Kaolin

**Production of Kaolin**

tonnes

Country	1986	1987	1988	1989	1990
Australia (c)(f)	185 617	176 958	159 067	*185 000	*200 000
New Zealand	28 464	25 548	29 649	26 324	25 435
<b>World total</b>	<b>20 400 000</b>	<b>20 700 000</b>	<b>22 600 000</b>	<b>22 700 000</b>	<b>23 600 000</b>

## Note(s):

(1) In addition to the countries listed, Lebanon and Vietnam are 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

Country	1986	1987	1988	1989	1990
United Kingdom	2 523 713	2 600 398	2 902 034	2 708 127	2 596 334
Belgium-Luxembourg	37 002	41 019	77 279	96 598	121 240
Denmark	688	648	598	551	548
France	172 114	168 310	248 253	267 080	267 938
Germany, Federal Republic of	117 216	134 928	191 564	207 572	220 059
Greece	27 585	27 839	22 855	33 873	39 998
Italy	23 117	29 833	46 940	44 291	49 785
Netherlands	132 208	143 393	140 380	124 064	153 738
Portugal	1 140	2 594	2 538	10	171
Spain	127 840	160 924	165 960	130 312	162 726
Austria	52 029	48 860	48 568	50 040	39 967
Bulgaria	60 975	(a)*30 300	(a)*32 900	(a)*24 300	(a)*29 100
Czechoslovakia	383 000	391 000	414 000	388 000	358 000
German Democratic Republic	137 876	126 578	136 668	138 340	...
Hungary	7 443	6 904	6 888	...	7 091
Soviet Union (a)	*31 200	*31 300	*30 000	*26 100	*22 000
Sweden	1 558	2 807	1 706	639	1 935
Turkey	11 895	25 726	12 113	57 077	48 814
South Africa	1 566	682	193	554	39
Mexico	2 012	88	53	277	...
USA	1 436 563	1 838 498	2 143 157	2 338 688	2 827 196
Brazil	207 848	213 756	315 003	307 768	292 446
China (a)	*78 700	*191 400	*290 800	*448 800	*265 600
Hong Kong	73 866	176 647	263 611	325 633	213 896
of which: Re-exports	72 366	170 796	251 611	321 788	213 896
India (b)	5 715	16 637	9 068	...	7 790
Indonesia	44 807	76 405	82 682	121 468	129 661
Japan	9 318	6 151	7 061	7 145	7 377
Korea, Republic of	55 819	49 296	48 180	46 854	37 776
Malaysia	46 913	47 905	52 621	83 903	108 316
Thailand	3 601	4 718	7 218	4 160	8 592
Australia (c)	...	...	...	97 974	126 263

(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

## Imports of Kaolin

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	4 678	7 654	8 265	9 061	16 925
Belgium-Luxembourg	310 426	369 848	489 747	430 852	462 223
Denmark	29 749	28 311	24 776	28 727	24 929
France	309 698	340 115	373 662	378 275	404 983
Germany, Federal Republic of	893 504	919 567	1 000 595	1 070 985	1 005 860
Greece	52 864	54 109	25 879	30 820	28 514
Italy	617 589	684 532	675 185	696 289	685 915
Netherlands	460 099	471 362	465 546	451 417	478 972
Portugal	15 728	17 261	25 763	29 225	47 342
Spain	177 728	195 495	232 606	271 650	297 883
Austria	86 699	99 744	140 888	140 850	188 342
Bulgaria (c)	*4 000	*3 300	*2 900	*2 500	*400
Czechoslovakia (c)	*7 700	*7 300	*6 300	*5 500	*6 100
Finland	627 611	792 504	950 300	932 299	967 917
German Democratic Republic	5 000	4 600	4 400	2 600	...
Hungary	63 278	59 564	60 158	54 303	33 969
Norway	75 743	76 492	88 665	99 475	106 511
Poland	160 181	159 001	160 137	144 564	...
Romania (c)	*33 000	*25 000	*24 100	*24 500	*15 500
Sweden	386 682	442 104	441 103	352 788	374 746
Switzerland	...	...	111 219	111 432	102 766
Turkey	5 442	10 031	9 433	15 387	16 258
Yugoslavia	93 143	91 810	83 307	80 977	76 352
Algeria (d)	4 722	5 014	...	...	...
Ivory Coast	121	...	111	...	...
Morocco	8 032	5 456	7 757	9 790	12 380
Tunisia	14 007	34 539	26 291	28 144	30 223
Zimbabwe (e)	2 748	1 413	1 904	...	1 671
Canada	333 272	417 405	389 724	431 516	506 432
Mexico	93 126	91 832	110 688	107 638	...
USA	9 374	9 548	7 601	3 106	3 067
Argentina	24 448	30 258	24 135	18 100	...
Brazil	841	862	844	...	1 065
Chile	5 931	(c)*5 400	(c)*3 400	12 276	12 544
Colombia	6 036	...	9 133	7 803	...
Ecuador	4 925	3 149	1 760	4 702	2 284
Peru	2 135	2 237	3 094	1 158	...
Uruguay	2 792	5 009	4 934	...	...
Venezuela	16 770	29 958	31 061	9 898	...
Bangladesh (b)	350 641	104 570	84 308	...	...
Hong Kong	82 336	197 422	265 948	388 503	208 669
Indonesia	19 460	27 597	35 301	50 646	56 787
Iran (a)	11 720	8 671	8 448	12 823	...
Israel (c)	*12 700	*13 500	*8 900	*11 600	*10 700
Japan	678 359	763 079	970 491	1 029 809	1 167 957
Korea, Republic of	53 079	103 665	148 077	145 944	171 319
Malaysia	1 233	2 004	944	7 996	...
Pakistan (b)	5 712	7 102	8 293	...	7 044
Philippines	8 687	15 024	22 913	25 147	13 474
Saudi Arabia	2 122	2 364	3 398	2 061	...
Taiwan	120 134	156 723	149 557	358 541	568 628
Thailand	19 429	14 400	26 666	27 709	33 047
Australia (b)	2 767	9 531	12 345	17 174	11 896
New Zealand (b)	6 675	6 543	8 642	10 174	10 094

(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

**Production of Lithium Minerals**

Country	1986	1987	1988	1989	1990
Portugal Lepidolite	1 800	9 380	14 109	18 264	7 614
Soviet Union	*55 000	*55 000	*55 000	*55 000	*55 000
Namibia	855	927	1 642	1 398	1 268
Zimbabwe	32 760	14 959	15 073	20 647	19 053
Canada	*8 200	*11 300	*11 300	*8 700	*9 200
USA (a)(b)	*4 000	*4 000	*4 000	*4 500	...
Argentina	184	178	119	104	...
Brazil					
Amblygonite	49	52	25	...	...
Lepidolite	30	—	—	...	...
Petalite	1 614	2 946	1 115	...	...
Spodumene	366	505	331	...	...
Chile (c)	4 458	6 139	7 332	7 508	9 082
China	*15 000	*15 000	*15 000	*15 000	*15 000
Australia Spodumene	8 530	16 621	27 396	*30 000	*35 000
World total (a)	*7 200	*7 400	*7 900	*8 600	*8 700

(a) Li content

(b) Mostly spodumene

(c) Carbonate

## Lithium

**Exports of Lithium**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Oxides	...	199	201	221	275
Carbonate	286	432	548	734	594
Belgium-Luxembourg					
Oxides	50	—	99	—	41
France					
Oxides	21	36	100	3	1
Germany, Federal Republic of					
Metal	54	49	...	...	...
Oxides	694	909	712	745	724
Carbonate	1 462	1 444	1 371	1 819	1 685
Netherlands					
Oxides	18	—	17	40	18
Carbonate	62	132	64	61	36
Spain					
Lithium minerals	9	96	392	187	—
Soviet Union					
Oxides (a)	*100	*180	*20	*140	*340
Carbonate (a)	*150	*400	*300	*400	*600
Yugoslavia					
Carbonate	...	...	138	130	17
South Africa					
Lithium minerals (a)	*1 500	*100	*400	...	...
Zimbabwe					
Lithium minerals	22 837	18 053	17 976	...	20 149
USA					
Oxides	2 897	2 917	3 788	4 731	3 147
Carbonate	5 253	5 783	7 168	9 068	9 333
Chile					
Carbonate	4 487	6 063	7 153	8 102	8 228
China					
Oxides (a)	*500	*600	*800	*600	*1 000
Carbonate (a)	*1 100	*1 300	*1 400	*1 000	*1 600
Australia					
Lithium minerals (b)	...	...	...	29 593	35 664

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

(b) Years ended 30 June of that stated



## Imports of Lithium

Country	1986	1987	1988	1989	1990
United Kingdom					
Metal	36	51	...	...	...
Oxides	510	625	630	692	764
Carbonate	1 160	1 742	2 066	1 958	1 932
Belgium-Luxembourg					
Oxides	187	225	198	151	143
Carbonate	237	249	271	312	326
France					
Metal	41	7	...	...	...
Oxides	329	415	388	378	371
Carbonate	596	578	624	778	805
Germany, Federal Republic of					
Metal	24	22	...	...	...
Oxides	1 668	1 515	1 631	966	779
Carbonate	5 068	5 034	4 368	5 972	5 490
Italy					
Metal	1	45	...	...	...
Oxides	267	396	369	154	184
Carbonate	527	702	626	926	956
Netherlands					
Oxides	83	68	65	165	181
Carbonate	466	514	469	513	666
Spain					
Lithium minerals	567	803	325	606	622
Oxides	95	206	127	139	197
Carbonate	289	282	313	415	333
Finland					
Carbonate	...	...	93	97	121
Sweden					
Carbonate	...	...	100	101	98
Yugoslavia					
Carbonate	...	...	168	134	37
South Africa					
Lithium minerals	600	623	...	...	...
Oxides	100	151	138	102	135
Canada					
Carbonate	953	1 260	1 522	1 561	1 587
USA					
Lithium minerals	12 010	16 487	14 361	...	...
Brazil					
Oxides	388	471	503	...	256
Carbonate	36	118	237	...	291
Japan					
Metal	50	81	...	...	...
Oxides	885	888	935	1 020	1 036
Carbonate	2 431	3 096	3 318	3 933	3 835
Korea, Republic of					
Oxides	287	588	152	129	149
Carbonate	166	309	513	455	621
Taiwan					
Carbonate	...	...	...	216	230
Australia					
Oxides (a)	174	145	221	141	159

(a) Years ended 30 June of that stated

**Production of Magnesite**

tonnes

Country	1986	1987	1988	1989	1990
Greece	1 261 028	1 132 186	1 104 523	890 105	696 850
Spain	587 609	396 002	467 816	470 000	*460 000
Austria	1 084 360	946 943	1 121 585	1 204 942	1 179 162
Czechoslovakia	666 000	671 000	631 000	642 000	561 000
Poland	20 900	22 300	23 867	24 133	23 300
Soviet Union	*1 925 000	*1 875 000	*1 825 000	*1 825 000	*1 700 000
Turkey	1 306 645	1 189 667	1 125 844	1 343 893	845 124
Yugoslavia	422 548	403 000	382 000	364 000	268 000
Egypt	6 095	5 038	110	...	9 426
South Africa	61 186	74 961	74 088	75 695	114 182
Zimbabwe	27 649	28 991	30 121	33 423	32 639
Canada (b)	144 000	*150 000	*200 000	...	...
Brazil (c)	307 096	396 830	402 463	*300 000	*350 000
Colombia	14 936	15 444	17 760	20 425	19 300
China	*2 000 000	*2 000 000	*2 000 000	*2 000 000	2 400 000
India	460 315	419 933	507 873	479 530	*500 000
Iran (a)	*2 240	*2 240	2 777	*2 800	*3 000
Korea, Dem. P.R. of	*1 900 000	*1 500 000	*1 500 000	*1 500 000	*1 500 000
Nepal (d)	63 190	38 388	45 000	27 978	25 000
Pakistan	1 757	3 824	3 766	8 750	4 274
Philippines	2 111	1 355	—	...	...
Australia	41 441	53 941	62 848	65 000	*65 000
World total	12 300 000	11 300 000	11 500 000	11 500 000	11 000 000

## Note(s):

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

(d) Years ended 15 July of that stated

## Exports of Magnesite and Magnesia

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Magnesite	105	50	4 028	446	376
Magnesia	82 625	86 055	72 917	89 209	75 144
Belgium-Luxembourg					
Magnesite	154	534	994	195	373
Magnesia	4 923	4 445	2 112	5 232	7 022
France					
Magnesite	515	218	450	573	81
Magnesia	15 897	21 972	21 704	19 580	19 523
Germany, Federal Republic of					
Magnesite	22	204	3 024	1 930	2 048
Magnesia	39 694	55 929	62 622	70 082	66 059
Greece					
Magnesite	8 054	3 075	15 867	12 220	8 879
Magnesia	326 861	287 701	258 077	294 267	236 487
Irish Republic (a)	*62 600	*62 600	*81 700	*78 400	*57 700
Italy					
Magnesite	719	713	3 342	3 686	4 013
Magnesia	123 773	99 852	109 355	126 301	119 678
Netherlands					
Magnesite	1 618	2 260	2 224	3 881	5 457
Magnesia	32 902	34 614	37 570	44 756	47 970
Spain					
Magnesite	8	216	13 851	15 311	20 937
Magnesia	109 286	87 058	82 954	80 628	76 785
Austria					
Magnesite	755	387	58	219	347
Magnesia	137 550	140 875	150 026	165 686	166 604
Czechoslovakia					
Magnesite	305 000	303 000	306 000	248 000	583 000
Finland					
Magnesia	(d)503	(d)581	33	30	519
Norway					
Magnesite	...	...	161	155	177
Magnesia	(d)8 689	(d)4 170	3 332	3 108	4 074
Soviet Union (a)	*6 800	*8 000	*5 800	*4 500	*6 200
Sweden					
Magnesite	...	...	185	518	116
Magnesia	(d)575	(d)796	346	532	176
Turkey					
Magnesite	17 833	32 069	80 806	143 456	117 529
Magnesia	116 211	134 025	133 913	141 682	110 996
Yugoslavia					
Magnesia	7 895	5 895	7 365	16 027	12 646
South Africa (a)	*1 700	*3 500	*3 600	*3 000	*2 400
Zimbabwe	23 175	25 099	25 479	...	29 738
Canada					
Magnesia	(e)55 099	(e)25 860	67 133	56 335	61 337
Mexico					
Magnesia	44 342	39 430	59 076	84 716	...
USA					
Magnesite	...	...	...	10 384	8 009
Magnesia	(d)42 764	(d)45 776	(d)43 715	43 016	105 476
Brazil					
Magnesia	75 263	73 585	110 745	55 596	92 409
China (a)	*538 600	*582 300	*828 700	*952 800	*920 300
Hong Kong (c)	29 478	25 638	42 105	28 609	13 143
India (b)					
Magnesite	—	508	533	...	70
Magnesia	2 192	1 318	4 220	...	4 158
Israel					
Magnesia	(a)*8 700	(a)*30 300	31 260	37 881	43 627
Japan					
Magnesite	...	...	307	307	791
Magnesia	(d)126 612	(d)93 845	102 459	121 575	94 564

**Exports of Magnesite and Magnesia**

tonnes

Country	1986	1987	1988	1989	1990
Korea, Dem. P.R. of (a)	*194 200	*217 100	*265 200	*191 700	*181 200
Singapore	172	480	1 561	337	1 010
of which: Re-exports	28	123	261	205	138
Australia (f)	5 696	1 931	2 706	5 322	3 350

## Note(s):

- (1) The term 'magnesia', 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) Re-exports
- (d) Including magnesite
- (e) Imports into the USA
- (f) Years ended 30 June of that stated

## Imports of Magnesite and Magnesias

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Magnesite	9 241	7 778	16 323	15 186	22 406
Magnesia	115 292	121 753	148 654	141 713	130 355
Belgium-Luxembourg					
Magnesite	803	447	823	2 867	1 738
Magnesia	21 447	18 363	21 514	29 963	27 835
Denmark					
Magnesite	6	31	1 315	2 259	5 730
Magnesia	12 339	10 180	14 148	22 414	9 746
France					
Magnesite	100	117	5 844	987	1 368
Magnesia	180 092	195 559	208 410	217 807	206 689
Germany, Federal Republic of					
Magnesite	4 918	6 089	18 405	10 417	18 598
Magnesia	414 131	362 024	440 801	494 566	508 324
Greece					
Magnesite	5 743	3 275	43 214	80 301	92 623
Magnesia	18 798	8 658	17 442	1 465	1 421
Irish Republic					
Magnesite	278	0	16 448	25 310	30 643
Magnesia	41 973	35 623	10 923	12 050	15 197
Italy					
Magnesite	12 720	12 965	29 313	29 137	16 640
Magnesia	81 008	82 722	77 492	94 558	86 147
Netherlands					
Magnesite	1 939	2 582	12 284	4 061	2 743
Magnesia	80 890	59 406	75 357	89 672	107 093
Portugal					
Magnesite	245	165	356	1 032	1 466
Magnesia	2 818	2 850	2 612	2 789	1 996
Spain					
Magnesite	4	14	41	913	883
Magnesia	62 478	58 940	63 963	80 214	77 236
Austria					
Magnesite	584	118	590	594	607
Magnesia	121 481	108 534	136 281	142 720	134 806
Bulgaria (b)	*6 200	*8 200	*7 100	*7 100	*7 200
Finland					
Magnesite	...	...	1 254	1 525	956
Magnesia	(d)9 620	(d)5 225	5 473	6 270	6 192
German Democratic Republic (b)	*32 000	*31 000	*35 100	*34 400	*28 700
Hungary					
Magnesia	100 032	91 480	80 606	76 494	50 729
Norway					
Magnesite	...	...	5 866	4 442	2 358
Magnesia	(d)6 911	(d)9 292	2 283	4 715	1 870
Poland					
Magnesia	211 464	251 748	253 417	164 065	174 000
Romania (b)	*50 200	*54 100	*33 700	*44 800	*51 500
Soviet Union					
Magnesia	696 638	577 600	538 627	542 392	...
Sweden					
Magnesite	...	...	17 686	23 191	12 864
Magnesia	(d)23 471	(d)28 130	20 946	21 605	16 663
Switzerland					
Magnesite	24	37	1 053	438	368
Magnesia	5 425	6 565	5 416	6 037	5 967
Yugoslavia					
Magnesite	5 244	0	5	19 893	17 760
Magnesia	16 388	12 897	10 358	10 679	8 034
Algeria					
Magnesia	632	1 201	868	...	...
Egypt	2 289	8 484	34 312	...	...
Morocco					
Magnesia	120	164	171	204	185
South Africa					
Magnesite	35 667	26 101	28 144	27 437	35 108
Magnesia	45 520	80 299	57 083	67 917	79 649
Tunisia					
Magnesia	474	698	938	731	853

**Imports of Magnesite and Magnesia**

tonnes

Country	1986	1987	1988	1989	1990
Canada					
Magnesite	...	...	28 851	125 657	96 714
Magnesia	46 600	72 757	110 169	86 166	99 827
USA					
Magnesite	34	3 011	8 170	8 372	1 957
Magnesia	264 788	244 112	272 934	290 302	243 932
Argentina					
Magnesia	15 776	20 159	24 428	20 285	...
Brazil					
Magnesia	1 374	745	1 089	...	1 657
Chile	37 286	10 146	9 857	...	...
Peru					
Magnesia	5 075	8 183	7 128	3 599	...
Venezuela					
Magnesia	60 167	94 491	80 289	57 286	...
Bangladesh (a)	2 768	11 465	10 762	...	...
Hong Kong	31 501	28 322	47 463	30 370	14 808
India (c)					
Magnesite	120	13	34	...	7 304
Magnesia	31 198	36 779	69 106	...	72 284
Indonesia					
Magnesite	...	...	...	191	466
Magnesia	(d)8 641	(d)5 367	(d)6 664	16 603	19 149
Israel (b)	*1 100	*1 200	*3 200	*2 400	*1 200
Japan					
Magnesite	33 613	36 202	12 199	735	1 381
Magnesia	233 320	277 613	387 973	429 395	372 014
Korea, Republic of					
Magnesite	728	4 700	3 870	489	2 384
Magnesia	75 369	54 509	85 371	91 281	80 494
Malaysia					
Magnesite	5 595	9 730	11 696	13 840	...
Pakistan (a)					
Magnesite	292	382	940	...	488
Magnesia	430	278	589	...	700
Philippines	8 375	29 268	24 143	14 211	8 430
Singapore	472	1 781	8 397	25 020	16 007
Taiwan					
Magnesite	...	...	...	4 491	123
Magnesia	(d)37 215	(d)38 113	(d)66 069	51 080	60 921
Thailand					
Magnesite	13 234	19 176	18 229	28 127	20 563
Magnesia	1 204	2 874	3 332	3 586	4 515
Australia					
Magnesite (a)	...	...	14 307	18 335	16 926
Magnesia (a)	(d)17 621	(d)14 647	2 414	3 389	935
New Zealand (a)					
Magnesite	...	...	3 962	6 633	3 779
Magnesia	(d)6 795	(d)2 201	3 727	6 681	5 436

Note(s):

(1) The term 'magnesia', 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) Including magnesite

## Production of Mica

Country	1986	1987	1988	1989	1990
France (e)	10 834	9 300	*9 000	*9 000	*9 000
Portugal (a)	484	160	...	...	...
Spain (e)	325	370	2 233	951	*1 900
Norway (b)	*3 000	*4 000	*4 000	*4 500	*4 800
Soviet Union	*50 000	*50 000	*50 000	*50 000	*45 000
Yugoslavia	756	887	807	794	802
Madagascar	1 775	402	693	1 182	721
Morocco	*1 500	1 060	*1 000	*1 000	*1 000
South Africa	2 509	970	1 669	1 708	1 765
Zimbabwe	1 390	801	1 368	1 471	1 300
Canada	11 800	13 200	14 148	16 100	15 988
Mexico	1 748	3 419	6 228	4 510	5 369
USA (d)(e)	134 000	146 000	130 000	119 000	109 000
Argentina	551	791	960	327	...
Brazil (a)	1 662	1 484	1 734	1 202	...
China (c)	*20 200	*18 700	*12 200	*20 200	*23 800
India	7 519	10 547	7 533	7 307	*7 300
Iran (f)	2 450	1 127	2 294	*2 000	*2 000
Malaysia	—	—	1 065	2 251	3 341
Sri Lanka	895	1 228	1 981	2 510	1 797
Taiwan	774	787	4 387	4 290	4 946
Australia	24	106	3 584	...	...
World total	254 000	265 000	257 000	254 000	245 000

## Note(s):

(1) In addition to the countries listed, Namibia, Pakistan and Romania are 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

(f) Years ended 20 March following that stated

## Mica

**Exports of Mica**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Unmanufactured	95	23	50	68	0
Ground	1 101	2 560	4 262	4 951	4 981
Waste	1 940	1 727	80	103	81
Belgium-Luxembourg	82	12	928	521	5 165
France					
Unmanufactured	2 591	2 542	763	1 578	1 229
Ground	4 310	4 492	6 651	6 827	7 142
Germany, Federal Republic of					
Unmanufactured	0	15	55	4	13
Ground	1 364	1 327	1 232	1 327	1 398
Italy					
Unmanufactured	43	107	134	(c)430	(c)392
Ground	79	134	649	...	...
Netherlands					
Unmanufactured	779	1 016	473	464	989
Ground	222	655	524	819	996
Portugal	484	160	...	...	...
Spain	22	21	529	751	1 189
Austria	1 659	371	651	616	671
Finland					
Unmanufactured	(c)274	(c)1 315	—	674	54
Ground	...	...	1 976	2 875	3 689
Norway	1 422	1 916	1 946	2 241	2 414
Sweden	46	38	60	15	15
Switzerland	77	89	142	133	131
Turkey	20	121	34	118	4 544
Madagascar	1 874	653	...	684	2 038
Morocco	1 508	2 230	1 862	1 121	700
South Africa	720	1 105	851	884	1 060
Zimbabwe					
Ground	845	468	814	...	708
Canada	(d)7 913	(d)7 947	8 775	12 859	12 182
USA					
Unmanufactured	1 503	913	1 181	1 351	794
Ground	5 313	4 301	5 412	3 745	4 342
Brazil	1 662	1 484	1 734	1 202	1 516
China (a)	*20 200	*18 700	*12 200	*20 200	*23 800
India (b)					
Block	578	383	407	...	264
Splittings	2 695	2 842	3 731	...	2 283
Condenser films	8	14	28	...	34
Waste	16 581	10 288	15 151	...	8 199
Japan	366	318	529	577	683
Malaysia	1 765	1 797	2 422	2 650	3 465
Singapore	51	298	377	350	290
of which: Re-exports	51	298	377	350	289
Sri Lanka	889	1 309	1 805	2 691	1 288
Taiwan	198	394	183	307	273

## Note(s):

(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

(c) Including ground

(d) Imports into the USA and Japan



# Imports of Mica

Mica  
tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Unmanufactured	570	515	57	42	150
Ground	1 925	5 524	3 471	4 245	3 784
Waste	17 519	13 904	10 186	16 357	16 886
Belgium-Luxembourg					
Unmanufactured	6 568	5 023	...	...	...
Ground	779	939	1 169	1 374	1 589
Denmark	258	206	238	197	228
France					
Unmanufactured	4 214	3 989	3 306	4 440	3 082
Ground	631	876	919	1 416	1 580
Germany, Federal Republic of					
Unmanufactured	4 124	2 860	1 698	1 541	1 600
Ground	7 343	11 911	13 919	15 000	14 949
Greece	514	597	522	590	557
Irish Republic	222	127	207	686	507
Italy					
Unmanufactured	109	265	204	95	224
Ground	986	863	1 577	1 383	1 659
Netherlands					
Unmanufactured	987	1 594	785	726	936
Ground	893	1 181	1 357	1 888	2 405
Portugal	168	160	156	218	216
Spain	2 567	1 506	1 550	1 555	1 854
Austria	183	221	426	401	370
Czechoslovakia (c)	*1 100	*1 500	*1 500	...	...
Finland	276	304	590	244	346
German Democratic Republic	1 212	820	628	920	...
Norway					
Unmanufactured	179	347	130	123	157
Waste	1 115	1 535	3 097	2 398	4 524
Poland	1 357	729	1 643	893	...
Soviet Union (c)	*1 500	*2 300	*300	*150	...
Sweden	399	434	398	510	574
Switzerland	585	726	856	925	566
Turkey	326	9	7	6	3
Yugoslavia	297	336	101	72	102
Egypt	28	14	95	...	...
South Africa	500	493	687	1 283	697
Canada	2 174	2 204	1 815	2 512	2 340
Jamaica	103	162	108	162	153
Mexico	154	57	154	207	...
Trinidad & Tobago	129	67	53	43	108
USA					
Block	105	42	183	158	381
Splittings	899	786	1 317	1 380	1 204
Ground	5 451	5 673	7 780	8 904	9 142
Other unmanufactured	2 150	4 195	4 431	4 266	4 065
Colombia	53	...	118	132	...
Venezuela	704	429	492	420	...
Hong Kong	48	57	68	317	904
Indonesia	599	237	440	493	814
Iran (a)	11	150	755	...	...
Japan					
Block	1 965	3 648	90	248	672
Splittings	1 457	2 824	4 944	6 333	6 787
Waste	5 603	3 504	6 269	4 565	4 929
Other unmanufactured	6 118	7 251	9 819	13 107	15 005
Korea, Republic of	987	1 084	1 926	2 122	2 508
Malaysia	87	352	3 114	329	...
Philippines	109	134	139	204	129

## Mica

**Imports of Mica**

tonnes

Country	1986	1987	1988	1989	1990
Saudi Arabia	—	654	—	302	...
Singapore	496	382	1 010	951	1 353
Taiwan					
Unmanufactured	54	251	208	149	407
Ground	391	572	680	843	709
Thailand	177	274	319	542	595
Australia (b)	599	655	641	1 546	937
New Zealand (b)	£105 000	£119 000	£122 000	£122 000	£146 000

## Note(s):

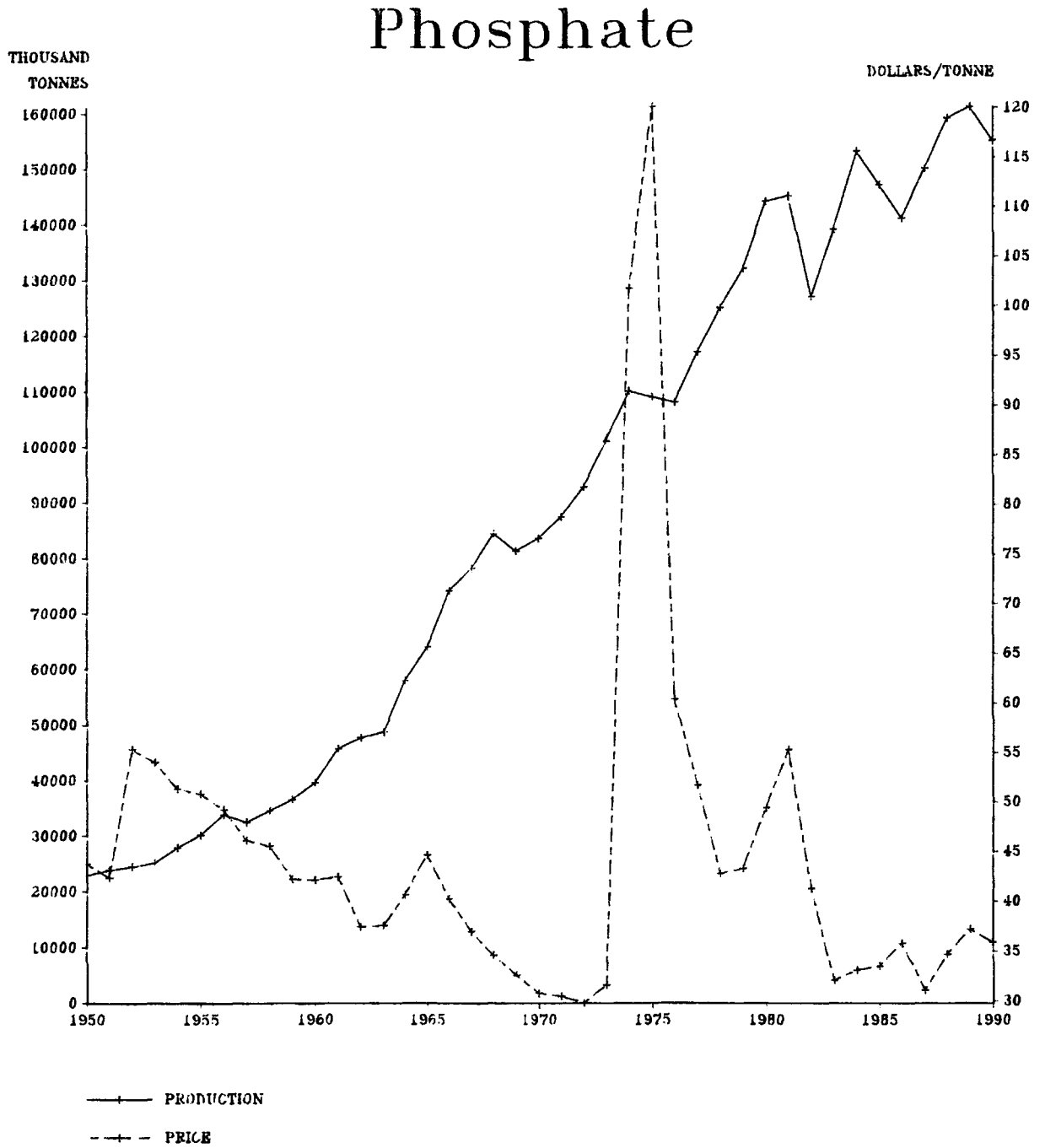
(1) This table shows unmanufactured mica and includes sheet, block, splittings, ground and waste, unless these are separately specified. Mica powder is included under the term 'ground'

(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 3** World production of phosphate rock compared with the yearly average price of Moroccan phosphate (70% BPL) f.a.s. Casablanca expressed in constant 1985 US dollars.

## Production of Phosphate Rock

Country	1986	1987	1988	1989	1990
Finland	527 495	553 279	583 542	563 934	546 134
Soviet Union	*32 400 000	*33 200 000	*34 000 000	*33 100 000	*30 000 000
Sweden	186 676	227 844	73 713	70 962	6 600
Turkey	2 700	19 197	74 230	84 810	86 800
Algeria	1 203 300	1 209 000	1 331 000	1 223 600	1 128 000
Egypt	769 160	580 061	207 698	216 107	886 911
Morocco	21 427 000	21 270 000	25 015 000	18 067 000	21 189 400
Senegal					
Phosphate rock	1 875 628	1 780 836	2 327 262	2 272 600	2 147 000
Aluminium phosphate (a)	131 300	79 136	417 090	157 600	*140 000
South Africa	2 922 500	2 623 100	2 850 200	2 962 900	3 164 800
Tanzania	10 028	18 386	13 000	10 600	47 500
Togo	2 313 900	2 968 635	3 312 773	3 484 237	2 995 490
Tunisia	5 800 000	6 215 000	6 027 000	6 610 360	6 258 514
Zimbabwe	135 592	154 827	125 156	133 791	147 767
Mexico	746 863	688 973	666 753	624 000	604 350
Netherlands Antilles (b)	22 702	22 291	21 931	15 738	4 180
USA	40 320 000	40 954 000	45 389 000	49 817 000	46 343 000
Brazil (d)	4 542 317	5 433 175	4 647 875	*3 700 000	*3 700 000
Chile					
Phosphate rock	6 684	10 389	9 161	14 354	13 986
Guano	7 546	5 685	4 052	3 127	1 452
Colombia	28 624	29 800	30 000	30 000	31 000
Peru	5 167	60 713	13 465	*21 000	*5 000
Venezuela	172 766	98 265	83 604	174 198	138 391
China	9 790 000	14 866 000	16 600 000	21 760 000	21 550 000
Christmas Island (b)(c)	880 115	836 000	—	—	33 600
India	667 070	679 419	738 877	703 716	659 100
Indonesia	601	2 592	411	11 000	1 600
Iraq	*1 000 000	*1 500 000	*1 273 000	*1 142 500	*1 100 000
Israel	2 518 000	2 731 000	2 648 000	2 761 000	2 482 000
Jordan	6 249 223	6 845 400	5 628 200	6 635 600	5 748 100
Korea, Dem. P.R. of	*500 000	*500 000	*500 000	*500 000	*500 000
Pakistan	31 094	72 782	35 700	40 000	30 000
Philippines					
Phosphate rock	1 656	5 824	7 104	4 000	2 963
Guano	3 466	935	1 406	48 000	*40 000
Sri Lanka	14 977	21 305	23 104	29 257	32 564
Syria	1 606 000	1 986 000	2 342 000	2 256 000	1 670 000
Thailand	4 940	4 502	8 348	6 584	9 547
Vietnam	*400 000	*300 000	280 000	255 100	273 700
Australia	33 659	11 294	13 000	8 000	16 000
Nauru (b)	1 493 581	1 375 496	1 540 379	1 186 820	926 200
World total	141 000 000	150 000 000	159 000 000	161 000 000	155 000 000

(a) Including lime phosphates

(b) Exports

(c) Including phosphate dust

(d) Including beneficiated and directly shipped material

## Phosphates

**Exports of Phosphate Rock**

tonnes

Country	1986	1987	1988	1989	1990
Belgium-Luxembourg	17 604	30 822	19 305	19 342	16 438
Denmark	1 369	10 467	1 449	1 910	1 294
France	3 202	4 065	4 459	12 863	2 660
Germany, Federal Republic of	2 482	2 989	5 189	5 090	5 040
Netherlands	21 876	137 637	158 586	194 541	211 330
Finland	0	1 894	2 807	15 430	22 545
Soviet Union (b)	*2 451 000	*3 216 000	*2 582 000	*2 712 000	*1 914 000
Sweden	132 725	142 096	72 363	80 328	12 354
Algeria	785 363	855 520	744 177	890 000	*750 000
Egypt	71 770	68 650	122 254	*112 500	*140 000
Morocco	13 696 128	13 061 333	14 260 343	12 426 000	11 672 000
Senegal					
Calcium phosphate	1 319 474	845 789	(c)1 846 500	(c)1 396 449	(c)1 355 700
Aluminium phosphate	60 489	52 284	...	...	...
South Africa	948 500	1 061 400	1 268 000	1 094 200	1 217 100
Togo	2 214 303	2 646 070	3 312 773	3 347 147	2 783 495
Tunisia	1 205 752	1 241 277	1 114 055	1 082 386	601 821
Netherlands Antilles	22 702	22 291	21 931	15 738	4 180
USA	9 176 000	8 454 000	8 092 000	8 323 000	6 959 000
China	...	109 657	158 200	194 479	...
Christmas Island (a)	880 115	846 800	—	—	33 600
Israel	2 351 399	2 369 093	1 915 000	1 946 000	1 501 000
Jordan	5 197 665	5 543 685	5 726 740	6 356 840	4 871 123
Malaysia	2 104	4 777	6 726	2 078	...
Singapore (d)	2 605	898	743	163	5 348
Syria	1 262 299	1 514 336	1 881 000	1 729 000	1 394 000
Australia (e)	15 343	15 203	7 302	54	17
Nauru	1 493 581	1 375 496	1 540 379	1 186 820	926 200

(a) Including phosphate dust

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

(c) Including aluminium phosphate

(d) Re-exports

(e) Years ended 30 June of that stated

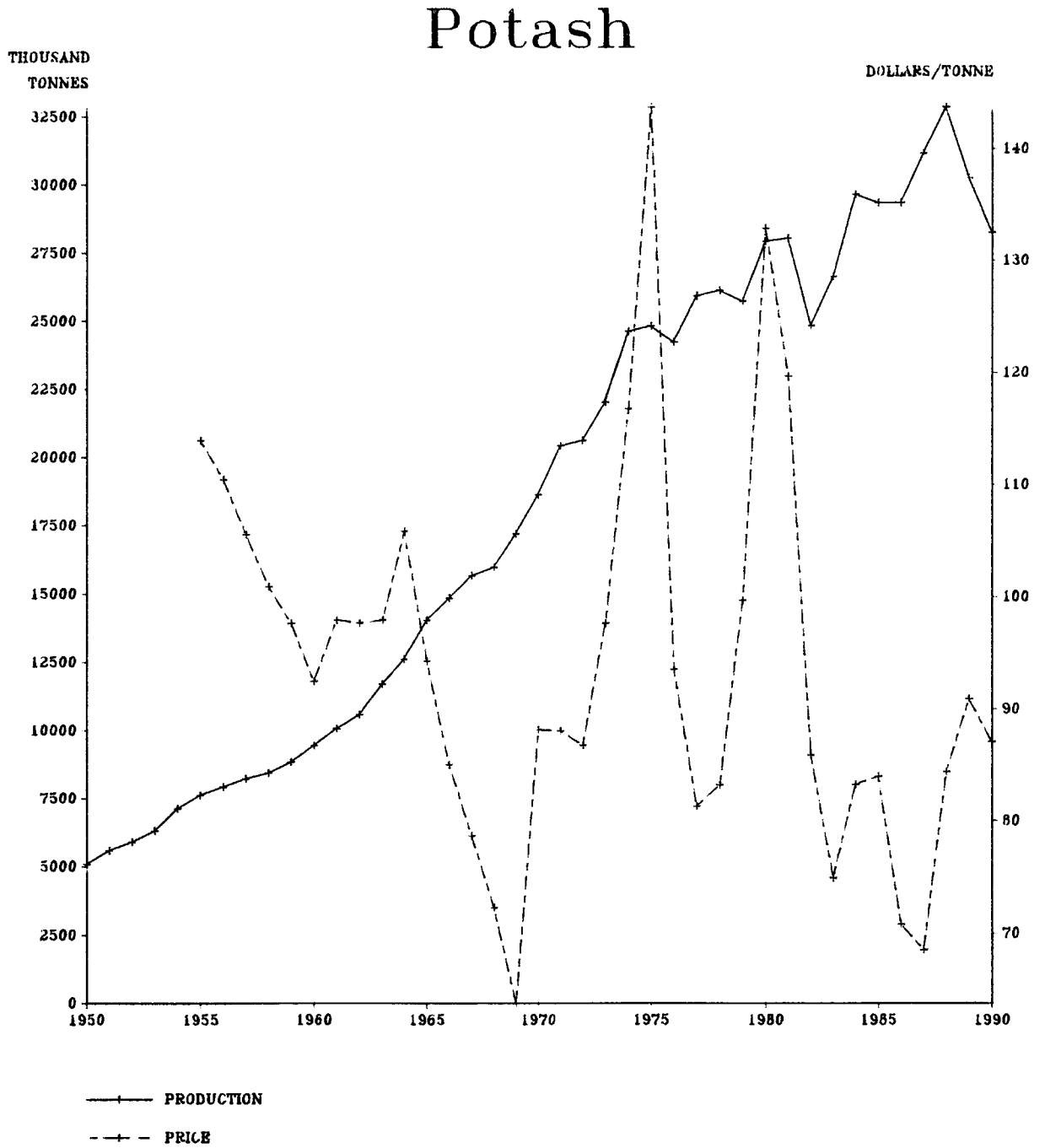
## Imports of Phosphate Rock

Country	1986	1987	1988	1989	1990
United Kingdom	936 153	758 084	746 823	602 426	548 126
Belgium-Luxembourg	2 286 726	2 522 224	2 386 939	2 279 182	2 211 516
Denmark	198 473	234 464	270 370	219 203	172 960
France	3 566 714	3 754 538	3 672 788	3 578 361	3 270 709
Germany, Federal Republic of	1 579 045	1 444 894	1 157 569	1 208 100	902 915
Greece	356 999	795 412	308 123	451 232	713 185
Irish Republic	5 105	2 813	1 495	6 128	4 507
Italy	1 388 856	1 302 576	1 162 063	1 056 869	851 157
Netherlands	2 053 253	2 212 428	2 459 808	2 366 965	2 235 549
Portugal	307 603	324 888	262 847	237 725	169 350
Spain	3 700 779	2 832 571	2 870 591	2 421 726	2 088 262
Albania	95 200	104 800	87 100	108 000	114 200
Austria	421 837	350 134	328 113	426 191	440 217
Bulgaria	629 255	520 900	732 600	643 000	335 400
Czechoslovakia (a)	273 000	255 000	146 000	199 000	92 000
Finland	190 800	136 200	149 900	121 800	112 200
German Democratic Republic (a)	437 300	368 300	394 000	423 900	*140 000
Hungary	585 147	712 200	544 221	523 211	328 149
Norway	445 807	475 426	512 188	599 961	620 089
Poland	2 970 000	3 482 000	3 401 000	3 319 000	1 410 800
Romania (a)	1 041 200	867 100	873 100	833 200	*495 000
Sweden	588 417	739 838	693 305	714 696	649 904
Switzerland	5 063	5 237	2 193	3 312	2 040
Turkey	702 401	813 582	995 330	808 922	730 319
Yugoslavia	1 439 150	1 373 803	1 741 304	1 234 726	1 066 386
Ivory Coast	10 533	...	4 646	...	...
Nigeria	7 400	...	...	...	...
South Africa	...	250 650	404 787	296 801	124 682
Tanzania	...	...	25 000	...	...
Zimbabwe	11 939	6 747	—	...	—
Canada	2 355 683	1 968 225	2 157 426	1 846 917	1 258 290
Cuba	24 800	10 000	5 000	5 000	8 200
Mexico	1 096 767	1 345 432	1 489 631	1 456 615	2 278 376
USA	527 776	466 562	675 626	709 564	456 761
Brazil	119 237	152 675	142 340	146 000	186 745
Chile	13 871	15 929	18 275	17 800	25 900
Colombia	51 127	47 800	43 696	37 703	44 600
Uruguay	35 422	89 700	77 149	70 200	48 600
Venezuela	59 639	54 926	68 365	68 130	74 400
Bangladesh (b)	162 601	95 006	87 547	*160 000	*110 000
China	338 400	186 794	194 647	211 046	275 200
India (c)	1 867 600	1 819 319	2 017 431	2 431 200	2 681 911
Indonesia	717 571	1 195 638	1 035 831	886 342	898 852
Japan	2 076 190	2 159 958	1 821 007	1 590 053	1 543 302
Korea, Dem. P.R. of	144 400	90 000	132 000	31 000	36 400
Korea, Republic of	1 606 721	1 702 440	1 653 005	1 544 445	1 559 966
Malaysia	283 857	384 588	359 420	376 161	257 700
Pakistan (b)	191 855	115 573	278 845	238 300	279 564
Philippines	1 286 548	1 034 936	717 016	780 371	834 369
Saudi Arabia	17 177	4 298	4 869	2 134	16 600
Singapore	4 920	3 445	2 358	725	10 199
Sri Lanka	13 434	18 718	10 500	14 000	16 405
Taiwan	330 763	361 188	368 630	391 353	420 425
Australia	1 690 344	1 666 215	2 082 000	1 761 000	1 092 000
New Zealand (b)	484 595	338 178	563 310	489 350	708 618

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

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated



**Figure 4** World production of potash compared with the yearly average price of Canadian potash at Vancouver expressed in constant 1985 US dollars.



## Production of Potash

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

Country	1986	1987	1988	1989	1990
United Kingdom					
Chloride	416 965	450 345	483 662	486 501	513 634
France					
Potassic salts	1 620 200	1 538 700	1 502 450	1 195 400	1 292 000
Germany, Federal Republic of					
Potassic salts	2 161 000	2 199 000	2 290 000	2 182 000	2 216 000
Italy					
Potassic salts	157 958	177 274	195 500	207 630	*100 000
Spain					
Potassic salts	794 586	838 439	855 466	842 399	686 000
German Democratic Republic					
Potassic salts	*4 100 000	4 222 000	4 203 000	3 852 000	*3 200 000
Soviet Union	10 200 000	10 900 000	11 300 000	10 232 000	9 088 000
Canada					
Chloride	6 677 983	7 398 906	8 310 586	7 333 499	7 007 063
USA					
Potassic salts	1 202 000	1 262 000	1 521 000	1 595 000	1 713 000
Brazil					
Chloride	10 524	37 311	54 121	96 945	68 000
Chile					
Chloride	—	—	*5 300	*17 900	*25 500
Nitrate	*20 600	*23 100	*25 300	*25 000	*25 000
China	*40 000	*40 000	*40 000	50 700	46 100
Israel					
Chloride	1 255 000	1 253 000	1 244 000	1 338 000	1 350 000
Jordan	660 000	734 000	785 000	793 000	790 000
World total	29 300 000	31 100 000	32 800 000	30 200 000	28 100 000

## Exports of Potash

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Chloride	94 929	327 485	434 640	367 140	384 505
Other potassic fertilisers	900	1 594	1 967	2 060	1 493
Potassic chemicals	4 023	6 214	5 020	3 294	6 932
Belgium-Luxembourg					
Fertiliser salts	2 127	1 024	530	945	674
Sulphate (b)	*322 900	*365 300	*238 200	*197 200	*182 500
Chloride	29 572	107 714	55 921	192 384	224 280
Other potassic fertilisers	5 519	5 130	3 942	6 941	9 723
Potassic chemicals	2 181	1 994	2 737	1 083	626
France					
Fertiliser salts	6 710	7	—	2	—
Chloride	288 716	419 134	513 901	340 128	311 105
Other potassic fertilisers	20 563	19 779	17 696	16 105	14 697
Potassic chemicals	7 306	5 476	8 745	996	518
Germany, Federal Republic of					
Fertiliser salts	43 401	47 958	43 017	43 546	45 668
Potassic fertilisers	2 177 290	2 297 189	2 317 394	2 378 355	2 540 235
Potassic chemicals	40 649	39 174	43 393	46 344	42 629
Greece					
Potassic fertilisers	58 175	12 406	420	...	...
Italy					
Sulphate	66 291	56 733	74 397	131 932	92 078
Other potassic fertilisers	285	1 904	2 060	3 372	1 431
Potassic chemicals	1 951	2 969	3 182	2 755	5 419
Netherlands					
Sulphate (a)	276	296	409	512	569
Chloride (a)	5 999	44 039	63 055	77 261	74 179
Potassic chemicals	3 090	3 603	4 434	4 715	5 649
Portugal					
Potassic fertilisers	110	186	35	223	10 105
Spain					
Sulphate	86 746	58 479	48 325	34 665	71 557
Chloride	395 562	627 730	627 743	528 856	595 951
Potassic chemicals	9 355	8 423	5 197	10 407	8 333
Czechoslovakia					
Potassic chemicals (b)	*3 700	*1 600	*900	*400	*400
German Democratic Republic					
Fertiliser salts (a)	2 814 000	2 894 000	2 832 000	2 556 000	2 381 500
Poland					
Potassic chemicals	4 310	4 268	4 055	3 612	...
Romania					
Potassic chemicals (b)	*51 100	*25 300	*7 200	*7 200	*4 200
Soviet Union					
Fertiliser salts	5 127 007	5 412 162	5 830 462	5 315 002	*4 900 000
Sweden					
Sulphate	—	5	11 877	33 498	55 362
Switzerland					
Potassic chemicals	1 061	844	1 594	905	1 000
Yugoslavia					
Potassic chemicals	873	882	3 517	4 210	4 206
Canada					
Chloride	9 894 211	10 983 658	12 674 202	10 914 791	11 494 339
Other potassic fertilisers	...	...	45 074	60 892	274 321
Potassic chemicals	(d)2 868	(d)7 127	15 611	18 931	10 124
USA					
Sulphate	316 673	414 830	382 027	448 880	561 914
Chloride	708 357	511 590	400 831	496 575	445 810
Potassic chemicals	19 114	22 868	30 306	129 375	62 081
Chile					
Fertiliser salts	108 215	94 478	131 190	121 148	137 724
China					
Potassic chemicals (b)	*4 300	*6 100	*6 900	*18 800	*4 500
Hong Kong					
Potassic chemicals (c)	811	1 721	16 505	3 467	1 493

## Exports of Potash

Potash  
tonnes

Country	1986	1987	1988	1989	1990
Israel					
Chloride (b)	*1 275 000	*1 402 200	*1 408 500	*1 407 200	*1 364 200
Other potassic fertilisers (b)	*187 300	*177 200	*179 200	*140 300	*119 600
Potassic chemicals	(b)*111 400	(b)*124 700	218 462	249 027	228 144
Japan					
Potassic fertilisers	310	384	1 187	1 350	1 074
Potassic chemicals	8 985	10 485	19 790	21 830	17 390
Jordan					
Fertiliser salts	1 205 056	1 243 928	1 300 411	1 257 895	1 403 358
Korea, Republic of					
Sulphate	27 419	19 493	44 800	46 020	89 123
Chloride	9 258	21 679	10 500	2 260	21
Potassic chemicals	7 399	9 292	13 802	8 862	15 669
Singapore					
Sulphate	5 143	1 918	3 004	10 157	6 857
of which: Re-exports	5 143	1 918	2 944	10 156	6 838
Chloride	13 625	12 267	85 064	94 091	107 358
of which: Re-exports	13 625	12 265	85 058	94 070	105 606
Other potassic fertilisers	122 600	125 807	137 753	14 969	4 770
of which: Re-exports	122 454	125 607	136 996	14 959	4 768
Taiwan					
Potassic fertilisers	25 855	34 511	52 024	48 267	80 895
Potassic chemicals	1 016	1 063	1 636	3 301	6 589

### Note(s):

(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 hydroxide, 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

(d) Imports into the USA

## Imports of Potash

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Fertiliser salts	32 144	25 912	28 038	17 274	19 605
Chloride	470 885	521 274	570 686	452 657	...
Other potassic fertilisers	7 764	7 834	23 796	15 521	46 105
Potassic chemicals	27 377	30 146	32 623	36 166	36 718
Belgium-Luxembourg					
Fertiliser salts	39 460	38 646	30 540	29 796	32 899
Sulphate	32 799	48 693	34 222	53 406	84 139
Chloride	1 066 949	1 308 403	1 229 633	1 251 317	1 427 117
Other potassic fertilisers	155 690	22 912	30 132	19 781	29 500
Potassic chemicals	13 696	12 351	12 268	13 229	15 859
Denmark					
Fertiliser salts	2 761	2 667	3	*20	26
Sulphate	45 612	39 109	31 178	22 800	18 208
Chloride	217 429	240 420	229 558	239 907	269 454
Potassic chemicals	7 508	7 140	8 409	7 616	7 729
France					
Fertiliser salts	24 392	84 235	58 260	74 040	85 922
Sulphate	151 572	162 211	106 118	109 575	112 096
Chloride	664 553	1 115 054	1 012 242	1 290 689	1 110 814
Other potassic fertilisers	31	44	32 236	27 467	23 720
Potassic chemicals	24 367	29 118	29 826	34 641	34 674
Germany, Federal Republic of					
Chloride	64 364	149 060	179 316	131 851	113 229
Potassic chemicals	18 209	18 840	28 037	27 937	34 004
Greece					
Sulphate	51 818	159 971	86 495	107 978	38 582
Potassic chemicals	5 902	18 371	10 191	9 644	12 173
Irish Republic					
Sulphate	4 436	3 600	2 097	5 011	3 989
Chloride	235 034	297 680	219 477	253 195	225 692
Other potassic fertilisers	310	548	400	1 622	3 395
Italy					
Fertiliser salts	7 112	4 632	1 587	1 725	427
Sulphate	70 665	77 050	75 561	44 134	114 265
Chloride	606 425	666 059	655 647	702 553	592 539
Other potassic fertilisers	19 759	21 295	39 008	25 768	29 579
Potassic chemicals	27 219	30 418	35 356	34 696	36 727
Netherlands					
Fertiliser salts (a)	377	654	708	768	682
Sulphate (a)	44 979	41 337	20 173	20 096	15 480
Chloride (a)	200 780	285 553	302 227	340 581	324 576
Other potassic fertilisers (a)	—	—	12 946	10 478	9 993
Potassic chemicals	39 776	44 357	52 506	54 401	49 116
Portugal					
Sulphate	1 315	2 573	...	...	2 217
Chloride	65 459	78 043	(e)85 414	(e)81 160	64 524
Potassic chemicals	2 750	3 961	...	...	5 548
Spain					
Chloride	8 375	25 532	39 016	27 765	52 930
Other potassic fertilisers	86	3 202	7 516	12 710	18 793
Potassic chemicals	15 846	25 783	31 030	47 690	45 816
Austria					
Fertiliser salts	12 079	10 424	11 842	16 647	16 730
Sulphate	22 757	20 416	15 286	16 319	16 668
Chloride	185 489	163 225	197 176	165 486	170 116
Other potassic fertilisers	7 340	7 829	4 875	5 014	4 075
Potassic chemicals	6 896	7 136	7 459	6 137	6 372
Bulgaria					
Fertiliser salts (c)	*188 900	*142 300	*183 400	*223 200	...
Czechoslovakia					
Potassic fertilisers (a)	572 000	551 000	641 000	557 000	470 000
Finland					
Chloride (c)	*213 100	*212 100	*209 800	*241 000	...
Other potassic fertilisers	364	182	106	111	107
Potassic chemicals	4 314	6 278	7 197	9 542	7 767
Hungary					
Fertiliser salts	2 338	2 257	2 132	...	...
Potassic fertilisers	1 114 655	1 080 930	1 356 158	879 990	680 948
Potassic chemicals	1 220	1 509	1 562	1 420	...

## Imports of Potash

Potash  
tonnes

Country	1986	1987	1988	1989	1990
Iceland					
Sulphate	5 781	5 041	1 000	2 076	1 468
Chloride	4 090	4 120	5 850	7 127	5 549
Norway					
Sulphate	97 947	92 449	124 196	123 606	138 965
Chloride	218 791	212 012	227 477	293 756	305 288
Other potassic fertilisers	926	1 066	1 496	536	514
Potassic chemicals	3 457	2 189	1 959	2 570	2 122
Poland					
Chloride	17 993	17 350	18 475	17 242	...
Other potassic fertilisers	2 373 000	2 496 000	2 532 000	2 055 000	1 166 000
Potassic chemicals	6 027	5 283	5 721	5 976	...
Romania					
Fertiliser salts (a)	457 600	352 100	398 600	327 400	300 400
Sweden					
Fertiliser salts	2 099	1 998	4 934	6 309	5 720
Chloride	99	514	141 911	153 799	177 522
Other potassic fertilisers	1 202	1 644	31 699	11 731	36 659
Potassic chemicals	3 894	4 485	4 897	4 153	4 884
Switzerland					
Chloride	...	...	51 315	52 569	51 509
Other potassic fertilisers	71 002	68 464	13 231	11 459	10 522
Potassic chemicals	13 482	13 415	15 217	14 871	14 205
Turkey					
Fertiliser salts	20 634	16 881	13 517	...	...
Sulphate	50 958	8 563	14 919	14 245	20 565
Other potassic fertilisers	39 697	33 519	45 439	66 448	84 783
Potassic chemicals	6 326	7 975	7 725	5 946	10 304
Yugoslavia					
Sulphate	18 899	17 138	32 017	6 217	14 052
Chloride	559 280	523 319	606 000	436 001	398 739
Potassic chemicals	178 226	141 134	7 570	7 777	6 871
Algeria					
Sulphate	71 585	102 669	99 148	*100 000	*45 000
Potassic chemicals	450	603	...	...	...
Cameroon					
Potassic fertilisers	9 104	41 155	*9 200	*5 800	*18 800
Egypt					
Potassic fertilisers	35 402	31 713	*9 000	*46 000	*46 300
Gabon					
Fertiliser salts	459	...	...	...	...
Potassic fertilisers	1 516	...	*1 400	*1 800	*1 400
Ivory Coast					
Sulphate	6 980	...	1 370	...	...
Chloride	22 427	...	36 944	...	...
Kenya					
Potassic fertilisers	1 540	1 076	3 724	*3 700	...
Liberia					
Potassic fertilisers (a)	1 800	1 200	1 700	2 000	—
Madagascar					
Potassic fertilisers	1 072	4 664	*3 000	7 688	19 371
Mauritius					
Potassic fertilisers	21 229	27 605	17 445	36 039	24 988
Morocco					
Sulphate	47 079	34 710	59 815	45 961	50 969
Chloride	41 048	61 176	61 117	21 723	36 256
Potassic chemicals	982	971	1 060	1 375	608
Niger					
Potassic fertilisers	2 864	...	...	...	...
Nigeria					
Potassic fertilisers	6 690	1 519	...	...	...
Reunion					
Potassic fertilisers	3 700	5 240	...	...	...
Senegal					
Potassic fertilisers	1 160	6 447	13 472	11 953	...
South Africa					
Potassic fertilisers	208 068	220 115	245 435	649 553	211 448
Potassic chemicals	6 383	7 039	28 353	31 427	18 363

## Potash

**Imports of Potash**

tonnes

Country	1986	1987	1988	1989	1990
Tunisia					
Potassic fertilisers	15 021	3 501	45 500	11 132	56 598
Potassic chemicals	4 516	599	599	296	661
Zimbabwe					
Sulphate	15 672	20 740	5 876	...	20 396
Chloride	28 577	47 685	15 903	(e)*60 000	47 234
Belize					
Potassic fertilisers	1 030	2 044	2 122	2 199	...
Canada					
Sulphate	29 005	11 814	53 799	39 759	86 877
Chloride	390	967	3 765	4 553	7 382
Other potassic fertilisers	23 991	51 503	1 877	1 885	1 912
Potassic chemicals	9 786	10 159	13 160	17 307	21 253
Costa Rica					
Potassic fertilisers	59 103	57 564	61 727	50 811	85 141
Cuba					
Sulphate	18 000	22 000	20 000	20 000	...
Chloride	367 000	352 000	323 000	394 000	*345 000
Dominican Republic					
Potassic fertilisers	*13 400	*25 600	17 276	32 100	21 800
El Salvador					
Potassic fertilisers	10 665	6 381	7 206	7 451	...
Guatemala					
Potassic fertilisers	23 123	16 808	10 632	39 402	31 073
Honduras					
Potassic fertilisers	9 506	3 757	28 706	10 557	...
Jamaica					
Potassic fertilisers	3 096	391	11 472	447	400
Martinique					
Potassic fertilisers	20 033	4 561	10 008	9 192	18 365
Mexico					
Sulphate	29 181	4 156	31 745	24 253	...
Chloride	144 667	77 436	123 777	85 940	55 300
Nicaragua					
Potassic fertilisers	...	*4 000	*10 000	*11 000	...
Panama					
Potassic fertilisers	9 098	2 485	7 918	16 982	17 939
St. Kitts-Nevis-Anguilla					
Potassic fertilisers	*1 500	*1 500	*1 600	*1 600	...
Trinidad & Tobago					
Potassic fertilisers	3 125	1 281	1 583	3 461	...
USA					
Fertiliser salts	46 196	20 100	36 905	6 949	1 302
Sulphate	47 689	57 635	90 787	64 215	55 361
Chloride	6 836 183	6 613 676	6 795 910	5 497 763	6 707 720
Other potassic fertilisers	149	296	3 122	834 723	355 682
Potassic chemicals	38 611	40 588	30 231	155 457	59 125
Argentina					
Sulphate	8 299	3 852	6 448	1 412	...
Chloride	11 219	16 799	19 073	10 970	...
Potassic chemicals	7 198	7 808	7 269	...	...
Brazil					
Sulphate	42 976	46 963	48 100	...	22 572
Chloride	2 234 374	2 402 789	2 145 575	1 662 543	1 710 222
Potassic chemicals	15 263	7 625	12 488	...	12 254
Chile					
Sulphate	25 489	26 953	29 348	22 312	14 806
Chloride	53 506	43 237	143 893	139 822	135 069
Colombia					
Sulphate	16 470	19 091	15 447	16 272	...
Chloride	173 707	228 206	241 791	239 050	(e)*310 000
Potassic chemicals	1 874	...	1 814	2 167	...
Ecuador					
Chloride	4 667	19 272	26 768	17 152	32 500
Other potassic fertilisers	2 512	6 944	382	2 192	...
Guyana					
Potassic fertilisers	*2 000	*3 000	*3 000	*4 000	...

## Imports of Potash

Potash

tonnes

Country	1986	1987	1988	1989	1990
Peru					
Sulphate	8 611	8 349	6 827	...	...
Chloride	24 500	45 678	17 811	(e)22 300	(e)1 400
Potassic chemicals	1 367	1 653	1 096	1 029	...
Uruguay					
Potassic fertilisers	6 536	5 310	6 307	...	...
Potassic chemicals	368	505	268	...	...
Venezuela					
Sulphate	22 059	56 341	26 416	36 917	...
Chloride	122 510	84 013	124 309	104 997	(e)*100 000
Potassic chemicals	1 811	1 794	2 353	2 541	...
Bangladesh (d)					
Potassic fertilisers	76 215	54 408	66 946	18 500	...
China					
Potassic fertilisers	(c)*440 000	1 786 720	2 243 896	1 477 092	2 072 805
Cyprus					
Potassic fertilisers	1 061	1 239	...	115	410
Dubai					
Potassic fertilisers	984	...	...	...	...
Hong Kong					
Potassic chemicals	1 689	2 181	3 581	3 838	2 172
India (b)					
Fertiliser salts	89 316	—	—	...	4
Chloride	988 302	814 346	1 078 921	...	1 615 426
Other potassic fertilisers	188 168	231 562	176 589	...	232 257
Potassic chemicals	3 870	2 544	1 864	...	886
Indonesia					
Sulphate	1 700	5 307	1 400	104 629	26 325
Chloride	88 759	206 641	509 804	259 600	417 635
Other potassic fertilisers	1 665	45	12 053	—	—
Potassic chemicals	1 870	2 323	3 036	4 928	5 398
Japan					
Sulphate	171 347	222 776	236 268	222 314	190 373
Chloride	970 042	1 142 162	1 041 940	947 907	944 421
Other potassic fertilisers	58 065	74 872	66 528	83 344	64 608
Potassic chemicals	8 410	11 799	16 644	18 052	17 680
Jordan					
Potassic fertilisers	—	—	3 424	...	300
Korea, Dem. P.R. of					
Potassic fertilisers (c)	*23 000	*11 000	*31 600	...	...
Korea, Republic of					
Chloride	429 960	697 864	662 936	679 718	570 899
Potassic chemicals	5 174	9 142	6 223	10 572	9 132
Malaysia					
Fertiliser salts	10	184	—	5	...
Sulphate	7 714	9 861	28 678	3 349	...
Chloride	229 231	291 726	24 653	24 700	...
Other potassic fertilisers	229 510	310 158	771 110	607 285	...
Pakistan (d)					
Potassic chemicals	1 678	1 956	2 448	...	1 444
Philippines					
Sulphate	19 521	19 543	99 586	4 875	29 715
Chloride	66 109	148 489	93 266	122 062	146 070
Other potassic fertilisers	960	2 105	698	—	1 180
Potassic chemicals	2 546	2 538	3 191	3 829	5 226
Saudi Arabia					
Sulphate	2 497	14 239	25 139	7 855	...
Other potassic fertilisers	32 772	34 661	30 614	8 198	...
Singapore					
Sulphate	6 613	3 800	3	14 420	10 373
Chloride	8 256	12 037	90 434	66 266	84 344
Other potassic fertilisers	140 667	112 024	179 043	918	24 856
Sri Lanka					
Chloride	35 914	55 600	58 502	...	52 302
Other potassic fertilisers	24 393	45 599	62 253	...	19 465
Syria					
Potassic fertilisers	10 986	20 277	*62 500	...	*87 000

## Potash

**Imports of Potash**

tonnes

Country	1986	1987	1988	1989	1990
<b>Taiwan</b>					
Chloride	212 492	178 217	227 858	244 952	257 242
Potassic chemicals	11 526	16 101	16 616	9 745	6 041
<b>Thailand</b>					
Sulphate	11 158	19 035	14 501	7 504	16 154
Chloride	6 477	6 960	60 703	76 226	106 228
Other potassic fertilisers	45 334	63 194	10 818	0	0
Potassic chemicals	10 674	7 543	9 714	7 813	10 632
<b>Australia</b>					
Sulphate (d)	10 291	6 886	15 636	16 234	11 815
Chloride (d)	184 079	219 782	261 056	282 640	275 948
Other potassic fertilisers (d)	901	3 534	634	559	1 976
Potassic chemicals (d)	14 114	8 988	15 292	12 164	16 511
<b>Fiji</b>					
Potassic fertilisers	3 208	2 692	...	...	...
<b>New Zealand (d)</b>					
Sulphate	1 140	617	1 343	1 686	4 171
Chloride	107 319	94 883	64 094	101 877	147 491
Other potassic fertilisers	308	2 776	41 801	325	680
Potassic chemicals	1 302	1 277	1 936	23 018	1 781

## Note(s):

(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 hydroxide, 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



**Production of Rare Earth Minerals**

Country	1986	1987	1988	1989	1990
Madagascar					
Bastnaesite	*10	*10	*10	*10	...
Zaire					
Monazite	7	97	168	175	124
USA					
Bastnaesite (a)	11 094	16 710	11 533	20 787	22 713
Monazite (a)(b)	*450	*450	*450	*450	*450
Brazil					
Monazite	3 618	4 332	2 817	*4 000	*4 000
China (a)	11 860	15 100	18 660	25 220	*25 000
India					
Monazite (d)	*4 000	*4 000	*4 000	*4 300	*4 500
Malaysia					
Monazite	5 959	2 908	2 920	2 948	3 323
Xenotime	145	31	47	131	165
Sri Lanka					
Monazite	17	100	*200	*200	*200
Thailand					
Monazite	1 609	458	590	631	377
Xenotime	28	30	101	35	14
Australia					
Monazite	14 822	12 813	10 897	13 000	6 000
Xenotime	41	5	0	...	...
World total (c)	69 300	78 600	72 800	102 900	99 000
World total (REO content)	*41 400	*47 100	*43 600	*61 600	*59 300

## Note(s):

- (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 believed to be produced also 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) Nominal capacity
- (c) Expressed as grossed up weight of concentrates produced
- (d) Years ended 31 March following that stated

**Exports of Rare Earths**

tonnes

Country	1986	1987	1988	1989	1990
<b>United Kingdom</b>					
Cerium compounds	337	351	582	607	679
Other rare earth compounds	...	59	86	70	102
Ferro-cerium & other pyrophoric alloys	10	6	121	54	10
Metals	40	64	28	100	84
<b>France</b>					
Ferro-cerium & other pyrophoric alloys	102	124	98	124	103
Metals	59	131	30	1	42
<b>Germany, Federal Republic of</b>					
Cerium compounds	150	201	(d)223	(d)210	(d)249
Other rare earth compounds	13	13	...	...	...
Ferro-cerium & other pyrophoric alloys	78	85	94	131	189
Metals	18	14	6	12	6
<b>Italy</b>					
Metals	14	138	780	22	42
<b>Austria</b>					
Cerium compounds	...	...	576	522	697
Other rare earth compounds	...	...	1 740	1 059	1 071
Metals	391	351	430	358	273
<b>Norway</b>					
Rare earth compounds	...	...	1 353	549	598
<b>Soviet Union</b>					
Rare earth compounds (b)	*1 000	*400	*1 000	*1 000	*1 400
Metals (b)	*40	...	*200	*300	*400
<b>South Africa (a)</b>					
Rare earth compounds	£4 000	£200	£2 100	£6 200	£7 900
<b>USA</b>					
Ores & concentrates	6 140	4 534	7 360	...	...
Ferro-cerium & other pyrophoric alloys	35	82	36	*35	...
<b>Brazil</b>					
Cerium compounds	—	523	780	799	246
Ferro-cerium & other pyrophoric alloys	307	324	260	198	...
Metals	89	103	107	187	234
<b>China</b>					
Rare earth compounds (b)	*4 300	*6 000	*7 400	*6 400	*2 800
Ferro-cerium & other pyrophoric alloys (b)	*400	*300	*200	*200	*200
Metals (b)	*90	*250	*420	*520	*400
<b>Hong Kong</b>					
Ferro-cerium & other pyrophoric alloys (c)	131	140	112	97	116
<b>Japan</b>					
Cerium compounds	...	...	482	903	648
Other rare earth compounds	...	...	322	165	154
Ferro-cerium & other pyrophoric alloys	20	25	...	...	...
<b>Malaysia</b>					
Ores & concentrates	738	1 024	173	660	212
<b>Thailand</b>					
Ores & concentrates	1 306	428	165	488	220
Ferro-cerium & other pyrophoric alloys	0	0	37	54	18
<b>Australia</b>					
Ores & concentrates	14 100	10 491	10 000	20 000	11 000

## Note(s):

- (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	1986	1987	1988	1989	1990
<b>United Kingdom</b>					
Cerium compounds	222	240	655	355	269
Other rare earth compounds	...	884	215	169	323
Ferro-cerium & other pyrophoric alloys	3	4	111	384	23
Metals	61	57	54	77	22
<b>Belgium-Luxembourg</b>					
Cerium compounds	127	127	92	249	249
Other rare earth compounds	17	12	3	41	3
Ferro-cerium & other pyrophoric alloys	6	8	49	26	45
Metals	54	32	54	45	147
<b>Denmark</b>					
Ferro-cerium & other pyrophoric alloys	12	15	16	9	6
<b>France</b>					
Cerium compounds	962	167	661	356	638
Other rare earth compounds	1 366	1 798	3 012	2 599	364
Ferro-cerium & other pyrophoric alloys	118	62	57	37	37
Metals	203	188	228	291	302
<b>Germany, Federal Republic of</b>					
Cerium compounds	1 034	1 133	1 246	1 131	1 577
Other rare earth compounds	710	851	1 611	1 503	1 871
Ferro-cerium & other pyrophoric alloys	10	17	23	45	30
Metals	113	138	143	117	163
<b>Italy</b>					
Ferro-cerium & other pyrophoric alloys	5	8	29	22	24
Metals	64	67	70	61	59
<b>Netherlands</b>					
Cerium compounds	1 215	1 382	351	112	395
Other rare earth compounds	1 639	1 389	1 090	2 902	2 651
Ferro-cerium & other pyrophoric alloys	16	11	25	29	44
Metals	28	14	1	4	12
<b>Spain</b>					
Rare earth compounds	247	272	280	248	257
Ferro-cerium & other pyrophoric alloys	43	47	48	46	41
Metals	43	14	12	17	68
<b>Austria</b>					
Cerium compounds	...	...	1 510	1 531	1 200
Other rare earth compounds	...	...	179	121	15
Metals	88	2	111	245	255
<b>Norway</b>					
Rare earth compounds	...	...	56	70	48
Metals	...	...	282	257	248
<b>Switzerland</b>					
Metals	1	1	...	3	6
<b>Yugoslavia</b>					
Ferro-cerium & other pyrophoric alloys	2	3	191	409	300
Metals	...	...	66	61	1
<b>South Africa</b>					
Rare earth compounds (a)	£212 000	£83 000	£80 000	£140 000	£136 000
<b>Canada</b>					
Cerium compounds	...	...	201	278	311
Other rare earth compounds	...	...	240	158	255
<b>USA</b>					
Ores & concentrates	2 960	1 122	1 924	774	800
Cerium compounds	300	209	695	251	359
Other rare earth compounds	294	313	234	9 295	6 504
Ferro-cerium & other pyrophoric alloys	94	96	108	84	93
Metals	68	186	198	294	183
<b>Argentina</b>					
Rare earth compounds	42	41	67	...	...
<b>Brazil</b>					
Cerium compounds	156	247	262	...	207
Other rare earth compounds	11	15	14	...	21

**Imports of Rare Earths**

tonnes

Country	1986	1987	1988	1989	1990
<b>Hong Kong</b>					
Ferro-cerium & other pyrophoric alloys	183	217	178	170	228
<b>Indonesia</b>					
Rare earth compounds	4	58	21	27	26
Ferro-cerium & other pyrophoric alloys	76	22	17	107	...
<b>Japan</b>					
Cerium compounds	411	260	3 089	3 520	2 349
Other rare earth compounds	8 178	8 674	11 466	8 192	6 544
Ferro-cerium & other pyrophoric alloys	29	52	...	...	...
Metals	132	278	468	337	180
<b>Korea, Republic of</b>					
Cerium compounds	74	158	2 300	621	604
Other rare earth compounds	17	25	249	54	74
Ferro-cerium & other pyrophoric alloys	24	39	25	17	30
Metals	...	19	35	4	121
<b>Malaysia</b>					
Ores & concentrates	385	878	62	143	...
<b>Saudi Arabia</b>					
Ferro-cerium & other pyrophoric alloys	67	40	45	37	...
<b>Singapore</b>					
Ferro-cerium & other pyrophoric alloys	87	75	41	...	...
<b>Taiwan</b>					
Rare earth compounds	...	...	...	498	340
Ferro-cerium & other pyrophoric alloys	23	22	24	31	34
Metals	62	34	31	2	56
<b>Thailand</b>					
Ferro-cerium & other pyrophoric alloys	92	75	19	40	70

Note(s):

(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	1986	1987	1988	1989	1990
United Kingdom					
Rock salt	2 040 000	1 855 000	876 845	1 184 000	1 102 000
Brine salt	1 510 000	1 554 000	1 425 551	1 344 000	1 341 000
Salt in brine (a)	3 305 000	3 672 000	3 827 138	4 228 000	3 991 000
Denmark (m)	573 557	536 951	548 085	551 871	522 206
France					
Rock salt	976 000	930 000	*950 000	*950 000	*900 000
Salt in brine	3 963 000	3 663 000	3 973 000	4 322 000	4 022 000
Sea salt	1 610 000	1 627 000	1 435 000	1 132 000	1 298 000
Germany, Federal Republic of					
Rock salt	7 462 000	7 256 000	6 251 000	5 611 000	4 910 000
Brine salt	892 000	913 000	946 000	941 000	785 000
Salt in brine	5 193 884	5 395 544	5 379 475	5 386 147	5 242 186
Greece	160 917	141 548	181 324	148 265	150 000
Italy					
Rock salt & brine salt	3 432 696	3 687 660	3 609 095	3 500 512	3 752 003
Sea salt	*1 000 000	1 120 000	970 000	700 000	*680 000
Netherlands	3 763 000	3 979 000	3 693 000	3 756 000	3 653 000
Portugal					
Rock salt	466 398	525 055	530 047	583 671	646 422
Sea salt	194 392	177 723	138 784	*150 000	*130 000
Spain					
Rock salt	2 100 813	2 250 606	2 455 002	2 496 441	*2 200 000
Sea salt	916 055	848 426	1 298 984	593 798	*900 000
Other salt	89 876	95 652	124 126	132 508	*100 000
Albania					
Rock salt	69 592	76 260	75 353	88 478	85 342
Sea salt	122 401	116 818	123 740	120 019	151 157
Austria					
Rock salt	1 569	1 350	1 020	1 361	1 236
Salt in brine	215 000	180 000	255 000	251 000	*250 000
Evaporated salt	485 513	483 624	412 929	396 485	386 188
Bulgaria	*91 000	*92 000	*91 000	77 500	166 445
Czechoslovakia	68 290	71 710	72 880	73 051	76 140
Finland	3 834	2 945	4 861	5 917	9 023
German Democratic Republic	3 139 000	3 087 200	3 277 800	3 172 300	*2 600 000
Poland					
Rock salt	1 221 000	1 231 000	1 247 000	994 000	*700 000
Other salt	4 198 000	4 944 000	4 932 000	3 676 000	*3 530 000
Romania	5 355 000	5 395 000	5 353 000	5 038 000	*5 000 000
Soviet Union	15 300 000	15 400 000	14 800 000	15 000 000	*14 500 000
Switzerland					
Evaporated salt	29 862	...	...	...	...
Other salt	318 111	(1)330 735	(1)264 709	(1)198 608	(1)209 812
Turkey	1 171 824	1 217 747	1 384 194	1 739 117	1 888 962
Yugoslavia					
Rock salt	234 685	153 067	126 650	133 597	*99 400
Sea salt	69 842	67 672	58 286	50 376	71 345
Other salt	199 760	282 650	200 276	184 461	204 213
Algeria					
Brine salt & sea salt	190 500	232 900	232 000	228 400	224 600
Angola	47 000	65 000	55 000	*70 000	*70 000
Cape Verde Islands	4 855	...	...	...	1 140
Egypt	863 794	1 054 760	922 308	805 840	1 013 230
Ethiopia (d)	227 799	167 745	174 848	187 867	*180 000
Ghana	*50 000	*50 000	*50 000	*50 000	*50 000
Kenya	71 912	72 269	94 682	103 220	102 100
Libya	*12 000	*12 000	*12 000	*12 000	*12 000
Madagascar	54 721	42 339	52 658	57 508	*55 000
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	7 500	7 000	7 000	7 000
Morocco	118 814	130 946	139 212	89 075	*90 000
Mozambique	*28 000	*30 000	*35 000	*40 000	*40 000
Namibia	134 644	130 041	149 317	142 102	157 224
Senegal	145 000	34 100	26 800	161 300	90 800
Somalia	*30 000	*30 000	*30 000	*30 000	*30 000
South Africa	752 440	705 531	678 225	692 391	728 110
Sudan	190 000	83 939	91 000	90 000	95 000

## Production of Salt

tonnes

Country	1986	1987	1988	1989	1990
Tanzania	21 868	41 124	30 100	21 300	39 300
Tunisia (c)	450 000	425 000	450 000	480 000	402 000
Bahamas (k)	1 057 542	1 164 088	1 236 012	1 008 483	*1 030 000
Canada					
Rock salt	6 867 287	6 670 863	7 126 762	7 447 694	(1)11 191 385
Other salt (e)	3 464 559	3 458 190	3 560 418	3 609 699	...
Costa Rica	*30 000	12 650	27 000	*30 000	23 000
Cuba	266 000	230 500	200 800	206 100	*200 000
Dominican Republic	54 000	55 000	37 000	30 000	*30 000
El Salvador (c)	43 563	36 188	32 591	30 238	31 584
Guatemala (c)	39 100	46 000	41 400	63 100	*60 000
Honduras	*30 000	*30 000	*30 000	*30 000	*30 000
Mexico	6 205 031	6 198 833	6 965 173	6 942 165	7 135 121
Netherlands Antilles (k)	257 503	305 877	236 717	149 854	190 057
Nicaragua (c)	*15 000	*15 000	*15 000	*15 000	*15 000
Panama (c)	8 872	17 074	22 794	17 989	22 206
USA (f)					
Rock salt	11 429 000	10 854 000	11 703 000	12 644 000	13 055 000
Salt in brine	16 257 000	16 442 000	17 782 000	16 509 000	17 724 000
Evaporated salt	5 575 000	5 809 000	5 841 000	6 097 000	6 137 000
Argentina	1 218 183	950 478	1 245 709	1 185 458	1 202 000
Brazil					
Rock salt	954 062	951 645	1 336 000	1 298 000	*1 300 000
Sea salt	1 600 359	3 600 000	3 020 000	2 355 000	*2 600 000
Chile	1 032 373	865 168	1 043 397	903 932	1 834 971
Colombia					
Rock salt	226 828	204 665	209 099	190 380	208 697
Sea salt	344 122	450 404	473 482	469 875	478 150
Peru	399 387	444 894	125 500	...	...
Venezuela (c)	511 421	*500 000	*365 000	439 400	430 000
Afghanistan (g)	*10 000	*10 000	*35 000	*35 000	*35 000
Bangladesh (j)	746 000	416 000	409 000	449 000	*410 000
Cambodia	*40 000	*40 000	*40 000	*40 000	*40 000
China	17 610 000	17 640 000	22 640 000	28 380 000	20 470 000
Cyprus	6 051	—	—	—	—
India					
Rock salt	1 664	970	4 357	2 640	*2 700
Sea salt	10 116 000	9 900 000	*9 200 000	*9 600 000	*9 500 000
Indonesia	*600 000	*600 000	*600 000	*600 000	*600 000
Iran (g)	*700 000	*700 000	814 842	*800 000	845 000
Iraq	*70 000	*70 000	*70 000	*100 000	*50 000
Israel	294 800	302 700	386 300	495 900	...
Japan (i)	1 370 000	1 397 000	1 363 000	1 366 684	1 377 300
Jordan (b)	33 746	18 000	38 000	57 000	55 000
Korea, Dem. P.R. of	*570 000	*570 000	*570 000	*570 000	*570 000
Korea, Republic of	729 000	664 000	1 020 000	830 000	*900 000
Kuwait	26 166	35 279	31 753	32 000	*30 000
Laos	*30 000	*12 700	*30 000	7 950	*8 000
Lebanon	*3 000	*3 000	*3 000	*3 000	*3 000
Mongolia	*16 000	*16 000	*16 000	*16 000	*16 000
Myanmar (b)(c)(h)	245 930	256 680	245 930	256 850	*259 000
Nepal (n)	7 000	2 000	6 000	7 200	6 900
Pakistan					
Rock salt	544 815	515 782	509 000	721 053	763 046
Sea salt	242 274	302 486	207 200	*210 000	*210 000
Philippines	442 111	466 427	492 080	479 599	490 407
Sri Lanka	104 278	115 274	101 590	150 223	53 088
Syria	*87 000	81 000	127 000	137 950	*130 000
Taiwan	136 078	99 943	111 341	169 982	82 820
Thailand					
Rock salt	2 000	3 268	5 670	15 384	119 179
Other salt	*165 000	*165 000	*165 000	*165 000	*165 000
Vietnam	450 000	*230 000	*300 000	*320 000	*340 000
Yemen Arab Republic	300 000	163 000	150 000	*150 000	(o)220 000
Yemen, People's Dem.Rep. of	40 300	55 500	*70 000	*70 000	...

**Production of Salt**

Country	1986	1987	1988	1989	1990
Australia	6 130 300	6 336 000	6 976 000	7 069 000	7 227 000
New Zealand	—	*65 000	*65 000	*65 000	*65 000
World total	175 100 000	177 300 000	184 000 000	187 400 000	180 300 000

## Note(s):

- (1) This table does not include production of refined salt
- (2) Salt is known to be 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
  - (m) Sales
  - (n) Years ended 15 July of that stated
  - (o) Yemen Arab Republic and People's Dem. Rep. of Yemen were unified on 22 May 1990 as the Republic of Yemen

## Exports of Salt

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	368 717	404 587	293 028	285 296	325 542
Belgium-Luxembourg	164 861	83 597	77 614	80 847	81 418
Denmark	272 420	240 652	301 736	311 931	305 011
France	747 002	600 747	514 074	529 287	936 060
Germany, Federal Republic of	2 290 731	2 146 283	2 061 264	2 001 650	2 167 794
Irish Republic	1 556	1 234	754	1 595	1 554
Italy	619 198	613 394	358 371	81 885	170 784
Netherlands	2 684 831	2 658 571	2 776 934	2 815 205	2 662 295
Portugal	5 559	35 383	19 894	22 134	28 454
Spain	510 839	435 014	297 257	291 031	78 718
Albania	*10 000	...	49 000	33 000	46 000
Austria	1 621	2 727	—	—	—
German Democratic Republic	1 721 000	1 653 000	1 826 000	1 772 000	...
Norway	2 487	1 798	1 427	2 505	2 309
Poland	327 246	364 239	424 837	366 242	...
Romania (a)	*872 300	*842 000	*793 100	*727 100	*581 500
Soviet Union	418 057	451 609	344 909	299 156	...
Sweden	1 835	1 681	1 793	1 878	1 985
Turkey	20 857	17 386	20 312	4 368	2 368
Algeria	13 938	4 942	9 202	...	...
Cape Verde Islands	5 000	—	...	15	...
Egypt	13 013	180 276	122 017	...	...
Ethiopia	...	8 819	79	...	...
Ivory Coast	5 430	...	151	...	...
Kenya	16 042	20 974	48 239	...	...
Madagascar	9 116	8 289	...	12 548	8 141
Morocco	28 400	60 905	17 050	5 680	4 959
Namibia	113 348	118 604	133 894	185 328	153 371
Senegal	116 478	99 350	85 148	108 477	...
South Africa	90 184	81 715	79 404	76 748	91 049
Tanzania	4 025	2 164	7 140	5 606	...
Tunisia	359 568	340 702	295 682	483 450	399 488
Bahamas	1 057 542	1 164 088	1 236 012	1 008 483	...
Canada	2 552 532	1 960 130	3 038 462	2 137 512	1 912 161
El Salvador	3 680	4 486	...	...	...
Jamaica	1 669	2 347	3 377	3 369	3 793
Mexico	4 440 481	4 994 844	5 098 127	5 526 458	5 172 721
Netherlands Antilles	257 503	305 877	236 717	149 854	190 057
USA	1 065 696	501 311	855 718	1 429 638	2 266 152
Argentina	12 738	130 608	24 340	198 543	...
Brazil	37 809	27 416	24 018	13 069	12 196
Chile	921 244	826 387	654 577	699 674	1 201 421
Colombia	61 479	...	23 100	72 683	...
China	1 170 000	1 069 088	382 177	370 634	...
Hong Kong (c)	947	614	1 756	4 745	6 151
India (b)	242 512	187 692	494 418	...	403 882
Israel (a)	*9 700	*33 100	*10 500	*19 000	*18 100
Japan	1 182	717	656	1 036	1 320
Jordan	187	305	—	18 338	13 090
Korea, Republic of	11 689	49 967	14 467	24 157	40 464
Malaysia	6 482	1 245	1 233	2 698	...
Pakistan (d)	17 270	16 495	32 127	20 039	22 644
Saudi Arabia	12 298	6 507	12 189	11 653	...
Singapore	9 216	9 663	13 707	18 170	16 084
of which: Re-exports	7 565	8 961	12 442	17 252	14 436
Taiwan	1 950	3 418	4 800	6 834	8 000
Thailand	54 489	60 579	41 139	17 857	31 091
Yemen, People's Dem.Rep. of	26 565	17 000	...	...	...
Australia	5 213 037	*5 500 000	6 088 000	6 196 000	6 470 000
New Zealand (d)	2 760	3 891	3 444	1 897	3 055

(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



# Imports of Salt

Salt  
tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	357 128	222 668	162 057	140 042	166 797
Belgium-Luxembourg	1 341 250	1 295 472	1 061 158	1 110 538	960 257
Denmark	298 748	297 250	171 772	132 127	128 161
France	154 332	169 382	181 248	169 210	182 412
Germany, Federal Republic of	782 790	867 951	872 680	745 482	764 171
Greece	68 322	133 334	40 636	74 180	75 300
Irish Republic	107 907	105 570	94 940	107 767	121 259
Italy	934 150	882 193	707 861	646 571	680 046
Netherlands	336 495	285 188	247 647	220 405	264 166
Portugal	31 272	33 520	117 078	95 018	104 417
Spain	4 703	12 128	7 882	77 430	199 198
Austria	212	643	179	171	216
Bulgaria	237 618	...	...	...	...
Czechoslovakia (a)	*150 300	*148 700	*139 000	*140 600	...
Faeroe Islands	34 590	17 983	38 648	27 875	15 993
Finland	526 692	586 315	645 815	710 140	686 355
Greenland	3 331	3 921	3 590	4 958	5 024
Hungary	735 959	696 629	664 982	581 791	471 362
Iceland	83 191	103 353	67 924	130 608	90 765
Malta	£188 600	£58 100	£139 000	£81 500	...
Norway	555 602	596 368	470 547	491 912	511 753
Sweden	1 281 459	1 157 390	1 342 487	1 100 235	931 183
Switzerland	2 225	3 282	4 082	3 027	3 162
Turkey	255	428	12 126	9 265	18 072
Yugoslavia	290 613	329 870	255 730	268 962	251 300
Algeria	105	282	57	...	...
Botswana	7 726	10 385	...	...	...
Burkina Faso	24 154	21 629	...	...	...
Burundi	19 166	17 892	6 209	13 663	7 844
Cameroon	13 215	41 262	...	...	...
Central African Republic	...	...	...	5 809	2 700
Congo	4 645	3 779	5 028	3 763	...
Egypt	623	812	137	...	...
Gabon	4 571	...	...	...	5 162
Ivory Coast	41 509	...	34 042	...	...
Kenya	321	549	98	...	...
Liberia	3 320	3 615	...	...	...
Mauritius	5 385	622	972	1 028	598
Niger	26 001	24 427	17 480	...	...
Nigeria	226 669	453 959	...	...	...
Reunion	3 495	2 030	3 093	...	...
Rwanda	29 845	10 037	10 892	...	...
Seychelles	318	386	575	459	460
Sierra Leone	733	...	...	...	...
South Africa	93 692	91 321	88 177	165 308	143 076
Tanzania	751	10 834	2 623	297	...
Togo	...	1 988	4 776	9 999	15 415
Zaire	61 094	40 048	37 965	...	...
Zambia	944	764	12 409	58 823	885
Zimbabwe	51 190	48 329	55 466	...	54 415
Bahamas	2 658	1 648	2 063	4 287	...
Barbados	1 977	1 954	2 141	...	...
Belize	552	462	621	621	671
Canada	1 328 235	1 112 100	1 275 663	2 360 908	2 095 067
Dominica	534	659	577	639	...
Grenada	507	485	433	491	496
Guadeloupe	2 294	2 410	2 527	2 309	...
Guatemala	26 195	594	2 315	...	893
Jamaica	20 541	23 667	18 225	22 231	15 162
Martinique	2 532	2 380	2 376	2 290	2 594
Mexico	737	538	1 062	7 376	...
Netherlands Antilles	728	1 367	520	332	627
Panama	704	554	193	278	663
St. Lucia	740	797	777	1 590	...
Trinidad & Tobago	22 630	23 453	...	...	16 863
USA	6 046 735	7 165 810	4 950 341	5 519 290	5 969 601

**Imports of Salt**

tonnes

Country	1986	1987	1988	1989	1990
Brazil	783 343	1 231 509	47 743	...	226 023
Chile	3 256	...	...	...	...
French Guiana	379	429	503	444	542
Paraguay	3 898	2 011	1 777	395	...
Peru	363	442	297	184	...
Suriname	2 631	1 710	3 963	2 341	...
Uruguay	76 801	63 841	72 292	...	...
Abu Dhabi	6 801	2 308	2 016	...	1 627
Bahrain	2 143	1 887	2 802	2 242	...
Bangladesh (b)	399 272	165 960	219 990	376 423	...
Brunei	6 017	1 511	...	...	...
Cyprus	1 287	5 351	...	4 352	5 250
Dubai	14 751	...	...	...	...
Hong Kong	130 537	129 938	131 362	156 456	148 674
India (c)	13 533	11 081	10 645	...	18 215
Indonesia	60 886	85 463	757	175 767	349 042
Japan	6 614 250	6 830 128	7 229 250	7 703 070	7 920 433
Jordan	620	742	331	697	184
Korea, Dem. P.R. of (a)	*100 300	*224 700	*155 600	*133 200	...
Korea, Republic of	872 771	1 102 538	1 053 486	1 038 719	1 080 843
Kuwait	12 123	7 083	8 583	7 752	...
Macao	2 276	2 273	2 135	3 265	...
Malaysia	152 962	175 315	210 759	230 224	...
Oman	7 907	6 039	16 700	17 964	17 562
Philippines	88 918	93 052	52 620	208 540	111 265
Qatar	4 108	3 135	3 747	3 384	3 157
Saudi Arabia	14 038	10 694	24 868	15 733	...
Singapore	36 700	47 136	66 068	67 459	87 370
Taiwan	859 515	596 704	781 925	851 667	942 384
Thailand	937	1 160	846	895	828
Australia	6 895	7 971	7 243	6 633	7 232
Fiji	3 485	3 497	...	...	...
New Caledonia	741	625	649	846	551
New Zealand (b)	49 898	94 298	69 877	67 550	64 397
Solomon Islands	1 490	1 475	1 070	775	815
Vanuatu	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

**Production of Sillimanite Minerals**

Country	1986	1987	1988	1989	1990
France					
Andalusite	50 900	50 000	50 000	50 000	*50 000
Spain					
Andalusite	3 304	3 916	3 360	3 765	*3 600
Czechoslovakia	*75 000	*75 000	*75 000	*75 000	*75 000
Romania	*70 000	*70 000	*70 000	*70 000	*70 000
Soviet Union					
Kyanite (a)	*100 000	*100 000	*100 000	*100 000	*100 000
Sweden					
Kyanite	*5 000	*5 000	*5 000	*5 000	*5 000
South Africa					
Andalusite	181 624	218 560	259 556	284 617	283 677
Sillimanite	1 330	1 243	781	170	256
Zimbabwe					
Kyanite	1 851	1 834	1 795	1 869	160
USA					
Kyanite (b)	*90 000	*90 000	*90 000	*100 000	*100 000
Brazil					
Kyanite (d)	950	510	630	*600	*600
China	*2 500	*2 500	*2 500	*2 500	*2 500
India					
Andalusite	732	482	—	—	—
Kyanite	32 394	37 382	35 773	39 489	*39 000
Sillimanite	14 674	14 336	15 377	16 117	*16 000
Australia					
Kyanite	768	1 079	*500	*500	*750
Sillimanite (c)	133	77	64	*70	*100
World total	631 000	672 000	710 000	750 000	747 000

## Note(s):

(1) In addition to the countries listed above as producing sillimanite minerals, synthetic mullite is known to be 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

## Sillimanite

**Exports of Sillimanite Minerals**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Sillimanite minerals	4 631	4 362	5 618	6 274	4 816
Belgium-Luxembourg					
Sillimanite minerals	38	44	—	250	52
Denmark					
Sillimanite minerals	72	23	49	11	—
France					
Sillimanite minerals	115	29	46 525	49 764	47 654
Germany, Federal Republic of					
Sillimanite minerals					
Crude	533	2 015	...	...	...
Calcined	6 938	4 884	(a)6 374	(a)10 929	(a)12 920
Italy					
Sillimanite minerals	1 021	1 431	1 337	1 007	...
Netherlands					
Sillimanite minerals					
Crude	2 099	1 815	...	...	...
Other	432	1 371	(a)927	(a)1 011	(a)1 364
Austria					
Sillimanite minerals	22 374	20 735	1	10	0
Czechoslovakia					
Sillimanite minerals (b)	*18 500	*16 800	...	...	...
German Democratic Republic					
Sillimanite minerals (b)	*1 000	*900	...	...	...
Sweden					
Sillimanite minerals	...	...	2 559	3 280	3 623
South Africa					
Andalusite	113 514	139 426	147 046	160 084	148 360
Sillimanite	748	979	935	181	368
USA					
Kyanite & related minerals	(b)*58 900	(b)*61 700	(b)*96 600	29 950	33 211
Brazil					
Kyanite	241	228	82	39	89
Japan					
Sillimanite minerals	(d)12 473	(d)10 362	5 207	4 925	5 159
Macao					
Sillimanite minerals	20 806	27 102	12 000	1 260	...
New Zealand (c)					
Sillimanite minerals	14 259	18 118	9 930	—	—

## Note(s):

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

(a) Including crude

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

(c) Years ended 30 June of that stated

(d) Including chamotte and dinas earth

**Imports of Sillimanite Minerals**

Country	1986	1987	1988	1989	1990
United Kingdom					
Sillimanite minerals	44 609	48 717	52 694	87 871	58 219
Belgium-Luxembourg					
Sillimanite minerals					
Crude	537	1 320	...	...	...
Other	813	3 217	(b)3 487	(b)7 414	(b)9 712
Denmark					
Sillimanite minerals	661	1 129	1 162	2 737	2 143
France					
Sillimanite minerals					
Crude	2 604	2 528	...	...	...
Other	2 114	3 207	(b)5 331	(b)7 105	(b)8 098
Germany, Federal Republic of					
Sillimanite minerals					
Crude	35 641	30 583	...	...	...
Calcined	44 734	49 971	(b)131 409	(b)132 840	(b)126 436
Greece					
Sillimanite minerals	1 874	811	2	—	—
Italy					
Sillimanite minerals					
Crude	16 242	13 509	...	...	...
Other	6 512	7 799	(b)25 956	(b)24 692	(b)26 792
Netherlands					
Sillimanite minerals					
Crude	7 509	3 980	...	...	...
Other	2 367	1 037	(b)5 636	(b)8 485	(b)6 278
Spain					
Sillimanite minerals	5 282	5 502	8 819	12 666	17 857
Austria					
Sillimanite minerals	81 258	76 969	2 213	3 338	2 534
Finland					
Sillimanite minerals	...	...	1 698	76	1 623
Norway					
Sillimanite minerals	(a)1 763	(a)322	377	437	450
Sweden					
Sillimanite minerals	...	...	394	2 267	965
Switzerland					
Sillimanite minerals	...	...	339	653	754
Yugoslavia					
Sillimanite minerals	...	...	7 248	4 400	1 485
Canada					
Sillimanite minerals	...	...	7 222	6 664	6 245
Mexico					
Mullite	1 284	1 524	2 055	1 939	...
Argentina					
Sillimanite minerals	152	131	191	...	...
Japan					
Sillimanite minerals	28 653	26 609	35 298	37 583	34 825
Mullite	(a)20 146	(a)20 195	762	2 000	9 489
Korea, Republic of					
Sillimanite minerals	3 141	5 582	4 830	11 713	12 994
Mullite	6 300	7 172	4 710	5 157	4 919
Australia					
Sillimanite minerals & dinas earth	(c)2 203	7 932	3 655	5 511	4 168

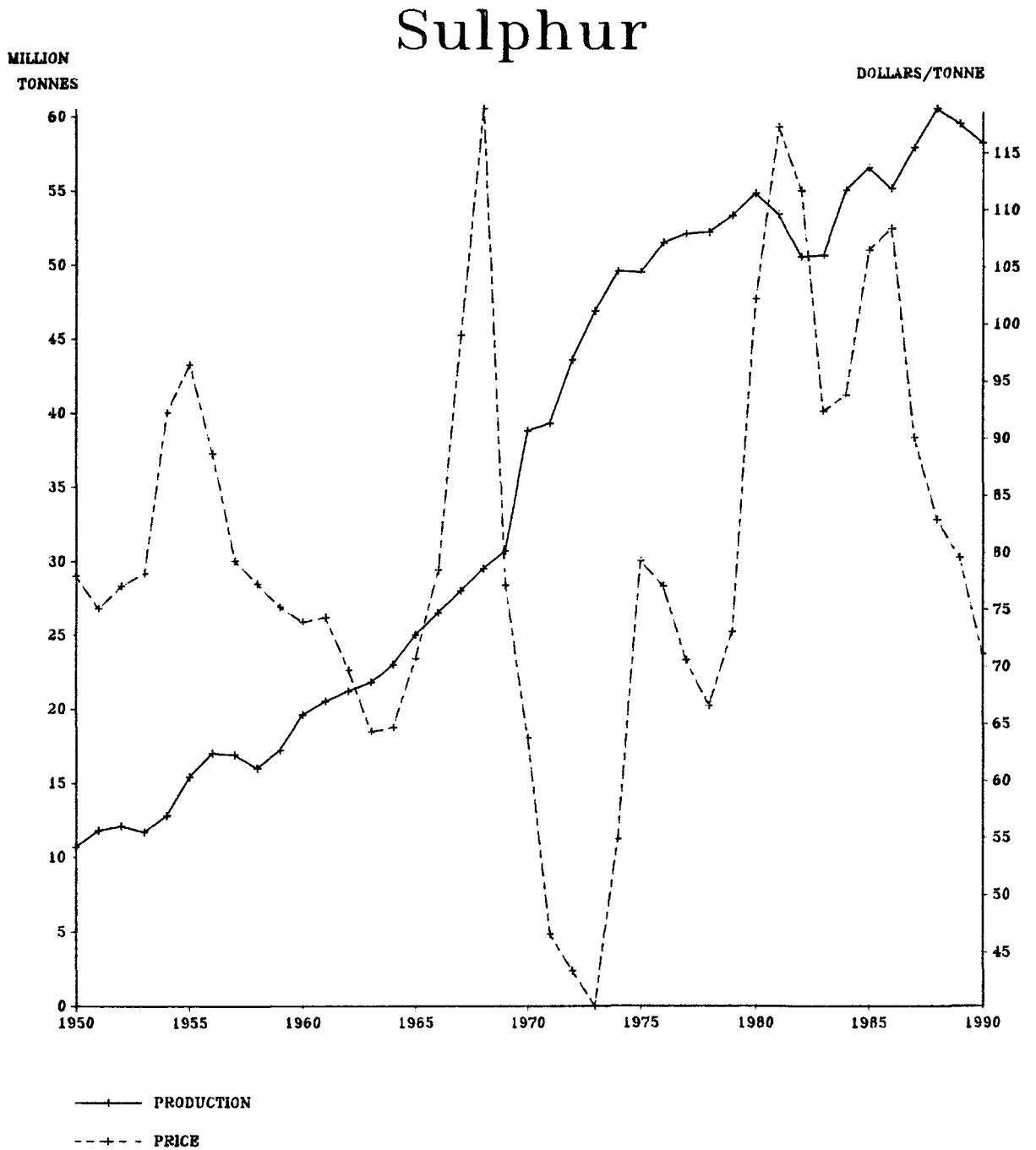
## Note(s):

(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

(c) Years ended 30 June of that stated



**Figure 5** World production of sulphur in all forms compared with the yearly average producer price and, from 1983, the average price f.o.b. mine/plant in the USA, expressed in constant 1985 US dollars.

## Production of Sulphur and Pyrites

Country		1986	1987	1988	1989	1990
United Kingdom						
	Recovered (c)	58 300	51 400	54 500	60 200	80 700
	Recovered (d)	105 000	119 000	129 000	118 000	129 000
Belgium						
	Recovered (c)(d)	*300 000	*300 000	*310 000	*320 000	*320 000
Denmark						
	Recovered (d)	12 810	10 568	13 571	18 842	12 118
France						
	Recovered (d)	1 149 100	1 280 000	1 232 000	1 146 000	1 149 000
Germany, Federal Republic of						
	Recovered (c)	*300 000	*300 000	*310 000	*315 000	*320 000
	Recovered (d)	*1 188 000	*1 239 000	*1 157 000	*1 157 000	*1 073 000
	Recovered (e)	*285 000	*285 000	*280 000	*310 000	*300 000
Greece						
	Pyrites (45%)	67 653	67 037	58 558	57 150	*60 000
	Recovered (d)	*140 000	*140 000	*140 000	*140 000	*140 000
Italy						
	Pyrites (43%)	309 137	306 905	307 646	323 409	310 243
	Recovered (d)	*185 000	*190 000	*190 000	*190 000	*190 000
	Sulphur ore	—	2 674	...	...	...
Netherlands						
	Recovered (c)(d)	*250 000	*211 000	*215 000	*260 000	285 000
Portugal						
	Pyrites (44%)	141 466	122 787	110 367	90 752	61 072
	Recovered	*5 000	*5 000	*5 000	*3 000	*3 000
Spain						
	Pyrites (47%)	1 191 975	1 010 528	1 055 670	878 917	*748 000
	Recovered (c)(d)(e)	*220 000	*235 000	*120 000	*120 000	*135 000
Austria						
	Recovered	40 334	41 394	47 548	49 134	*49 000
	Anhydrite	28 837	13 091	—	—	—
Bulgaria						
	Pyrites (42%)	*80 000	*80 000	*70 000	*70 000	*70 000
	Recovered	*62 000	*65 000	*60 000	*60 000	*60 000
Czechoslovakia						
	Pyrites (42%)	*60 000	*60 000	*60 000	*50 000	*50 000
	Recovered	41 127	38 023	50 287	60 182	55 570
	Sulphur ore	*6 000	*6 000	*6 000	*6 000	*6 000
Finland						
	Pyrites (44%)	240 580	273 260	270 570	345 240	290 157
	Recovered (c)	260 000	317 357	*240 000	*230 000	*230 000
	Recovered (d)	41 823	51 656	39 485	32 949	45 990
German Democratic Republic						
	Recovered	*315 000	*315 000	*315 000	*290 000	*265 000
Hungary						
	Pyrites	*1 000	*1 000	*1 000	*1 000	*1 000
	Recovered	*10 000	*10 000	*10 000	*10 000	*10 000
Norway						
	Pyrites (50%)	190 395	177 843	153 233	120 141	151 682
	Recovered (c)(d)	*80 000	*95 000	*90 000	*88 000	*90 000
Poland						
	Frasch (g)	4 894 000	4 966 000	5 000 000	4 864 000	4 661 000
	Recovered (c)	*170 000	*170 000	*150 000	*150 000	*140 000
	Recovered (d)	*30 000	*30 000	*20 000	*20 000	*20 000
	Anhydrite	*20 000	*20 000	*20 000	*20 000	*20 000
Romania						
	Pyrites (42%)	*150 000	*150 000	*150 000	*150 000	*75 000
	Recovered	*140 000	*130 000	*120 000	*120 000	*100 000
Soviet Union						
	Pyrites (46%)	2 090 000	2 150 000	*2 150 000	*2 150 000	*1 900 000
	Frasch	*1 100 000	*1 100 000	*1 100 000	*1 100 000	*1 000 000
	Recovered (c)	*1 050 000	*1 250 000	*1 375 000	*1 350 000	*1 200 000
	Recovered (d)	*2 025 000	*2 850 000	*3 740 000	*2 950 000	*2 925 000
	Sulphur ore	*2 400 000	*2 400 000	*2 400 000	*2 350 000	*2 000 000

**Production of Sulphur and Pyrites**

tonnes (sulphur content)

Country		1986	1987	1988	1989	1990
Sweden						
Pyrites	(48%)	215 161	205 706	170 424	144 074	120 875
Recovered (c)		*125 000	*130 000	*125 000	*125 000	*125 000
Sulphur ore		33 763	38 792	33 282	42 295	...
Turkey						
Pyrites	(45%)	4 152	22 035	75 387	*83 000	*85 000
Recovered (d)(e)		*29 000	*20 000	*21 000	*62 000	*71 000
Sulphur ore		41 275	33 642	28 196	27 455	*20 000
Yugoslavia						
Pyrites	(42%)	318 948	255 723	359 562	292 543	219 240
Recovered (c)(d)		*178 000	*178 000	*173 000	*173 000	*173 000
Algeria						
Recovered (d)		*20 000	*20 000	*20 000	*20 000	*20 000
Egypt						
Recovered (d)		10 000	10 000	*10 000	*10 000	*10 000
Libya						
Recovered (d)		*14 000	*14 000	*14 000	*14 500	*14 500
Namibia						
Pyrites	(50%)	94 726	60 130	113 341	98 266	69 463
South Africa						
Pyrites	(48%)	498 701	467 531	504 743	460 974	451 584
Recovered (d)(h)		*110 000	*110 000	*120 000	*120 000	*125 000
Recovered (c)		107 716	105 080	111 508	*104 000	*111 000
Zaire						
Recovered (c)		*38 500	*34 500	*35 000	*34 500	*34 000
Zambia						
Pyrites	(43%)	19 197	19 406	28 817	25 056	30 063
Recovered		*74 000	*74 000	*74 000	*74 000	*74 000
Zimbabwe						
Pyrites	(42%)	26 253	19 575	16 657	19 976	27 960
Recovered		*5 000	*5 000	*5 000	*5 000	*5 000
Canada						
Recovered (c)		810 000	785 000	879 000	836 000	969 000
Recovered (d)		6 965 775	7 322 791	8 106 641	6 868 930	7 167 920
Cuba						
Recovered (d)		*5 000	*5 000	*5 000	*5 000	*5 000
Mexico						
Frasch		1 588 359	1 805 560	1 628 000	1 528 500	1 440 580
Recovered (c)		*134 000	*154 000	*240 000	*286 000	*290 000
Recovered (d)		456 307	500 911	510 160	555 039	701 113
Netherlands Antilles						
Recovered (d)		*30 000	*30 000	20 685	20 205	19 469
Trinidad & Tobago						
Recovered (d)		*5 000	*5 000	*5 000	*5 000	*5 000
USA						
Pyrites	(40%)(a)	309 000	173 000	3 000	4 000	4 000
Frasch		4 043 000	3 202 000	3 174 000	3 888 000	3 726 000
Recovered (c)		919 000	1 003 000	1 125 000	1 190 000	1 294 000
Recovered (d)		5 816 000	6 161 000	6 444 000	6 510 000	6 536 000
Bolivia (f)						
Sulphur ore		4 730	8 746	6 733	8 167	2 101
Brazil						
Pyrites		97 238	82 446	108 895	77 461	*96 000
Recovered (c)		100 033	153 038	152 013	163 724	*160 000
Recovered (d)		73 572	77 322	61 396	60 121	*60 000
Chile						
Recovered (c)		120 000	119 000	131 000	180 000	187 000
Sulphur ore (b)		57 123	37 048	37 649	15 963	28 582
Colombia						
Recovered (d)		13 936	10 203	8 233	8 700	*8 000
Sulphur ore		36 038	41 490	42 617	41 722	39 686



## Production of Sulphur and Pyrites

Country		1986	1987	1988	1989	1990
Ecuador						
Recovered (d)		*10 000	*10 000	*10 000	*10 000	*10 000
Sulphur ore		*4 000	*4 500	*4 500	*4 300	*4 000
Peru						
Recovered (c)		*66 300	*66 000	*66 000	*66 000	*66 000
Venezuela						
Recovered (d)		99 380	*125 000	*125 000	*125 000	*125 000
Abu Dhabi						
Recovered (d)		*115 000	*105 000	*110 000	*80 000	*110 000
Bahrain						
Recovered (d)		46 000	47 500	47 690	*48 000	*48 000
China						
Pyrites (45%)		*2 500 000	*3 700 000	*3 900 000	*4 000 000	*4 000 000
Recovered		*300 000	*500 000	*550 000	*600 000	*600 000
Sulphur ore		*300 000	*300 000	*300 000	*300 000	*300 000
Cyprus						
Pyrites (44%)		24 936	50 355	49 784	25 944	—
India						
Pyrites (37%)		8 150	10 910	10 973	14 381	*14 000
Recovered (c)		*120 000	*120 000	*125 000	*125 000	*125 000
Indonesia						
Sulphur ore		4 525	3 941	4 321	3 939	3 628
Iran						
Recovered (d)		*250 000	*300 000	*300 000	*300 000	*300 000
Sulphur ore		*30 000	*30 000	*30 000	*30 000	*30 000
Iraq						
Frasch		*600 000	*707 000	*700 000	*900 000	*800 000
Recovered (d)		*200 000	*250 000	*350 000	*370 000	*250 000
Israel						
Recovered (d)		29 200	40 200	68 300	67 600	*64 000
Japan						
Pyrites (49%)		158 367	78 957	70 915	62 268	53 363
Recovered (c)(g)		1 255 429	1 249 623	1 267 934	1 384 318	*1 450 000
Recovered (d)		985 000	1 020 000	1 093 000	1 176 000	*1 200 000
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)		*55 000	*55 000	*55 000	*55 000	*55 000
Recovered (d)		*35 000	*35 000	*35 000	*36 000	*36 000
Kuwait						
Recovered (d)		268 000	309 000	353 000	560 000	425 000
Oman						
Recovered		*16 000	*17 000	*17 000	*17 000	*17 000
Pakistan						
Recovered		*26 000	*26 000	*25 000	*25 000	*25 000
Philippines						
Pyrites (46%)		108 597	47 299	174 491	164 000	168 000
Recovered (c)		*120 000	*140 000	*150 000	*185 000	134 316
Qatar						
Recovered (d)		48 500	53 300	*54 000	*52 000	*52 000
Saudi Arabia						
Recovered (d)		1 446 000	1 432 000	1 378 000	*1 400 000	*1 500 000
Singapore						
Recovered (d)		*50 000	*50 000	*50 000	*55 000	*55 000
Syria						
Recovered (d)		*35 000	*40 000	*40 000	*40 000	*40 000
Taiwan						
Recovered		62 980	89 082	86 541	76 060	95 533

**Production of Sulphur and Pyrites**

tonnes (sulphur content)

Country	1986	1987	1988	1989	1990
<b>Australia</b>					
Recovered (c)	453 012	536 244	*560 000	...	...
Recovered (d)	10 200	8 500	*9 000	*10 000	*10 000
<b>Total Pyrites</b>	9 100 000	9 800 000	10 200 000	9 900 000	9 200 000
<b>Total Frasch</b>	12 200 000	11 800 000	11 600 000	12 300 000	11 600 000
<b>Total Recovered</b>	30 800 000	33 400 000	35 800 000	34 500 000	34 900 000
<b>Total Sulphur ore</b>	2 900 000	2 900 000	2 900 000	2 800 000	2 500 000
<b>World total (all forms)</b>	55 100 000	57 900 000	60 500 000	59 500 000	58 200 000

## Note(s):

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

(a) Including hydrogen sulphide and liquid sulphur dioxide

(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

## Exports of Sulphur and Pyrites

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Sulphur					
Crude	1 584	2 857	3 325	3 931	3 863
Sublimed & precipitated	600	169	1 089	1 353	2 184
Belgium-Luxembourg					
Pyrites	125	130	265	245	206
Sulphur					
Crude	10 904	32 078	19 883	27 217	29 325
Sublimed & precipitated	189	292	85	59	34
Denmark					
Sulphur					
Crude	3 222	4 209	7 750	8 853	3 379
Sublimed & precipitated	4 642	2 415	2 254	34	67
France					
Sulphur					
Crude	366 873	472 083	537 359	417 132	501 702
Refined	821	2 258	9 424	7 391	7 472
Sublimed & precipitated	2 223	2 793	556	356	430
Germany, Federal Republic of					
Pyrites	1 290	1 400	1 318	1 499	1 274
Sulphur					
Crude	686 040	764 327	697 106	626 088	718 606
Sublimed & precipitated	361	200	235	315	8 546
Greece					
Sulphur	7 023	7 063	743	8 266	302
Italy					
Pyrites	4 676	4 883	5 351	5 780	5 752
Sulphur					
Crude	3 631	450	954	4 178	27 521
Sublimed & precipitated	449	49	279	481	238
Netherlands					
Sulphur	29 104	95 299	92 946	144 210	148 042
Spain					
Pyrites	347 216	248 457	162 984	86 121	13 651
Sulphur					
Crude	425	10 774	29 485	47 370	44 846
Sublimed & precipitated	76	47	39	85	1 690
Albania					
Pyrites	(c)*24 900	(c)*14 500	62 000	11 000	(c)*15 000
Finland					
Pyrites (c)	*144 200	*161 500	*288 900	*383 400	*351 900
Hungary					
Sulphur	18 856	20 174	34 508	38 081	17 000
Norway					
Pyrites	172 650	108 080	92 688	24 090	48 565
Sulphur					
Crude	2 643	739	800	—	10
Sublimed & precipitated	2 751	2 799	1 124	99	3 664
Poland					
Sulphur	3 823 000	3 856 000	3 878 000	3 636 000	3 815 000
Soviet Union					
Pyrites	315 000	309 000	246 000	161 000	114 000
Sulphur (c)	*68 300	*41 500	*59 200	*42 200	*2 500
Sweden					
Pyrites	14	58 654	4	76	93
Sulphur					
Crude	10 246	18 969	15 597	36 528	38 299
Sublimed & precipitated	9 286	82	2 363	3 077	841
Switzerland					
Sulphur					
Crude	6 421	16 877	12 389	14 331	15 791
Sublimed & precipitated	43	28	1	6	7
Yugoslavia					
Pyrites	80 463	65 467	36 928	30 212	32 724
Namibia					
Pyrites (e)	...	...	...	89 820	84 097
South Africa					
Sulphur	—	1 041	24 852	19 449	17 412

## Sulphur and Pyrites

**Exports of Sulphur and Pyrites**

tonnes

Country	1986	1987	1988	1989	1990
Canada					
Pyrites	...	—	4 585	10 540	119 722
Sulphur	6 257 290	6 571 800	7 381 005	5 516 208	6 057 556
Mexico					
Sulphur	1 047 367	1 444 615	1 738 934	1 208 901	1 330 902
Netherlands Antilles					
Sulphur	4 000	23 000	...	...	...
USA					
Sulphur					
Crude	(d)1 919 495	(d)1 215 832	(d)1 223 357	684 777	688 963
Refined	...	...	...	159 712	111 694
Sublimed & precipitated	...	...	...	191 743	128 493
Bolivia					
Sulphur	6 050	8 790	6 767	8 269	2 310
Colombia					
Sulphur	1 641	4 500	2 666	843	...
Venezuela					
Sulphur	16 000	20 033	...	...	...
Bahrain					
Sulphur	38 040	44 843	13 468	36 244	...
China					
Pyrites	...	130 315	200 507	230 312	...
Sulphur					
Crude	(c)*54 300	44 622	32 664	8 451	...
Sublimed & precipitated (c)	*3 600	*4 900	*500	*200	*100
Cyprus					
Pyrites	65 938	21 905	...	—	1 630
Iran					
Sulphur (c)	*11 600	*46 000	*73 400	*42 200	*143 500
Japan					
Sulphur					
Crude	77 815	138 133	170 366	262 621	385 385
Sublimed & precipitated	1 201	1 692	2 294	1 656	1 532
Korea, Republic of					
Sulphur	3 399	4 960	5 191	5 605	6 400
Kuwait					
Sulphur	360 022	...	...	...	...
Saudi Arabia					
Sulphur					
Crude	266	169 196	148 727	580 942	...
Sublimed & precipitated	924 676	371 948	831 785	410 921	...
Singapore					
Sulphur					
Crude (a)	15 885	24 815	26 925	21 342	35 729
Sublimed & precipitated	10 600	22 207	23 408	11 719	19 981
Taiwan					
Sulphur					
Crude	1 192	599	227	146	94
Sublimed & precipitated	153	274	76	9	26
Thailand					
Sulphur					
Crude	1 563	2 635	592	133	1 824
Sublimed & precipitated	406	27	45	—	35
Australia					
Sulphur (b)	773	32 706	46 010	558	1 149

(a) Re-exports

(b) Years ended 30 June of that stated

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

(d) Including refined, sublimed and precipitated

(e) S content

## Imports of Sulphur and Pyrites

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Pyrites	15 540	12 830	13 020	8 928	14 325
Sulphur					
Crude	684 569	618 984	682 897	641 460	470 862
Sublimed & precipitated	563	379	910	1 103	376
Belgium-Luxembourg					
Pyrites	260 194	296 979	223 932	147 738	85 356
Sulphur					
Crude	397 666	414 213	449 888	434 603	447 778
Sublimed & precipitated	1 451	2 298	1 788	848	390
Denmark					
Pyrites	71	26	140	—	42
Sulphur					
Crude	40 896	48 289	72 813	72 551	52 867
Sublimed & precipitated	174	142	87	43	41
France					
Pyrites	1 144	1 328	1 317	1 188	2 865
Sulphur					
Crude	530 890	642 767	746 655	628 330	651 213
Refined	2 079	2 959	11 957	8 594	10 769
Sublimed & precipitated	141	137	535	604	353
Germany, Federal Republic of					
Pyrites	203 328	150 525	159 233	65 176	84 310
Sulphur					
Crude	232 639	214 142	176 187	131 334	97 648
Sublimed & precipitated	2 041	1 434	1 009	924	5 891
Greece					
Pyrites	19 082	3 803	10 588	5	9
Sulphur					
Crude	101 072	151 689	79 573	94 693	90 179
Sublimed & precipitated	81	33	122	3	15
Irish Republic					
Sulphur					
Crude	391	318	295	274	381
Sublimed & precipitated	98	39	85	15	31
Italy					
Pyrites	158 971	102 513	118 589	88 116	94 974
Sulphur					
Crude	337 251	283 843	264 903	186 303	174 421
Sublimed & precipitated	1 325	1 202	1 111	1 434	1 415
Netherlands					
Pyrites	243	302	411	491	1 203
Sulphur					
Crude	289 455	237 546	171 058	199 528	188 336
Sublimed & precipitated	213	248	398	377	278
Portugal					
Sulphur	23 089	22 842	17 913	16 828	14 830
Spain					
Sulphur					
Crude	42 999	42 825	54 839	39 662	51 343
Sublimed & precipitated	37	51	59	99	1 316
Austria					
Pyrites	668	655	746	800	819
Sulphur					
Crude	90 590	82 590	87 996	84 879	59 329
Sublimed & precipitated	255	238	242	190	2 657
Bulgaria					
Pyrites (a)	*210 000	*190 000	*77 000	...	...
Sulphur (a)	*60 000	*53 000	*61 000	*37 000	...
Czechoslovakia					
Sulphur	466 000	488 000	486 000	419 000	396 000
Finland					
Sulphur					
Crude	28 183	17 951	42 256	54 016	21 197
Sublimed & precipitated	13	20	11	12	14
German Democratic Republic					
Sulphur (a)	*135 000	*138 000	*134 000	*135 000	...

**Imports of Sulphur and Pyrites**

tonnes

Country	1986	1987	1988	1989	1990
Hungary					
Pyrites	73 563	53 995	28 362	...	...
Sulphur	167 395	158 061	183 662	155 076	47 573
Malta					
Sulphur	93	81	39	181	...
Norway					
Pyrites	3 948	—	29 164	68 173	19 340
Sulphur					
Crude	6 138	3 371	3 503	3 473	3 652
Sublimed & precipitated	11	30	42	528	106
Romania					
Sulphur	337 800	418 300	356 300	347 200	262 000
Soviet Union					
Sulphur (a)	*1 719 100	*983 300	*748 000	*1 321 400	*1 029 700
Sweden					
Pyrites	48 807	65 914	125 817	188 101	225 107
Sulphur					
Crude	8 467	7 885	8 171	5 574	5 416
Sublimed & precipitated	9 898	8 402	7 935	11 315	10 803
Switzerland					
Pyrites	131	146	218	202	212
Sulphur					
Crude	47 320	57 173	54 829	59 932	56 164
Sublimed & precipitated	120	146	78	43	52
Turkey					
Pyrites	31 815	72 135	64 185	38	15 053
Sulphur					
Crude	129 108	108 254	139 115	126 749	160 873
Sublimed & precipitated	55	59	46	6 746	304
Yugoslavia					
Pyrites	4 584	451	30 455	10 774	3 633
Sulphur					
Crude	164 534	129 365	203 568	138 545	140 056
Refined	7 223	2 481	6 775	5 596	4 746
Sublimed & precipitated	498	130	175	73	50
Algeria					
Sulphur					
Crude	77 978	126 888	80 020	96 000	78 000
Sublimed & precipitated	5	4 104	...	...	...
Egypt					
Sulphur					
Crude	69 921	110 312	164 873	...	...
Sublimed & precipitated	9 060	38	481	...	...
Ethiopia					
Sulphur	2 074	70	2	716	1 601
Gabon					
Sulphur	5 501	5 000	4 000	4 000	2 000
Kenya					
Sulphur					
Crude	482	6 480	684	5 000	5 000
Sublimed & precipitated	1 047	1 368	1 323	...	...
Morocco					
Sulphur	1 672 342	2 042 825	2 924 965	1 095 286	2 739 592
Niger					
Sulphur	25 951	11 208	20 614	19 000	24 000
Nigeria					
Sulphur	772	4 174	6 000	...	5 000
Senegal					
Sulphur	118 679	149 584	155 000	157 636	247 000
South Africa					
Pyrites	75	196	60	70	154
Sulphur					
Crude	319 353	605 563	1 013 582	274 687	328 334
Sublimed & precipitated	100	56	91	451	444
Tanzania					
Sulphur	1 025	4 878	678	3 062	11 000

## Imports of Sulphur and Pyrites

Country	1986	1987	1988	1989	1990
Tunisia					
Sulphur	1 096 422	1 119 864	1 305 036	1 234 789	1 286 606
Zimbabwe					
Sulphur	15 436	29 575	30 426	20 000	19 903
Canada					
Pyrites	...	...	5 970	4 588	2 860
Sulphur					
Crude	10 760	24 712	32 217	18 311	13 247
Sublimed & precipitated	...	...	2 314	1 845	1 620
Cuba					
Sulphur	124 535	156 873	166 275	154 191	...
El Salvador					
Sulphur	4 044	1 154	8 949	228	2 127
Guatemala					
Sulphur	2 901	5 154	951	1 749	1 951
Jamaica					
Sulphur	302	3 005	3	3 286	6 010
Mexico					
Sulphur					
Crude	329 938	448 566	604 144	284 990	...
Sublimed & precipitated	35	75	1 133	288	...
Nicaragua					
Sulphur	1 022	1 000	1 000	...	...
USA					
Pyrites	40 429	32 501	11 435	29 007	32 061
Sulphur	1 427 881	1 599 125	1 995 524	2 240 139	2 557 272
Argentina					
Sulphur	110 571	105 896	53 882	64 228	*100 000
Brazil					
Sulphur					
Crude	1 155 291	1 189 846	1 145 282	1 145 365	723 508
Sublimed & precipitated	792	747	138	...	71
Chile					
Sulphur	65 121	71 499	69 540	51 154	64 854
Colombia					
Sulphur	25 850	25 700	25 984	31 904	...
Ecuador					
Sulphur	400	1 378	1 367	502	265
Peru					
Sulphur	2 784	4 947	6 271	3 000	7 000
Suriname					
Sulphur	637	1 064	784	781	...
Uruguay					
Sulphur	20 144	15 350	21 848	18 000	17 000
Venezuela					
Sulphur	296	268	82	6 127	...
Bangladesh (b)					
Sulphur	52 801	27 998	18 593	20 436	31 000
China					
Sulphur	13	31	20 598	126 553	45 000
Cyprus					
Sulphur	2 823	2 384	2 200	2 298	1 758
Hong Kong					
Sulphur					
Crude	5 342	294	345	344	623
Sublimed	294	434	262	849	574
India (c)					
Sulphur					
Crude	1 067 139	1 148 785	1 298 963	1 630 000	1 199 153
Sublimed & precipitated	218	679	1 362	...	1 275
Indonesia					
Sulphur					
Crude	10 844	33 620	61 970	49 605	143 192
Sublimed & precipitated	221 404	345 495	283 607	249 029	117 131

**Imports of Sulphur and Pyrites**

tonnes

Country	1986	1987	1988	1989	1990
Israel					
Sulphur	201 387	250 950	253 316	143 832	47 566
Japan					
Pyrites	28 246	205 020	259 652	327 863	317 550
Sulphur	2 023	68	2 305	287	939
Jordan					
Sulphur					
Crude	127 528	168 387	267 996	89 249	38 410
Sublimed & precipitated	35 638	20 723	—	—	62 444
Korea, Republic of					
Sulphur					
Crude	518 369	520 997	585 328	554 925	517 345
Sublimed & precipitated	1 330	1 902	2 531	2 830	1 766
Kuwait					
Sulphur	50 004	419 396	—	764 058	...
Malaysia					
Sulphur					
Crude	886	1 631	4 025	6 709	...
Sublimed & precipitated	22 796	20 349	15 297	27 873	...
Pakistan (b)					
Sulphur					
Crude	25 986	41 035	36 396	44 000	27 154
Sublimed & precipitated	1 958	810	113	...	—
Philippines					
Sulphur					
Crude	2 015	17 233	8 564	30 357	10 070
Sublimed & precipitated	17 318	1 704	14 062	2 897	10 215
Singapore					
Sulphur					
Crude	142	168	308	174	235
Sublimed & precipitated	510	216	192	127	195
Sri Lanka					
Sulphur					
Crude	363	1 203	712	...	525
Sublimed & precipitated	280	640	153	...	666
Syria					
Sulphur					
Crude	59 201	99 351	28 000	...	...
Sublimed & precipitated	33	27	...	...	...
Taiwan					
Sulphur					
Crude	60 515	17 893	59 160	93 505	114 827
Sublimed & precipitated	261 370	153 152	199 815	152 578	116 400
Thailand					
Sulphur					
Crude	57 334	46 703	23 148	2 403	12 648
Refined	2 561	12 310	81 898	71 444	69 780
Sublimed & precipitated	120	224	187	205	255
Australia					
Sulphur	398 101	379 560	555 678	416 000	312 000
New Zealand (b)					
Sulphur					
Crude	176 775	78 208	125 304	97 261	156 722
Sublimed & precipitated	738	687	105	52	128

(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



## Production of Talc

Talc  
tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	12 357	12 529	14 182	15 413	14 781
France	325 000	329 000	320 000	258 000	314 000
Germany, Federal Republic of	21 900	19 800	19 500	20 500	21 400
Greece	17 310	9 507	1 587	10 518	1 114
Italy	151 406	150 718	159 603	145 888	151 566
Portugal	5 908	7 702	7 187	8 063	8 162
Spain	73 914	75 307	68 979	71 660	*75 000
Austria	133 319	129 959	132 974	133 078	133 971
Finland	321 296	417 687	457 410	473 056	273 214
Hungary	1 550	1 685	1 326	1 041	675
Norway	*100 000	*100 000	*100 000	*100 000	*100 000
Romania	*65 000	*65 000	*65 000	*60 000	*55 000
Soviet Union	*520 000	*530 000	*530 000	*530 000	*500 000
Sweden	11 233	16 981	16 550	17 975	*17 000
Turkey	*35 000	*15 000	5 397	6 280	5 557
Yugoslavia	25 656	30 993	29 204	26 614	20 069
Egypt	5 579	6 105	7 268	6 526	6 340
South Africa					
Talc	8 641	8 005	10 111	11 596	11 179
Wonderstone (pyrophyllite)	4 606	3 467	3 162	3 942	2 759
Zambia	266	258	73	144	160
Zimbabwe	532	516	356	1 513	1 787
Canada	123 037	160 000	134 000	150 000	154 000
Mexico	24 301	17 469	13 645	13 908	13 777
USA					
Talc	1 106 000	1 080 000	1 136 347	1 171 871	1 185 142
Pyrophyllite	75 000	83 000	97 000	81 301	82 025
Argentina					
Talc	22 353	27 103	26 108	26 658	26 000
Pyrophyllite	2 812	1 260	671	1 310	1 300
Brazil					
Talc (b)	336 706	423 425	339 077	(d)*450 000	...
Pyrophyllite (b)	41 351	51 114	60 070	...	...
Chile	2 257	980	1 070	835	898
Colombia	9 013	11 927	10 353	9 196	10 390
Paraguay	130	180	210	200	*200
Peru	9 108	1 907	10 650	...	...
Uruguay	1 255	1 648	1 460	*1 500	...
Venezuela	25 000	*32 000	*32 000	...	...
China	*1 000 000	*1 000 000	*1 000 000	2 056 400	2 545 000
India					
Pyrophyllite	58 884	51 724	64 923	94 264	*95 000
Steatite	378 683	359 448	417 493	414 268	*416 000
Iran (a)	*31 000	*31 000	29 261	*30 000	23 000
Japan					
Talc	74 903	45 346	39 887	59 186	58 067
Pyrophyllite	962 302	939 165	949 973	922 213	890 168
Korea, Dem. P.R. of	*170 000	*170 000	*170 000	*170 000	*170 000
Korea, Republic of					
Talc	210 631	161 052	146 478	162 098	181 660
Pyrophyllite	587 049	690 819	673 776	770 298	*750 000
Nepal (c)	8 780	3 359	4 430	6 726	1 798
Pakistan	23 021	23 278	39 402	38 290	30 177
Taiwan	21 552	22 102	21 603	22 559	22 123
Thailand	39 051	41 850	42 128	47 041	33 650
Australia					
Talc	179 467	206 865	201 740	*200 000	*200 000
Pyrophyllite	8 588	6 036	4 030	*4 000	*5 000
World total	7 400 000	7 600 000	7 600 000	8 800 000	9 100 000

(a) Years ended 20 March following that stated

(b) Including beneficiated and directly shipped material

(c) Years ended 15 July of that stated

(d) Including pyrophyllite

Talc

**Exports of Talc**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	2 542	2 354	1 978	1 844	1 774
Belgium-Luxembourg	39 929	53 838	64 113	66 483	59 074
France	99 535	111 685	126 413	146 352	147 109
Germany, Federal Republic of	7 587	8 991	6 482	8 366	7 353
Greece	245	329	259	167	646
Italy	43 076	40 473	42 394	41 797	42 144
Netherlands	8 817	12 066	12 810	18 491	19 449
Spain	32 910	31 875	17 213	14 321	10 330
Austria	113 369	120 177	115 565	116 949	119 546
Czechoslovakia (a)	*6 800	*6 700	*6 300	*5 600	*5 100
Finland	48 284	75 867	72 537	90 635	105 782
Norway	42 702	45 100	41 090	44 292	43 570
Sweden	8 145	13 916	14 879	17 205	12 160
Switzerland	86	144	146	147	179
Turkey	782	334	651	135	84
Egypt	843	345	528	...	...
Canada	(d)33 999	(d)35 232	45 925	43 740	40 119
USA	211 931	283 693	382 557	321 060	200 276
Brazil	2 197	3 454	3 851	895	1 598
China	582 220	637 896	746 197	943 381	869 755
Hong Kong (c)	29 250	25 204	50 559	50 991	42 136
India (b)	12 339	23 331	15 629	...	14 402
Japan	3 518	2 654	2 658	2 476	3 160
Jordan	10 993	6 357	70	—	1 178
Korea, Dem. P.R. of (a)	*23 800	*19 800	*21 100	*15 200	*12 000
Korea, Republic of					
Talc	42 486	36 580	36 073	34 182	33 055
Pyrophyllite	—	—	221 903	259 580	256 058
Singapore	512	890	2 182	1 890	1 358
of which: Re-exports	508	863	2 169	1 869	1 240
Taiwan	695	357	246	290	1 741
Thailand	2 364	3 488	1 709	4 999	3 074
Australia (e)	163 355	145 945	165 211	136 519	169 558

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

(b) Years ended 31 March following that stated

(c) Re-exports

(d) Imports into the USA

(e) Years ended 30 June of that stated

# Imports of Talc

Talc  
tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	68 408	70 675	60 243	73 588	83 413
Belgium-Luxembourg	68 617	83 766	100 218	83 241	91 722
Denmark	9 649	9 870	10 364	12 426	10 279
France	17 929	23 331	22 992	25 979	25 377
Germany, Federal Republic of	148 298	155 536	173 702	194 995	197 506
Greece	2 508	2 739	2 614	3 141	2 622
Irish Republic	1 643	1 654	1 647	1 646	1 117
Italy	28 465	32 429	36 134	45 074	45 699
Netherlands	46 910	59 100	78 801	81 808	73 985
Portugal	6 708	7 757	10 208	9 434	11 952
Spain	13 614	19 971	28 341	27 695	32 505
Austria	6 198	10 698	8 179	12 980	9 953
Czechoslovakia (a)	*1 500	*2 300	*900	*700	*700
Finland	424	440	568	612	458
German Democratic Republic (a)	*1 500	*1 800	*1 700	*3 000	*1 300
Hungary	4 368	5 334	6 433	5 973	4 375
Norway	6 302	6 207	11 192	6 613	9 462
Poland	23 154	25 424	30 083	22 905	...
Soviet Union (a)	*1 500	*1 000	*3 000	*3 500	*2 900
Sweden	27 289	31 426	32 668	33 923	25 276
Switzerland	14 922	15 059	13 734	15 072	15 261
Turkey	549	505	689	608	1 322
Yugoslavia	4 885	4 377	5 099	4 389	4 360
Algeria	1 584	956	1 835	...	...
Egypt	975	1 570	1 617	...	...
Ivory Coast	1 720	...	1 505	...	...
Kenya	4 721	4 670	5 309	...	...
Morocco	1 079	1 417	1 914	1 481	1 566
South Africa	4 154	5 490	4 500	3 972	4 654
Tunisia	1 044	1 191	1 222	1 262	1 146
Canada	39 362	49 515	39 640	49 373	44 978
Costa Rica	1 096	991	873	1 144	1 235
Dominican Republic	462	...	...	...	...
El Salvador	452	515	421	526	452
Guatemala	159	197	296	290	357
Honduras	240	226	231	313	...
Jamaica	1 170	449	636	...	758
Mexico	96 200	93 406	107 618	110 013	92 759
Panama	265	254	374	367	435
Trinidad & Tobago	507	592	...	604	...
USA	50 776	55 607	83 375	76 531	63 255
Argentina	382	1 049	778	...	...
Chile	11 044	*10 000	16 216	11 707	...
Colombia	890	...	2 101	2 197	...
Ecuador	559	618	676	756	...
Peru	621	1 070	619	166	...
Venezuela	8 873	14 877	12 680	1 671	...
Bangladesh (b)	1 770	2 384	4 001	...	...
China (a)	*500	*1 100	*1 300	*1 100	*1 500
Cyprus	380	595	...	368	356
Dubai	465	...	...	...	...
Hong Kong	32 707	30 312	49 804	51 514	52 127
Indonesia	27 722	17 464	28 569	27 744	43 770
Israel (a)	*700	*1 500	*200	*1 000	*2 500
Japan	614 422	579 171	660 570	763 535	666 040
Jordan	399	471	395	1 074	1 105
Korea, Republic of	41 926	63 937	97 976	123 409	1 721 903
Malaysia	7 010	6 796	13 757	22 715	...
Pakistan (b)	1 156	13 635	1 564	...	783

Talc

## Imports of Talc

tonnes

Country	1986	1987	1988	1989	1990
Philippines	7 147	8 464	9 800	10 234	11 103
Saudi Arabia	2 918	3 004	3 538	4 445	...
Singapore	6 205	5 163	7 127	6 508	6 119
Sri Lanka	1 355	1 467	1 777	...	2 059
Syria	1 099	3 318	...	...	...
Taiwan	12 230	22 726	37 337	54 693	62 663
Thailand	22 118	26 518	29 962	33 626	36 612
Australia (b)	344	182	312	578	631
New Zealand (b)	2 371	2 217	1 945	1 586	1 491

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

(b) Years ended 30 June of that stated

## Production of Titanium Minerals

Country	1986	1987	1988	1989	1990
Portugal					
Ilmenite	232	141	59	111	43
Norway					
Ilmenite	802 426	852 323	898 035	929 830	814 488
Soviet Union					
Ilmenite	*450 000	*455 000	*460 000	*460 000	*430 000
Rutile	*10 000	*10 000	*10 000	*10 000	*9 500
Sierra Leone					
Ilmenite	—	5 600	42 118	62 310	54 639
Rutile	97 101	113 111	126 332	128 198	144 401
South Africa (c)	255 000	317 000	*350 000	*400 000	*425 000
Canada (a)					
Ilmenite (d)	*3 000 000	*3 000 000	*2 800 000	*3 400 000	*3 200 000
USA					
Ilmenite (b)	*290 000	*290 000	*300 000	*300 000	...
Brazil					
Ilmenite	61 414	169 303	142 167	144 200	*150 000
Rutile	311	392	1 514	2 600	*2 600
China					
Ilmenite	*145 000	*145 000	*150 000	271 000	184 000
India					
Ilmenite	*140 000	*140 000	*140 000	*160 000	*160 000
Rutile	*7 000	*7 000	*5 000	*5 000	*5 000
Malaysia					
Ilmenite	414 941	509 202	486 305	520 127	501 585
Sri Lanka					
Ilmenite	133 873	128 500	97 085	101 354	74 350
Rutile	8 443	7 200	13 759	5 589	7 580
Thailand					
Ilmenite	13 489	26 278	16 455	16 955	10 554
Leucoxene	797	800	1 798	30	120
Australia					
Ilmenite	1 237 694	1 498 087	1 442 894	1 696 000	1 602 000
Rutile	215 774	246 263	246 204	243 000	245 000
Leucoxene	14 143	11 290	12 946	18 000	19 000
World total					
Ilmenite (Wt. of concs)	7 400 000	8 200 000	8 000 000	9 300 000	8 800 000
Rutile (Wt. of concs)	395 000	435 000	454 000	455 000	479 000
All forms (TiO <sub>2</sub> content)	*4 105 000	*4 514 000	*4 466 000	*5 089 000	*4 860 000

## Note(s):

(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) Ti content of titanium minerals and slag

(d) Processed into slag. In 1990 Canada produced 987 000 tonnes (80% TiO<sub>2</sub>)

## Titanium

**Exports of Titanium**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Ilmenite	—	16 187	33	1	33
Metal	2 094	2 036	3 089	4 592	4 702
Oxides	136 715	158 537	165 607	169 012	144 693
Belgium-Luxembourg					
Metal	109	213	243	293	250
Oxides	70 850	71 343	100 548	108 579	96 997
France					
Titanium minerals	108	1 785	481	4 735	38
Metal	1 189	881	2 143	3 115	2 725
Oxides	161 104	156 571	160 887	167 340	147 471
Germany, Federal Republic of					
Ilmenite	920	348	1 112	1 380	288
Other titanium minerals	4 144	3 494	2 634	3 467	2 828
Metal	1 276	1 415	2 370	3 778	2 240
Oxides	229 431	235 606	236 833	229 693	187 494
Italy					
Titanium minerals	1 335	31	1 280	440	10 589
Metal	211	156	454	900	693
Oxides (b)	*25 500	*23 000	*29 400	*36 700	*24 200
Netherlands					
Ilmenite	525	3 087	2 426	1 975	1 689
Other titanium minerals	35 208	64 248	52 808	46 833	28 637
Metal	61	48	104	289	176
Oxides	35 955	33 891	40 508	41 526	28 639
Spain					
Oxides	23 997	26 836	21 943	23 811	17 441
Czechoslovakia					
Oxides (b)	*3 300	*3 500	*2 500	*3 700	*3 400
Finland					
Oxides (b)	*50 400	*52 800	*55 000	*58 100	*45 500
Norway					
Titanium minerals	693 265	715 915	692 879	678 364	576 419
Oxides (b)	*8 900	*14 900	*12 900	*18 700	*13 200
Soviet Union					
Metal (b)	*700	*700	*3 200	*5 100	*1 800
Sweden					
Metal	288	402	445	536	768
Oxides	608	651	637	426	925
Switzerland					
Oxides	(f)139	(f)128	918	1 566	766
Yugoslavia					
Oxides	17 961	19 794	20 932	22 410	15 358
Sierra Leone					
Rutile	120 542	115 000	114 000	140 000	142 000
South Africa					
Titanium minerals & slag (a)	243 000	272 000	...	...	...
Canada					
Titanium minerals	...	...	360 856	120 295	29 197
Titanium slag	*850 000	*850 000	*800 000	*950 000	*900 000
Metal	(d)597	(d)493	440	480	1 038
Oxides	(d)22 235	(d)15 905	32 470	44 536	48 039
USA					
Titanium minerals	4 842	4 024	10 162	20 138	20 060
Metal	16 151	10 899	11 162	13 695	16 011
Oxides	105 180	120 896	123 326	213 566	270 943
Brazil					
Titanium minerals	5 474	6 600	...	2 643	2 690
China					
Metal (b)	*100	*400	*900	*800	*600
Oxides (b)	*6 300	*10 400	*25 400	*23 300	*10 400
Hong Kong					
Oxides (c)	2 840	4 784	13 210	14 544	8 698
India (e)					
Ilmenite	14 605	42 352	119 108	...	82 430

## Exports of Titanium

Titanium

tonnes

Country	1986	1987	1988	1989	1990
Japan					
Metal	6 143	7 073	10 759	13 584	13 188
Oxides	69 346	78 441	81 495	86 433	90 979
Korea, Republic of					
Titanium minerals	—	43 593	147 350	146 708	136 440
Oxides	1 497	3 215	3 921	5 936	5 952
Malaysia					
Ilmenite	397 696	302 587	367 363	352 192	203 504
Singapore					
Oxides	1 445	1 461	2 683	3 452	1 542
of which: Re-exports	1 287	1 189	2 623	3 131	1 233
Sri Lanka					
Ilmenite	139 400	105 000	94 700	115 300	205
Rutile	11 860	—	5 982	4 500	6 760
Taiwan					
Oxides	395	12	501	767	4 900
Thailand					
Ilmenite	1 700	31 658	2 909	40 474	13 033
Australia					
Ilmenite	1 034 209	1 045 497	1 040 585	1 008 000	1 095 000
Rutile	229 665	256 781	244 482	258 000	181 000
Leucosene	13 474	10 685	12 976	23 000	26 000
Oxides	(b)*29 500	(b)*28 900	(b)*26 500	(g)38 673	(g)67 129

### Note(s):

- (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) Imports into the USA  
 (e) Years ended 31 March following that stated  
 (f) Excluding oxide based pigments  
 (g) Years ended 30 June of that stated

## Titanium

## Imports of Titanium

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Ilmenite	283 274	293 474	299 561	380 392	247 902
Other titanium minerals	90 380	122 735	157 342	108 965	126 713
Titanium slag	38 143	37 666	47 825	46 483	55 930
Metal	8 854	12 626	16 686	15 967	17 840
Oxides	37 864	37 193	41 452	48 560	38 818
Belgium-Luxembourg					
Ilmenite	56 604	67 450	72 379	78 549	48 900
Other titanium minerals	50 210	65 255	29 728	36 592	56 806
Metal	859	877	1 640	1 162	789
Oxides	29 579	33 859	35 655	45 800	40 997
Denmark					
Oxides	11 144	11 632	13 389	15 224	12 085
France					
Ilmenite	171 650	62 971	101 730	61 493	46 628
Other titanium minerals	94 086	132 942	144 675	139 535	151 715
Titanium slag	110 446	115 508	120 457	167 709	110 535
Metal	1 775	2 638	3 716	6 017	5 288
Oxides	46 451	48 200	60 241	66 233	60 023
Germany, Federal Republic of					
Ilmenite	432 551	465 354	449 361	459 017	494 344
Other titanium minerals	18 053	18 075	20 988	16 955	22 798
Titanium slag	229 223	239 572	244 726	255 792	262 990
Metal	2 902	3 126	5 185	6 616	5 986
Oxides	91 228	97 672	121 803	138 118	120 096
Greece					
Oxides	10 215	9 200	10 149	14 507	12 172
Irish Republic					
Oxides	3 300	1 791	1 553	1 419	1 315
Italy					
Ilmenite	36 524	119 145	46 967	50 086	...
Other titanium minerals	18 324	6 105	1 602	...	985
Titanium slag	85 752	77 930	84 753	120 460	81 687
Metal	3 472	3 409	3 858	3 494	3 961
Oxides	60 176	62 446	71 264	83 575	67 266
Netherlands					
Ilmenite	3 717	5 204	4 766	2 062	3 420
Other titanium minerals	43 749	59 251	75 071	34 939	56 579
Titanium slag	45 260	46 919	46 157	50 197	—
Metal	234	344	353	771	787
Oxides	28 618	32 187	43 856	50 163	53 018
Portugal					
Oxides	10 646	12 193	8 189	5 383	12 817
Spain					
Ilmenite	104 153	133 841	138 556	140 167	94 142
Other titanium minerals	2 767	2 100	4 269	1 815	2 331
Metal	1 789	449	533	806	1 508
Oxides	12 769	13 839	19 636	27 492	24 915
Austria					
Metal	...	...	2 613	2 074	641
Oxides	11 913	12 708	15 793	18 267	14 294
Bulgaria					
Titanium minerals (b)	*2 600	*3 800	*3 000	*3 100	*1 900
Oxides (b)	*2 500	*1 800	*2 100	*2 200	*500
Czechoslovakia					
Oxides (b)	*3 200	*3 200	*3 000	*2 900	*2 000
Finland					
Titanium minerals (b)	*43 200	*48 900	*43 100	*22 000	*46 100
Oxides	2 083	3 580	2 330	3 027	3 717
German Democratic Republic					
Oxides (b)	*20 900	*22 400	*25 100	*25 000	*15 100
Norway					
Oxides	7 601	7 309	7 693	9 287	7 801
Romania					
Titanium minerals (b)	*5 000	*8 600	*4 800	*8 200	*3 200
Oxides (b)	*5 600	*2 800	*2 000	*2 600	*6 000
Soviet Union					
Titanium minerals (b)	*69 700	*3 000	*34 000	*24 400	*12 000
Oxides (b)	*5 300	*11 600	*15 300	*16 500	*11 600



# Imports of Titanium

Titanium

tonnes

Country	1986	1987	1988	1989	1990
Sweden					
Titanium minerals	2 676	2 405	1 376	1 809	1 203
Metal	704	500	551	1 007	1 130
Oxides	24 856	25 532	26 731	28 290	25 557
Switzerland					
Oxides	(a)1 693	(a)2 004	18 552	22 088	17 470
Turkey					
Titanium minerals	9 337	4 527	3 219	1 576	3 208
Oxides	17 478	22 198	15 873	17 919	23 367
Yugoslavia					
Titanium minerals	48 147	48 463	46 058	52 518	23 701
Oxides	5 316	4 570	5 014	5 744	3 604
Algeria					
Oxides	15 253	12 206	...	...	...
Egypt					
Oxides	424	1 085	2 296	...	...
Kenya					
Oxides	518	785	524	...	...
Morocco					
Oxides	2 904	3 716	3 517	2 418	2 423
South Africa					
Oxides	631	786	1 384	1 020	729
Zimbabwe					
Oxides	1 253	1 192	...	...	...
Canada					
Titanium minerals (g)	2 894	19 311	32 061	58 246	27 523
Metal	480	392	1 637	2 621	2 541
Oxides	27 693	30 618	22 412	21 046	18 194
Mexico					
Ilmenite	47 129	44 562	29 101	60 531	...
Rutile sand	2 173	1 484	2 064	1 413	...
USA					
Ilmenite	423 045	308 524	418 976	459 403	374 725
Rutile (c)	200 118	225 650	260 087	264 895	274 605
Titanium slag	328 285	418 633	434 645	386 146	373 409
Metal	4 812	3 984	6 648	7 769	5 608
Oxides	183 863	174 290	185 758	166 378	147 592
Argentina					
Titanium minerals	1 994	1 780	2 015	1 032	...
Brazil					
Ilmenite	15 000	10 000	50 000	105 000	25 000
Rutile	2 614	3 026	3 491	3 006	1 706
Oxides	15 089	17 274	17 516	34 743	22 602
Chile					
Oxides	4 384	4 530	3 883	4 797	4 434
Colombia					
Oxides	8 708	...	8 193	8 972	...
Uruguay					
Oxides	5 291	5 958	3 881	...	...
Venezuela					
Oxides	13 805	19 751	18 602	6 136	...
China					
Metal (b)	*200	*300	*300	*500	*300
Oxides	(b)*20 300	(b)*19 400	(b)*16 100	19 214	23 507
Hong Kong					
Oxides	8 283	11 308	20 906	24 014	16 046
India (d)					
Oxides	14 849	13 137	10 315	...	17 002
Indonesia					
Oxides	14 112	14 182	12 088	18 055	22 277
Iran (f)					
Oxides	2 905	2 529	3 098	4 341	...
Israel					
Oxides	(b)*1 100	...	4 904	3 563	3 575

## Titanium

## Imports of Titanium

tonnes

Country	1986	1987	1988	1989	1990
Japan					
Titanium minerals	670 436	570 377	642 209	616 090	757 595
Titanium slag	89 956	88 387	...	...	...
Metal	...	...	924	1 062	786
Oxides	40 034	45 677	48 980	71 306	65 170
Jordan					
Oxides	808	1 922	2 203	1 402	1 449
Korea, Republic of					
Rutile sand	6 125	6 822	6 940	6 806	8 068
Titanium minerals	43 969	57 096	55 177	62 102	31 804
Metal	204	341	486	757	1 633
Oxides	28 143	28 688	37 048	41 785	40 686
Malaysia					
Titanium minerals	2 123	3 759	20 662	5 399	...
Oxides	7 616	8 755	10 299	15 980	...
Pakistan (e)					
Oxides	2 851	3 416	3 677	...	5 070
Philippines					
Titanium minerals	966	1 305	1 550	1 535	1 427
Oxides	8 218	10 537	7 934	14 945	12 852
Saudi Arabia					
Oxides	4 252	5 775	6 427	5 102	...
Singapore					
Oxides	8 725	8 508	11 100	14 976	5 784
Taiwan					
Titanium minerals	...	...	...	19 096	18 617
Oxides	43 592	47 505	48 703	56 933	56 878
Thailand					
Rutile	485	1 400	2 033	3 230	3 222
Oxides	1 708	2 210	15 122	21 884	20 952
Australia					
Titanium minerals (e)	...	...	...	33 146	22 033
Oxides (e)	1 664	964	1 202	1 369	2 153
New Zealand (e)					
Oxides	6 357	8 192	6 505	6 839	8 015

## Note(s):

- (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) Years ended 20 March following that stated
  - (g) Ti content

**Production of Zirconium Minerals**

Country	1986	1987	1988	1989	1990
Soviet Union	*85 000	*85 000	*85 000	*85 000	*84 000
South Africa (a)	*140 000	*140 000	*150 000	*160 000	*200 000
USA	*85 000	*90 000	114 651	118 388	102 073
Brazil (b)	15 116	18 140	28 029	32 970	33 000
China	*15 000	*15 000	*15 000	17 889	16 542
India	*16 000	*10 000	*15 000	*17 200	*18 000
Malaysia	12 633	17 828	25 671	18 704	4 279
Sri Lanka	910	2 500	...	21 983	19 727
Thailand	1 705	1 532	5 098	1 496	490
Australia	451 824	456 590	505 888	511 000	437 000
World total	823 000	837 000	947 000	985 000	915 000

## Note(s):

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

(a) Including baddeleyite ( $ZrO_2$ )

(b) Including caldasite rock containing zircon and baddeleyite

## Zirconium

**Exports of Zirconium**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Concentrates	315	376	345	844	888
Metal	123	92	94	216	143
Belgium-Luxembourg					
Concentrates	0	28	509	678	626
Metal	14	25	273	21	31
France					
Concentrates	415	967	3 291	3 286	857
Germany, Federal Republic of					
Concentrates	15 621	15 287	7 913	5 139	2 821
Metal	104	75	78	59	97
Italy					
Concentrates	8 137	11 137	9 325	5 648	4 301
Metal	22	144	230	786	553
Netherlands					
Concentrates	36 548	23 788	14 742	15 552	24 263
Spain					
Concentrates	110	135	641	1 264	1 425
Zirconium sand	2 393	1 677	6 095	1 470	1 601
Sweden					
Metal	126	101	82	89	109
South Africa					
Concentrates	*120 000	*67 000	*82 000	...	...
USA					
Concentrates	15 868	20 103	22 966	50 621	31 280
Metal	1 111	1 297	1 288	1 375	1 318
Malaysia					
Concentrates	4 015	11 930	28 263	15 073	3 249
Australia					
Concentrates	445 690	465 003	471 614	482 000	313 000

Note(s):

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

# Imports of Zirconium

Zirconium

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom					
Concentrates	33 275	37 308	43 411	55 228	35 685
Metal	178	314	159	253	140
Belgium-Luxembourg					
Concentrates	3 112	2 522	3 719	2 227	1 756
Metal	242	208	198	181	189
France					
Concentrates	38 932	49 120	45 761	52 164	49 714
Metal	154	255	306	193	296
Germany, Federal Republic of					
Concentrates	83 002	58 895	...	...	...
Metal	395	425	402	415	468
Italy					
Concentrates	48 175	78 234	82 863	84 814	56 399
Metal	54	31	285	210	63
Netherlands					
Concentrates	38 464	29 927	27 707	45 304	52 737
Portugal					
Concentrates	1 895	2 285	2 780	1 270	1 795
Spain					
Concentrates	25 813	35 300	42 646	39 765	29 594
Zirconium sand	2 004	4 600	6 200	9 372	9 171
Austria					
Concentrates	...	...	1 836	1 821	1 606
Bulgaria					
Concentrates (a)	*1 000	*2 500	*1 200	*1 300	*1 300
Czechoslovakia					
Concentrates (a)	*2 200	*2 400	*1 500	*800	*250
Finland					
Concentrates	3 540	1 519	—	2 589	1 001
German Democratic Republic					
Concentrates (a)	*100	*800	*1 600	*1 400	*1 500
Soviet Union					
Concentrates (a)	*7 400	*11 300	*8 200	*9 000	*8 200
Sweden					
Concentrates	4 269	1 139	232	32	117
Metal	296	253	262	269	300
Turkey					
Concentrates	644	757	620	370	613
Zirconium sand	3 141	5 252	5 719	...	...
Canada					
Concentrates	10 043	...	7 623	10 426	9 841
Metal	303	269	282	296	289
Mexico					
Zirconium sand	1 217	770	8 467	9 890	...
USA					
Concentrates	68 764	67 918	76 332	73 129	26 783
Metal	317	382	356	500	410
Argentina					
Concentrates	61	178	119	...	...
Zirconium sand	2 814	3 174	3 660	4 494	...
Brazil					
Concentrates	12 699	7 173	15 058	8 908	2 016
Japan					
Concentrates	171 709	177 474	197 592	172 848	119 008
Metal	498	415	510	641	683
Korea, Republic of					
Concentrates	10 844	19 002	24 430	21 813	24 515
Malaysia					
Concentrates	474	880	710	3 146	...
Philippines					
Zirconium sand	357	593	589	579	490

## Zirconium

**Imports of Zirconium**

tonnes

Country	1986	1987	1988	1989	1990
Taiwan					
Concentrates	...	...	...	26 078	7 064
Zirconium sand	792	1 829	6 732	6 617	6 008
Thailand					
Concentrates	682	561	—	1 658	1 108

## Note(s):

(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	1986	1987	1988	1989	1990
Portugal	—	35	4	*4	*4
Soviet Union	*2 000	*2 000	*2 000	*2 000	*1 600
Madagascar	0	0	15	30	3
South Africa	3	0	0	—	1
Zambia	1	1 131	1 343	880	1 633
Zimbabwe	103	85	32	46	28
USA	5 927	5 499	5 313	4 592	4 548
Argentina	50	46	39	89	85
Brazil (a)	812	693	594	576	396

Note(s):

(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	1986	1987	1988	1989	1990
Finland	8 540	8 125	10 727	9 355	...
Soviet Union	*200 000	*200 000	*200 000	*200 000	*175 000
Turkey	928 010	980 150	1 230 828	1 136 000	1 198 030
USA (a)	1 135 000	1 256 000	1 149 000	1 114 000	1 094 000
Argentina	191 871	184 796	269 574	261 308	*260 000
Chile	6 440	13 438	32 122	130 512	131 753
Peru	22 557	14 295	*15 000	*18 000	*18 000
China	*27 000	*27 000	*27 000	*27 000	*27 000

Note(s):

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

(a) Sold or used by producers

**Production of Nepheline Syenite**

tonnes

Country	1986	1987	1988	1989	1990
Norway	218 421	244 789	244 665	249 295	305 000
Soviet Union	1 638 000	1 660 000	1 640 000	1 697 000	*1 650 000
Canada	467 491	508 000	547 000	552 000	533 000

## Other Mineral Commodities

**Production of Perlite**

tonnes

Country	1986	1987	1988	1989	1990
Greece	541 495	569 183	573 253	607 486	*650 000
Italy	*73 000	*70 000	*71 000	*71 000	*71 000
Czechoslovakia (a)	41 443	42 305	43 390	45 396	*44 000
Hungary	109 360	112 410	120 562	108 678	95 572
Soviet Union	*600 000	*600 000	*600 000	*600 000	*550 000
Turkey	103 129	143 958	154 231	132 941	138 510
Mexico	46 170	39 428	39 169	37 354	35 625
USA	667 000	706 000	753 000	655 000	663 000
Argentina	19 960	...	...	...	...
Japan	*75 000	*75 000	*75 000	*77 000	*77 000
Philippines	24 400	34 298	3 170	*3 600	3 150
Australia	3 838	5 054	4 736	*5 400	*5 400
New Zealand	—	—	2 938	2 500	...

## Note(s):

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

(a) Expanded

**Production of Strontium Minerals**

tonnes

Country	1986	1987	1988	1989	1990
United Kingdom	14 739	22 655	25 553	20 885	24 734
Italy	4 667	177	—	—	—
Spain	31 740	26 558	41 981	32 323	*40 000
Turkey	40 000	49 000	54 000	*59 000	*60 000
Algeria	*5 400	*5 400	*5 400	*5 400	*5 400
Mexico	24 042	47 739	38 794	37 841	40 130
Argentina (a)	1 133	1 349	2 241	1 193	*1 200
Cyprus	7 365	6 300	—	—	—
Iran (b)	22 000	20 066	39 194	*30 000	28 000
Pakistan	997	1 114	941	956	1 799

## Note(s):

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

(a) May contain unbeneficiated material

(b) Years ended 20 March following that stated



**Production of Vermiculite**

tonnes

Country	1986	1987	1988	1989	1990
Egypt	93	317	236	102	28
Kenya	2 544	3 887	3 707	2 436	2 655
South Africa	193 657	228 863	209 177	224 500	220 311
Zimbabwe	60	325	884	1 498	2 135
Mexico	220	161	218	300	413
USA (a)	288 000	275 000	276 000	249 000	209 000
Argentina	5 207	18 612	19 300	590	...
Brazil (b)	14 150	16 825	26 903	19 000	*28 000
India	4 933	2 439	4 052	2 764	*4 000
Japan	*15 000	*15 000	*15 000	*15 000	*15 000
Australia	657	1 409	1 165	...	...

Note(s):

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

(a) Sold or used by producers

(b) Including beneficiated and directly shipped material

**Production of Wollastonite**

tonnes

Country	1986	1987	1988	1989	1990
Finland	16 797	15 041	19 165	21 634	29 628
Mexico	9 356	10 993	10 506	10 618	10 622
USA	65 000	72 000	81 000	*80 000	...
India	23 819	31 021	34 286	44 042	...

Note(s):

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





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