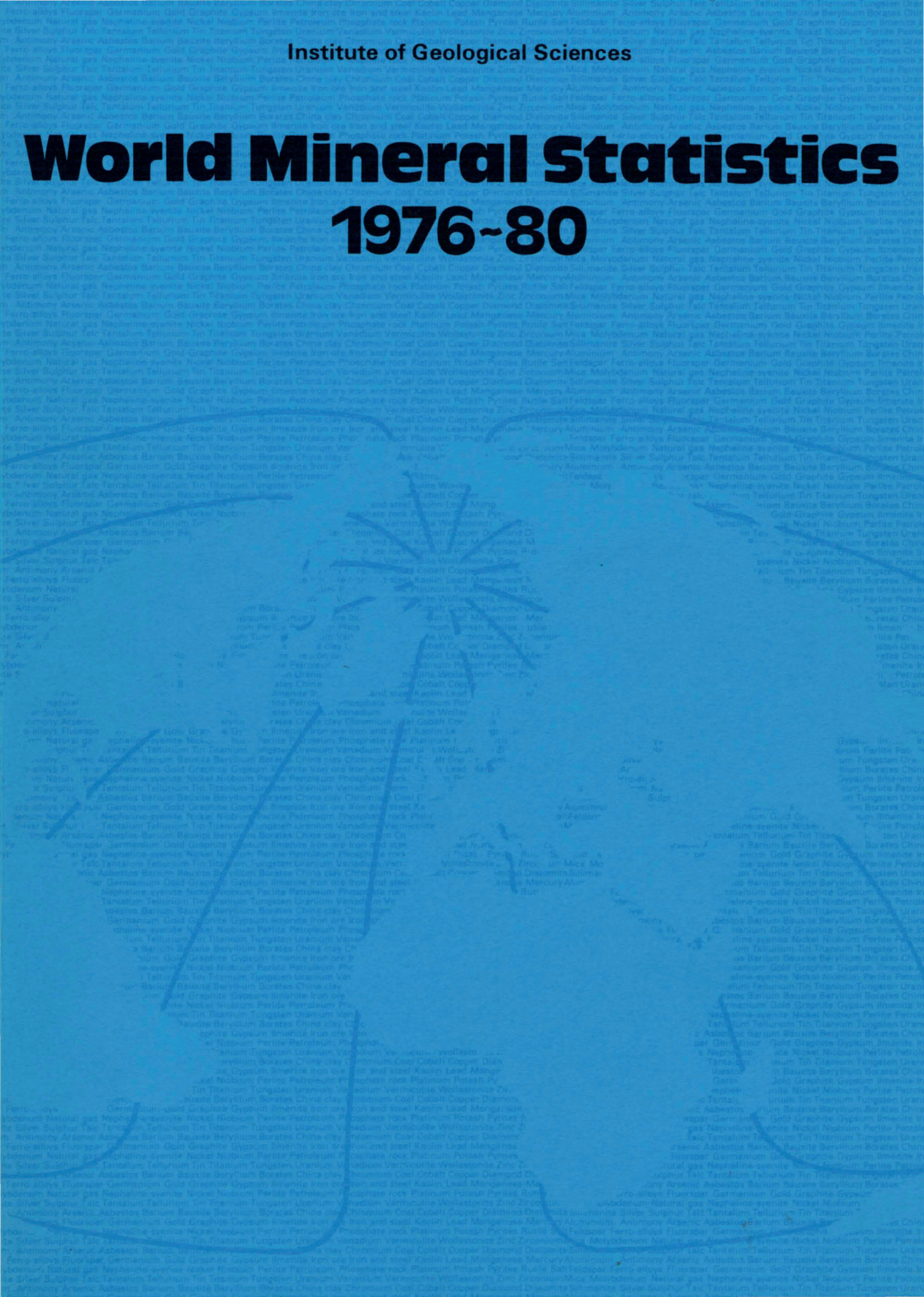


# Institute of Geological Sciences

# World Mineral Statistics 1976-80





INSTITUTE OF GEOLOGICAL SCIENCES

Natural Environment Research Council

# WORLD MINERAL STATISTICS 1976–80

Production: Exports: Imports

Compiled by G. J. Lofty, N. E. Sharp, J. A. Hillier,  
D. C. T. Singh, M. K. Lehall, A. R. Evans and N. R. Benbow

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Staff of the Minerals Strategy and Economics Research Unit  
*Institute of Geological Sciences, London*

## PREFACE

For over sixty years the Institute of Geological Sciences and its predecessors have published statistics on the production of, and trade in, minerals throughout the world for the information of government, industry and the general public. The well-known series of annual publications, the *Statistical Summary of the Mineral Industry: World Production, Exports and Imports*, began with a volume containing information for the years 1913-18 and concluded with an edition, published in 1973, covering the period 1967-71. This was then succeeded by a new annual series entitled *World Mineral Statistics*, first published in 1978.

The first three editions of *World Mineral Statistics* presented data for 1970-1978 inclusive, thus providing continuity with the old series. Each volume contained data for five years and was advanced two years at a time to bring the new series up-to-date as quickly as possible. The fourth volume, for the years 1975-1979, re-established the principle of a one-year roll forward for successive annual editions and this fifth volume presents data for the period 1976-1980. In each new volume, account is taken of revisions and information received after publication of the previous issue, so that the data for every year given is as up-to-date as is practically possible. As always, the objective is to present as far as possible the latest official information obtainable from primary sources, that is, from the individual producing and trading countries, rather than to reproduce data from compilations made by other organisations working in the field of world mineral statistics. The latter have, however, been fully consulted and the invaluable assistance and co-operation provided to the Institute by those numerous national and international organisations is gratefully acknowledged.

By increasing the scope of the work in successive editions, a wide spectrum of metallic and industrial minerals is now covered and this will be broadened from time to time as interest in particular minerals arises. In this volume, although there are no new tables, improvements have been made to the coverage of trade in coal by the inclusion of coal briquettes, to the trade in titanium by the inclusion of titanium oxides, and to the table of ferro-alloy production by the addition, where possible, of the type of furnace in operation. A review of the mine production tables demonstrates that in 1980, despite the world economic recession, there were increased outputs of more than half of the commodities. The largest increases were shown by sillimanite minerals, talc, potash and nickel. With respect to trade information, our staff have continued their efforts to fill gaps in the reported data by wide-ranging analyses of world trade statistics.

It is hoped that this presentation of economic and statistical information will provide the reader with a comprehensive basis for interpreting and analysing the activities and trends of today's world mineral industry. Criticism and suggestions that might help us better to meet the changing needs of the users of this publication are cordially invited.

Dr G M Brown, FRS

Director  
Institute of Geological Sciences  
Exhibition Road  
London SW7 2DE  
February 1982

## CONTENTS

Aluminium	1
Antimony	12
Arsenic	16
Asbestos	20
Barium	24
Bauxite	1
Bentonite	27
Beryl	263
Bismuth	33
Borates	263
Bromine	36
Cadmium	39
Chromium	42
Coal	46
Cobalt	54
Copper	59
Diamond	70
Diatomite	76
Feldspar	80
Ferro-alloys	112
Fluorspar	83
Fuller's earth	27
Germanium	263
Gold	86
Graphite	92
Gypsum	95
Iodine	102
Iron ore	105
Iron and steel	110
Kaolin	133
Lead	137
Lithium	146
Magnesite	149
Magnesium	264
Manganese	153
Mercury	158
Mica	161
Molybdenum	166
Natural gas	176
Nepheline syenite	264
Nickel	169
Niobium	229
Perlite	265
Petroleum	174
Phosphates	180
Platinum	184
Potash	188
Pyrites	216
Rare earths	197
Salt	201
Selenium	265
Sillimanite	208
Silver	211
Strontium	266
Sulphur	216
Talc	225
Tantalum	229
Tellurium	266
Tin	232
Titanium	239
Tungsten	244
Uranium	266
Vanadium	248
Vermiculite	267
Wollastonite	267
Zinc	251
Zirconium	260

## EXPLANATORY NOTES

### *Coverage*

Constant efforts are devoted to extending the coverage of countries and commodities dealt with by this publication. The range of minerals now covered is, with a few exceptions, the same as that in the *Statistical Summary of the Mineral Industry*, the predecessor of this series. However, somewhat less detail is here given on commodity sub-divisions in the trade tables to achieve greater clarity and consistency in this series. Users of this compilation are advised that, at least for the years up to 1976, the full coverage of the *Statistical Summary* is held on file in the Minerals Strategy and Economics Research Unit and is available for consultation. Where figures are shown in the tables as 'estimated' the source of the estimate is not generally given.

### *Arrangement of countries*

In each table, after the United Kingdom, countries are ordered alphabetically in geographical groupings as follows:

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

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

### *Production*

*Metals* It should be noted that mine production of some metals is expressed as metal content (or equivalent). This is clearly noted at the head of the table, adjacent to the unit used. Additionally, metal production from smelting and/or refining, of both domestic and imported ores, is shown in separate tables for cobalt, copper, iron, lead and zinc. So far as possible, the data given refer to primary metal production.

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

### *Trade*

*South Africa* Import data are taken from the trade statistics of the common customs area, which includes Botswana, Lesotho, South Africa, Namibia, and Swaziland, and relate to this area as a whole.

Estimates for South African exports, based on reconstruction from importing countries, may include material originating in any of the countries of the common customs area.

*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 the Virgin Islands, Guam, American Samoa and other US possessions. Also excluded is trade between any of these outlying areas, shipments from US possessions to foreign countries, and shipments for the use of the US Government in foreign countries.

*General* Although every effort has been made to provide comprehensive coverage of trade statistics the resulting trade compilations depend on the nature of the data available. The fact that a country is not shown as trading in a particular commodity does not necessarily imply that there is no trade in that item. The commodity may not be separately identified in the available trade statistics or may not be traded in significant quantities.

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

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

Tables showing trade in metals covered by Standard International Trade Classification (Revision 2) 688.0, 689.1 & 9, and 699.9 (Antimony, Bismuth, Cadmium, Chromium, Cobalt, Manganese, Molybdenum, Tantalum-Niobium, Titanium, Tungsten, Vanadium and Zirconium) include under the term 'metal', unwrought and wrought forms, powder, alloys, waste and scrap, unless these are separately shown. Trade tables of other metals include only unwrought forms under the term 'metal'.

#### *Acknowledgements*

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

Among the numerous overseas government departments 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 Mines 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, and whose own publications contain a wealth of authoritative data, include the World Bureau of Metal Statistics, the British Sulphur Corporation, Samuel Montagu & Company Ltd, the British Steel Corporation/Iron and Steel Statistics Bureau, the International Tin Council, ISMA Ltd, International Lead and Zinc Study Group, Metallgesellschaft AG, the UN Food and Agricultural Organisation, and the UNCTAD Committee on Tungsten.

More general information on a wider range of commodities can be found in such publications as the *Mining Journal: Mining Annual Review*; *World Mining: Yearbook Catalogue and Directory*; *Annales des Mines*; the American Bureau of Metal Statistics: *Non-ferrous Metal Data*; *Annuaire Statistique MINEMET*, and publications of the Statistical Office of the United Nations Department of Economic and Social Affairs. These, and similar works, form valuable sources of comparative data.

#### *Units*

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

Tonnes  $\times$  0.9842 = long tons

Tonnes  $\times$  1.1023 = short tons

Kilograms  $\times$  2.2046 = pounds

Kilograms  $\times$  32.1507 = troy ounces

Cubic metres  $\times$  35.31467 = cubic feet

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

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

**Production of Bauxite**

thousand tonnes

Country	1976	1977	1978	1979	1980
France	2 330	2 059	1 977	1 969	1 890
Italy	24	35	24	26	23
Greece	2 503	2 882	2 614	2 915	3 286
Hungary	2 918	2 949	2 899	2 976	2 950
Romania	890	702	708	710	700
Soviet Union (a)	* 6 700	* 6 700	* 6 700	* 6 500	* 6 400
Spain	13	10	9	8	10
Turkey	463	567	449	155	546
Yugoslavia	2 033	2 044	2 566	3 012	3 138
Ghana	267	283	330	214	225
Guinea	11 316	10 841	12 065	12 200	11 759
Mozambique	5	2	—	—	—
Sierra Leone	651	790	805	583	674
Dominican Republic (b)	620	575	568	524	511
Haiti	660	685	639	518	477
Jamaica	10 309	11 433	11 736	11 505	12 064
USA (b)	1 989	2 013	1 669	1 821	1 559
Brazil	998	1 352	1 401	2 160	4 696
Guyana	3 108	3 344	3 479	3 354	3 052
Surinam	4 585	4 856	5 029	4 771	4 893
China	* 1 100	* 1 200	* 1 400	* 1 500	* 1 700
India	1 449	1 519	1 663	1 952	1 740
Indonesia	940	1 301	1 008	1 052	1 249
Malaysia	660	616	615	387	920
Australia	24 084	26 086	24 293	27 583	27 178
World total	80 600	84 800	84 600	88 400	91 600

Note: In addition to the countries listed, Pakistan and Zimbabwe produce small amounts of bauxite

(a) Includes nepheline concentrates and alunite

(b) Dried bauxite equivalent

**Production of Alumina**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	96 000	98 500	94 000	88 100	101 700
France	1 020 000	1 081 000	1 056 440	1 069 160	1 172 800
Germany, Federal Republic of	1 333 425	1 453 948	1 409 780	1 352 374	1 421 000
Italy	797 800	792 308	808 552	847 533	900 373
Czechoslovakia	* 90 000	* 95 000	64 363	64 200	147 525
German Democratic Republic	44 468	38 953	37 585	40 965	43 025
Greece	461 600	474 200	482 000	495 000	494 300
Hungary	731 862	782 994	781 920	787 500	811 000
Romania	425 000	442 000	449 000	502 000	534 000
Soviet Union	* 2 500 000	* 2 600 000	* 2 600 000	* 2 600 000	* 2 700 000
Turkey	138 732	170 364	74 244	75 143	137 519
Yugoslavia	455 276	499 341	496 479	836 428	1 058 000
Guinea	552 000	562 000	622 000	656 000	708 000
Canada	490 000	1 060 800	1 053 600	824 000	1 202 000
Jamaica	1 644 000	2 048 000	2 111 000	2 074 000	2 478 000
USA	* 5 800 000	6 030 000	5 960 000	6 450 000	6 810 000
Brazil	306 183	340 800	352 100	449 100	492 700
Guyana	285 000	277 300	249 500	280 000	296 300
Surinam	1 162 000	1 215 000	1 316 000	1 313 000	1 444 000
China	* 520 000	* 650 000	* 700 000	* 800 000	* 800 000
India	442 000	386 600	488 000	500 000	512 000
Japan	1 662 000	2 045 000	1 767 000	1 822 000	2 218 000
Taiwan	47 700	51 000	51 000	59 000	80 000
Australia	6 205 828	6 659 234	6 775 675	7 414 606	7 246 499
World total	27 200 000	29 900 000	29 800 000	31 400 000	33 800 000



## Production of Primary Aluminium

thousand tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	335	350	346	360	374
France	385	399	391	395	431
Germany, Federal Republic of	697	742	740	742	731
Italy	213	260	267	270	291
Netherlands	256	241	261	258	262
Austria	89	92	91	93	94
Czechoslovakia	36	37	37	37	38
German Democratic Republic	* 60	* 65	* 65	* 60	* 62
Greece	134	145	144	145	147
Hungary	70	71	71	72	73
Iceland	65	71	74	71	73
Norway	618	623	639	664	652
Poland	103	104	100	97	95
Romania	207	209	213	217	241
Soviet Union	* 2 200	* 2 200	* 2 300	* 2 350	* 2 420
Spain	211	211	212	260	385
Sweden	83	83	82	82	82
Switzerland	78	80	79	83	86
Turkey	31	30	33	32	34
Yugoslavia	198	197	196	190	185
Cameroon	58	57	55	48	43
Egypt	59	90	100	101	120
Ghana	151	154	114	169	188
South Africa	78	78	81	86	87
Canada	633	983	1 048	860	1 075
Mexico	42	43	43	43	43
USA	3 857	4 117	4 358	4 557	4 654
Argentina	43	50	49	125	138
Brazil	139	167	186	238	261
Surinam	46	50	59	53	55
Venezuela	45	43	80	207	325
Bahrain	122	121	123	126	126
China	* 320	* 350	* 360	* 360	* 360
India	210	184	205	212	185
Iran	31	21	26	11	16
Japan	919	1 188	1 058	1 010	1 092
Korea, Republic of	18	17	18	18	18
Taiwan	26	30	50	56	64
Australia	232	248	263	270	303
New Zealand	140	145	151	154	156
World total	13 200	14 300	14 800	15 200	16 100

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Bauxite	1 460	1 238	659	2 813	2 953
Alumina	12 675	10 863	10 823	11 204	9 884
Alumina hydrate	30 314	32 277	25 200	22 358	32 786
Unwrought	81 193	60 245	74 117	88 914	73 617
Unwrought alloys (h)	78 995	105 504	86 479	118 071	120 839
Scrap (i)	6 869	9 757	12 706	28 187	35 731
Belgium-Luxembourg					
Bauxite	55	59	689	4 531	1 787
Alumina	694	194	185	1 152	744
Unwrought	9 510	5 403	1 048	820	4 167
Unwrought alloys	4 685	7 673	9 137	10 022	15 415
Scrap	32 127	38 978	28 726	33 532	36 800
Denmark					
Bauxite	21 802	13 720	41 561	51 989	46 483
Unwrought	—	1 145	3 364	4 032	105
Unwrought alloys	4 654	5 819	6 498	5 936	6 880
Scrap	4 793	6 598	7 345	11 581	11 856
France					
Bauxite	32 307	19 976	17 437	12 471	10 769
Alumina	235 222	251 089	226 873	257 371	267 413
Alumina hydrate	76 695	81 162	76 158	69 530	79 303
Unwrought	72 269	83 453	84 660	75 592	84 061
Unwrought alloys	76 924	82 339	81 758	82 006	93 341
Scrap	30 605	32 094	33 969	39 790	47 218
Germany, Federal Republic of					
Bauxite	4 615	9 327	12 260	21 621	21 713
Alumina	324 235	321 518	344 606	223 954	259 485
Alumina hydrate	132 026	118 543	120 544	155 077	142 353
Unwrought	133 366	69 404	107 670	67 653	61 141
Unwrought alloys	148 060	129 732	163 941	180 213	162 539
Scrap	49 388	50 819	52 982	51 975	68 913
Irish Republic					
Alumina	—	—	1 752	1 580	1 543
Unwrought (a)	1 883	1 993	2 325	2 523	2 206
Scrap	—	—	840	2 151	3 526
Italy					
Bauxite	1 390	6 744	12 240	27 565	24 163
Alumina	472 980	322 147	311 007	392 949	398 620
Alumina hydrate	2 584	10 130	16 592	24 947	25 374
Unwrought	3 608	11 644	49 195	13 045	3 510
Unwrought alloys	5 846	12 244	20 069	9 350	8 256
Scrap	1 339	1 001	1 693	1 644	2 430
Netherlands					
Bauxite (b)	5 605	3 467	3 295	26 323	13 441
Alumina (b)	27 029	30 282	39 098	59 128	51 339
Alumina hydrate (b)	10	35	421	358	517
Unwrought	168 593	202 108	170 048	219 367	233 644
Unwrought alloys	121 764	114 139	124 395	140 032	131 692
Scrap	48 510	53 358	61 994	67 297	74 331
Austria					
Unwrought	8 589	8 699	11 685	10 306	9 797
Scrap	30 419	48 737	42 570	38 864	32 736
Finland					
Unwrought (a)	1 195	3 248	2 652	1 338	3 887
Greece					
Bauxite	1 366 847	1 548 527	1 688 716	1 808 505	2 340 170
Alumina	194 732	203 127	174 355	266 882	203 175
Unwrought	88 909	77 513	85 275	73 806	60 245
Hungary					
Bauxite	633 018	584 319	601 203	595 687	541 943
Alumina	620 953	706 539	688 002	691 989	686 171
Alumina hydrate	7 027	6 309	8 605	9 455	7 667
Unwrought	53 927	67 903	77 777	80 556	84 216
Scrap	16 168	17 688	12 128	10 970	9 372
Iceland					
Unwrought (a)	78 625	74 200	77 349	76 226	67 318

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1976	1977	1978	1979	1980
Norway					
Unwrought	375 475	354 048	416 859	339 149	295 283
Unwrought alloys	186 316	210 214	213 382	226 155	225 897
Scrap	10 148	14 704	21 520	23 841	18 591
Romania					
Unwrought	75 000	60 200	70 300	65 000	93 800
Soviet Union					
Unwrought	* 520 000	* 540 000	* 560 000	* 560 000	* 560 000
Spain					
Unwrought	3 712	6 202	2 134	35 772	) 106 783
Unwrought alloys	7 092	2 658	3 704	7 098	
Sweden					
Bauxite	1 150	4 133	5 717	730	27
Unwrought	6 414	19 373	28 656	9 775	2 451
Unwrought alloys	6 923	13 085	9 873	9 786	15 276
Scrap	1 897	3 820	2 256	1 628	2 364
Switzerland					
Alumina	155	184	163	1 189	1 311
Unwrought & scrap	33 197	29 027	32 876	47 376	44 953
Turkey					
Bauxite	11 160	—	28 725	2 600	...
Alumina	76 080	60 310	20 870	1 500	...
Yugoslavia					
Bauxite	1 023 950	908 894	676 163	524 928	246 821
Alumina	—	—	52	46 365	428 066
Alumina hydrate	91 665	125 866	102 066	417 387	225 358
Unwrought	81 316	63 224	55 641	41 639	50 546
Unwrought alloys	1 459	831	3 089	4 540	3 325
Scrap	7 132	6 148	3 127	352	276
Cameroon					
Unwrought	20 837	20 244	7 244	30 518	11 700
Ghana					
Bauxite	306 048	162 149	...	...	...
Unwrought (a)	154 363	74 160	111 300	152 600	131 900
Guinea					
Bauxite (f)	* 9 300 000	* 6 800 000	* 6 700 000	* 6 900 000	* 7 500 000
Alumina (f)	* 500 000	* 350 000	* 400 000	* 400 000	* 325 000
Sierra Leone					
Bauxite	578 961	809 726	550 280	...	...
South Africa					
Unwrought (a)	* 20 400	* 28 300	* 37 400	* 29 400	* 12 600
Canada					
Alumina (g)	15 944	24 211	32 701	26 543	39 508
Unwrought	507 863	655 352	862 816	550 697	784 738
Scrap	51 419	50 833	57 773	70 467	78 130
Dominican Republic					
Bauxite	516 632	642 667	628 470	523 114	...
Haiti					
Bauxite	738 758	700 707	629 524	...	...
Jamaica					
Bauxite (d)	6 284 034	6 355 182	6 447 769	6 469 155	6 000 000
Alumina	1 622 565	2 034 482	2 139 703	2 061 202	2 200 000
USA					
Bauxite	24 624	33 183	34 040	32 905	38 539
of which: Re-exports	9 382	7 515	10 828	9 361	10 172
Alumina	738 186	492 777	501 552	547 915	828 770
Alumina hydrate	31 575	33 973	44 105	36 791	38 107
Unwrought	) 138 590	) 88 855	69 389	117 774	504 935
Unwrought alloys			45 677	64 917	144 114
Scrap	98 872	92 369	176 590	279 373	403 779
Brazil					
Bauxite	2 738	3 654	4 005	516 149	2 679 429
Guyana					
Bauxite, dried	934 284	895 653	1 014 484	...	...
Bauxite, calcined	742 432	704 593	587 619	...	...
Alumina	250 888	251 860	251 170	...	...

**Exports of Bauxite, Alumina and Aluminium**

tonnes

Country	1976	1977	1978	1979	1980
Surinam					
Bauxite	1 976 000	2 172 000	2 240 508	1 736 954	1 775 031
Alumina	1 060 000	1 104 000	1 124 543	1 184 584	1 328 875
Unwrought	46 300	59 000	54 984	63 512	43 831
Venezuela					
Unwrought	11 296	6 261	16 967	146 400	227 700
Bahrain					
Unwrought (a)	120 903	112 970	140 100	130 234	77 546
China					
Bauxite (f)	* 135 000	* 109 000	* 100 000	* 250 000	* 500 000
Alumina (f)	* 10 000	* 8 000	* 10 000	* 21 000	* 19 000
Hong Kong					
Bauxite (Re-exports)	10 435	8 223	4 500	8 760	17 440
Alumina (Re-exports)	16	7	3 620	7	636
Alumina hydrate (Re-exports)	798	628	1 851	1 389	1 940
Unwrought (Re-exports)	4 281	4 777	5 605	5 980	10 365
Scrap	5 543	5 977	6 302	8 210	10 206
India					
Bauxite	21 190	47 665	3 360	43 708	...
Alumina	—	—	193 219	97 029	...
Unwrought (a) (c)	25 319	1 796	21	343	* 100
Indonesia					
Bauxite	872 039	1 138 361	911 105	1 091 032	1 112 622
Iran (e)					
Unwrought	1 506	—	200	—	—
Japan					
Bauxite	1 066	660	1 821	1 000	0
Alumina	85 243	151 869	124 105	205 841	393 882
Alumina hydrate	38 224	51 447	50 961	53 742	46 662
Unwrought	52 024	86 924	45 438	1 764	4 067
Unwrought alloys	17 682	12 725	9 156	6 182	3 577
Scrap	752	1 422	1 097	292	858
Malaysia					
Bauxite	523 818	663 758	...	...	...
Singapore					
Alumina	21 856	2 795	1 425	882	1 789
Unwrought	559	893	3 665	3 226	4 053
Scrap	3 792	3 921	4 228	22 517	6 438
Taiwan					
Alumina	130	3 964	2 380	104	3 740
Unwrought	295	78	444	6	6
Australia					
Bauxite	* 5 900 000	* 6 200 000	* 5 400 000	* 5 700 000	* 5 400 000
Alumina	5 855 447	6 071 542	6 310 213	6 534 193	6 994 000
Unwrought (a)	64 532	77 818	80 019	76 000	46 456
Scrap	5 996	6 925	8 363	10 965	13 485
New Zealand (j)					
Unwrought (a)	98 009	124 887	112 659	143 257	119 557
Scrap	2 136	1 953	1 540	1 583	2 571

## Notes:

- 1 Except where alumina hydrate is separately specified, national trade figures for alumina can be considered as inclusive of hydrate
- 2 In this table the term 'unwrought' aluminium corresponds to item 684.1 of the Standard International Trade Classification (Revision 2) and comprises ingots, blocks, unwrought bars, etc

(a) Including alloys

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(c) Years ended 31 March following that stated

(d) Estimated dry equivalent

(e) Years ended 20 March following that stated

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

(g) Officially described as 'Aluminium ores and concentrates' but believed to be mostly alumina

(h) See footnote (i)

(i) From 1977 excludes waste and scrap in ingot form for smelting, which is then included with 'Unwrought alloys'

(j) Years ended 30 June of that stated

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Bauxite, uncalcined	273 106	320 816	288 426	257 172	241 585
Bauxite, calcined	185 011	196 720	135 630	155 585	167 490
Alumina	(h)* 650 000	698 168	695 887	596 323	775 171
Alumina hydrate	3 139	4 661	3 466	13 510	3 738
Unwrought	128 076	110 115	78 228	75 131	74 043
Unwrought alloys (i)	90 170	92 450	113 380	110 349	97 378
Scrap (j)	16 729	6 167	4 976	6 282	5 792
Belgium-Luxembourg					
Bauxite	19 680	17 406	32 867	40 903	35 936
Alumina	8 242	6 984	6 201	7 303	7 059
Alumina hydrate	12 815	15 300	15 633	16 566	14 460
Unwrought	147 836	139 555	175 926	175 774	183 376
Unwrought alloys	110 412	98 855	90 908	76 997	69 124
Scrap	19 073	14 161	15 351	26 556	33 316
Denmark					
Bauxite	93 064	4 543	10 143	89 385	90 555
Alumina	371	1 318	511	772	1 379
Alumina hydrate	1 171	2 344	3 783	2 392	2 640
Unwrought	710	1 837	5 981	11 323	5 101
Unwrought alloys	10 206	11 137	11 141	9 787	16 834
Scrap	2 260	2 776	1 638	1 377	2 270
France					
Bauxite	2 269 601	1 919 636	1 954 504	1 720 059	1 358 095
Alumina	12 577	16 485	37 231	16 154	21 918
Alumina hydrate	6 903	14 634	18 550	22 033	22 720
Unwrought	140 011	151 534	160 732	168 745	186 211
Unwrought alloys	111 396	123 732	130 095	146 357	146 242
Scrap	31 735	37 081	42 286	52 228	56 678
Germany, Federal Republic of					
Bauxite	4 086 997	4 090 450	3 613 821	3 694 216	4 177 043
Alumina	473 147	494 918	486 069	458 120	440 704
Alumina hydrate	2 652	2 099	2 080	1 712	1 437
Unwrought	245 280	258 285	245 788	293 717	361 204
Unwrought alloys	159 869	162 226	165 070	193 525	227 872
Scrap	102 532	128 757	137 345	157 123	171 813
Irish Republic					
Alumina	2 796	3 163	3 239	3 536	3 998
Unwrought (a)	7 705	5 625	6 333	7 888	5 486
Italy					
Bauxite	1 836 634	1 938 527	1 644 740	2 287 342	2 288 293
Alumina	87 820	114 483	139 505	164 816	161 711
Alumina hydrate	23 304	31 502	27 336	14 974	18 476
Unwrought	128 166	123 201	119 944	126 721	172 029
Unwrought alloys	69 411	75 004	70 541	109 925	122 787
Scrap	73 568	90 054	82 849	97 408	123 463
Netherlands					
Bauxite (b)	130 828	141 242	151 521	193 695	196 261
Alumina (b)	512 341	505 774	542 576	562 993	585 774
Alumina hydrate (b)	28 444	24 760	21 861	24 577	18 126
Unwrought	130 339	130 953	106 553	127 852	185 830
Unwrought alloys	31 769	31 351	38 955	39 479	30 001
Scrap	28 341	29 850	30 515	33 468	44 713
Austria					
Bauxite	30 878	34 233	40 226	40 231	41 706
Alumina	188 489	192 835	198 667	192 829	225 671
Alumina hydrate	8 727	7 770	7 890	7 628	6 756
Unwrought	21 040	19 246	14 891	30 663	35 182
Scrap	24 145	55 838	47 061	44 137	52 632
Czechoslovakia					
Bauxite	477 000	481 000	456 000	436 274	465 716
Unwrought (a)	88 000	88 000	95 000	88 000	93 000

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1976	1977	1978	1979	1980
<b>Finland</b>					
Bauxite	2 442	76	265	4 044	4 131
Alumina	174	147	287	429	708
Alumina hydrate	22 401	17 672	24 045	27 409	28 551
Unwrought	19 198	23 287	18 191	21 073	23 048
Unwrought alloys	5 268	5 248	3 520	3 818	3 689
Scrap	0	15	13	3 849	2 475
<b>German Democratic Republic</b>					
Bauxite	260 900	197 900	251 500	133 800	120 600
Alumina	89 504	95 101	105 345	...	...
Unwrought (a)	51 641	52 677	43 117	...	...
<b>Greece</b>					
Bauxite	4 181	3 726	1 057	5 878	6 502
Alumina	—	—	216	285	147
Alumina hydrate	—	—	353	348	73
Unwrought	3 646	4 527	374	367	154
<b>Hungary</b>					
Unwrought	155 514	162 406	165 859	180 187	187 865
<b>Iceland</b>					
Alumina	130 966	113 168	141 907	142 465	145 905
<b>Norway</b>					
Bauxite	3 473	10 542	3 706	20 641	6 894
Alumina	1 313 561	1 267 885	1 197 810	1 165 392	1 441 859
Alumina hydrate	29 250	33 579	31 682	41 105	37 608
Unwrought	13 469	4 246	3 615	3 155	7 330
Unwrought alloys	10 092	4 255	4 334	5 746	9 068
<b>Poland</b>					
Bauxite	127 417	115 298	100 558	95 074	83 146
Alumina	281 060	289 553	313 209	283 038	287 206
<b>Portugal</b>					
Alumina	3 163	5 160	8 193	6 285	4 576
Unwrought	9 431	12 050	20 223	21 803	27 403
<b>Romania</b>					
Bauxite	* 592 500	* 550 800	* 877 200	...	...
Alumina	* 37 000	* 36 000	* 25 600	...	...
<b>Soviet Union</b>					
Bauxite	3 524 000	* 3 500 000	* 3 500 000	* 3 500 000	* 3 500 000
Alumina	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
<b>Spain</b>					
Bauxite	95 027	110 294	117 544	142 818	349 385
Alumina	408 641	413 487	432 221	559 221	706 580
Unwrought	13 441	32 954	31 127	6 496	) 3 164
Unwrought alloys	986	3 890	6 845	656	)
Scrap	2 861	3 466	3 108	4 080	5 631
<b>Sweden</b>					
Bauxite	38 523	37 470	58 167	67 573	65 335
Alumina	150 643	193 364	145 338	150 290	191 803
Alumina hydrate	39 206	39 675	39 898	49 299	43 259
Unwrought	25 579	23 921	24 065	23 319	22 267
Unwrought alloys	21 187	19 404	10 103	13 437	14 601
Scrap	1 179	430	2 936	5 840	3 507
<b>Switzerland</b>					
Bauxite	25 534	8 560	7 693	6 995	5 533
Alumina	158 222	158 096	152 844	151 287	174 110
Unwrought & scrap	31 143	39 219	35 314	41 184	54 162
<b>Turkey</b>					
Alumina	192	188	171	138	...
Unwrought	26 861	40 906	11 245	13 022	...
<b>Yugoslavia</b>					
Bauxite	41 304	51 403	43 643	63 883	217 595
Alumina	38 327	1 347	30 162	1 367	1 284
Unwrought	32 283	43 066	40 704	40 655	58 342
Unwrought alloys	1 401	633	885	564	297

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1976	1977	1978	1979	1980
Cameroon					
Alumina	127 080	78 425	81 600	67 183	...
Egypt					
Unwrought & scrap	1 533	772	839	1 857	...
Ghana					
Alumina	4 365 407	306 583	...	...	...
Unwrought (a)	119	5 132	...	...	...
Madagascar					
Unwrought & scrap	656	444	1 112	—	...
Morocco					
Bauxite	—	—	780	810	519
Alumina	1 415	2 431	1 725	1 853	2 399
Nigeria					
Unwrought (a)	5 334	3 963	1 617	...	...
South Africa					
Bauxite	13 248	24 034	18 119	23 699	24 745
Alumina	165 347	159 739	184 956	174 109	164 674
Unwrought	633	449	614	617	305
Scrap	875	662	518	405	1 742
Tanzania					
Unwrought (a)	3 427	—	4 734	...	...
Canada					
Bauxite	1 230 053	2 764 286	2 432 552	2 149 671	3 504 427
Alumina	908 055	821 597	1 056 208	952 888	984 080
Unwrought	22 556	20 795	11 480	23 984	9 907
Scrap	8 936	16 126	27 162	30 682	30 724
Mexico					
Bauxite, calcined	34 751	28 032	48 834	59 459	...
Alumina	93 065	95 914	93 932	96 783	...
Alumina hydrate	11 945	12 836	14 668	18 498	...
Unwrought	9 865	5 491	27 106	38 456	* 60 000
USA					
Bauxite, crude dried	12 796 409	13 374 074	14 036 476	14 239 807	13 896 210
Bauxite, calcined	314 136	241 720	251 786	266 736	377 812
Alumina	3 287 971	3 760 359	3 961 982	3 769 718	4 345 684
Unwrought	250 235	272 836	340 231	238 359	245 177
Unwrought alloys	266 591	337 706	345 995	279 016	281 467
Scrap	77 758	81 551	83 588	61 975	54 251
Argentina					
Bauxite	20 691	20 458	18 560	...	...
Alumina	43 053	136 752	82 501	...	...
Alumina hydrate	7 518	13 679	4 344	...	...
Unwrought	21 570	108	1	—	100
Brazil					
Bauxite	14 018	12 364	10 091	15 574	13 175
Alumina	3 335	705	23 981	70 080	63 825
Alumina hydrate	1 321	1 234	354	535	282
Unwrought	59 037	62 048	53 070	45 008	38 797
Unwrought alloys	19 071	18 771	7 257	6 809	7 905
Scrap	4 043	8 432	22 234	22 764	11 145
Chile					
Unwrought	...	3 237	4 269	...	...
Colombia					
Unwrought (a)	13 870	13 857	* 17 000	15 599	12 697
Uruguay					
Bauxite	680	1 830	951	1 590	...
Alumina	462	803	1 033	1 288	...
Unwrought	2 033	849	3 350	3 680	...
Venezuela					
Bauxite	10 006	9 309	6 022	...	...
Alumina	327 872	87 044	150 113	...	...
Alumina hydrate	915	2 934	1 015	...	...
Unwrought	2 184	31 994	39 913	—	600

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1976	1977	1978	1979	1980
China					
Unwrought (a)(f)	* 163 700	* 108 100	* 154 800	* 66 700	* 63 700
Hong Kong					
Bauxite	4 789	6 345	7 070	9 400	15 092
Alumina	228	281	1 081	243	979
Alumina hydrate	863	800	1 937	1 422	2 100
Unwrought	22 878	25 876	28 481	30 515	40 469
Scrap	458	303	473	468	1 074
India (c)					
Alumina	422	1 003	782	494	...
Unwrought	330	5 508	17 996	40 654	) * 49 000
Unwrought alloys	6	29	33	19	
Indonesia					
Alumina	7 633	17 664	21 866	14 358	19 316
Unwrought	8 401	11 623	12 288	15 150	14 131
Iran (e)					
Alumina	19 494	16 555	* 1 350	* 100	...
Unwrought	9 543	3 187	* 21 000	...	...
Israel					
Unwrought (g)	409	18 305	24 790	19 738	19 073
Japan					
Bauxite	4 276 583	5 318 199	4 742 993	4 597 104	5 707 708
Alumina	626 697	939 860	757 322	758 631	731 245
Alumina hydrate	720	620	1 596	2 162	3 857
Unwrought	340 425	411 624	598 120	748 438	750 080
Unwrought alloys	89 700	122 183	142 084	135 459	160 005
Scrap	69 304	70 470	139 612	181 531	275 696
Korea, Republic of					
Alumina	49 243	49 415	60 752	35 719	33 515
Unwrought (a)	32 445	63 380	86 500	82 803	73 818
Scrap	29 629	3 321	...	5 308	3 862
Malaysia					
Alumina	4 201	5 480	...	...	...
Unwrought (a)	8 370	11 740	...	...	...
Pakistan (d)					
Unwrought	7 154	10 171	52 385	10 044	11 905
Philippines					
Bauxite	4 362	7 750	4 112	9 909	8 219
Alumina	1 926	2 577	1 549	2 743	1 201
Unwrought	11 417	10 443	8 668	19 352	9 461
Unwrought alloys	5 962	6 549	8 122	9 060	8 190
Singapore					
Bauxite	5 397	3 681	7 242	11 000	400
Alumina	4 138	3 919	4 460	7 583	8 186
Unwrought	3 541	3 842	7 862	6 038	9 092
Scrap	377	542	399	384	433
Syria					
Unwrought & scrap	1 933	2 081	1 508	1 289	...
Taiwan					
Bauxite	166 029	162 569	171 182	209 618	260 438
Alumina	16 456	6 849	39 760	63 652	57 915
Alumina hydrate	5 086	2 117	2 819	3 876	1 111
Unwrought	36 358	52 479	48 672	52 860	58 320
Scrap	6 208	8 700	10 103	13 768	19 255
Thailand					
Bauxite	3 086	12 316	5 911	10 191	...
Alumina	725	1 340	525	1 469	...
Alumina hydrate	1 022	4 297	3 456	7 399	...
Unwrought	26 102	29 144	29 684	38 467	...
Unwrought alloys	2 225	4 095	4 335	4 739	...
Scrap	1 006	1 386	456	1 142	...



**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1976	1977	1978	1979	1980
Australia					
Alumina	3 199	2 197	3 524	4 210	3 967
Unwrought (a)	256	183	359	4 330	8 580
Scrap	1 420	1 374	1 337	1 463	3 627
New Zealand (d)					
Alumina	297 647	255 829	331 403	320 599	265 290
Unwrought	75	274	180	263	390

## Notes:

- 1 Except where alumina hydrate is separately specified, national trade figures for alumina can be considered as inclusive of hydrate
  - 2 In this table the term 'unwrought' aluminium corresponds to item 684.1 of the Standard International Trade Classification (Revision 2) and comprises ingots, blocks, unwrought bars, etc
- (a) Including alloys  
 (b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any  
 (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) IGS estimates, based on known exports from certain countries  
 (g) Figures may be incomplete as value only given in Israeli trade return for imports from some countries  
 (h) IGS estimate based on interpretation of official data  
 (i) See footnote (j)  
 (j) From 1977 excludes waste and scrap in ingot form for smelting, which is then included with 'Unwrought alloys'

## Antimony

**Mine Production of Antimony**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
Italy	1 009	808	931	950	713
Austria	568	561	550	655	662
Czechoslovakia	285	300	300	300	820
Soviet Union	* 7 700	* 7 700	* 7 000	* 7 500	* 7 000
Spain	157	331	442	525	621
Turkey	1 784	1 921	1 984	495	2 153
Yugoslavia	2 021	2 248	2 676	2 037	1 750
Algeria	* 60	* 60	* 60	* 60	—
Morocco	1 426	1 443	1 483	850	549
South Africa	10 714	11 831	9 095	11 651	13 013
Zimbabwe	279	551	121	158	150
Canada	3 400	3 200	3 000	2 954	2 361
Guatemala	1 120	916	230	639	700
Honduras	117	103	149	150	150
Mexico	2 546	2 698	2 457	2 872	2 176
USA	257	553	724	655	311
Bolivia	17 409	15 156	12 672	13 019	15 465
Brazil	38	367	274	73	75
Peru (a)	603	819	745	763	769
Burma	455	560	620	710	* 750
China	* 8 400	* 10 000	* 10 000	* 10 000	* 10 000
India	404	186	—	—	—
Korea, Republic of	10	—	20	—	—
Malaysia	361	264	291	307	204
Pakistan	121	94	104	31	40
Thailand	4 534	3 031	3 548	3 625	3 603
Australia (b)	1 892	2 089	1 580	1 539	1 355
World total	67 700	67 800	61 100	62 500	65 400

## Notes:

- 1 This table includes antimony content of antimonial lead alloys
- 2 In addition to the countries listed, Afghanistan, Hungary, Iran and Romania are also believed to produce antimony

(a) Includes Sb content of antimonial lead plus Sb content of ores for export

(b) Includes Sb content of lead and zinc concentrates

## Exports of Antimony

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore	13	31	—	396	824
Metal	902	704	497	173	288
Oxide	4 800	4 200	(a)* 4 200	(a)* 3 000	(a)* 2 300
France					
Metal	157	219	392	126	123
Oxide	3 346	3 189	4 654	4 677	11 293
Germany, Federal Republic of					
Ore	—	132	—	0	—
Metal	75	216	19	17	47
Oxide	268	366	319	344	261
Italy					
Metal	494	1 145	61	20	3
Oxide	115	206	487	301	204
Netherlands					
Metal	66	91	39	136	79
Oxide	133	188	407	474	341
Austria					
Ore	488	336	414	493	291
Sulphide (b)	3	22	0	20	28
Spain					
Metal	323	262	464	593	...
Sweden					
Metal	56	3	12	13	—
Turkey					
Ore	2 795	1 819	1 400	400	...
Metal	347	20	565	290	...
Yugoslavia					
Metal	775	580	1 485	975	1 055
Morocco					
Ore	3 795	3 495	2 267	1 966	1 159
South Africa					
Ore	18 115	8 452	3 173	11 379	3 029
Guatemala					
Ores & concentrates	1 525	1 579	...	...	...
Mexico					
Ores & concentrates	6 115	3 387	4 508	1 311	...
Metal	190	143	384	534	...
USA					
Metal	471	763	639	488	452
Oxide	294	236	216	630	838
Bolivia					
Ore (c)(d)	17 398	13 822	10 527	16 584	12 589
Peru					
Ores & concentrates	579	865	...	...	...
Metal	231	429	...	...	...
Burma					
Ores & concentrates	543	354	...	...	...
China (a)					
Ores & concentrates	* 1 400	* 2 100	* 500	* 2 900	* 3 700
Metal	* 2 000	* 3 000	* 5 000	* 6 000	* 3 000
Oxide	* 1 200	* 400	* 1 200	* 1 700	* 2 400
Japan					
Metal	194	77	102	59	41
Thailand					
Ore	6 017	3 989	5 594	5 690	...
Metal	253	45	73	60	...
Australia					
Ores & concentrates	1 324	1 216	3 040	1 356	1 376

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

(b) Believed to be crude liquated sulphide

(c) Sb content

(d) May include metal

## Antimony

**Imports of Antimony**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	116	828	317	413	347
Oxide	142	349	253	272	510
Belgium-Luxembourg					
Ore	11 170	6 823	5 179	6 662	5 177
Metal	210	550	230	335	32
Oxide	147	104	110	240	193
Denmark					
Metal	13	21	9	24	10
Oxide	23	10	27	26	32
France					
Ore	10 829	7 679	9 984	10 794	8 822
Metal	563	451	818	886	347
Oxide	193	318	454	434	426
Germany, Federal Republic of					
Ore	3 514	2 578	3 040	3 126	3 002
Metal	1 064	761	747	567	538
Oxide	3 010	3 243	3 406	3 896	3 351
Italy					
Ore	1 090	720	—	—	3
Metal	230	121	152	122	106
Oxide	363	437	406	626	528
Netherlands					
Metal	47	128	90	132	112
Oxide	863	897	1 059	1 141	985
Austria					
Metal	171	92	52	56	63
Finland					
Metal	6	5	39	35	15
Greece					
Metal	40	40	63	13	6
Norway					
Metal	40	17	22	28	43
Spain					
Ore	992	1 054	564	664	...
Metal	99	321	126	199	...
Oxide	237	202	307	242	...
Sweden					
Metal	25	25	21	19	14
Switzerland					
Metal	160	137	126	28	91
Yugoslavia					
Ores & concentrates	1 935	2 209	2 576	3 261	4 201
Metal	118	170	145	...	0
Algeria					
Metal	30	115	35	...	...
Morocco					
Metal	12	9	2	9	—
Canada					
Oxide	734	626	906	794	944
Mexico					
Oxide	41	37	...	...	...
USA					
Ore	19 001	7 296	7 867	14 284	10 018
Liquated	37	235	47	25	7
Metal	2 584	2 251	4 015	3 376	2 367
Oxide	10 533	8 746	9 702	12 384	11 108

**Imports of Antimony**

Country	1976	1977	1978	1979	1980
Argentina					
Ore	533	368	220	...	...
Brazil					
Ore	1 721	494	655	1 641	623
Metal	129	81	284	177	132
Oxide	340	386	392	597	786
Sulphide	3	3	5	9	11
Venezuela					
Metal	101	142	179	...	...
India					
Ore	1 523	1 453	106	1	...
Metal	46	526	811	450	...
Oxide (a)	68	107	114	67	...
Japan					
Ores & concentrates	12 703	7 501	6 553	6 702	6 996
Metal	1 055	1 239	1 611	3 202	1 563
Sulphide	...	41	43	16	—
Malaysia					
Metal	60	52	...	...	...
Australia					
Metal	32	58	87	51	36

(a) Years ended 31 March following that stated

## Arsenic

**Production of White Arsenic**

tonnes

Country	1976	1977	1978	1979	1980
France (a)(b)	7 276	6 042	5 280	* 5 500	* 5 300
Germany, Federal Republic of	* 360	* 360	* 360	* 360	* 360
Portugal	278	222	253	155	* 200
Soviet Union	* 7 400	* 7 500	* 7 600	* 7 700	* 7 700
Sweden (b)	6 990	6 000	5 400	* 5 100	* 4 100
Namibia (c)	5 122	2 615	2 401	2 221	* 2 000
Zimbabwe	139	201	129	—	79
Mexico (d)	5 498	5 742	6 244	6 535	* 6 500
Peru	789	1 367	1 257	2 440	* 2 500
Japan	* 60	...	...	...	...
Korea, Republic of	706	491	548	* 590	...

## Notes:

- 1 The production data in this table does not include calculated trioxide equivalents for output reported as arsenic metal
- 2 In addition to the countries listed, Argentina, Austria, Belgium, China, Czechoslovakia, German Democratic Republic, Finland, Hungary, United Kingdom and Yugoslavia are also believed to produce arsenic

(a) Byproduct of complex gold ores

(b) Excluding metallic arsenic

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

(d) Including trioxide equivalent of black arsenic

**Exports of Arsenic**

Country	1976	1977	1978	1979	1980
United Kingdom					
White arsenic	68	18	81	853	165
Metallic arsenic (d)	40	28	12	13	29
France					
White arsenic	5 759	7 210	12 937	10 264	7 889
Metallic arsenic	117	378	146	41	104
Germany, Federal Republic of					
White arsenic	140	44	56	122	928
Italy					
White arsenic	1	233	25	20	73
Netherlands					
White arsenic (b)	128	29	2	81	27
Portugal					
White arsenic	(c) 87	10	(c) 106	...	...
South Africa (a)					
White arsenic	* 2 000	...	...	...	...
Mexico					
White arsenic, pure	4 667	3 234	2 802	3 246	...
White arsenic, crude	50	10	—	31	...
Hong Kong					
White arsenic (Re-exports)	17	38	8	7	38
Japan					
White arsenic	5	12	6	...	—

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

- (a) IGS estimates, based on known imports into certain countries
- (b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any
- (c) Includes arsenic acid
- (d) May include some tellurium

## Arsenic

**Imports of Arsenic**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
White arsenic	4 879	* 5 600	...	...	5 445
Metallic arsenic (a)	177	117	119	137	141
Belgium-Luxembourg					
White arsenic	39	29	40	9	37
Metallic arsenic (a)	77	62	73	115	100
Denmark					
White arsenic	31	0	3	0	10
France					
Metallic arsenic	102	89	60	113	211
Germany, Federal Republic of					
White arsenic	534	576	508	675	545
Metallic arsenic (a)	61	40	56	54	49
Italy					
White arsenic	1 186	868	785	817	837
Metallic arsenic (a)	105	47	78	63	57
Netherlands					
White arsenic (f)	508	194	291	147	4
Finland					
White arsenic (e)	836	773	916	1 097	1 220
Greece					
White arsenic	129	83	68	29	...
Norway					
White arsenic (e)	89	59	...	...	...
Spain					
White arsenic	596	483	308	299	...
Metallic arsenic	5	12	14	19	...
Switzerland					
White arsenic (e)	30	65	26	58	6
Turkey					
White arsenic	77	55	51	43	...
Yugoslavia					
White arsenic	111	50	...	66	102
Metallic arsenic	18	21	36	138	85
Morocco					
White arsenic	0	10	—	0	10
South Africa					
White arsenic (e)	90	165	52	34	—
Metallic arsenic	17	13	17	10	12
USA					
White arsenic	3 866	5 426	9 349	11 181	11 365
Metallic arsenic	261	323	335	367	241
Argentina					
White arsenic	396	207	132	...	...
Brazil					
White arsenic	1 255	600	562	830	—
Metallic arsenic	38	34	39	59	54
Chile					
White arsenic	...	31	297	...	...
Uruguay					
White arsenic	42	21	50	69	...
Venezuela					
White arsenic	20	54	20	...	...
Hong Kong					
White arsenic	46	55	10	18	46
India (b)					
White arsenic	986	500	580	1 017	...
Metallic arsenic	34	18	...	31	...
Indonesia					
White arsenic	27	91	142	107	99
Iran (d)					
White arsenic	66	31	...	...	...
Japan					
White arsenic	1 359	1 076	751	999	716
Korea, Republic of					
White arsenic	2	11	22	17	—



**Imports of Arsenic**

Country	1976	1977	1978	1979	1980
Malaysia					
White arsenic	834	43	...	...	...
Philippines					
White arsenic	106	135	152	246	75
Taiwan					
White arsenic	79	244	213	681	190
Thailand					
White arsenic	72	75	58	152	...
Australia					
White arsenic	584	685	456	936	...
New Zealand (c)					
White arsenic (e)	1 701	2 009	1 872	2 070	1 888

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

(a) May include some tellurium

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

(d) Years ended 20 March following that stated

(e) Includes pentoxide and/or arsenic acid

(f) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

## Asbestos

**Production of Asbestos**

tonnes

Country	1976	1977	1978	1979	1980
Italy	164 788	149 327	135 401	143 931	157 794
Bulgaria	* 300	* 500	* 700	* 600	* 700
Czechoslovakia	...	...	575	564	617
Soviet Union	* 1 850 000	* 1 900 000	* 1 945 000	* 2 020 000	* 2 150 000
Turkey	9 941	3 975	13 380	38 967	8 724
Yugoslavia	12 830	9 036	10 304	9 959	10 468
Egypt	1 018	478	349	238	* 230
Mozambique	—	—	—	789	* 800
South Africa					
Amosite	78 898	66 983	40 526	39 058	51 646
Anthophyllite	1 506	550	—	—	—
Crocidolite	178 411	200 966	137 171	118 301	118 148
Chrysotile	111 025	111 575	79 511	91 828	106 940
Swaziland					
Chrysotile	39 327	38 046	36 951	34 294	32 833
Zimbabwe					
Chrysotile	281 455	273 194	248 861	259 891	250 949
Canada					
Chrysotile	1 536 091	1 517 360	1 421 808	1 492 719	1 335 000
USA (a)	104 873	92 256	93 097	93 354	80 079
Argentina	889	686	1 069	1 371	* 1 300
Brazil	92 703	92 773	122 815	138 213	169 173
Afghanistan	13 260	13 000	* 13 000	* 4 000	...
China	* 150 000	* 200 000	* 250 000	* 250 000	* 250 000
Cyprus					
Chrysotile	34 518	36 684	34 359	35 472	35 535
India					
Amphibole	24 119	22 177	24 623	32 094	31 253
Japan					
Chrysotile	7 703	6 307	5 746	3 362	* 3 300
Korea, Republic of	4 762	6 180	13 616	14 804	9 854
Taiwan	853	673	2 031	2 957	683
Australia					
Chrysotile	60 642	50 601	62 744	79 721	92 418
World total	4 800 000	4 800 000	4 700 000	4 900 000	4 900 000

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

(a) Sold or used by producers

**Exports of Unmanufactured Asbestos**

Country	1976	1977	1978	1979	1980
United Kingdom	1 996	705	522	616	1 118
Belgium-Luxembourg	269	225	221	131	57
Denmark	182	97	268	80	48
France	2 314	1 647	532	1 348	1 575
Germany, Federal Republic of	67 953	45 551	44 215	65 365	27 333
Italy	83 752	67 106	68 958	74 478	63 815
Netherlands	199	255	393	56	36
Austria	449	102	81	2	5
Finland	—	3	—	41	20
Soviet Union	* 630 000	* 600 000	* 600 000	* 450 000	* 600 000
Sweden	119	225	1	112	—
Switzerland	17	74	37	142	43
Yugoslavia	2 163	2 159	1 902	1 983	2 506
South Africa (a)	* 335 000	* 365 000	* 350 000	* 381 000	* 323 000
Swaziland	41 847	34 853	38 083	37 065	31 435
Zimbabwe	...	...	212 437	285 021	274 258
Canada					
Crude	83	1	1	20	—
Fibre	725 233	705 852	689 549	719 071	650 878
Shorts	777 309	709 650	708 389	741 945	559 675
USA	42 568	34 144	41 782	42 137	48 666
Cyprus	33 552	35 341	29 338	39 106	29 965
Hong Kong (Re-exports)	433	215	225	1 844	8 492
Japan	3 529	1 226	756	147	428
Singapore	1 098	5 203	5 901	9 623	10 461
Australia	40 145	20 510	37 094	54 041	51 172

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

## Imports of Unmanufactured Asbestos

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	144 938	127 217	117 617	116 665	94 638
Belgium-Luxembourg	70 373	54 219	53 737	50 754	47 880
Denmark	30 625	26 926	21 470	26 865	13 714
France	143 625	114 790	110 612	126 476	127 124
Germany, Federal Republic of	382 570	399 278	345 817	386 383	392 978
Irish Republic	5 275	6 654	8 014	7 564	8 413
Italy	77 179	65 469	47 189	77 152	86 550
Netherlands	49 466	39 909	41 357	28 235	19 042
Austria	38 552	39 074	30 807	23 912	20 241
Bulgaria	...	2 300	2 100	...	...
Czechoslovakia	44 750	1 685	44 028	41 804	46 197
Finland	5 790	5 624	5 415	3 019	5 040
German Democratic Republic	58 002	71 400	62 600	62 000	74 400
Greece	20 411	19 650	14 756	15 214	14 179
Hungary	36 035	41 632	39 100	37 540	48 402
Iceland	9	12	11	7	5
Norway	5 134	2 269	517	490	103
Poland	108 261	87 723	102 376	103 372	83 272
Portugal	13 028	18 774	17 111	11 213	19 708
Romania	* 7 640	* 12 500	* 11 100	...	...
Spain	113 053	105 763	79 338	74 000	67 148
Sweden	10 366	2 555	1 334	861	1 195
Switzerland	18 929	22 682	22 794	20 689	21 029
Turkey	19 681	16 519	17 105	10 247	...
Yugoslavia	42 675	57 032	47 796	47 475	60 023
Algeria	11 852	15 872	9 415	...	...
Canary Islands	352	1 145	236	161	...
Egypt	13 322	15 380	11 334	476	...
Ghana	9 869	6 905	...	...	...
Kenya	921	1 572	797	1 348	...
Libya	1 846	2 641	5 033	2 050	...
Morocco	6 621	7 812	5 649	4 756	6 770
Mozambique	2 570	...	...	...	...
Nigeria	55 258	55 689	142 242	...	...
Senegal	...	1 679	910	...	...
South Africa	30 428	24 523	15 151	18 203	19 520
Tunisia	1 474	2 567	1 749	3 658	5 838
Uganda	147	...	...	...	...
Zaire	1 673	1 013	617	427	...
Zambia	3 788	1 234	...	...	...
Canada	6 002	4 112	756	1 953	1 156
Costa Rica	1 417	1 389	...	...	...
El Salvador	2 637	4 242	...	...	...
Guatemala	2 553	3 297	...	...	...
Jamaica	32	55	352	370	...
Mexico	50 668	44 961	60 359	71 617	...
Nicaragua	1 560	1 561	1 362	2	...
Panama	603	532	349	445	...
USA					
Amosite	1 428	529	1 170	462	364
Crocidolite	9 322	10 922	16 865	13 828	7 597
Chrysotile	550 817	515 142	531 416	487 191	305 358
Other unmanufactured	35 225	18 287	20 975	11 606	13 976
Argentina	20 868	20 334	13 368	...	...
Brazil	33 882	39 197	37 650	35 763	24 799
Chile	...	8 245	9 324	...	...
Colombia	19 954	19 341	* 17 000	20 875	26 866
Uruguay	1 193	2 652	1 463	2 681	...
Venezuela	17 624	14 356	19 385	...	...

**Imports of Unmanufactured Asbestos**

Country	1976	1977	1978	1979	1980
Dubai	3 315	7 278	8 337	4 205	4 631
Hong Kong	851	318	2 406	1 844	8 776
India	47 167	65 968	51 895	48 458	...
Indonesia	9 340	11 363	14 781	14 616	23 047
Iran (a)	40 109	24 445	...	* 2 000	...
Iraq	1 306	...	...	...	...
Israel (c)	3 542	5 426	4 879	3 050	28 317
Japan	325 346	300 636	234 901	291 531	305 408
Korea, Republic of	74 206	70 255	48 898	58 616	36 787
Kuwait	69	8 248	6 285	10 044	...
Malaysia	19 281	21 141	...	...	...
Pakistan (b)	5 647	14 428	8 738	6 638	10 679
Philippines	2 471	4 286	4 822	6 570	4 467
Saudi Arabia	11 339	15 572	6 993	24 169	...
Singapore	9 154	13 376	9 168	12 318	16 661
Sri Lanka	2 896	2 296	1 940	11 780	6 188
Syria	1 349	5 589	3 352	1 050	...
Taiwan	19 157	25 343	24 892	29 103	31 247
Thailand	56 688	52 455	50 690	72 528	...
Australia	60 490	74 267	42 115	22 942	25 307
New Zealand (b)	9 168	5 095	8 525	9 818	4 952

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

**Production of Barium Minerals**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	50 000	57 000	54 409	45 000	54 000
France	181 965	211 090	225 000	235 000	* 227 000
Germany, Federal Republic of	262 387	265 593	168 586	161 661	175 380
Irish Republic	323 000	373 000	343 753	319 000	260 000
Italy	179 412	152 646	236 832	214 630	203 038
Austria	81	192	242	305	249
Czechoslovakia	...	...	65 000	67 803	61 052
German Democratic Republic	* 31 000	* 31 000	* 35 000	* 36 000	* 36 000
Greece	90 620	95 794	110 841	109 344	98 529
Poland	80 342	88 700	90 300	96 000	* 96 300
Portugal	90	590	503	704	1 200
Romania	* 85 000	* 85 000	* 87 300	* 88 000	* 88 000
Soviet Union	* 400 000	* 450 000	* 475 000	* 500 000	* 500 000
Spain	91 115	84 280	71 457	74 000	* 73 000
Turkey	188 266	143 510	100 904	100 005	112 975
Yugoslavia	56 122	52 245	42 800	46 073	* 43 000
Algeria	74 543	42 303	* 73 000	* 90 000	* 91 000
Egypt	239	658	* 1 000	* 2 000	* 3 000
Kenya	359	429	303	363	6 647
Morocco	137 463	149 920	176 813	286 467	318 000
South Africa	1 915	2 500	2 355	2 494	2 635
Swaziland	368	—	—	—	—
Tunisia	22 313	16 049	16 358	14 929	26 950
Zimbabwe	1 480	2 798	878	449	195
Canada	100 266	116 950	99 339	67 035	* 86 000
Mexico	270 063	270 674	231 485	151 162	269 322
USA (b)	1 119 594	1 355 216	1 969 000	1 916 000	2 037 000
Argentina	40 546	30 571	45 685	54 928	* 58 000
Brazil	51 238	39 575	238 257	489 997	...
Chile	21 243	65 038	182 422	226 767	* 204 000
Colombia	3 100	3 450	3 500	* 3 600	* 3 600
Peru	330 689	434 984	362 000	436 000	* 450 000
Afghanistan (c)	5 100	14 100	12 700	2 700	—
Burma (a)	15 681	23 805	42 166	* 40 000	* 42 000
China	* 299 000	* 350 000	* 400 000	* 500 000	* 680 000
India	235 068	330 989	388 582	490 699	345 948
Iran (c)	* 230 000	* 185 000	* 200 000	* 180 000	* 150 000
Japan	66 409	72 916	77 036	53 736	* 50 000
Korea, Dem. P.R. of	* 120 000	* 120 000	* 110 000	* 110 000	* 110 000
Korea, Republic of	4 174	2 645	1 005	728	410
Malaysia	6 096	12 074	5 079	1 401	—
Pakistan	9 052	17 718	16 303	32 433	14 054
Philippines	3 199	5 393	5 548	6 667	* 6 500
Thailand	151 343	118 466	274 564	378 654	305 057
Australia	14 133	11 675	13 790	94 066	34 951
World total	5 400 000	5 900 000	7 100 000	7 700 000	7 700 000

Note: In addition to the countries listed, Bulgaria and Cuba are believed to produce barium minerals

(a) Years ended 31 March following that stated

(b) Sold or used by producers

(c) Years ended 20 March following that stated

**Exports of Barium Minerals**

Country	1976	1977	1978	1979	1980
United Kingdom	6 630	3 904	3 424	4 622	4 051
Belgium-Luxembourg	199	315	408	430	13 656
France	58 560	99 353	116 535	121 722	113 937
Germany, Federal Republic of	65 582	32 761	38 178	38 720	44 406
Irish Republic	...	...	322 853	302 317	272 643
Italy	24 314	20 264	73 863	89 352	105 818
Netherlands (b)	102 895	103 708	94 774	77 548	122 537
Czechoslovakia	* 1 500	* 1 200	* 8 500	7 000	8 000
Greece	33 695	36 003	48 256	38 587	55 259
Norway	13 913	13 228	4 627	1 627	272
Portugal	2 466	1 000	3	283	...
Romania	...	* 500	* 600	...	...
Spain	52 801	58 070	90 793	74 677	52 018
Turkey	175 191	154 911	124 123	95 844	...
Yugoslavia	41 665	25 309	16 495	13 965	19 077
Morocco	120 556	181 244	224 842	277 346	333 820
Swaziland	369	—	...	...	...
Tunisia	4 000	157	1 109	200	2 840
Canada	60 297	69 421	56 783	2 038	645
Mexico	106 728	122 204	98 950	134 584	...
Trinidad & Tobago	183	1 021	1 469	527	...
USA	37 402	44 952	33 179	96 117	87 833
China (d)	* 63 400	* 77 300	* 126 700	* 278 700	* 591 100
India	151 426	177 188	201 042	338 312	...
Indonesia	5 186	3 402	12 546	7 159	6 451
Israel (c)	163	761	708	82	72
Japan	...	1 250	2 894	1 002	1 902
Malaysia	1 747	895	...	...	...
Pakistan (a)	...	500	—	3 750	1 700
Singapore	42 229	40 021	35 615	52 521	37 667
Thailand	107 186	202 725	195 122	288 852	...
Australia	4 017	1 304	969	1 232	48 108

Note: Trade in barium minerals is reported under item 278.92 of the Standard International Trade Classification (Revision 2) and is described as "barytes and witherite". However, it is thought that very little, if any, witherite is traded

(a) Years ended 30 June of that stated

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

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

(d) IGS estimates, based on known imports into certain countries

## Barium

**Imports of Barium Minerals**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	36 448	50 616	80 315	90 355	143 089
Belgium-Luxembourg	8 477	8 318	8 293	8 082	8 407
Denmark	11 264	4 471	5 863	3 951	12 461
France	11 411	11 814	8 983	14 427	14 611
Germany, Federal Republic of	124 162	175 356	196 465	197 659	201 630
Italy	7 748	18 538	13 871	13 634	7 531
Netherlands (c)	121 874	130 261	124 608	201 894	81 728
Austria	4 008	3 785	6 976	3 227	5 752
Finland	1 272	1 154	952	1 224	1 168
Norway	51 589	61 121	63 204	102 981	111 392
Poland	35 058	14 280	21 653	...	...
Portugal	485	413	458	645	1 979
Romania	* 3 900	* 4 000	* 8 900	...	...
Soviet Union	* 350 000	* 400 000	* 450 000	* 450 000	* 500 000
Spain	10 197	809	3 321	2 518	850
Sweden	6 153	5 390	4 660	5 493	3 992
Switzerland	3 089	3 324	2 880	2 291	3 181
Yugoslavia	760	1 110	1 206	1 204	1 147
Algeria	45 100	67 388	98 895	...	...
Cameroon	2 725	7 432	15 750	...	...
Gabon	12 894	3 577	—	...	...
Ivory Coast	106	3 243	3 505	345	...
Senegal	20	76	39	...	...
South Africa	2 685	3 444	2 437	19 168	5 621
Tunisia	8 924	3 458	1 568	2 480	233
Canada	18 097	5 979	15 635	8 390	48 749
Trinidad & Tobago	32 668	54 024	61 870	35 662	...
USA	833 257	875 280	1 191 915	1 374 721	1 702 216
Brazil	252	163	240	156	175
Venezuela	41 728	60 914	87 152	...	...
Abu Dhabi	—	—	—	1 472	16 189
Hong Kong	1 013	291	258	335	1 169
Indonesia	51 835	760	22 295	19 881	21 031
Iran (b)	206	242	...	...	...
Iraq	35 752	...	...	...	...
Japan	16 516	32 771	21 278	24 565	40 173
Malaysia	8 270	3 946	...	...	...
Philippines	272	632	1 169	1 054	1 893
Saudi Arabia	30 550	12 552	3 812	553	...
Singapore	37 481	28 532	14 858	50 774	66 343
Syria	810	123	2 326	—	...
Taiwan	7 386	2 880	10 340	2 870	7 605
Australia	1 435	1 527	541	1 189	1 273
New Zealand (a)	5 623	1 747	1 169	1 582	1 332

Note: Trade in barium minerals is reported under item 278.92 of the Standard International Trade Classification (Revision 2) and is described as "barytes and witherite". However, it is thought that very little, if any, witherite is traded

(a) Years ended 30 June of that stated

(b) Years ended 20 March following that stated

(c) Figure for 1976 excludes imports from Belgium-Luxembourg, if any



## Production of Bentonite and Fuller's Earth

Country	1976	1977	1978	1979	1980
United Kingdom					
Fuller's earth (a)	163 000	159 000	167 000	171 000	163 000
France					
Bentonite	17 297	8 063	10 144	16 069	* 18 000
Italy					
Bentonite	264 935	292 428	224 208	282 446	322 888
Fuller's earth	39 840	6 344	10 143	1 080	4 300
Greece					
Bentonite	316 769	545 570	385 067	567 605	509 095
Hungary					
Bentonite	71 148	80 000	82 000	72 488	78 000
Poland					
Bentonite	139 161	76 730	89 820	161 587	157 090
Romania					
Bentonite	* 63 000	* 63 000	* 65 000	* 65 000	* 65 000
Spain					
Bentonite	108 148	114 600	108 318	120 678	* 118 000
Turkey					
Bentonite	21 126	4 358	8 280	7 937	13 182
Yugoslavia					
Bentonite	106 000	116 000	154 000	...	...
Algeria					
Bentonite	24 514	24 337	35 664	* 36 000	* 36 000
Fuller's earth	3 186	4 263	4 847	* 5 000	* 5 000
Egypt					
Bentonite	...	4 616	4 662	5 085	5 200
Morocco					
Bentonite	4 019	4 807	4 800	* 1 000	* 1 100
Fuller's earth	36 768	21 025	29 880	13 586	* 17 000
Mozambique					
Bentonite	2 298	2 744	3 000	1 656	* 1 500
Senegal					
Fuller's earth (b)	4 380	4 620	6 930	* 7 250	3 978
South Africa					
Bentonite	39 602	37 221	34 519	46 394	51 815
Fuller's earth	—	—	258	919	720
Mexico					
Bentonite	55 583	59 169	140 325	169 848	...
Fuller's earth	20 108	61 369	40 615	48 820	* 48 000
USA					
Bentonite (c)	3 193 637	3 398 757	4 052 944	4 011 639	3 796 223
Fuller's earth (c)(f)	1 217 063	1 295 756	1 387 647	1 422 690	1 391 443
Argentina					
Bentonite	132 313	114 836	106 957	157 382	174 189
Fuller's earth	3 133	4 129	3 482	5 445	7 408
Brazil					
Bentonite	143 218	108 395	167 614	212 503	259 868
Colombia					
Bentonite	* 1 200	* 1 200	* 1 200	* 1 200	* 1 200
Peru					
Bentonite	39 545	41 545	37 215	40 800	* 41 000
Burma (d)					
Bentonite	533	1 349	* 1 590	* 1 500	* 1 350
Cyprus					
Bentonite	5 080	13 209	8 500	5 300	8 852
India					
Bentonite	137 514	150 568	153 026	146 922	...
Fuller's earth	16 144	13 517	16 297	17 343	...
Iran					
Bentonite	* 50 000	* 25 000	* 40 000	* 20 000	* 20 000
Israel					
Bentonite (e)	8 086	6 952	6 900	6 287	* 6 000
Japan					
Bentonite	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000

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

tonnes

Country	1976	1977	1978	1979	1980
Pakistan					
Bentonite	747	1 089	1 113	1 265	1 347
Fuller's earth	16 000	* 18 000	* 16 000	42 822	24 463
Philippines					
Bentonite	2 117	2 279	1 569	3 123	4 758
Australia					
Bentonite	11 954	5 603	4 656	6 626	* 7 000
Fuller's earth	9	50	68	* 50	* 50
New Zealand					
Bentonite	1 042	2 633	9 824	4 954	3 000
World total Bentonite	5 365 000	5 707 000	6 343 000	6 723 000	6 572 000
World total Fuller's earth	1 520 000	1 588 000	1 683 000	1 736 000	1 682 000

## Notes:

- 1 Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important. Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process. 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
  - 2 In addition to the countries listed, Austria, Canada, China, Federal Republic of Germany, Soviet Union and Tanzania are also believed to produce bentonite and France, Iran, Japan and Turkey may produce fuller's earth
- (a) IGS estimates of saleable production based on data from producing companies  
(b) Attapulgite  
(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) Mostly attapulgite

## Exports of Bentonite and Fuller's Earth

Country	1976	1977	1978	1979	1980
United Kingdom					
Bentonite	17 862	13 680	13 954	11 975	19 017
Fuller's earth	2 613	3 361	3 772	3 866	6 045
Belgium-Luxembourg					
Bentonite	8 067	7 845	8 273	11 574	10 831
Fuller's earth	166	988	441	1 326	508
Denmark					
Bentonite	116	46	21	21	6
France					
Bentonite	5 722	10 073	10 371	5 887	6 877
Fuller's earth	2 736	4 384	1 016	929	1 999
Germany, Federal Republic of					
Bentonite	44 335	30 494	25 014	26 250	29 755
Fuller's earth	226	582	1 086	3 157	4 945
Italy					
Bentonite	23 501	18 605	20 217	31 273	18 967
Netherlands					
Bentonite (a)	10 292	17 107	23 839	26 462	35 210
Fuller's earth (a)	273	1 098	1 060	822	845
Greece					
Bentonite	381 388	381 284	332 008	450 173	468 911
Hungary					
Bentonite	18 537	19 400	14 156	14 797	15 604
Spain					
Bentonite	25 560	40 090	37 881	39 876	...
Sweden					
Bentonite	1	17	11	14	—
Turkey					
Bentonite	10 150	520	3 394	4 995	...
Yugoslavia					
Bentonite	303	38	136	297	1 401
Algeria					
Bentonite (b)	460	150	100	...	...
Morocco					
Bentonite	1	50	812	0	—
Fuller's earth	10 303	11 194	10 965	12 634	17 384
Mozambique					
Bentonite (c)	1 760	2 474	...	...	...
Senegal					
Fuller's earth (d)	4 540	4 400	...	...	...
South Africa					
Bentonite	1 806	1 216	874	1 064	1 630
Mexico					
Bentonite	6	9	16	74	...
USA					
Bentonite	714 061	715 394	656 248	773 674	814 421
Fuller's earth	38 350	40 946	53 654	67 081	104 073
Argentina					
Bentonite	7 494	9 984	10 181	...	...
Venezuela					
Bentonite	—	528	337	...	...

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

tonnes

Country	1976	1977	1978	1979	1980
India					
Bentonite	12 631	18 538	19 811	19 775	...
Fuller's earth	21	1 332	1 242	2 613	...
Indonesia					
Bentonite	2 793	0	2 736	1 268	2 946
Kuwait					
Bentonite	...	11 581	21 012	3 217	...
Singapore					
Bentonite	611	893	1 539	21 600	25 596
Fuller's earth	—	—	—	5 066	9 335
Taiwan					
Bentonite	800	8	27	80	49

## Notes:

1 See note 1 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 2) 278.21. Activated bentonite and fuller's earth, Standard International Trade Classification (Revision 2) 598.92(b) are excluded. However, some countries are believed to include sodium-exchanged bentonite, often referred to as activated bentonite, under Standard International Trade Classification (Revision 2) 598.92(b), e.g. Italy

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(b) Including crude kaolin

(c) May include other clays

(d) Attapulgit

## Imports of Bentonite and Fuller's Earth

Country	1976	1977	1978	1979	1980
United Kingdom					
Bentonite	48 402	76 645	46 083	74 861	76 454
Fuller's earth	3 060	2 270	103	522	2 743
Belgium-Luxembourg					
Bentonite	27 822	26 556	28 628	24 553	38 519
Fuller's earth	355	357	4 261	12 445	18 604
Denmark					
Bentonite	2 169	2 867	3 612	3 652	5 021
Fuller's earth	96	189	403	571	672
France					
Bentonite	93 080	96 482	87 235	92 464	76 062
Fuller's earth	1 195	863	1 283	2 028	1 900
Germany, Federal Republic of					
Bentonite	93 290	77 527	45 879	66 841	78 043
Fuller's earth	8 502	16 360	6 785	5 282	5 676
Italy					
Bentonite	42 484	65 595	54 673	29 912	55 438
Fuller's earth	1 547	2 314	2 435	1 991	1 316
Netherlands					
Bentonite (a)	31 048	35 186	54 913	62 633	64 756
Fuller's earth (a)	4 338	3 156	3 784	2 265	4 118
Austria					
Bentonite	541	651	514	594	888
German Democratic Republic					
Bentonite	* 15 430	* 14 130	* 9 990	...	...
Greece					
Bentonite	335	95	243	153	693
Norway					
Bentonite	...	...	31 442	39 185	46 914
Fuller's earth	357	221	910	112	244
Portugal					
Bentonite	15 622	21 274	22 991	22 477	...
Spain					
Bentonite	38 836	49 390	28 285	35 277	...
Sweden					
Bentonite	4 424	3 185	3 189	7 292	4 462
Yugoslavia					
Bentonite	343	759	16	19	21
Algeria					
Bentonite (b)	8 541	6 768	7 193	...	...
Ivory Coast					
Bentonite	371	403	508	461	...
Morocco					
Bentonite	2	500	25	0	—
Senegal					
Bentonite	...	1 957	1 198	...	...
Tunisia					
Bentonite	(b) 11 032	(b) 17 234	(b) 15 034	(b) 21 450	3 025
Zimbabwe					
Bentonite	...	...	...	988	...
Canada					
Bentonite	274 095	358 724	295 713	612 757	469 292
Fuller's earth	571	2 356	226	1 483	1 385
Mexico					
Bentonite	299	1 488	4 679	7 782	...
USA					
Bentonite	87	123	48	74	141
Fuller's earth	20	62	76	168	270
Brazil					
Bentonite	14 045	16 193	14 354	21 594	13 174
Peru					
Bentonite	850	876	...	...	...
Uruguay					
Bentonite	97	80	162	323	...
Venezuela					
Bentonite	19 233	26 817	27 357	...	...

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

tonnes

Country	1976	1977	1978	1979	1980
India					
Bentonite	18	6	14	45	...
Fuller's earth	231	25	471	381	...
Indonesia					
Bentonite	15 514	8 461	25 313	9 164	6 137
Korea, Republic of					
Bentonite	547	592	...	3 075	2 017
Kuwait					
Bentonite	33 822	13 716	35 607	1 731	...
Malaysia					
Bentonite	2 572	1 524	...	...	...
Fuller's earth	3 325	7 601	...	...	...
Pakistan (c)					
Fuller's earth	25	175	561	306	60
Philippines	1 584	1 082	9 663	10 257	7 147
Singapore					
Bentonite	2 741	4 925	4 802	46 377	46 778
Fuller's earth	—	—	—	3 187	4 856
Taiwan					
Bentonite	3 903	5 375	5 077	6 895	6 435
Thailand					
Bentonite	...	1 622	2 163	2 141	...
Australia					
Bentonite	22 204	13 191	30 355	57 241	55 917

## Notes:

- 1 See note 1 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 2) 278.21. Activated bentonite and fuller's earth, Standard International Trade Classification (Revision 2) 598.92(b) are excluded. However, some countries are believed to include sodium-exchanged bentonite, often referred to as activated bentonite, under Standard International Trade Classification (Revision 2) 598.92(b) e.g. Italy

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Including crude kaolin

(c) Years ended 30 June of that stated

**Mine Production of Bismuth**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
France	100	73	79	95	* 90
Germany, Federal Republic of	* 10	* 10	* 10	* 10	* 10
Italy	—	8	9	19	43
Romania	* 80	* 80	* 80	* 80	* 80
Soviet Union	* 60	* 65	* 70	* 73	* 72
Yugoslavia	78	74	13	23	83
Canada (a)	130	165	145	137	171
Mexico	557	729	978	754	* 750
USA	* 400	* 400	* 400	* 400	* 400
Bolivia	612	680	482	10	11
Peru (a)	521	585	* 590	600	* 500
China	* 220	* 225	* 240	* 260	* 260
Japan	682	698	623	* 485	* 320
Korea, Republic of	174	134	122	87	123
Australia	769	932	1 054	* 950	* 900
World total	4 400	4 900	4 900	4 000	3 800

## Notes:

1 The figures in this table are in some instances derived from reported bismuth content of refined and impure metal plus recoverable bismuth in ores and concentrates exported. Production for some countries may include bismuth produced from imported ores but it is thought that any resulting duplication is insignificant in the countries shown

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

(a) Includes Bi content of bullion and concentrates exported

## Bismuth

**Exports of Bismuth**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Compounds	34	28	58	16	16
Metal	285	310	399	255	312
France					
Compounds	283	289	292	102	577
Metal	107	72	7	49	12
Germany, Federal Republic of					
Compounds	121	98	105	63	122
Metal	526	462	517	407	316
Italy					
Compounds	88	73	227	696	1
Metal	18	31	30	6	5
Netherlands					
Compounds (a)	27	33	25	37	13
Metal	50	46	66	27	31
Yugoslavia					
Compounds	67	21	11	16	...
Metal	19	2	—	—	...
Mexico					
Metal	304	331	187	242	...
USA					
Metal	75	51	163	198	60
Bolivia					
Ores (b)	40	52	14	—	—
Metal	264	483	117	46	547
Japan					
Metal	313	302	287	181	242
Korea, Republic of					
Metal	76	186	38	134	119

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(b) Bi content



**Imports of Bismuth**

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	327	394	325	335	389
Belgium-Luxembourg					
Compounds	64	56	37	18	18
France					
Compounds	72	58	4	44	8
Metal	737	644	346	322	362
Germany, Federal Republic of					
Compounds	19	16	21	22	15
Metal	246	160	113	211	268
Italy					
Compounds	56	48	24	21	39
Metal	103	97	62	55	63
Netherlands					
Compounds (a)	155	86	171	152	365
Metal	49	55	52	54	62
Spain					
Metal	161	253	96	102	...
Turkey					
Compounds	21	17	8	5	...
Yugoslavia					
Compounds	16	17	5	6	7
Metal	24	31	18	5	4
Morocco					
Compounds	11	16	19	5	6
USA					
Metal	1 056	1 206	1 208	1 077	1 008
Argentina					
Metal	20	13	8	...	...
Brazil					
Compounds	9	9	10	0	4
Metal	27	23	34	46	132
India					
Metal	2	30	97	66	...
Australia					
Metal	14	14	22	13	13

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

## Bromine

**Production of Bromine**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom	29 900 000	24 700 000	25 100 000	29 162 000	26 388 000
France	15 180 000	15 570 000	16 200 000	18 997 000	16 480 000
Germany, Federal Republic of	4 154 000	3 736 000	3 893 000	4 020 000	* 4 000 000
Italy	588 000	* 600 000	* 600 000	* 600 000	* 600 000
Soviet Union	* 13 600 000	* 15 000 000	* 15 000 000	* 15 000 000	* 15 000 000
Spain	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
USA (a)	212 281 000	196 814 000	202 529 000	225 435 000	173 091 000
India	436 000	522 000	451 000	313 000	* 334 000
Israel	23 200 000	* 33 000 000	* 35 000 000	* 46 000 000	* 50 000 000
Japan	* 12 000 000	* 12 000 000	* 12 000 000	* 11 800 000	* 12 000 000
World total	311 739 000	302 342 000	311 173 000	351 727 000	298 293 000

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

Bromine  
kilograms

## Exports of Bromine

Country	1976	1977	1978	1979	1980
United Kingdom	1 583 779	2 535 619	1 834 619	1 705 486	1 800 857
Belgium-Luxembourg	1 200	—	138 000	411 900	1 923 300
Germany, Federal Republic of	202 900	193 900	112 100	13 200	10 600
Italy	—	18 372	14 900	—	—
Netherlands (a)	61 000	304 000	1 193 000	871 000	845 000
USA	2 012 000	2 440 000	2 900 000	4 600 000	3 700 000

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

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

## Bromine

**Imports of Bromine**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom	1 740 441	3 495 166	4 006 331	4 168 041	4 642 218
Belgium-Luxembourg	26 800	43 800	249 000	828 100	1 972 200
Denmark	96 200	84 000	121 900	90 200	97 400
France	997 000	1 970 000	2 762 000	2 542 000	2 817 300
Germany, Federal Republic of	3 109 900	2 204 600	1 871 000	2 922 100	2 874 300
Italy	1 678 303	2 062 024	1 974 600	3 008 434	2 701 100
Netherlands (a)	1 082 000	1 983 000	3 286 000	4 401 000	3 766 000
Greece	1 000	1 389	683	—	—
Hungary	250 400	574 500	587 000	1 036 000	618 000
Portugal	1 100	500	500	1 400	...
Spain	11 000	40 072	46 908	205 000	...
Turkey	249	928	84	—	...
Yugoslavia	2 286	15 276	11 812	10 001	9 397
Algeria	12	264	—	...	...
Morocco	175	70	40	6	57
South Africa	5 700	3 600	50 900	54 800	76 000
Zambia	—	158	...	...	...
USA	...	235 000	303 000	15 000	500
Argentina	127 794	49 314	61 800	...	...
Brazil	28 556	64 744	33 587	31 611	24 518
Venezuela	15 319	47 476	4 027	...	...
India (b)	303 983	505 598	192 770	411 430	...
Korea, Republic of	11 741	104 736	...	154 530	121 610
Saudi Arabia	—	12 981	...	13 235	...
Syria	3	97	9 500	10 131	...
Taiwan	156	794	5 708	18	153
Thailand	—	—	39	33	...

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

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Years ended 31 March following that stated

**Production of Cadmium**

Country	1976	1977	1978	1979	1980
United Kingdom	190	295	291	424	375
Belgium	1 175	1 434	1 164	1 440	1 527
France	532	790	694	689	792
Germany, Federal Republic of	1 275	1 336	1 182	1 266	1 194
Italy	436	449	378	526	568
Netherlands	398	* 302	* 402	* 416	* 455
Austria	29	26	33	34	36
Bulgaria	* 220	* 200	* 210	* 210	* 200
Finland	426	527	611	590	580
German Democratic Republic	* 18	* 18	* 18	* 15	* 16
Norway	80	97	120	115	130
Poland	* 700	* 754	* 761	* 773	* 698
Romania	100	90	90	90	85
Soviet Union	* 2 900	* 2 900	* 3 000	* 3 000	* 2 900
Spain	246	303	253	222	309
Turkey	—	20	15	12	10
Yugoslavia	160	189	186	289	* 290
Algeria	29	133	175	185	150
Namibia (c)	118	88	79	81	70
Zaire	252	246	186	212	168
Zambia	7	4	—	—	—
Canada (a)	1 388	1 369	1 265	1 455	1 303
Mexico	710	908	897	830	* 800
USA (b)	2 047	1 999	1 653	1 823	1 578
Argentina	* 35	40	22	* 20	* 20
Brazil	19	10	10	17	* 25
Peru	174	182	169	190	174
China	* 200	* 200	* 220	* 225	* 225
India	34	44	113	166	89
Japan	2 500	2 844	2 531	2 598	2 209
Korea, Dem P.R. of	* 150	* 150	* 150	* 150	* 150
Korea, Republic of	—	20	40	50	365
Australia	649	671	747	804	1 012
World total	17 200	18 600	17 700	18 900	18 500

(a) Refined cadmium from all sources including that obtained from imported lead and zinc concentrates; includes cadmium in sponge

(b) Includes cadmium sponge and secondary metal

(c) Thought to be a by product of the smelting of zinc ores in South Africa

## Cadmium

**Exports of Cadmium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	105	109	155	73	133
Sulphide	32	17	11	1	21
Belgium-Luxembourg					
Metal	836	945	736	810	870
Sulphide	37	46	43	29	22
France					
Metal	353	132	219	478	266
Sulphide	2	—	4	1	2
Germany, Federal Republic of					
Metal (a)	477	274	313	494	300
Oxide	28	30	18	22	28
Sulphide	37	45	24	28	...
Italy	424	140	124	259	322
Netherlands	474	380	373	528	404
Austria	15	8	20	25	31
Finland	450	472	507	707	565
Norway	93	81	97	156	114
Soviet Union	* 1 000	* 1 000	* 900	* 900	* 1 000
Spain	172	208	149	194	...
Yugoslavia	153	101	176	133	105
Zaire	208	186	—	74	...
Canada	1 556	870	1 260	1 293	1 096
Mexico	1 195	961	759	633	...
USA	229	107	328	212	244
Bolivia	141	150	93	8	—
Peru	199	171	...	...	...
Japan	1 841	784	111	151	229
Korea, Dem. P.R. of	* 180	* 50	...	* 80	* 60
Australia	524	557	744	625	794

(a) Including rhenium

**Imports of Cadmium**

Country	1976	1977	1978	1979	1980
United Kingdom	1 310	1 299	1 174	1 432	793
Belgium-Luxembourg	1 376	1 146	1 032	1 166	1 029
Denmark	9	11	10	9	4
France					
Metal	559	625	649	735	661
Sulphide	40	55	54	68	48
Germany, Federal Republic of					
Metal	1 136	988	994	1 165	1 145
Oxide	503	410	428	539	550
Italy					
Metal	259	148	179	88	68
Sulphide	28	19	35	15	88
Netherlands					
Metal	169	59	55	85	68
Sulphide	68	19	17	25	15
Austria	2	6	4	3	5
Sweden	403	270	132	168	268
Soviet Union	* 260	* 260	* 260	* 265	* 260
Turkey	18	19	9	—	...
USA					
Metal	3 095	2 332	2 881	2 572	2 617
Flue dust (a)	223	13	—	—	—
Brazil	153	154	55	248	210
India	0	6	66	61	...

(a) Cd content

**Production of Chromium Ores and Concentrates**

tonnes

Country	1976	1977	1978	1979	1980
Albania	* 830 000	* 880 000	* 1 000 000	* 1 020 000	* 1 100 000
Finland (a)(b)	174 869	168 871	178 500	177 300	186 400
Greece (b)	34 289	33 450	32 878	44 767	34 568
Soviet Union	* 2 100 000	* 2 180 000	* 2 300 000	* 2 400 000	* 2 450 000
Turkey (b)	664 701	636 523	466 711	418 978	239 139
Yugoslavia	2 020	1 546	1 907	168	...
Madagascar (b)	211 426	164 789	119 283	128 347	146 529
South Africa	2 409 235	3 058 863	3 144 741	3 296 962	3 414 410
Sudan	23 749	22 300	23 680	28 176	* 25 000
Zimbabwe	863 868	677 322	477 765	541 742	552 475
Cuba	19 115	20 354	28 776	28 200	* 32 000
Brazil	186 106	309 995	269 870	340 385	* 300 000
Colombia (b)	5 000	5 000	5 000	* 5 000	* 5 000
Cyprus	9 156	14 230	15 339	15 743	16 612
India	402 111	352 535	266 293	309 841	319 538
Iran	* 160 000	* 233 000	* 198 000	* 136 000	* 81 600
Japan	22 150	18 144	9 000	9 051	* 13 600
Pakistan	10 836	* 9 000	* 12 000	2 467	3 115
Philippines	431 063	538 549	539 898	556 110	576 087
Vietnam	* 13 500	* 12 700	* 12 700	* 13 500	* 15 500
New Caledonia	9 051	8 310	8 229	12 407	2 188
World total	8 600 000	9 300 000	9 100 000	9 500 000	9 500 000

Note: In addition to the countries listed, Bulgaria, China and Democratic P.R. of Korea are also believed to produce chromite

(a) Including foundry sand  
(b) Concentrates



## Exports of Chromium

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore	965	26	38	222	891
Metal	2 106	2 088	2 249	2 121	2 569
Belgium-Luxembourg					
Ore	323	1 071	447	19	27
Metal	28	59	421	504	464
France					
Ore	396	982	983	1 379	1 616
Metal	712	455	611	720	698
Germany, Federal Republic of					
Ore	13 551	3 931	3 212	8 807	5 412
Metal	274	63	126	225	275
Italy					
Ore	2 962	2 137	3 606	2 673	2 034
Metal	14	10	90	19	9
Netherlands					
Ore (c)	23 675	19 548	15 150	14 417	18 726
Metal (c)	101	21	56	2	3
Albania					
Ore	* 690 000	* 720 000	* 800 000	...	...
Austria					
Ore	294	829	923	1 028	291
Finland					
Ore	291 483	508 305	364 461	308 847	206 547
Greece					
Ore	22 107	74 939	20 381	29 140	32 319
Soviet Union					
Ore	975 000	673 000	738 000	775 000	567 000
Turkey					
Ore	608 435	464 640	284 558	322 046	...
Yugoslavia					
Ore	303	3 523	5 854	10 475	11 537
Madagascar					
Ore	117 414	116 232	144 662	...	...
South Africa					
Ore	1 196 434	1 482 491	1 422 588	1 269 487	1 213 362
Sudan					
Ore	* 32 000	3 680	...	...	...
Zimbabwe					
Ore	...	...	...	11 463	...
Cuba					
Ore	26 691	51 669	...	...	...
USA					
Ore	188 951	225 101	47 414	41 290	45 003
of which: Re-exports	76 795	55 437	26 564	25 802	39 640
Metal	539	531	529	164	324
Brazil					
Ore	9 128	71 111	81 859	45 215	...
Cyprus					
Ore	12 343	14 234	11 148	10 698	6 889
India					
Ore	277 798	167 057	67 102	236 017	...
Iran (a)					
Ore	5 400	...	* 89 000	* 27 000	...
Japan					
Ore	2 089	2 805	1 636	1 786	5 678
Pakistan (b)					
Ore	15 536	23 991	4 086	—	—
Philippines					
Ore	378 104	432 937	455 681	496 770	484 109
New Caledonia					
Ore	9 105	4 734	4 345	11 563	7 292

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

## Chromium

**Imports of Chromium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore	137 715	197 591	138 152	92 041	92 573
Metal	121	143	222	...	...
Belgium-Luxembourg					
Ore	2 776	3 891	2 309	1 903	1 671
Metal	145	226	910	543	275
France					
Ore	345 481	281 006	242 480	261 701	278 773
Metal	69	56	64	246	394
Germany, Federal Republic of					
Ore	547 293	415 593	371 738	546 786	328 847
Metal	435	400	698	883	862
Irish Republic					
Ore	7 758	6 445	5 579	6 222	1
Italy					
Ore	236 915	187 389	140 186	232 445	171 045
Metal	152	88	206	206	186
Netherlands					
Ore (a)	21 022	26 440	6 398	6 866	27 176
Metal (a)	76	75	81	59	126
Austria					
Ore	62 765	85 492	61 947	57 077	77 407
Czechoslovakia					
Ore	...	156 000	180 000	168 000	182 000
German Democratic Republic					
Ore (b)	48 600	43 000	51 700	44 600	40 100
Hungary					
Ore (c)	17 000	17 000	17 000	17 000	15 000
Norway					
Ore	68 862	28 146	5 372	36 357	293
Poland					
Ore	194 720	215 604	198 540	211 248	197 975
Portugal					
Ore	713	317	692	733	409
Spain					
Ore	117 392	112 657	95 165	117 977	84 558
Sweden					
Ore	377 465	385 113	557 522	673 537	332 328
Metal	351	139	215	215	144
Yugoslavia					
Ore	234 335	225 471	219 069	297 919	278 799
South Africa					
Ore	167 125	66 586	1 348	845	7 430
Canada					
Ore (b)	58 263	60 285	46 898	40 008	41 468
Mexico					
Ore	51 261	49 167	50 919	55 015	...
USA					
Ore	1 157 000	1 173 000	919 000	929 000	891 000
Metal	2 219	2 214	3 171	3 247	3 719
Argentina					
Ore	4 111	4 562	1 985	...	...
Brazil					
Ore	12 233	18 197	18 651	24 575	31 435
Venezuela					
Ore	12 500	0	5 600	...	...

Chromium

**Imports of Chromium**

tonnes

Country	1976	1977	1978	1979	1980
Japan					
Ore	1 217 404	899 934	669 987	962 251	950 039
Korea, Dem. P.R. of					
Ore	* 10 000	* 10 000	* 10 000	* 7 000	...
Taiwan					
Ore	4 579	7 706	3 327	6 653	6 363
Australia					
Ore	3 489	10 749	12 088	11 884	...

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

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

(c) Exports from Soviet Union

## Coal

**Production of Coal**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Mined –					
Anthracite	1 249 000	1 209 000	1 453 000	1 693 000	1 607 000
Bituminous	109 015 000	105 915 000	106 075 000	106 082 000	110 823 000
Opencast –					
Anthracite	1 114 000	1 320 000	1 499 000	1 337 000	1 295 000
Bituminous	10 830 000	12 230 000	12 668 000	11 525 000	14 484 000
Belgium					
Anthracite	1 125 716	795 741	627 500	510 530	375 460
Bituminous	6 112 022	6 272 300	5 962 768	5 613 973	5 948 574
France					
Anthracite & bituminous	21 879 000	21 294 000	19 690 000	18 611 000	18 100 000
Lignite	3 188 000	3 080 000	2 732 000	2 450 000	2 600 000
Germany, Federal Republic of					
Anthracite & bituminous	89 269 000	84 840 000	83 936 000	86 319 000	87 146 000
Brown coal	134 493 000	122 920 000	123 559 000	130 579 000	129 833 000
Irish Republic					
Anthracite & semi-bituminous	49 090	53 810	30 400	62 000	63 000
Italy					
Bituminous	1 340	285	—	—	—
Lignite	2 027 991	1 843 931	1 868 078	2 122 926	1 932 571
Albania					
Brown coal & lignite	* 950 000	* 1 000 000	* 1 050 000	...	...
Austria					
Brown coal & lignite	3 214 598	3 127 473	3 075 680	2 740 742	2 864 967
Bulgaria					
Anthracite & bituminous	295 000	287 000	273 000	274 000	267 000
Brown coal & lignite	25 184 000	24 887 000	25 531 000	27 955 000	29 899 000
Czechoslovakia					
Bituminous	28 083 000	27 788 000	27 971 000	28 114 000	27 680 000
Brown coal	86 838 000	90 696 000	92 450 000	93 731 000	92 529 000
Lignite	3 488 000	3 354 000	3 269 000	3 201 000	3 197 000
German Democratic Republic					
Bituminous	457 000	349 000	85 000	—	—
Brown coal	246 897 000	253 705 000	235 264 000	256 063 000	258 097 000
Greece					
Lignite	22 303 238	23 893 197	21 888 000	23 617 433	23 207 000
Hungary					
Bituminous	2 934 000	2 925 212	2 953 902	3 002 567	3 065 389
Brown coal	14 779 000	14 433 014	14 301 627	14 181 758	14 156 496
Lignite	7 544 000	8 096 270	8 413 988	8 474 713	8 478 981
Norway					
Spitzbergen –					
Bituminous	524 729	436 784	402 084	280 280	283 412
Poland					
Bituminous	179 303 000	186 112 000	192 622 000	201 000 084	193 121 000
Brown coal	39 305 000	40 760 000	41 005 000	38 083 000	36 866 000
Portugal					
Anthracite	193 447	195 265	180 102	179 118	177 453
Romania					
Anthracite & bituminous	8 696 000	8 637 000	8 794 000	9 299 000	9 686 000
Lignite	18 819 000	19 872 000	22 019 000	24 956 000	27 448 000
Brown coal	600 000	635 000	641 000	633 000	680 000
Soviet Union					
Anthracite & bituminous	548 018 000	555 100 000	557 140 000	533 960 000	552 954 000
Lignite	163 504 000	167 025 000	166 484 000	164 704 000	163 417 000
Spain					
Anthracite	3 548 099	3 760 522	3 830 589	3 659 590	4 025 852
Bituminous	6 969 235	8 114 575	7 667 695	7 790 918	8 708 325
Lignite	4 150 363	5 812 868	8 271 535	10 701 417	8 865 215

## Production of Coal

Country	1976	1977	1978	1979	1980
Turkey					
Bituminous	8 080 756	7 676 743	7 741 311	7 199 786	6 598 755
Lignite	13 721 995	14 828 264	18 030 048	15 602 578	16 940 248
Yugoslavia					
Bituminous	547 000	512 000	471 000	434 000	388 000
Lignite	27 148 000	29 611 000	30 360 000	32 329 000	36 949 000
Brown coal	9 110 000	8 960 000	8 853 000	9 351 000	9 665 000
Botswana	224 099	294 039	314 486	355 115	371 395
Morocco					
Anthracite	702 000	707 000	720 000	710 000	680 000
Mozambique					
Bituminous	553 000	310 000	118 000	320 000	408 000
Nigeria					
Sub-bituminous	135 514	237 510	400 212	172 147	612 802
South Africa					
Anthracite	2 459 429	2 558 960	2 150 038	3 308 727	3 895 455
Bituminous	74 600 187	82 851 583	88 207 790	100 459 139	111 224 519
Swaziland					
Bituminous	126 140	128 990	165 874	168 409	175 984
Tanzania					
Bituminous	824	2 096	6 541	5 572	4 250
Zaire					
Bituminous	112 219	127 955	96 771	99 220	138 000
Zambia					
Bituminous	772 513	708 077	615 145	598 507	568 799
Zimbabwe					
Bituminous	3 678 776	3 029 477	3 065 804	3 186 433	3 133 036
Canada					
Bituminous	14 388 822	15 301 000	17 141 000	18 610 252	20 150 880
Sub-bituminous	6 409 619	7 902 000	8 278 000	9 574 698	10 544 445
Lignite	4 677 597	5 478 000	5 058 000	5 012 629	5 970 648
Mexico					
Bituminous	5 649 628	6 610 223	6 755 556	7 356 696	...
USA					
Anthracite	5 650 159	5 317 088	4 569 000	3 987 000	)
Bituminous	592 442 000	601 601 000	544 733 000	663 050 000	) 752 691 000
Lignite	23 251 000	26 517 000	32 591 000	38 623 000	)
Argentina					
Lignite	614 585	533 312	434 141	726 939	* 400 000
Brazil					
Bituminous & lignite	7 032 649	10 108 830	11 923 095	14 033 913	* 14 500 000
Chile					
Bituminous	1 222 536	1 270 867	1 089 842	915 002	* 800 000
Colombia					
Bituminous	4 000 000	4 204 100	4 930 000	* 5 000 000	* 4 000 000
Peru					
Anthracite	10 816	23 410	23 250	24 000	...
Venezuela					
Bituminous	87 000	121 000	81 000	* 60 000	* 50 000
Afghanistan (c)					
Bituminous	159 900	172 700	217 500	...	...
Burma (b)	18 698	27 433	38 610	36 064	* 27 000
China	* 440 000 000	* 550 000 000	* 618 000 000	* 635 000 000	* 620 000 000
India					
Bituminous	101 876 000	110 247 000	101 973 000	103 845 000	109 101 000
Lignite	3 895 000	3 632 000	3 613 000	3 264 000	4 548 000
Indonesia					
Bituminous	192 910	230 627	264 180	279 000	304 000
Iran (c)					
Bituminous	* 900 000	* 900 000	* 900 000	* 900 000	* 700 000
Japan					
Anthracite & bituminous	18 396 029	18 246 245	18 991 274	17 640 804	* 18 024 000
Lignite	50 421	54 711	36 839	30 492	* 24 000

## Coal

**Production of Coal**

tonnes

Country	1976	1977	1978	1979	1980
Korea, Dem. P.R. of					
Anthracite	* 33 000 000	* 34 500 000	* 35 000 000	* 35 000 000	* 36 000 000
Bituminous	* 7 800 000	* 8 300 000	* 8 800 000	* 8 800 000	* 8 800 000
Lignite	* 200 000	* 200 000	* 200 000	* 200 000	* 200 000
Korea, Republic of					
Anthracite	16 428 000	17 233 000	18 054 000	18 208 000	18 543 000
Mongolia (a)	2 921 000	3 318 000	3 400 000	* 3 400 000	...
Pakistan					
Lignite	1 300 000	1 050 000	* 1 120 000	1 346 000	1 695 000
Philippines					
Bituminous	120 810	284 554	255 054	263 132	276 288
Taiwan					
Bituminous	3 235 810	2 955 915	2 883 904	2 719 751	2 573 530
Thailand					
Lignite	680 343	438 570	638 942	1 356 467	1 426 566
Vietnam					
Anthracite	* 5 500 000	* 6 100 000	* 6 200 000	* 6 100 000	...
Australia					
Bituminous	69 370 000	72 679 000	74 094 000	76 794 000	77 043 000
Sub-bituminous	5 483 000	5 529 000	5 733 000	6 365 000	7 207 000
Brown coal	30 940 000	29 250 000	32 860 000	32 597 000	32 895 000
New Zealand					
Bituminous	448 000	388 800	363 800	382 500	486 600
Sub-bituminous	1 867 000	1 816 000	1 667 800	1 354 800	1 436 900
Lignite	171 000	164 100	150 900	209 000	194 000
World total	3 349 000 000	3 518 000 000	3 540 000 000	3 722 000 000	3 799 000 000

(a) Including lignite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

## Exports of Coal

Country	1976	1977	1978	1979	1980
United Kingdom					
Anthracite	1 033 725	738 967	532 683	846 216	1 014 614
Bituminous	400 672	1 201 678	1 730 615	1 493 160	3 027 598
Briquettes	232 741	156 994	145 725	174 391	118 881
Belgium-Luxembourg					
Anthracite	47 859	28 564	49 448	65 208	48 012
Other	343 176	338 198	221 709	438 968	515 411
France					
Anthracite	190 169	201 045	177 588	133 318	100 602
Bituminous	403 683	385 802	354 161	436 236	358 710
Lignite	19 007	12 775	6 370	6 852	6 617
Briquettes	50 111	45 034	27 786	41 368	50 249
Germany, Federal Republic of					
Brown coal	11 122	26 092	66 075	163 615	275 152
Other (b)	12 804 510	14 286 954	18 656 165	15 224 923	12 304 190
Briquettes	664 194	706 493	825 302	945 011	959 407
Irish Republic (b)	30 625	49 130	57 945	65 760	38 446
Italy (b)	5 246	14 489	5 544	13 019	18 718
Netherlands					
Anthracite	213 731	187 519	141 169	272 568	213 439
Other	246 013	274 896	343 844	759 518	1 333 147
Briquettes	5 696	14 372	4 828	11 089	3 309
Austria					
Brown coal	9 031	8 341	5 433	11 575	24 052
Czechoslovakia					
Brown coal	1 607 000	1 654 000	1 515 000	1 647 000	2 160 000
Other	3 770 000	3 308 000	3 745 000	3 366 000	3 728 000
German Democratic Republic					
Briquettes	2 287 000	2 243 000	2 211 000	1 806 000	2 212 000
Hungary					
Brown coal	55 455	56 138	37 460	20 983	44 547
Norway	95 731	164 422	77 042	63 577	91 120
Poland					
Brown coal	3 084 000	3 387 000	3 332 000	2 974 000	1 569 000
Other	38 944 000	39 317 000	40 099 000	41 437 000	31 048 000
Soviet Union					
Anthracite	* 4 600 000	* 4 700 000	* 4 700 000	* 4 700 000	* 4 000 000
Other	* 22 300 000	* 22 500 000	* 22 500 000	* 23 000 000	* 23 000 000
Spain					
Anthracite	14 303	21 927	16 232	14 455	14 072
Sweden (b)	5 931	32 034	31 555	24 499	3 994
Switzerland	2	104	6	4 876	403
Turkey					
Lignite	—	—	244 617	130 885	...
Other	500	700	520	1 485	...
Yugoslavia					
Brown coal	14 402	174 429	374 013	296 267	318 833
Lignite	240 761	42 946	23 762	77 211	78 660
Morocco					
Anthracite	30 030	10 380	54 928	77 622	81 012
Mozambique	204 843	156 138	...	...	...
Nigeria	10 416	4 000	3 600	...	...
South Africa					
Anthracite	1 530 151	2 223 833	2 528 160	3 363 925	3 409 202
Bituminous	4 430 991	10 478 234	12 860 508	19 977 383	25 741 032
Swaziland	109 819	76 913	105 342	165 170	139 558
Zimbabwe	...	...	216 614	195 952	229 498
Canada	11 772 151	12 069 202	13 657 443	13 852 775	14 310 708
USA					
Anthracite	558 070	566 907	785 875	1 118 332	1 628 371
Bituminous	53 891 778	32 096 879	36 129 749	58 770 047	81 539 975
Lignite	79 273	37 331	20 703	23 940	59 025
Argentina	507	638	656	...	...
Colombia					
Anthracite	15 666	17 223	...	...	...
Bituminous	3 085	101 489	* 125 000	129 395	86 458

## Coal

**Exports of Coal**

tonnes

Country	1976	1977	1978	1979	1980
China (c)	* 322 000	* 490 800	* 772 200	* 1 400 000	* 2 100 000
India (a)	598 836	639 908	264 895	93 660	...
Japan	51 213	31 651	47 740	59 563	70 726
Korea, Dem. P.R. of	* 70 000	* 40 000	* 27 000	* 57 000	...
Korea, Republic of Anthracite	10 000	9 000	4 000	...	...
Australia	32 870 000	36 383 000	38 052 000	41 006 000	...

Note: This table excludes bunker shipments

(a) Years ended 31 March following that stated

(b) Including anthracite

(c) IGS estimates, based on imports into Japan



## Imports of Coal

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Anthracite	141 979	269 027	217 423	251 281	320 642
Other	2 694 183	2 169 516	2 131 910	4 101 829	7 013 065
Briquettes	82 237	85 244	77 257	91 988	169 986
Belgium-Luxembourg					
Anthracite	1 853 870	1 918 684	2 189 474	2 218 140	1 807 545
Other	6 088 811	5 157 392	5 586 648	7 950 986	8 873 843
Briquettes	56 196	56 543	54 675	71 029	82 441
Denmark					
Coal	4 177 022	5 565 900	6 110 405	7 555 732	9 929 449
Briquettes	17 280	15 777	13 007	22 557	114 720
France					
Anthracite	2 261 518	2 077 998	2 164 335	2 313 018	2 534 387
Bituminous	16 493 343	19 444 092	21 618 731	24 394 826	27 257 426
Lignite	11 836	11 929	11 024	11 774	11 526
Briquettes	208 219	230 903	431 919	432 546	305 760
Germany, Federal Republic of					
Anthracite	415 900	270 372	155 694	210 745	154 025
Brown coal	1 550 544	1 602 103	1 460 151	1 590 319	2 124 539
Other	5 554 416	6 082 780	6 408 807	7 562 192	8 969 458
Briquettes	14 771	12 703	13 942	15 421	17 821
Irish Republic					
Anthracite	27 102	37 727	56 479	48 705	36 825
Bituminous	579 326	829 943	783 550	1 167 219	1 168 360
Italy					
Anthracite	278 471	324 751	497 051	373 231	293 977
Bituminous	11 562 732	11 955 667	11 238 632	13 491 693	16 222 716
Lignite	38 342	44 245	26 572	41 828	47 506
Briquettes	46 867	66 610	39 462	47 308	64 011
Netherlands					
Anthracite	197 811	329 125	337 572	286 047	417 808
Brown coal	1 102	15 723	54 930	153 764	156 168
Other	4 712 344	5 565 102	4 693 083	5 924 741	6 737 607
Briquettes	17 050	17 961	22 152	36 294	43 515
Austria					
Anthracite	...	...	34 823	43 424	52 840
Brown coal	259 595	226 807	247 893	228 527	283 372
Other	2 606 960	2 331 643	2 257 001	2 750 492	2 805 265
Briquettes	373 148	322 041	285 943	299 286	325 686
Bulgaria	6 184 000	6 251 000	6 201 000	6 360 000	6 732 000
Czechoslovakia					
Brown coal	...	318 000	466 000	475 000	438 000
Other	5 209 000	5 619 000	5 591 000	5 492 000	5 058 000
Finland					
Anthracite	105 964	94 660	86 169	124 205	127 242
Other	2 676 005	4 192 568	4 703 069	4 647 005	4 542 386
German Democratic Republic (c)	6 096 000	6 058 000	5 936 000	8 657 000	6 828 000
Greece					
Anthracite	5 810	6 303	52 142	6 000	) 533 000
Other	565 658	380 015	323 747	448 000	)
Greenland	3 857	...	2 652	2 790	...
Hungary					
Coal (c)	1 297 000	1 524 288	1 420 029	1 514 663	1 622 633
Briquettes	514 704	572 567	500 134	462 037	503 747
Norway (a)					
Anthracite	88 878	85 329	79 535	92 940	103 425
Other	364 478	335 547	367 954	579 420	635 014
Poland					
Anthracite	50 000	41 000	30 000	26 000	30 000
Other	1 080 000	1 080 000	1 044 000	945 000	1 012 000
Portugal					
Anthracite	3 701	7 913	7 961	4 578	12 000
Other	404 155	357 326	425 322	371 366	297 192
Romania	2 622 900	3 439 900	4 668 500	3 844 900	...
Soviet Union	9 376 000	* 9 500 000	* 10 000 000	* 10 000 000	* 10 000 000

## Coal

## Imports of Coal

tonnes

Country	1976	1977	1978	1979	1980
Spain					
Anthracite	35 523	10 429	7 479	5 310	8 000
Brown coal	19 695	12 327	6 391	7 086	7 000
Other	4 513 192	3 935 112	3 369 128	4 186 399	5 670 000
Sweden					
Anthracite	177 352	115 400	31 757	43 638	44 949
Other	1 840 325	1 284 208	1 512 949	2 075 556	2 136 655
Switzerland					
Anthracite	114 024	143 047	141 499	317 049	573 437
Briquettes	52 363	53 313	49 180	61 618	65 803
Turkey	248 942	484 271	636 454	549 694	...
Yugoslavia					
Anthracite	130 492	185 493	209 565	200 496	137 465
Lignite	22 131	29 537	399	—	—
Other	2 491 297	2 418 747	1 463 914	3 335 365	3 420 285
Briquettes	105 325	194 990	139 447	51 550	111 948
Algeria	13 074	41 164	30 530	...	...
Egypt	978 513	1 042 455	857 267	356 990	...
Ghana	18 188	1 524	12 000	...	...
Kenya	61 990	62 010	47 738	15 875	15 563
Madagascar	21 554	16 798	13 206	28 863	...
Malawi	62 471	56 529	55 307	...	...
Morocco	10 686	8 782	7 860	10 474	9 951
Mozambique	151 415	161 381	...	...	...
Nigeria	4 171	16	49	...	...
South Africa	302 894	295 663	198 593	175 887	199 473
Tunisia	23 229	20 098	27 085	32 739	...
Zaire	27 555	29 474	42 999	12 058	21 006
Zimbabwe	...	...	...	22 951	...
Canada					
Anthracite	213 381	293 171	225 638	159 081	331 174
Bituminous	14 281 066	14 900 274	12 900 419	17 280 373	15 514 002
Other	90 557	126 086	99 833	101 329	202 369
Cuba	41 607	41 910	...	...	...
Mexico	88 460	624 945	567 037	733 540	...
St Pierre & Miquelon	1 000	...	...	...	...
USA					
Bituminous	865 136	1 071 745	1 688 486	1 107 581	811 797
Other	243 358	583 129	1 472 684	784 084	301 181
Argentina	807 268	1 252 502	954 353	...	...
Brazil					
Anthracite	6 807	12 998	24 670	35 372	240 677
Bituminous	3 167 673	3 550 309	3 615 592	4 443 141	4 279 895
Chile	140 000	179 245	172 547	...	...
Peru					
Bituminous	20 074	50 515	...	...	...
Uruguay	22 145	1 590	403	4 136	...
Venezuela	12 833	23 736	31 734	...	...
Burma	202 000	202 000	191 000	...	...
Hong Kong	12 972	11 114	7 711	5 814	2 851
India	35	2 805	1 583	639 705	...
Indonesia	9 342	32	2 515	4 082	4 876
Iran (b)	5 143	3 074	* 83 000	* 51 000	...
Israel (d)	156	195	305	116	244
Japan					
Anthracite	1 071 987	1 489 110	1 052 253	1 028 255	1 191 229
Lignite	12 219	42 899	38 168	42 322	33 970
Other	59 686 541	59 351 856	51 124 931	57 525 808	67 036 601
Korea, Dem. P.R. of	* 387 000	* 365 000	* 300 000	...	...
Korea, Republic of	1 493 951	2 006 813	2 402 921	6 337 991	7 296 353
Malaysia					
Anthracite	22 119	20 141	...	...	...
Philippines	5 041	25 589	51 540	1 510	2 422

**Imports of Coal**

tonnes

Country	1976	1977	1978	1979	1980
Syria	1 699	1 130	1 059	808	...
Taiwan	213 532	757 812	1 369 200	2 720 141	4 068 985
Thailand	3 450	2 163	12 990	20 178	...
Australia	11 050	2 666	22 696	16 016	2 159
New Caledonia	73 983	124 598	44 105	87 906	119 799

(a) Excludes coal imported from Spitzbergen

(b) Years ended 20 March following that stated

(c) Including anthracite

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

## Cobalt

**Mine Production of Cobalt**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
Finland	1 207	1 227	1 236	1 070	950
Soviet Union	* 1 800	* 1 900	* 1 950	* 1 800	* 2 050
Botswana	198	165	261	294	226
Morocco	911	990	1 133	1 041	* 1 000
Zaire	10 686	10 208	13 146	13 599	* 14 700
Zambia	2 175	1 704	2 063	3 176	3 310
Zimbabwe	—	—	17	204	115
Canada	1 356	1 485	1 233	1 640	1 603
Cuba	* 1 500	* 1 500	* 1 400	* 1 300	* 1 500
Philippines	492	1 084	1 192	1 370	1 514
Australia	3 250	3 324	3 265	3 046	* 3 000
New Caledonia	3 568	3 504	2 015	2 491	2 683
World total	27 100	27 100	28 911	31 000	32 700

Note: There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered. Figures in this table relate where possible to cobalt recovered. The principal exceptions to this are Australia and New Caledonia, the figures for which relate to cobalt in ore raised

**Production of Cobalt Metal**

Country	1976	1977	1978	1979	1980
United Kingdom (a)	...	...	...	...	...
Belgium (b)	...	...	...	...	...
France	851	742	871	659	* 900
Germany, Federal Republic of	384	400	300	* 330	* 400
Czechoslovakia (c)	...	...	...	...	...
Finland	1 011	1 109	1 052	1 178	1 152
Norway	576	705	522	953	1 275
Soviet Union (d)	* 1 800	* 1 900	* 1 950	* 1 800	* 2 050
Zaire	10 686	10 208	13 146	13 599	* 14 700
Zambia	2 175	1 704	2 063	3 176	3 310
Canada	298	459	519	474	* 470
USA	165	221	292	421	* 450
Japan	515	1 093	1 864	2 653	2 867
World total	19 100	19 100	23 200	25 800	28 200

(a) Details of production not known: it is believed that currently about 600 tonnes of cobalt in compounds is produced annually in the United Kingdom from imported materials

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

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

(d) Excluding production from imported material

## Cobalt

**Exports of Cobalt**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	1 428	624	885	962	623
Oxides	634	316	411	244	289
Belgium-Luxembourg (a)					
Metal	* 3 800	* 4 500	* 4 000	* 3 300	* 2 300
Oxides	* 1 700	* 1 600	* 2 200	* 1 700	* 1 000
France					
Metal	943	1 066	1 100	797	835
Oxides	201	209	192	118	181
Germany, Federal Republic of					
Metal	322	340	796	847	821
Oxides	67	41	86	45	88
Italy	44	29	72	107	30
Netherlands					
Metal	124	95	100	254	196
Oxides	39	26	62	78	48
Finland					
Metal	811	999	853	1 069	1 201
Oxides	19	—	—	0	0
Norway	936	677	559	885	1 139
Sweden					
Metal	23	40	63	221	103
Oxides	—	2	0	85	0
Switzerland					
Oxides	7	7	11	2	1
Morocco					
Ore	8 550	9 076	8 922	7 530	7 489
Zaire	8 129	8 845	9 567	8 139	...
Zambia	2 312	1 682	* 2 000	* 3 000	* 2 000
Canada					
Metal	1 040	687	826	302	327
of which: Re-exports	516	3	110	6	2
Oxides	471	605	748	445	325
USA					
Metal	1 967	1 228	1 436	1 170	1 075
Oxides	161	639	816	1 357	780
Japan					
Oxides	11	10	87	41	85

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

**Imports of Cobalt**

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	2 262	2 124	2 266	3 032	2 189
Oxides	807	1 096	1 141	683	1 333
Belgium-Luxembourg					
Oxides	66	59	66	54	43
Denmark	23	21	33	30	19
France					
Ore	8 679	8 678	9 727	7 684	5 698
Metal	796	660	964	897	1 139
Oxides	198	169	293	267	200
Germany, Federal Republic of					
Metal	1 870	2 091	2 059	1 848	1 703
Oxides	346	320	603	483	319
Italy					
Metal	256	312	369	338	258
Oxide	256	254	215	189	193
Netherlands					
Metal	84	17	78	194	180
Oxides	412	274	387	286	197
Austria					
Oxides	3	5	6	2	4
Finland					
Metal	3	126	306	418	7
Oxides	53	52	309	622	246
Norway					
Metal	4	5	3	18	69
Oxides	19	10	9	9	6
Portugal					
Oxide	12	23	6	9	4
Spain					
Oxides	218	138	143	75	73
Sweden					
Metal	545	237	484	509	487
Oxides	4	5	3	4	2
Switzerland					
Oxides	7	7	16	2	1
Turkey					
Oxides	333	15	200	21	...
Yugoslavia					
Metal	83	71	...	...	...
Oxides	19	35	32	22	17
South Africa					
Metal	67	90	139	64	100
Oxides	12	2	6	8	4
USA					
Metal	6 862	7 635	7 479	8 567	6 783
Oxide	63	230	504	230	188
Argentina	84	78	48	...	...
Brazil					
Metal	289	237	312	237	303
Oxide	93	78	86	53	52
Venezuela					
Oxides	17	7	13	...	...
Hong Kong					
Oxide	56	49	41	18	18
India					
Metal	59	137	151	136	...
Oxide (a)	7	3	8	5	...
Indonesia					
Oxides	38	15	9	6	5
Iran (b)					
Oxides	79	21	...	...	...
Japan					
Metal	3 932	2 085	1 359	1 677	1 693
Oxide	754	597	615	651	292

## Cobalt

**Imports of Cobalt**

tonnes

Country	1976	1977	1978	1979	1980
Korea, Republic of Oxides	18	25	26	16	9
Taiwan Oxides	46	32	31	17	23
Australia Metal	28	20	29	30	13
Oxide	23	7	13	16	11

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated



## Mine Production of Copper

tonnes (metal content)

Country	1976	1977	1978	1979	1980
United Kingdom (a)	552	453	135	...	200
France	188	128	200	400	500
Germany, Federal Republic of	1 613	1 210	821	851	1 274
Irish Republic	4 097	4 829	4 700	5 000	4 000
Italy	1 000	700	531	489	604
Albania	* 10 000	* 10 000	* 11 500	* 9 700	* 10 500
Austria	1 138	—	—	—	—
Bulgaria	* 57 000	* 57 000	* 57 000	* 60 000	* 62 000
Czechoslovakia	8 500	9 300	8 200	8 000	4 287
Finland	41 700	46 746	46 818	41 100	36 800
German Democratic Republic	* 16 000	* 17 000	* 16 000	* 15 000	* 15 000
Greece	2 600	3 500	1 500	—	100
Hungary	262	304	203	116	—
Norway	31 080	29 053	29 073	28 659	28 869
Poland	263 000	282 000	312 000	340 000	343 000
Portugal	387	331	326	509	714
Romania	* 30 000	* 27 000	* 27 000	* 28 000	* 28 000
Soviet Union	* 1 130 000	* 1 100 000	* 1 140 000	* 1 150 000	* 1 150 000
Spain	34 867	34 750	33 948	18 400	35 900
Sweden	44 860	44 764	47 412	45 800	42 800
Turkey	29 323	34 979	27 188	30 521	20 800
Yugoslavia	120 130	116 218	123 319	111 421	116 800
Algeria	400	400	200	200	200
Botswana	12 473	11 788	14 615	14 563	15 554
Congo	408	1 015	608	* 1 000	—
Mauritania	10 000	8 000	2 830	—	—
Morocco	4 400	3 370	4 300	8 300	8 400
Mozambique	2 000	3 000	300	200	—
Namibia	43 500	49 200	37 700	41 900	39 200
South Africa	196 880	205 414	205 745	190 591	200 683
Uganda	* 7 000	* 4 000	* 1 300	—	—
Zaire	443 948	452 716	472 533	451 548	459 700
Zambia	711 681	658 788	654 012	586 046	609 935
Zimbabwe	48 186	34 767	33 848	29 724	26 901
Canada (b)	730 930	759 423	659 380	636 383	708 416
Cuba	2 898	2 583	2 821	2 840	3 300
Guatemala	3 500	2 500	2 023	2 500	800
Honduras	364	535	600	* 1 000	...
Mexico	88 970	89 662	87 186	107 109	175 400
Nicaragua	800	300	100	—	—
USA	1 456 564	1 364 375	1 357 587	1 443 556	1 168 311
Argentina	265	169	319	89	100
Bolivia	4 680	3 670	3 267	1 797	1 882
Brazil	54	25	59	62	1 403
Chile	1 005 200	1 056 200	1 035 500	1 061 000	1 067 700
Colombia	260	310	400	1 100	1 400
Ecuador	267	765	507	1 200	1 200
Peru	220 269	341 000	366 400	397 200	365 300
Burma	* 92	* 100	* 100	* 100	* 100
China	* 150 000	* 155 000	* 160 000	* 160 000	* 165 000
Cyprus	7 900	6 800	4 678	1 200	81
India	25 400	30 200	26 600	27 000	26 800
Indonesia	69 100	57 100	58 000	57 200	56 600
Iran	6 000	6 000	6 000	3 000	1 000
Israel	2 100	—	—	—	400
Japan	81 606	81 395	71 951	59 960	53 200
Korea, Dem. P.R. of	* 15 000	* 15 000	* 15 000	* 15 000	* 12 000
Korea, Republic of	2 097	1 688	669	433	896

## Copper

**Mine Production of Copper**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
Malaysia	18 200	24 000	26 000	24 514	26 990
Philippines	237 588	272 792	263 589	298 300	323 485
Taiwan	2 000	2 000	800	600	500
Australia	218 480	221 579	222 111	237 610	210 850
Papua New Guinea	176 519	182 291	198 603	170 788	146 813
World total	7 850 000	7 950 000	7 900 000	7 900 000	7 800 000

(a) In a mixed copper-zinc concentrate

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

**Smelter Production of Copper**

Country	1976	1977	1978	1979	1980
Belgium	* 14 000	* 13 000	* 9 000	* 1 500	* 700
Germany, Federal Republic of	193 700	189 593	165 800	158 200	153 900
Albania	10 000	9 000	9 500	9 700	10 500
Austria (a)	28 589	31 707	31 485	32 812	43 300
Bulgaria	* 57 000	* 57 000	* 58 000	* 57 000	* 57 000
Czechoslovakia	11 400	10 000	10 000	10 000	30 966
Finland	50 300	60 800	62 900	54 600	47 200
German Democratic Republic	22 500	18 000	17 000	19 000	18 000
Hungary	5 154	3 777	1 005	2 288	2 069
Norway	23 393	26 575	20 061	27 339	33 690
Poland	270 000	290 000	320 000	320 000	320 000
Portugal	2 800	3 400	3 000	5 500	6 600
Romania	40 491	41 429	38 880	41 120	40 675
Soviet Union	* 1 144 000	* 1 100 000	* 1 170 000	* 1 170 000	* 1 150 000
Spain	120 286	145 444	112 500	108 300	103 058
Sweden	62 867	61 720	67 044	64 544	56 441
Turkey	28 100	31 332	26 196	22 212	15 900
Yugoslavia	121 600	97 397	107 507	108 732	114 300
Namibia	36 100	53 400	45 900	42 700	40 000
South Africa	168 000	188 400	189 400	182 300	185 800
Uganda	7 000	2 201	980	—	—
Zaire (b)	407 700	450 700	391 000	370 200	425 700
Zambia (b)	705 900	658 500	653 900	595 100	601 348
Zimbabwe	23 500	28 000	34 200	31 400	26 700
Canada	488 600	500 300	425 300	384 500	492 700
Mexico	85 175	87 457	86 978	83 857	85 700
USA	1 392 186	1 301 970	1 288 378	1 335 607	1 008 397
Chile	856 300	888 400	927 400	949 900	953 100
Peru	188 400	321 100	319 000	370 600	348 600
China	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
India	24 696	23 489	19 480	21 455	28 489
Japan	838 200	915 200	905 900	921 400	929 800
Korea, Dem. P.R. of	* 20 000	* 20 000	* 20 000	* 18 000	* 17 000
Korea, Republic of (a)	30 911	42 880	52 442	63 082	72 931
Taiwan	11 660	11 669	14 353	15 305	19 495
Australia	167 346	167 664	164 395	163 192	172 783
World total	7 800 000	8 000 000	8 000 000	8 000 000	7 800 000

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

(a) Refined

(b) Including leach cathodes

## Copper

**Exports of Copper**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore & matte	93	2 099	973	6	4
Unwrought -					
Unrefined	1 773	—	4	75	80
Refined	12 291	6 880	11 110	22 569	32 938
Alloys	18 866	38 238	28 780	25 418	27 522
Scrap	39 056	29 483	40 431	59 593	82 903
Belgium-Luxembourg					
Ore	772	1 539	3 443	733	716
Burnt cupreous pyrites	160 213	162 205	142 309	144 883	138 574
Unwrought -					
Matte & unrefined (h)	1 428	884	2 128	2 945	6 662
Refined	307 507	320 965	304 783	297 601	299 149
Alloys	8 507	6 885	6 466	7 971	8 222
Scrap	12 898	16 573	19 912	26 846	26 356
Denmark					
Unwrought	—	151	15	127	70
Unwrought alloys	819	862	867	1 110	1 040
Scrap	8 849	11 120	12 499	12 735	15 118
France					
Ore	455	2 309	0	564	1 618
Matte (h)	551	1 390	504	1 181	2 345
Unwrought -					
Unrefined	4 439	5 076	3 665	5 790	3 335
Refined	6 488	7 388	17 248	17 322	12 007
Alloys	2 711	5 248	4 343	4 691	3 715
Scrap	100 508	96 091	98 204	104 933	108 405
Germany, Federal Republic of					
Burnt cupreous pyrites	144	2 973	172	10 732	954
Matte (h)	212	338	300	96	617
Unwrought -					
Unrefined	38 913	32 364	29 589	22 384	24 976
Refined	53 700	66 954	112 695	86 686	73 646
Alloys	9 576	8 395	9 347	12 220	13 505
Scrap	39 565	46 340	53 956	54 820	66 832
Irish Republic					
Ores & concentrates	18 529	18 985	25 002	17 703	18 888
Unwrought	961	652	359	253	454
Scrap	—	—	5 869	5 910	6 698
Italy					
Ore	2 817	1 604	2 631	1 232	4 125
Matte (h)	1 773	378	45	328	1 073
Unwrought -					
Unrefined	787	2 131	877	72	113
Refined	1 520	790	751	424	2 613
Alloys	3 036	1 817	1 591	4 977	1 584
Scrap	12 144	11 028	9 088	15 712	11 149
Netherlands					
Unwrought	7 354	2 342	2 241	2 193	1 479
Unwrought alloys	3 400	2 916	2 312	3 079	4 466
Scrap	37 357	35 371	41 509	56 006	58 390
Austria					
Ore	1 246	550	91	116	5
Unwrought	12 155	12 192	17 238	18 774	17 955
Unwrought alloys	1 662	1 280	1 425	1 363	1 385
Scrap	704	1 304	2 474	3 242	3 713
Finland					
Unwrought -					
Unrefined	—	—	2	10 113	5 945
Refined	23 107	34 558	16 048	5 551	2 473
Alloys	526	2 749	1 492	1 228	894
Scrap	1 000	338	217	521	234

## Exports of Copper

tonnes

Country	1976	1977	1978	1979	1980
Norway					
Ore	105 715	98 728	98 239	98 797	89 498
Unwrought –					
Unrefined	5 865	6 841	5 586	6 192	7 376
Refined	14 793	19 558	14 614	20 051	25 484
Alloys	1 318	1 126	1 587	1 601	1 966
Scrap	2 303	2 673	4 221	4 569	4 166
Poland					
Unwrought	96 062	117 919	146 688	133 720	144 754
Portugal					
Unwrought	—	—	815	3 144	2 641
Soviet Union					
Unwrought	* 227 000	* 227 000	* 247 000	* 247 000	* 247 000
Spain					
Ore	1 141	2 637	36	98	...
Matte	626	575	689	325	233
Unwrought	29 803	43 438	46 504	29 970	59 965
Unwrought alloys	4 626	3 944	5 890	5 868	6 309
Scrap	1 093	1 592	705	704	884
Sweden					
Ore	32 064	36 231	15 794	27 177	6 895
Unwrought –					
Unrefined	2 784	—	25	3 045	723
Refined	30 369	36 978	27 097	24 495	17 841
Alloys	3 116	3 787	2 748	3 683	2 479
Scrap	1 053	718	350	687	1 838
Switzerland					
Unwrought –					
Refined	540	826	557	4 024	2 201
Alloys	5 029	5 362	4 809	5 813	4 429
Scrap	7 266	6 633	4 972	12 119	12 075
Yugoslavia					
Unwrought	60 639	18 740	16 070	8 357	14 334
Algeria					
Ore	1 337	1 000	800	1 000	...
Scrap	2 781	4 489	1 501	...	...
Botswana					
Ores & concentrates (b)	12 300	12 500	15 600	10 800	20 000
Congo					
Ores & concentrates	670	261	...	...	...
Ivory Coast					
Matte & scrap	628	708	1 046	1 023	...
Mauritania					
Ore (b)	11 000	7 000	2 800	—	...
Morocco					
Ore	22 700	18 095	10 419	21 272	22 274
Matte	—	—	—	1 219	1 743
Scrap	1 548	905	1 462	1 902	1 591
Senegal					
Unwrought & scrap	...	667	746	...	...
South Africa (f)					
Ores & concentrates	* 78 000	* 70 000	* 50 000	* 72 000	* 85 000
Unwrought	* 151 600	* 209 100	* 224 100	* 180 000	* 166 000
Tunisia					
Unwrought & scrap (g)	720	853	359	867	832
Uganda					
Unwrought	5 452	2 201	...	...	...
Zaire					
Ores & concentrates	30 869	142 854	61 133	86 394	...
Unwrought –					
Unrefined (e)	315 489	357 090	301 290	266 164	272 733
Refined	73 981	90 643	103 645	70 041	154 158
Scrap	366	447	...	...	...

## Copper

## Exports of Copper

tonnes

Country	1976	1977	1978	1979	1980
Zambia					
Unwrought –					
Unrefined	21 105	8 128	25 604	20 911	3 173
Refined	712 346	647 086	549 887	625 781	614 208
Zimbabwe					
Unwrought	...	...	35 856	26 772	22 700
Canada					
Ores, concentrates & matte (b)	294 823	279 583	282 162	318 347	286 046
Unwrought	323 326	294 535	247 754	191 140	335 028
Scrap	40 063	37 398	41 214	40 564	43 167
Mexico					
Concentrates	2 579	995	559	18 742	...
Unwrought –					
Unrefined	5 098	8 780	903	251	...
Refined	51	4 105	53	0	...
Trinidad & Tobago					
Scrap	523	1 135	3 085	364	...
USA					
Ores & concentrates (b)	7 138	21 934	17 486	44 565	106 825
Matte (b)	6 337	3 001	...	...	...
Unwrought –					
Unrefined	2 486	14 877	10 384	7 466	3 819
Refined	102 343	56 053	95 296	74 888	18 926
Alloys	1 546	1 447	7 899	7 571	3 460
Scrap	103 712	109 054	156 065	171 736	191 622
Bolivia					
Ore (b)	4 681	3 174	2 990	1 740	1 676
Chile					
Ores & concentrates (b)	156 200	171 000	112 400	99 100	124 400
Unwrought –					
Unrefined	231 000	216 700	163 300	163 500	151 500
Refined	594 700	617 500	702 100	745 900	769 100
Peru					
Ore (b)	12 085	17 530	48 100	31 200	17 532
Unwrought	172 053	293 909	307 775	351 951	334 450
Cyprus					
Ores & concentrates	42 520	31 215	26 225	12 322	812
Hong Kong					
Scrap	8 157	9 167	11 219	14 482	17 354
Indonesia					
Ores & concentrates	216 828	182 292	186 601	168 634	193 509
Iran					
Ore (c)	4 200	...	* 17 000	* 9 000	...
Israel (i)					
Matte	239	428	148	85	(a) 2 522
Cement copper	4 180	266	—	36	79
Scrap	1 759	2 648	2 223	3 130	4 419
Japan					
Unwrought	29 333	48 044	55 383	52 469	216 406
Scrap	467	669	558	299	527
Malaysia					
Ore	81 354	98 859	...	...	...
Scrap	1 794	1 782	...	...	...
Philippines					
Ores & concentrates	956 558	1 007 365	895 299	1 049 124	1 141 855
Scrap	1 305	930	1 679	916	1 729
Singapore					
Scrap	7 193	7 531	9 896	15 543	13 865
Taiwan					
Ores & concentrates	264	—	—	—	—
Unwrought	787	537	448	236	272
Scrap	4 828	3 150	5 518	7 552	5 279

**Exports of Copper**

Country	1976	1977	1978	1979	1980
Australia					
Ores, concentrates & matte (b)	51 962	44 926	41 418	49 155	55 467
Unwrought –					
Unrefined	9 935	9 075	4 144	28 756	18 100
Refined	76 240	74 689	60 065	46 978	50 784
Alloys	23	43	158	435	319
Scrap	393	475	348	340	601
New Zealand (d)					
Unwrought	92	132	212	59	—
Scrap	1 016	493	800	1 797	1 106
Papua New Guinea					
Ores & concentrates (b)	179 194	182 048	193 299	171 258	142 241

Note: In this table the term 'unwrought' copper corresponds to item 682.1 of the Standard International Trade Classification (Revision 2) and includes both unrefined (including blister) and refined copper. Additionally the term 'unwrought' as used here includes alloys unless these are separately specified. The term 'scrap' includes scrap alloys

(a) Including unwrought and waste

(b) Cu content

(c) Years ended 20 March following that stated

(d) Years ended 30 June of that stated

(e) Including leach cathodes

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

(g) Including matte

(h) From 1977 includes cement copper

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

## Copper

## Imports of Copper

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore & matte	1 491	1 112	1 935	563	644
Unwrought –					
Unrefined	50 989	58 583	50 847	60 472	74 631
Electrolytic	353 710	369 830	336 264	299 992	258 210
Other refined	29 378	14 604	16 999	16 644	13 131
Alloys	838	1 698	1 204	670	732
Scrap	11 898	12 362	9 667	10 546	9 171
Belgium-Luxembourg					
Ore (i)	24 053	21 283	5 485	1 774	2 628
Burnt cupreous pyrites	37 730	23 847	13 240	7 964	3 104
Unwrought –					
Matte & unrefined (j)	229 932	223 311	196 244	172 410	189 986
Refined	302 216	358 305	361 165	343 106	317 255
Alloys	5 573	3 465	2 741	2 993	2 515
Scrap	82 098	69 660	64 993	100 383	124 528
Denmark					
Unwrought	4 859	6 670	5 164	3 518	3 105
Unwrought alloys	990	1 032	840	716	582
Scrap	1 473	817	1 460	2 909	3 123
France					
Ore	31	1 008	1	4	0
Matte (j)	1 179	544	522	45	1 054
Unwrought –					
Unrefined	23 894	33 733	22 734	21 258	17 895
Refined	338 080	305 311	279 251	343 897	412 546
Alloys	5 442	4 305	4 229	4 139	4 584
Scrap	16 705	15 450	19 086	24 870	36 739
Germany, Federal Republic of					
Ore	615 285	576 307	531 355	483 740	537 883
Burnt cupreous pyrites	888 865	818 467	510 709	611 115	546 261
Matte (j)	1 027	6 837	7 561	12 249	11 026
Unwrought –					
Unrefined	130 790	118 921	109 225	62 785	51 680
Refined	401 303	440 276	428 794	449 995	444 672
Alloys	49 566	49 303	47 951	55 111	51 016
Scrap	114 699	109 941	137 563	168 822	178 490
Irish Republic					
Unwrought	274	333	161	148	197
Italy					
Unwrought –					
Unrefined	4 798	5 778	4 654	6 802	2 241
Refined	292 496	299 584	351 646	338 464	372 834
Alloys	22 799	16 787	14 074	18 621	21 255
Scrap	69 061	72 639	69 579	76 309	99 524
Netherlands					
Unwrought	59 102	50 248	26 322	28 688	20 028
Unwrought alloys	1 494	2 060	1 699	2 382	1 520
Scrap	12 420	14 588	16 485	21 139	29 459
Austria					
Unwrought –					
Unrefined	9 706	12 949	15 948	7 887	5 479
Refined	10 348	8 066	4 406	3 664	9 261
Alloys	1 935	1 445	1 036	1 340	908
Scrap	12 938	12 116	15 602	23 280	20 113
Czechoslovakia					
Unwrought	63 000	58 000	56 000	58 000	63 000



## Imports of Copper

Country	1976	1977	1978	1979	1980
Finland					
Ore	15 805	11 813	4 192	24 705	9 934
Unwrought –					
Refined	16 277	9 996	13 913	11 806	23 436
Alloys	394	512	420	587	497
Scrap	781	171	366	1 002	1 768
German Democratic Republic					
Ores & concentrates	26 050	28 050	16 950	...	...
Unwrought	12 250	52 490	64 660	...	...
Scrap	630	1 470	2 160	...	...
Greece					
Unwrought	23 648	22 233	21 544	24 014	24 692
Unwrought alloys	325	304	341	707	265
Scrap	15	200	193	255	355
Hungary					
Unwrought (c)	30 248	37 639	32 888	25 995	28 962
Norway					
Unwrought	2 481	1 161	1 216	1 098	721
Unwrought alloys	964	588	1 863	1 551	1 538
Scrap	1 005	1 410	414	228	331
Poland					
Unwrought	1 512	1 023	589	—	...
Portugal					
Ore	696	805	6 249	62	10
Unwrought	10 193	17 603	14 893	11 850	12 464
Scrap	732	2 666	2 981	1 340	244
Romania					
Unwrought	* 18 500	* 33 700	* 27 100	...	...
Soviet Union					
Ore (a)	* 59 200	* 67 100	* 62 900	* 43 400	* 56 800
Unwrought	* 8 000	* 8 000	* 8 000	* 8 000	* 8 000
Spain					
Ore	174 126	188 928	222 248	191 109	204 097
Matte & cement	26 039	28 481	11 785	11 304	3 811
Unwrought –					
Unrefined	4 052	4 121	2 704	1 193	...
Refined	44 742	53 852	37 527	51 656	24 045
Alloys	49	101	126	243	222
Scrap	9 044	6 746	11 466	18 951	35 814
Sweden					
Ore	57 946	44 738	34 323	33 153	46 870
Matte (j)	8 643	2 564	11 616	10 371	8 009
Unwrought	65 668	49 151	70 923	71 476	72 224
Unwrought alloys	3 866	2 641	3 797	3 689	4 581
Scrap	3 189	2 817	4 074	6 184	4 988
Switzerland					
Unwrought –					
Refined	21 303	24 899	21 852	11 037	9 396
Alloys	1 629	1 799	1 359	1 063	1 170
Scrap	1 945	4 255	4 952	3 395	3 566
Turkey					
Ore	—	25 364	—	—	...
Unwrought	5 154	3 893	1 894	2 282	...
Scrap	240	1 890	269	622	...
Yugoslavia					
Concentrates	30 701	20 137	23 994	7 739	47 817
Unwrought	27 087	25 747	36 478	29 051	47 668
Unwrought alloys	4 725	1 438	3 583	7 044	2 744
Algeria					
Unwrought	2 192	3 830	4 325	...	...
Egypt					
Unwrought & scrap (k)	559	2 002	2 790	1 163	...

## Copper

## Imports of Copper

tonnes

Country	1976	1977	1978	1979	1980
South Africa					
Ores & concentrates	8 827	199	—	—	2 972
Unwrought	3 821	3 535	967	2 025	8 853
Unwrought alloys	32	104	111	101	161
Scrap	709	197	210	55	286
Canada					
Ores, concentrates, scrap (d)	14 012	16 427	18 398	2 640	38 975
Unwrought	9 124	18 821	21 439	32 541	13 465
Unwrought alloys	6 680	7 913	9 940	9 816	10 282
Scrap	4 754	3 765	7 586	8 916	7 006
Mexico					
Unwrought	30	49	2 162	1 805	...
USA					
Ores & concentrates (d)	64 126	38 177	20 916	22 433	13 756
Matte (d)	16 586	16 175	10 724	414	765
Unwrought –					
Unrefined (d)	40 355	41 898	89 407	68 137	47 655
Refined	346 112	354 506	414 697	215 161	458 112
Alloys	3 833	4 097	7 251	3 959	2 340
Scrap	26 654	25 953	28 619	29 615	29 764
Argentina					
Unwrought, refined	28 526	36 675	31 189	...	...
Brazil					
Unwrought, refined	150 552	182 299	156 989	190 175	208 159
Colombia					
Unwrought & scrap	1 192	1 937	...	...	...
Uruguay					
Unwrought	6	71	67	235	...
Venezuela					
Unwrought –					
Refined	3 655	5 768	6 068	...	...
Alloys	563	688	660	...	...
China					
Refined (b)	32 100	37 300	52 700	53 200	41 900
Hong Kong					
Unwrought	163	156	106	145	201
Scrap	2 079	2 988	1 644	2 198	4 927
India					
Unwrought (e)	29 703	32 609	69 695	43 257	...
Scrap	7 113	16 305	15 904	34 275	...
Indonesia					
Unwrought	462	348	292	5 062	12 248
Iran (f)					
Unwrought	1 744	...	* 300	* 600	...
Scrap	2 499	...	...	...	...
Israel (h)					
Unwrought	...	...	206	135	387
Japan					
Ores & concentrates	2 587 392	2 823 007	2 817 967	2 969 026	3 103 557
Matte & cement	—	—	141	1 580	2 574
Unwrought	232 344	273 395	333 073	395 054	290 803
Unwrought alloys	678	45	50	102	105
Scrap	33 798	40 991	55 049	49 356	49 929
Korea, Republic of					
Ore	67 859	90 804	55 766	128 809	233 999
Unwrought	10 501	21 520	...	26 269	15 470
Scrap	28 988	33 132	...	51 259	19 632
Malaysia					
Unwrought	34	71	...	...	...
Pakistan (g)					
Scrap	1 628	1 416	3 292	835	803
Philippines					
Unwrought	6 167	6 442	6 462	5 335	17 651

**Imports of Copper**

Country	1976	1977	1978	1979	1980
Singapore					
Unwrought	353	319	165	241	554
Scrap	1 368	1 341	1 561	3 060	5 026
Syria					
Unwrought (k)	1 412	849	661	549	...
Taiwan					
Ores & concentrates	8 025	55 118	20 654	61 106	131 315
Matte & cement	7	921	4 968	962	14
Unwrought	24 443	36 940	33 928	56 021	66 186
Scrap	5 705	10 426	14 083	16 329	35 072
Thailand					
Unwrought	2 852	4 363	5 483	5 887	...
Scrap	393	1 447	672	512	...
Australia					
Unwrought	8	33	11	228	224
Unwrought alloys	66	458	120	283	18
Scrap	957	796	869	1 109	2 070
New Zealand (g)					
Unwrought	1 141	2 245	1 038	2 452	3 068

Note: In this table the term 'unwrought' copper corresponds to item 682.1 of the Standard International Trade Classification (Revision 2) and includes both unrefined (including blister) and refined copper. Additionally the term 'unwrought' as used here includes alloys unless these are separately specified. The term 'scrap' includes scrap alloys

- (a) IGS estimates, based on known exports from certain countries
- (b) Imports from western countries only
- (c) Including semi-manufactures
- (d) Cu content
- (e) Years ended 31 March following that stated
- (f) Years ended 20 March following that stated
- (g) Years ended 30 June of that stated
- (h) Figures may be incomplete as value only given in Israeli trade return for imports from some countries
- (i) Partial figures. Imports from certain countries are confidential
- (j) From 1977 includes cement copper
- (k) Including matte

## Diamond

**Production of Diamond**

carats

Country	1976	1977	1978	1979	1980
Soviet Union	* 9 900 000	* 10 300 000	* 10 550 000	* 10 700 000	* 10 850 000
Angola	340 000	353 000	700 000	* 750 000	1 500 000
Botswana	2 361 000	2 691 000	2 799 000	4 394 000	5 146 000
Central African Republic	286 007	296 908	284 246	314 067	* 279 000
Ghana	2 283 000	1 947 000	1 423 000	1 253 000	* 1 200 000
Guinea	* 80 000	* 80 000	* 80 000	* 85 000	* 84 000
Ivory Coast	60 000	17 800	10 000	37 000	* 40 000
Lesotho	(a) 7 051	22 688	48 977	52 421	53 714
Liberia (a)	320 298	326 214	307 377	301 808	* 300 000
Namibia	1 693 994	2 001 217	1 898 211	1 652 536	1 560 000
Sierra Leone	999 441	746 290	797 043	855 164	592 018
South Africa	7 022 770	7 643 291	7 726 605	8 384 332	8 521 682
Tanzania	431 601	507 294	295 117	341 912	269 876
Zaire	11 821 000	11 215 000	11 245 000	8 734 000	10 235 000
Brazil	261 000	320 000	500 000	500 000	666 832
Guyana	13 897	16 679	17 226	15 824	10 236
Venezuela	851 000	687 000	756 000	803 000	825 000
India	20 487	18 297	15 942	15 229	14 371
Indonesia	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
World total	38 800 000	39 200 000	39 500 000	39 200 000	42 200 000

## Notes:

- 1 This table does not show production of synthetic diamond
- 2 In addition to the countries listed, China is also believed to produce diamonds

(a) Exports

## Exports of Diamond

Country	1976	1977	1978	1979	1980
United Kingdom					
Industrial	4 221 088	20 588 095	12 840 110	11 229 202	9 178 933
Other	72 127 733	66 731 636	70 306 670	61 199 105	62 404 599
Belgium-Luxembourg					
Rough	15 330 053	22 333 014	24 577 800	22 807 126	24 868 056
Cut	2 627 110	3 143 400	3 076 942	2 875 324	2 602 506
Industrial	8 817 103	9 106 907	8 650 019	9 150 601	8 070 087
France					
Rough	7 825	40 628	29 758	2 406	2 176
Cut	34 075	92 190	35 874	34 760	52 773
Industrial	423 890	43 978	148 426	191 048	177 713
Dust	176 810	187 265	255 560	129 130	199 770
Germany, Federal Republic of					
Industrial	190 715	220 132	355 445	295 777	222 053
Other	158 595	142 898	149 643	113 376	118 523
Italy					
Industrial	55 000	2 169	297 988	75 059	142 402
Other	15 000	437	23 657	1 186	75 586
Netherlands					
Industrial	4 540 473	4 185 224	1 071 953	845 467	833 512
Other	1 719 919	2 901 996	1 933 848	438 962	254 736
Malta	£40 700	£782 400	£1 186 100	£1 604 000	£900 100
Portugal					
Industrial	70 455	29 819	—	—	—
Other	290 253	227 993	57 568	35 683	45 000
Soviet Union					
Gem	* £288 992 000	* £362 671 000	* £198 201 000	...	...
Industrial	* £762 000	* £781 000	* £392 000	...	...
Sweden					
Gem	£330 470	£651 820	£1 088 300	£1 585 950	£4 390 000
Industrial	£36 860	£21 730	£94 500	£17 900	£21 700
Central African Republic	277 837	282 252	...	...	...
Congo	£740 000	...	...	...	...
Ghana					
Industrial	2 304 643	1 946 587	...	...	...
Ivory Coast	95 000	50 000	—	* 2 000	...
Lesotho	5 000	14 977	67 722	105 245	...
Liberia	320 298	326 214	307 377	301 808	...
Sierra Leone	919 871	521 402	280 795	...	...
South Africa (c)					
Rough	£236 172 000	£434 501 000	£414 337 000	£492 385 000	£525 494 000
Cut	£58 425 000	£102 099 000	£156 020 000	£175 344 000	£171 574 000
Industrial	£24 967 000	£29 185 000	£14 309 000	£14 572 000	£11 981 000
Tanzania	445 625	407 533	293 310	234 830	273 705
Zaire	2 998 556	2 672 575	2 621 978	3 039 930	...
Canada					
Cut	38 333	41 843	36 805	34 571	28 929
of which: Re-exports	38 333	41 843	36 740	32 555	28 433
Industrial	251 198	203 183	140 541	174 752	240 817
of which: Re-exports	229 682	198 481	137 229	168 344	210 786
Dust	47 336	46 892	36 459	20 513	19 795
of which: Re-exports	27 428	43 091	36 459	19 156	19 650
USA					
Rough	1 025 923	1 119 829	1 291 864	922 298	983 546
of which: Re-exports	1 025 183	1 113 988	1 179 038	913 981	983 546
Cut	485 735	436 800	307 333	273 210	341 207
of which: Re-exports	173 622	126 481	87 960	68 046	130 564
Industrial	3 076 661	3 508 044	2 955 584	2 737 433	3 569 318
of which: Re-exports	2 437 573	3 131 930	2 666 434	2 054 707	3 268 170
Bort	432 808	325 239	...	...	...
of which: Re-exports	355 816	319 525	...	...	...
Dust (b)	14 457 139	17 736 072	19 480 573	27 769 094	28 534 606
of which: Re-exports	301 677	464 083	624 028	472 309	372 150

## Diamond

**Exports of Diamond**

carats

Country	1976	1977	1978	1979	1980
Brazil	7 615	4 970	34 810	7 840	...
of which: Re-exports	6 015	3 895	6 825	7 085	...
Guyana	11 844	9 625	10 999	...	...
Venezuela					
Rough	765 000	785 000	640 000	...	...
Industrial	200 000	75 000	205 000	...	...
Hong Kong	443 349	354 560	366 654	383 359	324 669
of which: Re-exports	440 808	348 852	359 595	372 714	285 501
India					
Gem	£121 610 000	£246 080 000	£395 752 000	£266 499 000	...
Israel (a)					
Cut	3 637 000	3 637 000	2 884 000	2 451 000	2 649 000
Japan					
Cut	1 664	798	232	1 031	450 000
Industrial	479	1 283	1 185	1 286	11 562
Malaysia					
Rough	£51 700	£80 500	...	...	...
Cut	£1 900	£10 700	...	...	...
Singapore					
Rough	£332 800	£1 400	£1 300	£80 500	£152 400
Cut	£888 500	£1 196 200	£2 003 700	£2 899 500	£2 181 000
Industrial	£39 800	£19 700	£6 300	£21 800	£16 000
Thailand	146	367	8 199	5 637	...
Australia					
Gem	14 124	12 483	17 032	13 185	...
Industrial	187 416	357 624	200 593	247 861	391 297

Note: 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. (See explanatory notes at the front of the volume)

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

(b) May include synthetic material

(c) Values shown are for the common customs union

## Imports of Diamond

Country	1976	1977	1978	1979	1980
United Kingdom	£1 124 873 744	£1 814 585 000	£2 403 269 635	£2 705 513 536	£3 035 607 473
Belgium-Luxembourg					
Rough	19 753 106	29 198 889	26 294 445	24 910 619	26 513 377
Cut	1 692 393	2 388 354	2 524 643	2 225 218	2 097 733
Industrial	9 392 852	9 493 268	10 183 231	11 309 001	9 388 064
France					
Rough	30 820	30 145	24 256	22 884	21 867
Cut	313 150	1 797 506	541 062	433 302	705 281
Industrial	781 350	1 030 531	675 580	496 826	689 793
Dust	2 878 715	3 658 165	3 470 425	3 976 970	5 085 000
Germany, Federal Republic of					
Industrial	774 880	933 158	1 175 419	1 056 672	1 105 324
Other	728 425	781 172	725 575	519 713	560 516
Italy					
Industrial	105 000	140 923	180 324	184 340	221 140
Other	735 000	116 163	98 086	155 619	354 171
Netherlands					
Industrial	10 054 317	4 141 476	1 245 078	877 485	589 247
Other	4 601 628	10 485 734	3 839 227	762 925	366 938
Czechoslovakia					
Gem	* £351 000	* £669 000	* £489 000	...	...
Industrial	* £1 210 000	* £1 129 000	* £2 088 000	...	...
Finland					
Industrial	79 500	10 750	11 650	10 000	10 000
Other	1 000	8 250	21 050	70 000	20 000
Malta					
Rough	£540 600	£965 700	£1 545 500	£3 166 000	£1 863 500
Cut	£17 100	£12 700	£22 100	£4 000	£1 000
Norway					
Industrial	10 000	10 000	10 000	25 000	25 000
Other	80 000	110 000	45 000	65 000	40 000
Portugal	363 618	370 383	90 452	137 797	...
Spain					
Rough	£803 300	£742 000	£1 159 400	£618 500	...
Cut	...	...	£1 901 700	£505 000	...
Industrial	£922 700	£1 028 500	£959 600	£1 181 400	...
Other	£28 218 600	£30 175 800	£22 853 600	£17 784 500	...
Dust	...	£1 445 800	£1 514 300	£1 785 600	...
Sweden					
Gem	£7 082 820	£9 591 630	£10 310 500	£6 758 500	£11 173 300
Industrial	£487 820	£607 980	£606 800	£643 500	£471 700
Yugoslavia					
Industrial	537 105	736 645	35 000	150 000	295 000
Other	15 000	80 000	100 000	120 000	...
Dust	344 345	408 330	130 000	150 000	* 200 000
Algeria					
Industrial	5 030 000	525 000	675 000	...	...
Madagascar	...	105 000	...	...	...
South Africa					
Rough	27 000	75 000	28 000	69 000	124 000
Cut	13 000	67 000	45 000	38 000	40 500
Industrial	6 708 500	2 851 000	763 000	1 691 000	2 346 000
Tanzania					
Cut	213 660	91 050	...	...	...
Zambia					
Industrial	80 300 000	20 960 000	...	...	...
Canada					
Cut	191 839	208 971	165 170	137 456	133 042
Industrial	885 361	829 589	1 023 583	1 332 418	1 343 395
Dust	620 926	693 236	750 417	1 134 411	1 287 451

## Diamond

## Imports of Diamond

carats

Country	1976	1977	1978	1979	1980
Mexico					
Cut	37 885	20 440	)		
Industrial	6 715 000	3 245 000	)	...	...
Nicaragua					
Industrial	10 000	65 000	300 000	...	...
Panama					
Industrial	1 370 000	245 000	240 000	40 000	...
USA					
Rough	2 464 053	2 909 360	2 478 830	2 119 523	1 577 059
Cut	3 111 993	3 526 802	3 209 183	2 352 646	2 574 168
Industrial	5 291 337	7 145 344	6 922 093	1 091 766	6 189 849
Bort	186 264	260 456	177 082	58 255	59 772
Dust (a)	6 741 430	8 332 736	7 437 398	5 265 420	3 603 547
Argentina					
Industrial	145 000	650 000	2 805 000	...	...
Dust	189 705	368 205	337 370	...	...
Brazil					
Rough	6 390	2 590	3 695	1 465	5 990
Cut	4 940	3 300	7 400	10 575	8 335
Industrial	433 155	412 440	418 640	248 395	416 345
Dust	1 823 185	1 647 960	2 134 450	2 317 695	2 872 070
Costa Rica					
Industrial	135 000	40 000	...	...	...
Venezuela					
Rough	150 000	...	2 175 000	...	...
Industrial	2 140 000	4 470 000	2 895 000	...	...
Abu Dhabi	65 000	1 220 000	10 000	5 000	40 000
China					
Gem (e)	* 13 019	—	* 12 321	* 17 559	* 17 120
Industrial (d)	* 34 800	—	* 99 100	* 99 300	* 186 400
Dubai	5 000	13 915 000	39 495 000	7 400 000	8 740 000
Hong Kong					
Rough	—	—	116 986	52 212	121 377
Cut	1 227 553	1 291 573	1 296 252	1 002 710	1 169 288
Industrial	...	...	69 932	57 083	145 309
India					
Gem	£90 739 000	£188 540 000	£278 592 000	£199 265 000	...
Industrial & bort	480 000	775 000	970 000	480 000	...
Indonesia					
Industrial	750 000	—	55 000	1 790 000	1 620 000
Iraq					
Cut	60 000	...	...	...	...
Israel					
Rough (c)	10 003 000	12 256 000	8 490 000	5 884 000	55 625 000
Cut (c)	107 000	142 000	148 000	102 000	87 000
Industrial (c)	2 250 000	2 885 000	3 044 000	7 144 000	1 045 000
Japan					
Rough	32 977	41 863	27 423	38 598	29 763
Cut	683 028	690 704	742 070	683 836	683 055
Industrial	636 198	735 799	697 283	622 873	681 354
Dust	1 696 600	1 535 190	2 204 800	912 040	828 240
Korea, Republic of					
Industrial	136 025	40 330	* 300 000	450 002	...
Malaysia					
Rough	£596 800	£874 100	...	...	...
Cut	£331 900	£187 000	...	...	...
Industrial	£19 700	£14 200	...	...	...
Philippines					
Industrial	54 905	73 300	76 733	84 110	57 088
Saudi Arabia					
Industrial	5 225 000	5 940 000	...	7 795 000	...
Other	1 575 000	3 760 000	...	4 135 000	...



**Imports of Diamond**

Country	1976	1977	1978	1979	1980
Singapore					
Rough	£48 500	£1 400	—	£310 100	£365 000
Cut	£6 895 000	£5 279 300	£11 422 100	£16 678 500	£28 886 000
Industrial	£184 900	£105 300	£146 900	£949 600	£558 000
Taiwan					
Industrial	560 000	1 315 000	1 555 000	...	7 270 000
Other	60 130 000	50 000	1 135 000	165 000	—
Dust	230 000	2 005 000	1 290 000	32 620 000	4 245 000
Thailand					
Industrial	18 990	29 040	69 767	133 774	...
Other	31	744 985	18 232	5 845	...
Australia					
Gem	93 800	79 415	75 093	68 402	70 471
Industrial	850 177	971 689	892 006	1 139 174	1 136 216
New Zealand (b)					
Industrial	£51 500	£77 100	£46 300	£70 900	£24 800
Other	£831 600	£825 600	£1 884 800	£1 436 200	£1 004 800

Note: 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. (See explanatory notes at the front of the volume)

(a) May include synthetic material

(b) Years ended 30 June of that stated

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

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

(e) Exports from the United Kingdom

## Diatomite

**Production of Diatomite**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	* 2 000	* 2 000	* 2 000	* 1 000	* 1 000
Denmark (a)					
Diatomite	5 196	6 858	5 980	6 158	4 443
Moler (d)	93 000	96 000	102 000	* 110 300	* 102 400
France (b)	210 255	205 534	217 407	332 916	...
Germany, Federal Republic of	21 190	17 762	14 326	18 390	...
Italy	18 220	* 19 000	* 19 000	* 19 000	* 20 000
Austria	1 882	242	536	—	—
Iceland	21 668	20 170	20 955	22 247	19 353
Portugal	3 150	3 390	2 700	3 200	2 310
Romania	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Soviet Union	* 210 000	* 215 000	* 220 000	* 220 000	* 225 000
Spain (b)	18 931	28 281	21 370	* 28 000	* 27 000
Sweden	327	—	—	—	—
Turkey	8 500	9 000	* 9 000	* 9 000	* 9 000
Yugoslavia	8 245	5 741	4 483	...	...
Algeria	4 321	4 075	4 437	* 4 400	* 3 600
Egypt	327	373	99	* 90	* 100
Kenya	2 668	2 441	1 723	1 266	1 677
South Africa	619	666	930	1 059	584
Canada	3 000	1 000	2 000	2 000	* 2 000
Costa Rica	717	680	610	635	* 1 000
Mexico	26 294	23 574	40 862	44 004	* 40 000
USA (c)	572 778	587 895	591 000	650 000	625 000
Argentina	13 850	12 337	7 227	7 327	* 7 000
Brazil	4 179	4 966	10 709	6 650	10 807
Chile	330	480	5 008	763	* 1 000
Colombia	650	630	630	630	* 600
Peru	* 18 000	18 800	16 500	19 000	* 20 000
Korea, Republic of	13 483	22 980	18 845	23 915	25 101
Thailand	—	190	1 105	3 418	1 982
Australia	1 480	1 288	3 136	3 592	328
New Zealand	1 425	1 113	—	—	—
World total	1 300 000	1 400 000	1 400 000	1 600 000	1 500 000

Note: In addition to the countries listed, Hungary is also believed to produce diatomite

(a) Sales

(b) Including tripoli

(c) Sold or used by producers

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

## Exports of Diatomite

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	2 220	1 069	853	1 098	985
Belgium-Luxembourg	6 829	4 103	3 567	1 350	7 806
Denmark					
Diatomite	6 451	7 957	6 546	6 323	4 679
Moler	57 428	54 900	46 569	52 052	51 607
Moler bricks	24 937	28 872	27 255	30 252	28 045
France	17 577	19 363	24 982	28 876	25 876
Germany, Federal Republic of	4 805	3 909	3 999	4 153	2 513
Italy	1 174	1 038	1 193	1 866	885
Netherlands	207	294	520	559	657
Austria	681	1 058	1 027	1 031	1 135
Finland	34	8	8	9	42
Iceland	22 699	20 985	20 020	21 288	18 149
Norway	83	75	45	34	11
Portugal	1 018	1 189	1 213	16	44
Spain	2 919	2 286	1 658	1 453	1 672
Sweden	195	107	160	142	67
Algeria	850	795	2 445	...	...
Kenya	185	879	361	227	...
Costa Rica	1 280	1 028	...	...	...
Mexico	3 606	3 005	2 762	3 788	...
USA	135 360	138 269	138 865	153 927	156 970
Japan	1 151	1 024	1 298	1 277	1 891
Korea, Republic of	300	50	60	60	120
Taiwan	236	100	123	50	184

**Imports of Diatomite**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	12 221	9 918	9 090	11 902	13 602
Belgium-Luxembourg	6 341	7 747	9 607	11 349	9 039
Denmark	4 059	4 607	4 238	5 447	7 205
France	6 861	5 254	8 878	11 327	9 164
Germany, Federal Republic of	54 507	46 813	39 100	40 190	37 506
Irish Republic	...	722	946	1 217	712
Italy	3 273	3 748	5 391	5 912	5 597
Netherlands	15 964	15 769	16 241	17 460	16 489
Austria	6 474	9 570	7 206	7 856	8 691
Czechoslovakia	* 800	* 2 000	* 1 100	...	...
Finland	1 077	1 281	1 295	1 901	2 053
Greece	381	404	589	677	517
Iceland	1	3	34	44	2
Norway	1 480	2 368	1 960	1 968	1 939
Poland	...	* 400	* 200	...	...
Portugal	3 032	3 786	3 534	4 058	4 284
Romania	* 1 100	* 1 500	* 1 300	...	...
Spain	2 434	2 689	3 061	2 875	3 094
Sweden	4 063	3 883	4 097	5 544	3 805
Switzerland	4 539	6 207	8 098	9 102	9 381
Turkey	818	362	204	84	...
Yugoslavia	77	87	152	285	421
Cameroon	464	388	605	685	...
Canary Islands	69	93	66	123	...
Ivory Coast	375	310	384	238	...
Kenya	458	250	602	401	...
Morocco	426	297	405	176	255
South Africa	4 922	4 735	7 728	5 900	6 468
Tunisia	150	385	137	169	...
Zaire	940	905	570	321	...
Zambia	472	1 022	...	...	...
Canada	35 765	27 180	25 371	28 348	26 577
Costa Rica	440	204	...	...	...
El Salvador	2 335	1 500	...	...	...
Guatemala	519	416	...	...	...
Honduras	888	409	260	...	...
Mexico	270	1 672	271	228	...
Nicaragua	239	1 634	543	344	...
Panama	275	523	597	399	...
USA	4 676	591	181	479	268
Argentina	3 027	3 772	2 636	...	...
Brazil	1 554	2 127	1 365	1 633	1 535
Peru	1 357	1 350	...	...	...
Uruguay	116	154	108	125	...
Venezuela	4 193	5 112	4 857	...	...
Cyprus	83	46	137	117	...
Hong Kong	199	286	264	242	364
India (d)	1 127	826	247	387	...
Indonesia	375	525	508	2 388	723
Iran (c)	1 481	1 040	* 900	* 300	...
Israel (b)	86	176	89	304	191
Japan	2 656	5 046	5 871	5 962	7 464
Malaysia	177	385	...	...	...

**Imports of Diatomite**

Country	1976	1977	1978	1979	1980
Philippines	2 485	2 255	1 715	1 451	1 609
Saudi Arabia	3 773	2 490	2 461	5 327	...
Singapore	232	339	320	657	619
Taiwan	1 372	1 428	2 284	3 076	2 909
Thailand	21	18	37	220	...
Australia	9 059	9 587	11 983	10 657	12 278
Fiji	55	136	...	...	...
New Zealand (a)	558	793	555	700	1 224

(a) Years ended 30 June of that stated

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

(c) Years ended 20 March following that stated

(d) Years ended 31 March following that stated

**Production of Feldspar**

tonnes

Country	1976	1977	1978	1979	1980
France (c)	201 855	192 000	211 000	195 000	210 000
Germany, Federal Republic of	419 976	393 793	385 590	372 754	* 380 000
Italy	182 605	213 593	251 083	294 648	344 301
Austria	3 800	3 645	2 886	6 594	10 946
Finland	71 559	63 896	61 893	67 900	68 000
Norway (d)	37 690	70 799	59 522	87 888	* 80 000
Poland	113 436	114 530	106 977	88 367	85 955
Portugal	13 323	15 246	21 582	38 315	40 802
Romania	* 58 000	* 60 000	* 60 000	* 60 000	* 60 000
Soviet Union	* 280 000	* 290 000	* 300 000	* 310 000	* 310 000
Spain (c)	90 964	93 222	116 283	* 116 000	* 125 000
Sweden (e)	44 746	52 167	53 845	58 655	* 55 000
Turkey	57 800	75 200	75 000	* 73 000	* 72 000
Yugoslavia	52 000	56 146	48 013	56 160	58 000
Egypt	2 128	2 633	3 337	* 3 350	* 3 600
Kenya	1 115	1 869	964	868	387
Mozambique	* 850	* 900	* 900	—	—
Nigeria	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
South Africa	46 138	51 230	52 545	47 416	52 247
Zambia	517	832	789	91	475
Zimbabwe	3 029	896	726	1 085	1 263
Mexico	73 239	114 319	109 808	110 869	* 110 000
USA (e)	671 030	665 900	666 800	671 000	644 000
Argentina	68 224	42 921	41 824	33 550	* 35 000
Brazil (b)	84 134	96 187	103 597	* 170 000	* 160 000
Chile	823	2 452	903	133	...
Colombia	30 000	26 508	26 455	29 000	* 30 000
Peru	* 4 000	4 320	9 760	9 000	* 9 000
Uruguay	1 145	1 625	2 572	3 000	* 3 000
Venezuela	28 000	32 000	30 000	* 30 000	...
Burma (a)	1 709	2 091	1 971	2 004	* 1 700
Hong Kong	2 299	3 378	3 157	742	2 974
India	55 307	54 710	51 675	54 264	58 610
Japan	393 698	365 445	415 950	401 285	* 400 000
Korea, Republic of	26 208	49 374	69 200	36 238	71 972
Pakistan	2 795	3 951	4 833	14 525	10 898
Philippines	15 240	16 073	18 073	16 848	* 17 000
Sri Lanka	3 198	3 679	3 160	3 790	3 955
Taiwan	12 567	16 219	15 757	24 403	25 149
Thailand	12 257	17 619	32 583	26 428	24 158
Australia	4 519	1 877	3 185	3 869	3 150
World total	3 200 000	3 300 000	3 400 000	3 500 000	3 600 000

Note: In addition to the countries listed, China, Czechoslovakia, Namibia and the United Kingdom are also believed to produce feldspar

- (a) Years ended 31 March following that stated
- (b) Includes beneficiated and direct shipping ore
- (c) Including pegmatite
- (d) Underground: production of ground withheld
- (e) Sold or used by producers

**Exports of Feldspar**

Country	1976	1977	1978	1979	1980
United Kingdom	2 516	2 413	1 956	2 118	1 067
Belgium-Luxembourg	6 744	6 975	8 544	7 462	6 494
France	37 528	43 640	52 453	51 726	56 948
Germany, Federal Republic of	13 553	20 080	17 696	16 810	18 124
Italy	23 633	28 793	28 482	35 578	37 035
Netherlands (b)	241	2 714	2 524	3 929	3 501
Finland (a)	51 681	52 466	54 082	50 810	46 998
Norway	86 007	74 208	78 736	94 502	84 729
Portugal (a)	1 946	3 931	2 148	9 099	11 273
Spain (a)	2 474	5 720	6 989	1 901	109 101
Sweden (a)	30 106	40 253	37 832	34 713	29 976
Switzerland (a)	593	509	397	255	282
Yugoslavia	6 974	8 932	7 904	9 695	11 498
South Africa	3 247	2 543	2 712	3 266	2 407
USA (a)	5 711	5 627	9 372	11 227	11 792
Hong Kong (c)	1 667	3 928	6 385	13 249	18 106
of which: Re-exports	384	2 556	4 175	11 799	300
India	11 983	13 533	14 697	16 006	...
Japan	9 512	11 224	15 157	23 630	22 889
Korea, Republic of	10 951	14 091	22 080	13 380	19 672
Singapore	691	1 049	585	4 469	5 704
Thailand	221	4 610	413	2 304	...

(a) May include some leucite and nepheline

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(c) Including fluorspar

**Imports of Feldspar**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	132 725	132 041	125 735	118 993	91 087
Belgium-Luxembourg	66 232	70 659	64 403	67 186	35 564
Denmark	10 416	9 557	8 847	11 773	15 535
France	10 806	17 323	17 024	17 839	17 948
Germany, Federal Republic of	41 250	48 666	54 364	52 808	63 213
Italy	7 745	9 510	7 983	8 192	17 655
Netherlands (b)	20 910	11 701	25 630	19 115	21 632
Austria (a)	6 650	6 713	5 948	4 564	6 111
Finland (a)	27	162	1 917	61	701
Greece (a)	10 801	12 325	11 850	20 644	16 044
Poland	16 383	16 714	15 599	16 725	13 786
Portugal (a)	1 976	2 142	2 691	2 209	...
Spain (a)	13 452	13 639	15 203	16 256	21 470
Sweden (a)	11 803	11 674	7 166	7 657	12 845
Switzerland (a)	12 308	14 785	10 065	8 605	12 097
Turkey	105	13	—	10	...
Yugoslavia	629	1 189	1 001	1 150	1 154
Algeria (a)	1 371	2 585	3 091	...	...
Morocco (a)	25	58	20	84	441
South Africa (a)(c)	135	26	40	90	81
Tunisia (c)	750	1 070	1 686	3 149	1 871
Mexico	1 416	600	725	3 434	...
Trinidad & Tobago (c)	932	1 041	66	262	...
USA	84	220	35	241	366
Venezuela	610	852	621	...	...
Hong Kong (c)	2 312	3 975	6 327	13 838	16 373
Indonesia (a)	2 584	6 014	6 766	10 768	13 611
Iran (a)(c)(e)	2 224	221	* 600	* 100	...
Israel (a)(f)	610	2 264	227	688	365
Japan (a)	5 346	12 335	9 064	5 269	5 568
Jordan (a)	626	—	289	415	...
Malaysia	6 333	7 037	...	...	...
Philippines (a)(c)	3 695	2 968	2 940	3 354	3 022
Singapore	4 906	5 057	4 448	4 618	6 420
Taiwan (a)(c)	17 885	28 471	48 280	44 221	54 262
Thailand (a)	1 207	301	1 195	569	...
Australia (a)	4 577	10 250	13 713	15 394	...
New Zealand (a)(c)(d)	1 243	1 925	1 747	997	1 020

(a) May include some leucite and nepheline

(b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(c) Including fluorspar

(d) Years ended 30 June of that stated

(e) Years ended 20 March following that stated

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



**Production of Fluorspar**

Country	1976	1977	1978	1979	1980
United Kingdom (a)	217 000	206 000	189 269	154 000	186 300
France (b)	675 000	531 600	529 600	471 100	* 471 000
Germany, Federal Republic of	64 210	83 750	75 722	63 172	87 346
Italy	210 812	185 749	171 216	182 791	151 965
Czechoslovakia	* 93 000	* 96 000	* 96 000	* 96 000	* 96 000
German Democratic Republic	* 90 000	* 100 000	* 100 000	* 100 000	* 100 000
Greece	1 000	500	610	360	440
Romania	* 15 000	* 20 000	* 20 000	* 20 000	* 20 000
Soviet Union	* 490 000	* 500 000	* 510 000	* 520 000	* 520 000
Spain	293 469	310 461	301 295	197 830	266 820
Sweden	3 324	2 414	—	—	—
Turkey	1 282	1 711	1 337	2 024	1 945
Egypt	1 003	1 406	2 235	682	* 680
Kenya	75 027	124 000	108 274	68 700	93 378
Morocco	51 450	40 000	59 200	63 200	64 400
South Africa	290 718	350 679	393 276	451 112	522 718
Tunisia	34 538	28 887	33 100	36 800	39 451
Zimbabwe	690	522	312	—	—
Canada	59 700	59 500	—	—	—
Mexico	896 535	660 087	959 784	875 216	916 455
USA	170 796	153 758	117 415	99 154	84 037
Argentina	40 077	43 792	26 746	38 076	* 30 000
Brazil (c)	31 160	66 645	61 800	52 505	* 55 500
China	* 350 000	* 400 000	* 400 000	* 400 000	* 400 000
India	17 632	18 791	17 546	21 495	21 247
Korea, Dem. P.R. of	* 30 000	* 40 000	* 40 000	* 40 000	* 40 000
Korea, Republic of	20 270	12 981	11 368	8 450	6 912
Mongolia	* 302 000	* 335 000	* 455 000	* 450 000	* 450 000
Pakistan	10	—	335	418	1 184
Thailand	200 364	239 625	259 786	259 852	306 331
World total	4 700 000	4 600 000	4 900 000	4 700 000	4 900 000

Note: In addition to the countries listed, Bulgaria is also believed to produce fluorspar

(a) Including fluorspar recovered from old lead and zinc mine dumps

(b) Washed or sorted

(c) Includes beneficiated and direct shipping ore

## Fluorspar

**Exports of Fluorspar**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	34 531	23 468	7 935	26 337	57 230
Belgium-Luxembourg	840	1 439	4 541	4 984	4 926
France	92 135	93 343	95 284	98 742	107 391
Germany, Federal Republic of	14 478	10 979	14 789	16 610	14 099
Italy	104 609	55 749	60 952	55 080	83 753
Spain	226 175	200 722	193 485	101 546	107 519
Sweden	651	336	538	824	361
Kenya (a)	90 465	100 208	102 900	59 352	...
Morocco	27 548	78 201	69 823	62 997	64 070
South Africa	215 915	288 626	384 387	471 498	442 667
Tunisia	(a) 16 670	(a) 14 000	—	—	6 025
Mexico	663 166	604 951	712 970	708 620	...
USA	4 601	6 026	7 518	13 132	16 207
Argentina	5 739	240	239	...	...
Brazil	203	50	—	—	...
China (b)	* 220 000	* 250 000	* 262 000	* 313 000	* 340 000
Korea, Dem. P.R. of (b)	* 3 000	(a) * 9 000	* 6 800	* 3 600	* 7 900
Korea, Republic of	6 607	3 864	1 152	470	500
Thailand	284 287	241 459	205 697	219 390	...

(a) Including feldspar

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

## Imports of Fluorspar

Country	1976	1977	1978	1979	1980
United Kingdom	20	5 795	3 782	27 119	9 573
Belgium-Luxembourg	16 202	14 855	9 953	14 550	16 876
Denmark	3 969	2 179	4 462	3 970	1 287
France	2 152	14 845	1 796	1 228	27 766
Germany, Federal Republic of	244 644	206 708	240 385	248 690	270 068
Italy	50 062	33 905	46 973	78 717	105 531
Netherlands (b)	26 452	15 063	13 863	10 988	14 251
Austria	14 609	13 172	16 077	18 369	17 298
Finland	3 775	6 383	2 204	5 486	4 429
Greece	1 223	1 877	1 553	10 302	2 135
Norway	38 306	42 270	44 972	46 941	48 843
Poland	48 548	72 315	86 640	62 553	55 328
Soviet Union	* 500 000	* 550 000	* 550 000	* 550 000	* 550 000
Sweden	15 054	10 502	13 651	15 858	13 008
Turkey	110	609	149	20	...
Yugoslavia	5 618	6 861	3 140	5 121	5 716
Algeria	118	535	37	...	...
South Africa (a)(c)	135	26	40	90	81
Tunisia (c)	750	1 070	1 686	3 149	1 871
Canada	137 310	124 494	170 236	167 904	223 939
USA	889 170	912 786	821 493	894 926	314 260
Chile	...	4 672	3 861	...	...
Venezuela	5 429	182	3 345	...	...
Hong Kong (c)	2 312	3 975	6 327	13 838	16 373
India	4 062	4 752	5 000	5 034	...
Iran (a)(c)(e)	2 224	221	* 600	* 100	...
Japan	383 390	373 228	371 387	467 135	487 455
Malaysia (a)	2 533	7 698	...	...	...
Philippines (a)(c)	3 695	2 968	2 940	3 354	3 022
Taiwan (a)(c)	17 885	28 471	48 280	44 221	54 262
Australia	36 046	27 029	32 711	27 012	38 369
New Zealand (a)(c)(d)	1 243	1 925	1 747	997	1 020

(a) May include some leucite and nepheline

(b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(c) Including feldspar

(d) Years ended 30 June of that stated

(e) Years ended 20 March following that stated

Gold

**Production of Gold**

kilograms

Country	1976	1977	1978	1979	1980
France	1 898	1 569	1 855	1 263	* 1 100
Germany, Federal Republic of	76	74	66	* 75	* 75
Finland	820	852	905	881	1 301
Portugal	312	275	284	320	340
Romania	* 1 900	* 2 000	* 2 000	* 2 000	* 2 000
Soviet Union	* 250 000	* 250 000	* 250 000	* 300 000	* 300 000
Spain	4 317	3 657	3 137	2 843	* 3 000
Sweden	1 934	2 113	2 373	2 200	2 200
Yugoslavia	4 427	5 108	4 434	4 323	4 000
Angola	* 31	* 31	* 31	...	...
Burundi	13	* 14	* 14	* 4	* 4
Cameroon	8	6	6	5	* 5
Congo	* 218	* 218	* 206	* 203	* 220
Ethiopia (b)	842	270	240	* 247	* 280
Gabon	96	73	30	* 30	* 28
Ghana	16 561	14 957	12 505	10 147	10 937
Kenya	1	4	6	15	4
Liberia (a)	* 140	* 140	* 140	* 155	* 140
Madagascar	2	2	4	1	4
Mali	28	29	30	* 31	* 45
Mauritania	690	870	* 250	—	—
Rwanda	29	56	35	* 15	* 15
South Africa	713 390	699 887	704 449	703 473	672 786
Zaire	2 746	2 715	2 286	2 270	1 243
Zambia (c)	341	207	259	247	257
Zimbabwe	12 086	12 506	12 414	12 063	11 443
Canada	52 621	53 921	53 967	51 142	48 284
Costa Rica	* 300	* 400	* 500	* 520	* 500
Dominican Republic	12 871	10 839	10 453	10 979	11 496
El Salvador	95	67	113	85	* 90
Honduras	71	77	* 80	47	46
Mexico	5 064	6 616	6 283	5 921	6 096
Nicaragua	2 359	2 046	2 050	1 900	* 2 100
USA	32 598	34 225	31 068	30 169	29 591
Argentina	181	171	174	315	346
Bolivia	896	431	770	948	1 620
Brazil	4 922	5 355	9 359	4 461	15 214
Chile	4 017	3 620	3 182	3 465	6 586
Colombia	9 274	7 992	7 563	8 261	15 458
Ecuador	343	244	85	100	* 110
French Guiana	88	150	90	62	92
Guyana	487	370	479	329	342
Peru	2 470	3 247	3 206	3 805	* 4 700
Surinam	1	12	9	6	5
Venezuela	513	541	400	466	514
China	* 2 500	* 3 000	* 4 700	* 6 000	* 7 000
India	3 132	3 014	2 774	2 637	2 452
Indonesia	355	256	254	170	* 160
Japan	4 282	4 635	4 516	4 034	* 4 000
Kampuchea, Democratic	* 30	* 30	—	—	—
Korea, Dem. P.R. of	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Korea, Republic of	583	665	852	749	1 282
Malaysia	141	153	210	197	156
Philippines	15 589	17 373	18 243	16 646	18 350
Taiwan	838	466	417	443	413

**Production of Gold**

Country	1976	1977	1978	1979	1980
Australia	15 637	19 417	20 142	18 566	16 921
Fiji	2 045	1 519	872	907	774
New Zealand	102	223	219	218	200
Papua New Guinea	20 759	22 839	23 885	20 172	14 730
Solomon Islands	24	14	18	22	34
World total	1 200 000	1 200 000	1 200 000	1 200 000	1 200 000

## Notes:

- 1 In several countries, for example Brazil, Colombia and Indonesia, a certain amount of gold produced in very small operations is not recorded in the official statistics used in compiling this table; in the case of Brazil this amount is thought to be substantial
- 2 In addition to the countries listed, Bulgaria, Burma, Czechoslovakia, German Democratic Republic, Hungary, Norway, Sudan and Thailand are also believed to produce gold

(a) Years ended 31 August of that stated

(b) Years ended 6 July of that stated

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

## Gold

**Exports of Gold**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal –					
Refined	563 674	659 948	640 466	492 165	336 030
Other	3 333	2 659	13 946	5 219	2 388
Waste & scrap	6 074	924	15 766	31 170	7 198
Belgium-Luxembourg					
Metal	12 446	12 415	13 902	18 143	27 234
France					
Metal	91 954	40 790	23 350	33 806	23 625
Waste & scrap	1 901	221	10 566	28 311	63 409
Germany, Federal Republic of					
Metal	22 883	23 710	50 335	27 218	27 426
Waste & scrap	4 448	1 870	651	84	13 497
Italy					
Metal	574	437	1 986	1 643	5 333
Netherlands					
Metal	16 653	22 605	26 450	29 491	28 690
Waste & scrap	27 285	7 000	5 000	17 000	74 000
Austria					
Metal	267	473	367	640	662
Finland					
Metal	39	110	130	116	603
Norway					
Metal	208	255	159	137	257
Spain					
Metal	...	20 192	15 002	6 010	...
Sweden					
Metal	2 000	2 000	2 000	2 000	5 000
Waste & scrap	51 000	55 000	50 000	40 000	44 000
Switzerland					
Metal	50 237	82 104	(c) 5 809	(c) 7 039	(c) 5 025
Ghana					
Metal	50 107	10 625	...	...	...
South Africa					
Metal (e)	£1 200 000	£7 300 000	£4 000 000	£10 600 000	£11 500 000
Zaire					
Metal (d)	* 8 700	* 100	...	...	...
Canada					
Ores & concentrates (b)	5 724	5 098	8 316	6 421	6 313
Metal	57 655	48 854	50 486	55 894	59 849
Nicaragua					
Metal	1 920	1 904	2 095	1 056	...
USA					
Ore	(a) 10 498	(a) 12 310	715	529	719
Metal –					
Unrefined	...	...	1 279	2 174	2 283
Refined	79 040	205 750	156 890	491 884	150 450
Other	...	...	2 052	2 789	3 688
Waste & scrap	...	...	13 104	25 818	41 229
Colombia					
Ore	417 800	375 550	...	...	...
Metal	204	...	...	...	...
Peru					
Metal	2 016	4 010	...	...	...
Hong Kong					
Metal (Re-exports)	12 081	445	2 611	9 319	29 549
Japan					
Metal	5 088	4 817	6 378	7 151	12 996
Philippines					
Ores & concentrates (b)	12 290	13 045	12 789	11 422	13 051
Metal	4 358	2 921	38	—	—

**Exports of Gold**

Country	1976	1977	1978	1979	1980
<i>Australia</i>					
Ores, concentrates & unrefined metal (b)	4 549	4 857	2 415	3 149	1 214
Refined metal	10 147	8 865	5 154	7 288	6 014
<i>Fiji</i>					
Metal	2 045	1 519	872	907	...
<i>Papua New Guinea</i>					
Metal	20 759	22 839	23 885	20 172	14 730

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

- (a) Including unrefined, waste and scrap
- (b) Au content
- (c) Partly worked only
- (d) IGS estimates, based on part figures given in trade account
- (e) Values shown are for the common customs union

## Gold

**Imports of Gold**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore	...	...	2 781	15 348	2 152
Metal –					
Unrefined	6 865	5 559	3 561	13 495	60 859
Refined	602 570	641 693	511 209	786 287	551 907
Other	2 241	7 139	4 613	9 682	4 390
Waste & scrap	9 113	12 284	10 390	85 697	20 020
Belgium-Luxembourg					
Metal	40 421	31 468	25 768	24 287	57 725
Denmark					
Metal	2 546	2 901	2 487	1 647	615
France					
Metal	99 595	77 439	71 401	77 565	70 845
Waste & scrap	319	6 958	9 074	11 041	8 606
Germany, Federal Republic of					
Metal	91 787	111 427	113 863	107 152	126 569
Waste & scrap	73 503	82 665	80 699	115 022	156 827
Italy					
Metal	162 190	187 770	214 314	189 519	69 778
Netherlands					
Metal	33 843	23 464	35 720	33 765	23 690
Waste & scrap	1 250	1 000	2 000	3 000	...
Austria					
Metal	30 071	10 709	8 292	3 575	1 559
Finland					
Metal	1 088	952	1 312	1 493	953
Malta					
Metal	527	607	876	643	123
Norway					
Metal	1 210	1 983	1 194	1 215	1 096
Waste & scrap	3	3 303	1 983	244	805
Portugal					
Metal	91	366	194	279	...
Sweden					
Metal	2 000	1 000	1 000	1 000	...
Waste & scrap	3 000	5 000	2 000	...	6 000
Switzerland					
Metal	2 887	4 245	(b) 1 294	(b) 2 431	(b) 3 892
Ivory Coast					
Metal	196	228	301	143	...
Kenya					
Metal	20	9	8	74	1 221
Madagascar					
Metal	37	470	—	...	...
Morocco					
Metal	5 748	5 150	2 762	184	—
South Africa					
Metal	249	74	64	199	6 601
Waste & scrap	167	1	10	882	69 495
Tunisia					
Metal	624	767	1 173	677	768
Canada					
Ores & concentrates (c)	1 395	1 772	348	774	2 312
Metal	6 755	11 911	41 274	92 130	69 743
USA					
Ore	(a) 5 173	(a) 7 448	7 931	5 230	4 524
Metal –					
Unrefined (f)	...	...	6 135	5 708	12 015
Refined	77 439	131 093	138 320	136 044	127 232
Brazil					
Metal	3 245	2 590	3 156	3 264	849
Surinam					
Metal	200	300	...	...	...
Venezuela					
Metal	915	1 900	8 051	...	...



**Imports of Gold**

Country	1976	1977	1978	1979	1980
Brunei					
Metal	93	162	140	282	...
Cyprus					
Metal	533	621	782	598	...
Hong Kong					
Metal	115 772	28 814	54 372	105 587	35 872
Indonesia					
Metal	313	10 250	5 720	2 200	—
Iran (d)					
Metal	95 436	...	...	...	...
Japan					
Metal	73 540	51 649	98 514	62 896	31 837
Malaysia					
Metal	1 453	536	...	...	...
Saudi Arabia					
Metal	827 197	93 907	...	16 431	...
Syria					
Metal	6 600	22	388	360	...
Taiwan					
Metal	11 901	14 300	8 143	8 240	10 579
Thailand					
Metal	79	686	7 171	3 307	...
Australia					
Metal	2 853	1 736	628	585	1 795
New Zealand (e)					
Metal	—	304	241	168	190

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

- (a) Including unrefined, waste and scrap
- (b) Partly worked only
- (c) Au content
- (d) Years ended 20 March following that stated
- (e) Years ended 30 June of that stated
- (f) Including waste and scrap

## Graphite

**Production of Graphite**

tonnes

Country	1976	1977	1978	1979	1980
Germany, Federal Republic of (b)	14 026	13 456	11 927	10 282	* 12 000
Italy	3 848	3 819	4 108	4 102	3 957
Austria (a)	33 057	35 288	40 501	40 519	36 699
Czechoslovakia	...	...	13 630	14 600	15 700
Norway	9 071	9 097	11 151	11 892	10 780
Romania	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Soviet Union	* 95 000	* 95 000	* 95 000	* 100 000	* 100 000
Turkey	...	...	1 295	1 673	1 820
Madagascar	16 216	14 677	16 624	13 378	9 906
South Africa	530	911	583	394	—
Zimbabwe	8 064	8 017	5 655	5 737	7 385
Mexico	60 337	58 432	52 264	50 880	* 55 000
Argentina	145	85	8	10	12
Brazil	6 018	9 187	10 357	12 476	16 411
Burma (c)	161	205	309	268	* 200
China	* 50 000	* 60 000	* 80 000	* 100 000	* 100 000
India	38 273	48 455	63 784	52 821	48 795
Korea, Dem. P.R. of	* 20 000	* 20 000	* 20 000	* 25 000	* 25 000
Korea, Republic of	41 690	65 955	56 319	56 693	60 586
Sri Lanka	8 135	8 893	10 708	9 432	7 794
Thailand	30	23	23	—	2 074
World total	426 000	472 000	500 000	516 000	520 000

## Notes:

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

(a) Crude

(b) Including production from imported crude graphite

(c) Years ended 31 March following that stated

**Exports of Graphite**

Country	1976	1977	1978	1979	1980
United Kingdom	1 717	2 544	2 649	3 158	2 080
Belgium-Luxembourg	508	68	67	50	24
France	1 029	662	1 051	1 518	889
Germany, Federal Republic of	7 284	7 483	7 927	6 860	7 195
Italy	1 314	1 971	2 823	3 854	3 413
Netherlands	493	191	594	644	515
Austria	16 374	16 859	17 787	17 870	16 576
Czechoslovakia	* 400	* 300	* 500	3 000	3 000
Norway	9 019	9 147	10 870	11 178	10 675
Soviet Union (a)	* 63 600	* 10 900	* 12 200	* 11 700	* 12 600
Sweden	97	40	28	47	47
Madagascar	17 021	17 003	16 861	14 588	...
South Africa	—	374	311	—	—
Mexico	45 706	45 648	47 136	9 115	...
USA	11 100	12 808	8 776	8 683	8 083
China (a)	* 12 200	* 13 100	* 13 700	* 25 000	* 36 000
Hong Kong (Re-exports)	1 886	840	622	817	161
India	14	44	352	1 416	...
Japan	1 704	1 311	1 406	1 554	1 745
Korea, Dem. P.R. of	* 7 100	* 13 900	* 13 200	* 24 500	...
Korea, Republic of	41 141	64 644	50 807	46 520	45 416
Sri Lanka	7 609	8 059	11 416	11 154	6 604
Taiwan	737	614	785	615	505

Note: This table excludes synthetic graphite

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

## Imports of Graphite

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	13 244	17 827	17 166	14 584	18 115
Belgium-Luxembourg	1 069	891	3 959	1 842	5 832
Denmark	493	741	753	653	990
France	5 890	5 727	6 781	7 744	9 057
Germany, Federal Republic of	29 665	29 369	28 583	26 063	25 124
Italy	4 782	4 802	5 535	4 691	5 410
Netherlands	479	456	892	1 169	782
Austria	269	779	1 614	1 710	2 301
Finland	188	181	104	173	172
German Democratic Republic	5 553	5 725	6 214	6 884	5 632
Greece	243	339	233	154	194
Hungary	...	...	1 974	2 054	1 673
Norway	981	615	664	784	757
Poland	12 207	10 025	11 906	13 828	11 386
Portugal	284	270	294	184	388
Spain	1 501	1 095	1 484	1 778	2 218
Sweden	1 501	855	549	855	911
Switzerland	219	175	190	202	232
Turkey	586	450	415	169	...
Yugoslavia	1 853	1 806	1 812	1 824	1 843
Algeria	122	473	178	...	...
Ethiopia	...	140	1	...	...
Morocco	11	5	13	0	23
South Africa	480	461	520	938	1 134
Sudan	—	58	14	1	...
Mexico	176	239	114	310	...
USA	70 486	76 538	87 711	75 085	52 284
Argentina	425	574	387	...	...
Brazil	109	48	96	112	69
Venezuela	405	631	425	...	...
Hong Kong	2 171	1 344	1 201	1 325	214
India	647	698	607	787	...
Indonesia	93	206	107	90	135
Iran (a)	756	1 663	* 800	* 100	...
Japan	33 539	64 991	48 895	70 955	69 605
Malaysia	427	375	...	...	...
Pakistan (b)	552	2 047	957	607	1 060
Philippines	113	182	160	291	184
Singapore	215	162	151	519	572
Taiwan	5 451	5 943	9 512	13 722	15 696
Thailand	1 457	1 324	1 494	1 519	...
Australia	1 367	1 720	2 274	1 858	...
New Zealand (b)	55	108	84	68	133

Note: This table excludes synthetic graphite

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

## Production of Gypsum

Country	1976	1977	1978	1979	1980
United Kingdom					
Gypsum	3 324 000	3 236 000	3 230 000	* 3 500 000	3 371 000
Anhydrite	26 000	25 000	92 000	...	76 000
Belgium (a)(d)	220 000	167 439	183 487	192 938	174 088
France					
Gypsum	6 128 637	6 168 497	) 6 071 000	6 127 000	6 528 000
Anhydrite	501 298	531 276			
Germany, Federal Republic of					
Gypsum	1 709 316	1 796 706	1 749 136	1 718 921	) 2 990 000
Anhydrite	390 498	421 172	489 219	531 693	
Irish Republic	355 000	342 000	385 790	411 000	382 000
Italy	3 924 689	4 180 474	* 4 170 000	* 4 200 000	* 3 800 000
Luxembourg	5 037	5 319	4 476	1 682	—
Austria					
Gypsum	661 849	655 413	626 475	670 930	698 652
Anhydrite	108 370	153 688	139 490	127 178	134 765
Bulgaria	* 232 000	* 295 000	* 340 000	* 309 000	311 164
Czechoslovakia (a)	660 000	682 000	697 000	734 000	757 000
German Democratic Republic (d)	301 595	303 886	309 348	319 254	313 181
Greece	444 686	518 680	507 062	* 450 000	* 450 000
Poland (d)	326 000	341 000	329 000	319 000	* 305 000
Portugal	159 594	175 961	208 701	240 777	* 200 000
Soviet Union	* 5 000 000	* 5 200 000	* 5 300 000	* 5 400 000	* 5 400 000
Spain	4 908 673	5 481 522	5 368 600	* 4 500 000	* 4 100 000
Switzerland	* 70 000	* 70 000	* 70 000	* 70 000	* 70 000
Turkey	32 308	65 327	58 766	78 255	72 234
Yugoslavia	504 730	579 092	602 626	686 587	* 690 000
Algeria	* 175 000	* 175 000	* 175 000	* 190 000	* 200 000
Angola	* 20 000	* 25 000	* 25 000	* 25 000	* 25 000
Egypt	466 604	508 635	793 796	796 000	690 368
Kenya	78 020	25 999	4 080	400	—
Libya	...	...	2 803	1 389	...
Mauritania	10 965	10 163	13 600	* 13 600	* 14 000
Niger	2 588	* 2 500	* 2 500	* 2 700	* 1 800
South Africa	482 375	439 688	388 734	377 467	452 490
Sudan	7 523	11 361	26 000	30 000	* 10 000
Tanzania	57 149	1 159	23 300	9 952	8 119
Tunisia	94 520	104 564	116 806	145 325	214 910
Zambia	4 650	4 634	1 734	1 180	—
Canada (a)	6 002 154	7 233 931	8 074 441	8 098 166	7 209 000
Cuba	* 85 000	* 90 000	* 95 000	* 90 000	* 90 000
Dominican Republic	174 960	161 168	168 178	175 000	* 170 000
Guatemala	12 535	19 623	37 771	25 000	33 566
Honduras	* 10 000	18 144	* 23 000	* 23 000	* 23 000
Jamaica	248 963	214 824	132 403	58 000	* 60 000
Mexico	1 414 237	1 495 730	1 757 870	2 021 006	* 1 800 000
Nicaragua	* 30 000	* 36 000	* 36 000	* 36 000	* 40 000
USA	10 868 000	12 147 000	13 509 000	13 272 000	* 11 000 000
Argentina	507 125	546 968	611 158	587 482	595 113
Brazil	545 463	543 046	474 732	481 732	576 824
Chile	65 079	147 104	174 143	162 482	* 170 000
Colombia	205 000	210 000	255 000	270 000	248 000
Ecuador	44 000	44 000	34 500	35 000	* 35 000
Paraguay	* 16 000	* 14 000	* 9 000	* 11 000	* 10 000
Peru	171 126	215 100	238 824	217 000	* 220 000
Venezuela	111 000	122 000	190 000	195 000	* 190 000

**Production of Gypsum**

tonnes

Country	1976	1977	1978	1979	1980
Burma (b)	16 798	22 608	38 350	38 265	* 37 100
China	* 1 000 000	* 1 000 000	* 1 500 000	* 2 000 000	* 2 000 000
Cyprus	66 043	86 364	60 700	46 100	43 550
India	727 000	778 000	884 000	877 000	856 000
Iran (c)	* 6 500 000	* 6 900 000	* 8 000 000	* 7 000 000	* 7 000 000
Iraq	* 160 000	* 160 000	* 160 000	* 160 000	* 160 000
Israel	* 200 000	* 200 000	* 200 000	* 65 000	* 60 000
Japan	64 831	1 000	—	...	...
Jordan	20 900	21 800	36 300	59 900	65 997
Lebanon	* 12 700	15 400	11 800	* 10 000	* 10 000
Mongolia	* 25 000	* 27 000	* 27 000	* 27 000	* 30 000
Pakistan (a)	443 000	283 000	290 000	337 000	568 000
Philippines	2 820	1 710	—	—	—
Saudi Arabia	30 481	30 481	* 200 000	* 300 000	* 300 000
Syria	64 800	88 800	86 182	64 440	* 65 000
Taiwan	2 303	7 412	3 385	2 535	8 070
Thailand	267 822	380 090	280 904	352 398	411 977
Vietnam	* 10 000	* 12 000	* 14 000	* 14 000	* 15 000
Australia	941 944	915 991	939 884	1 230 204	1 295 463
World total	62 500 000	66 900 000	71 100 000	70 600 000	67 900 000

Note: In addition to the countries listed, Ethiopia and Romania are also believed to produce gypsum

(a) Including anhydrite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Calcined

## Exports of Gypsum

Country	1976	1977	1978	1979	1980
United Kingdom					
Crude	3 600	3 886	4 069	2 751	3 647
Calcined	11 594	10 881	12 401	14 838	14 241
Belgium-Luxembourg					
Crude	13 854	3 874	10 136	56 832	45 929
Calcined	53 640	34 134	43 980	39 755	54 678
Denmark					
Crude & calcined	67	270	130	123	172
France					
Crude	723 997	898 203	798 698	949 162	917 153
Calcined	208 380	213 559	209 855	189 839	241 319
Germany, Federal Republic of					
Crude	75 623	94 146	129 380	115 792	139 742
Calcined	196 402	240 104	226 603	241 126	250 661
Irish Republic					
Crude	) 66 504	31 995	33 726	29 607	32 608
Calcined		30 785	32 397	27 577	25 208
Italy					
Crude	712	353	247	20	67
Calcined	9 311	11 145	10 914	11 919	12 936
Netherlands					
Crude	) 13 538	427	928	1 532	133
Calcined		1 475	1 438	1 943	2 037
Austria					
Crude	96 626	94 814	99 276	121 598	134 911
Calcined	56 842	70 987	90 468	128 117	119 217
German Democratic Republic					
Calcined	76 730	77 208	68 681	80 353	78 604
Greece	6 193	7 305	5 622	...	...
Norway					
Crude	17 014	11 454	—	—	4 362
Poland	261 541	62 711	26 470	—	...
Romania					
Calcined	* 28 200	* 21 500	* 28 200	...	...
Soviet Union (a)	* 208 100	* 177 500	* 112 600	* 59 900	* 35 300
Spain					
Crude & calcined	363 196	635 032	775 745	1 110 653	1 119 715
Switzerland					
Ground & calcined	2 447	923	620	667	4 100
Turkey					
Crude & calcined	50	1 950	5 000	—	...
Egypt	9 523	25 019	18 693	9 100	...
Kenya	124	2 247	1 559	270	...
Morocco					
Crude	146 172	173 520	218 073	228 871	203 140
Calcined	3 140	2 037	4 160	8 010	2 882
South Africa	11 400	14 229	3 654	3 237	1 092
Tanzania	—	4 000	...	...	...
Canada					
Crude	3 798 243	4 994 324	5 178 604	5 474 736	4 960 214
Dominican Republic	137 892	113 297	195 998	190 794	...
Jamaica	215 504	248 400	152 816	21 062	...
Mexico	1 086 832	1 309 490	1 535 304	1 838 267	...
Nicaragua	14 418	14 966	17 490	13 341	...
USA					
Crude	19 314	16 632	17 867	4 019	6 378
Calcined	239 006	114 740	696 720	78 657	73 770
Argentina	16 727	21 752	9 749	...	...
Bolivia	...	—	1 000	—	1 200
Venezuela	17 800	16 250	11 050	...	...
Cyprus					
Crude	10 324	34 922	5 007	4 999	2 500
Calcined	884	4 186	2 688	4 464	2 621
Hong Kong (Re-exports)	456	840	528	31 433	1 430

## Gypsum

**Exports of Gypsum**

tonnes

Country	1976	1977	1978	1979	1980
Iraq					
Crude & calcined	12 022	...	...	...	...
Japan					
Crude	342	767	1 394	895	647
Calcined	15 370	5 707	4 778	5 262	5 723
Korea, Republic of					
Crude	15	71 897	) 109 095	10 085	26 336
Calcined	89 745	19	)	59 319	55 484
Saudi Arabia					
Crude & calcined	468	2 708	2 912	7 566	...
Singapore					
Crude & calcined	610	682	881	1 405	1 251
Syria	3 689	65 682	42 003	116 132	...
Taiwan	642	535	1 564	2 045	1 582
Thailand					
Crude	65 850	59 980	82 212	88 513	...
Calcined	439	457	1 321	1 447	...
Australia					
Crude & calcined	187 723	190 512	181 040	424 678	391 267

Note: In this table the term 'crude' as used here may include some anhydrite

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



## Imports of Gypsum

Country	1976	1977	1978	1979	1980
United Kingdom					
Crude	44 490	37 854	55 725	72 474	34 770
Calcined	41 438	49 055	40 240	38 940	85 651
Belgium-Luxembourg					
Crude	353 155	320 512	341 702	250 882	236 820
Calcined	63 679	119 275	104 978	123 296	184 806
Denmark					
Crude	287 910	366 031	293 907	311 551	303 737
Calcined	4 011	3 948	4 129	4 812	4 257
France					
Crude	13 529	10 274	12 544	8 657	15 639
Calcined	5 225	3 737	4 356	4 640	5 747
Germany, Federal Republic of					
Crude	25 597	22 123	29 532	55 358	41 264
Calcined	302 108	323 163	344 731	516 735	616 795
Irish Republic					
Crude	)	1 029	735	780	722
Calcined	) 6 928	3 239	3 246	4 405	3 989
Italy					
Crude	192	101	65	62	147
Calcined	14 353	16 260	17 895	16 115	20 814
Netherlands					
Crude	)	280 322	268 012	246 404	290 445
Calcined	) 363 211	126 173	122 327	124 161	134 778
Austria					
Crude	1 990	2 121	3 238	4 558	4 715
Calcined	9 413	5 366	8 187	9 623	6 668
Czechoslovakia	26 000	26 000	24 000	25 000	25 000
Finland					
Crude	120 610	123 075	81 492	157 468	148 039
Calcined	3 063	2 295	2 066	3 204	3 162
Greece					
Crude	48	18	35	50	52
Calcined	882	886	1 165	1 288	1 123
Hungary					
Calcined	66 359	67 465	74 382	85 931	86 584
Iceland	6 873	8 453	7 481	3 522	9 501
Norway					
Crude	185 867	168 039	141 858	175 631	136 210
Calcined	3 337	2 775	2 504	2 331	32 255
Portugal					
Crude	24 569	25 922	31 633	35 354	34 908
Calcined	535	420	139	148	210
Spain					
Crude & calcined	3 351	4 193	4 902	5 863	5 449
Sweden					
Crude	213 357	302 736	256 304	368 434	344 877
Calcined	6 522	6 342	5 970	5 899	5 568
Switzerland					
Crude	40 973	34 593	27 182	32 739	41 238
Ground & calcined	21 482	21 574	25 272	30 399	34 106
Yugoslavia	5 179	11	9	8	33
Algeria					
Crude & calcined	1 168	4 480	3 642	...	...
Cameroon					
Crude & calcined	5 804	7 748	20 867	12 284	...
Ghana					
Crude & calcined	16 440	15 831	...	...	...
Ivory Coast					
Crude	41 367	45 167	68 066	46 820	...
Calcined	3 465	4 284	5 098	6 727	...
Kenya	823	23 281	182	14 198	...
Liberia					
Crude & calcined	2 955	1 596	343	2 493	...
Libya					
Crude & calcined	2 870	3 253	658	303	...
Madagascar	2 064	2 240	3 121	...	...

## Gypsum

## Imports of Gypsum

tonnes

Country	1976	1977	1978	1979	1980
Melilla	1 345	653	1 845	543	...
Mozambique					
Crude	6 952	3 994	...	...	...
Calcined	14	19	...	...	...
Senegal					
Crude	...	12 115	3 308	...	...
Calcined	...	757	983	...	...
South Africa					
Crude & calcined	5 826	5 605	5 216	5 939	7 286
Tunisia					
Crude & calcined	190	199	169	215	474
Zaire					
Crude & calcined	22 413	395	144	5	...
Zambia	43	30	...	...	...
Zimbabwe	...	...	...	3 364	...
Canada					
Crude	54 769	24 042	70 995	152 463	154 715
Calcined	25 613	21 289	21 377	18 232	18 903
Costa Rica					
Crude	14 330	15 062	...	...	...
Calcined	601	582	...	...	...
El Salvador					
Crude	8 201	16 224	...	...	...
Calcined	184	284	...	...	...
Mexico					
Crude	12 721	9 845	18 071	17 244	...
Calcined	9 549	8 276	6 969	9 102	...
Nicaragua	408	304	213	171	...
Panama	20 961	16 338	16 179	16 204	...
Trinidad & Tobago					
Crude & calcined	13 590	44 676	10 462	7 717	...
USA					
Crude	5 653 000	6 417 000	7 537 000	7 052 000	6 682 000
Ground & calcined	20 000	4 000	3 000	2 000	2 000
Brazil	68	12	960	628	1 706
Peru					
Calcined	703	251	...	...	...
Uruguay					
Crude & ground	29 314	24 269	2 514	30 736	...
Venezuela	568	19 989	8 996	...	...
Hong Kong	25 657	52 823	62 120	132 726	86 119
Indonesia	79 753	109 653	157 757	287 554	318 607
Iran (a)	1 275	1 002	* 1 800	* 1 450	...
Israel (c)	23	96	186	507	331
Japan					
Crude	35 029	30 181	15 148	29 733	32 793
Calcined	365	230	187	381	442
Jordan	6 292	1 185	1 992	1 337	...
Korea, Republic of	3 416	5 429	4 395	5 077	8 424
Kuwait	16 859	30 331	81 603	60 453	...
Malaysia					
Crude & calcined	58 645	55 162	...	...	...
Philippines					
Crude	64 328	81 462	82 935	57 255	60 376
Calcined	5 449	4 659	5 279	6 019	5 295
Saudi Arabia					
Crude	971	4 398	...	2 988	...
Calcined	713	151 018	...	20 788	...
Singapore					
Crude & calcined	69 988	53 708	71 003	75 268	76 910
Sri Lanka	818	10 453	988	4 909	198 965
Taiwan					
Crude	55 774	24 169	24 522	39 673	23 421
Calcined	1 713	2 104	2 178	3 079	2 984

**Imports of Gypsum**

Country	1976	1977	1978	1979	1980
Thailand					
Crude & calcined	316	416	294	555	...
Australia	1 183	1 174	2 043	957	...
Fiji	281	211	...	...	...
New Zealand (b)					
Crude	129 579	110 421	140 037	98 485	92 672
Calcined	638	690	573	484	484

Note: In this table the term 'crude' as used here may include some anhydrite

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

Iodine

## Production of Iodine

kilograms

Country	1976	1977	1978	1979	1980
Soviet Union	* 2 300 000	* 2 300 000	* 2 300 000	* 2 300 000	* 2 300 000
USA	...	* 600 000	* 1 000 000	* 1 000 000	* 700 000
Chile	1 423 500	1 856 300	1 922 000	2 409 600	2 601 000
China	* 360 000	* 360 000	* 450 000	* 450 000	* 450 000
Indonesia	27 000	12 000	7 000	25 000	* 25 000
Japan	7 000 000	6 100 000	6 000 000	6 300 000	* 6 500 000
World total	11 100 000	11 200 000	11 700 000	12 500 000	12 600 000

**Exports of Iodine**

Country	1976	1977	1978	1979	1980
United Kingdom	51 589	124 111	123 089	118 729	224 309
Belgium-Luxembourg	11 600	15 500	7 700	4 100	47 100
Denmark	2 100	0	0	200	2 700
France	9 000	31 000	97 000	131 000	140 400
Germany, Federal Republic of	35 900	13 500	31 300	45 300	75 000
Italy	363	—	28 235	23 825	9 100
Netherlands (a)	16 000	11 000	4 000	18 000	11 000
Poland	...	* 6 250	* 3 450	...	...
Portugal	300	200	100	0	...
Spain	1 000	1 100	1 601	1 000	...
Chile	(c)* 1 200 000	2 279 200	1 268 700	(c)* 2 000 000	(c)* 2 200 000
Indonesia	9 000	16 500	—	14 700	28 850
Japan (b)	5 517 020	5 484 493	6 020 166	5 524 215	5 707 255

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

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

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

Iodine

**Imports of Iodine**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom	949 313	1 095 320	1 310 066	1 359 074	1 596 010
Belgium-Luxembourg	137 400	139 500	132 400	102 200	96 600
Denmark	2 600	500	700	1 300	2 400
France	593 000	745 000	998 000	1 156 000	1 101 600
Germany, Federal Republic of	813 600	703 900	791 400	870 700	1 139 900
Italy	142 087	236 472	241 924	252 087	301 100
Netherlands (a)	57 000	105 000	113 000	126 000	216 000
Greece	1 000	1 819	2 625	2 000	1 000
Hungary	86 837	55 349	79 500	40 400	33 900
Portugal	12 500	16 900	46 100	10 900	...
Spain	84 158	96 078	105 111	146 034	...
Turkey	6 943	5 225	51 510	1 031 655	...
Yugoslavia	38 141	41 026	27 923	70 773	60 121
Algeria	79	46	1 442	...	...
Ethiopia	...	7 292	50 500	...	...
Morocco	150 648	357	974	372	419
Sudan	—	—	38 964	10 350	...
Canada	128 094	160 889	175 000	260 000	270 000
Mexico	139 821	174 035	...	...	...
USA	2 950 537	3 168 331	3 138 926	2 822 876	2 848 589
Argentina	108 245	9 441	19 197	...	...
Brazil	127 017	82 466	165 571	130 409	176 261
Ecuador	354	1 044	...	...	...
Peru	3 085	2 687	...	...	...
Uruguay	600	900	700	1 400	...
Venezuela	11 696	8 565	11 469	...	...
India (b)	212 960	170 160	288 986	140 429	...
Indonesia	6 548	7 492	9 282	7 617	34 420
Korea, Republic of	4 047	7 855	...	5 207	3 120
Saudi Arabia	6 725	170 105	...	39 100	...
Taiwan	3 554	5 064	6 191	7 169	7 663
Thailand	603	2 478	1 488	1 324	...

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Years ended 31 March following that stated

## Production of Iron Ore

thousand tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	4 582	3 745	4 239	4 269	916
Belgium	63	47	43	—	—
France	45 181	36 630	33 454	31 627	28 980
Germany, Federal Republic of (f)	3 034	2 875	1 612	1 668	1 945
Italy	514	478	353	219	185
Luxembourg	2 079	1 548	835	630	560
Albania (b)	* 480	* 510	* 510	* 530	* 550
Austria	3 784	3 449	2 788	3 200	3 200
Bulgaria	2 316	2 270	2 453	2 103	1 886
Czechoslovakia	1 904	1 994	2 023	2 012	1 927
Finland	1 167	1 141	1 088	1 144	1 137
German Democratic Republic	60	63	70	56	51
Hungary	602	525	534	532	426
Norway	3 972	3 635	3 773	4 066	3 807
Poland	674	659	529	249	104
Portugal (f)	49	53	55	60	57
Romania	2 835	2 467	2 511	2 523	2 333
Soviet Union	241 256	242 047	246 398	241 738	244 713
Spain	7 050	7 375	8 580	8 440	8 865
Sweden	29 861	24 839	21 063	26 189	* 27 200
Turkey	3 602	3 470	4 198	1 955	2 495
Yugoslavia	4 260	4 451	4 564	4 617	4 530
Algeria	2 789	3 183	2 750	2 864	* 3 500
Angola	* 5 500	* 5 500	...	...	...
Egypt	1 242	1 409	1 456	1 435	1 870
Liberia	20 783	17 384	20 805	19 900	17 481
Mauritania	9 420	7 467	7 400	8 900	8 900
Morocco	343	407	63	62	78
South Africa (c)	15 663	26 481	24 206	31 565	26 312
Swaziland	1 936	1 441	(a)1 266	(a)494	—
Tunisia	512	344	339	394	389
Zimbabwe	1 352	1 176	1 123	1 201	1 622
Canada (g)	55 416	53 621	42 931	59 617	50 866
Mexico	5 466	5 381	5 334	6 061	7 500
USA	81 277	56 645	82 892	87 091	70 730
Argentina	506	1 030	909	611	* 1 000
Brazil	92 611	80 936	84 980	96 112	114 692
Chile	10 055	7 891	9 666	11 068	* 10 300
Colombia	498	460	454	* 350	* 500
Peru	4 776	6 284	4 923	5 358	* 5 600
Venezuela	18 684	13 683	13 515	16 300	16 000
China	* 65 000	* 60 000	* 70 000	* 75 000	* 75 000
India	43 868	42 598	38 838	38 859	40 878
Indonesia (d)	292	312	191	80	75
Iran (e)	* 1 100	* 1 100	* 1 500	* 600	* 600
Japan (d)	745	686	594	456	* 500
Korea, Dem. P.R. of	* 6 660	* 6 900	* 7 100	* 7 400	* 8 000
Korea, Republic of	755	791	693	639	619
Malaysia	308	330	320	351	371
Philippines	571	—	2	6	0
Thailand	25	63	88	103	85

Iron Ore

**Production of Iron Ore**

thousand tonnes

Country	1976	1977	1978	1979	1980
Australia	93 255	95 923	83 134	91 717	95 542
New Zealand	2 473	2 968	4 076	3 654	3 711
World total	903 000	847 000	858 000	911 000	904 000

Note: In addition to the countries listed, Cuba and Vietnam are also believed to produce iron ore

- (a) Production from stockpiles
- (b) Nickeliferous iron ore
- (c) Including by-product magnetite
- (d) Including iron sand
- (e) Years ended 20 March following that stated
- (f) Including manganiferous iron ore
- (g) Including shipments of by-product iron ore



## Exports of Iron Ore

Country	1976	1977	1978	1979	1980
United Kingdom	383	767	384	898	1 156
Belgium-Luxembourg					
Iron ore	26 710	148 185	83 852	3 367	60 237
Burnt pyrites	17 980	7 774	11 128	9 270	10 291
Denmark					
Iron ore	8 442	4 764	10 323	6 751	8 638
Burnt pyrites	—	—	608	—	—
France					
Iron ore	15 849 360	12 122 375	11 370 828	10 219 867	8 652 975
Burnt pyrites	4 509	4 700	26	—	—
Germany, Federal Republic of					
Iron ore	3 836	3 292	7 176	3 438	3 812
Burnt pyrites	106 610	241 815	184 046	226 063	155 875
Irish Republic					
Iron ore	27 776	31 092	37 352	31 160	27 092
Italy					
Iron ore	2	3 225	10 703	288	1 225
Burnt pyrites	142 878	126 390	65 916	65 648	46 559
Netherlands (b)	34 613	147 676	11 825	119 566	273 706
Austria	1 710	334	85	2	118
Finland	2 811	1 165	13 302	10	14 628
Greece					
Burnt pyrites	18 575	11 555	24 754	...	22 603
Norway					
Iron ore	2 729 241	2 695 573	3 074 126	3 408 646	2 721 777
Burnt pyrites	137 842	43 601	48 047	27 684	53 609
Portugal					
Burnt pyrites	106 254	64 555	10 500	27 514	21 000
Soviet Union	43 126 000	40 946 000	40 605 000	39 012 000	38 108 000
Spain					
Iron ore	2 187 541	1 466 371	2 024 815	1 994 544	2 087 000
Burnt pyrites	627 882	461 199	261 987	272 339	372 000
Sweden					
Iron ore	22 030 000	18 913 000	22 204 000	26 246 000	20 998 000
Burnt pyrites	388 000	330 000	355 000	316 000	250 000
Switzerland (b)	39	224	41	54	88
Yugoslavia					
Burnt pyrites	25 423	27 674	33 833	48 302	74 168
Algeria					
Iron ore	1 733 781	1 433 577	1 527 968	2 489 000	...
Burnt pyrites	42 870	—	20 000	...	...
Canary Islands					
Burnt pyrites	124 860	69 895	57 970	57 180	...
Liberia	20 533 153	17 663 184	20 804 586	19 865 581	...
Mauritania	9 660 808	8 423 415	6 500 000	9 000 000	...
Morocco					
Burnt pyrites	238 423	429 342	39 935	99 686	143 503
South Africa (d)	* 3 535 000	* 10 560 000	* 13 680 000	* 16 171 000	* 13 066 000
Swaziland	1 744 464	1 384 315	1 046 383	956 726	553 494
Tunisia	112 632	55 023	24 981	—	—
Canada	44 684 874	45 060 397	31 928 927	48 849 015	38 994 077
Mexico	11 497	802	893	413	...
USA (b)	2 960 061	2 177 714	4 281 635	5 347 856	5 780 534
Bolivia (c)	...	4 328	35 313	2 629	—
Brazil	67 085 514	58 540 946	66 371 318	75 587 907	78 958 000
Chile	8 942 000	6 704 884	3 129 199	6 980 000	7 600 000
Peru	4 302 644	6 103 347	4 800 000	5 780 000	5 900 000
Venezuela	15 672 000	11 936 000	12 821 000	12 990 000	* 11 500 000

## Iron Ore

**Exports of Iron Ore**

tonnes

Country	1976	1977	1978	1979	1980
Hong Kong	55 547	—	—	—	—
India	23 403 000	23 191 000	19 836 000	24 387 000	...
Korea, Republic of	4 076	1 360	2 000	30	—
Malaysia	8 936	141 488	...	...	...
Philippines					
Iron ore	835 806	1 982 596	3 279 988	4 133 234	4 263 809
Burnt pyrites	34 090	56 429	54 992	33 079	59 535
Australia	81 231 000	78 908 000	75 264 000	78 332 000	79 753 000
New Zealand (a)	2 236 308	2 222 860	3 079 107	3 001 620	3 499 168

(a) Years ended 30 June of that stated

(b) Including burnt pyrites

(c) Fe content of concentrates

(d) IGS estimates, based on known imports into certain countries

## Imports of Iron Ore

Country	1976	1977	1978	1979	1980
United Kingdom					
Iron ore	18 578 558	15 542 322	15 451 080	17 841 304	8 529 313
Burnt pyrites	183 803	211 658	226 543	221 166	218 087
Belgium-Luxembourg					
Iron ore	26 978 608	21 522 153	24 242 568	26 144 207	22 181 965
Burnt pyrites	195 717	226 678	201 813	175 705	103 415
Denmark (a)	40 735	36 670	41 168	26 961	19 633
France					
Iron ore	13 888 931	15 431 925	14 603 972	17 345 338	18 642 578
Burnt pyrites	80 312	78 187	92 272	87 452	70 041
Germany, Federal Republic of					
Iron ore	46 775 277	39 748 814	42 133 179	51 703 352	49 833 550
Burnt pyrites	16 815	3 313	21 924	14 668	14 930
Irish Republic	1	60	—	77	36
Italy (a)	17 304 469	15 504 116	16 296 692	17 320 601	16 912 443
Netherlands (a)	6 532 791	6 921 394	5 577 835	7 431 455	7 585 635
Austria					
Iron ore	2 876 479	2 610 912	2 618 559	3 963 480	3 336 303
Burnt pyrites	119 143	113 074	54 424	44 854	48 448
Bulgaria	1 638 000	1 672 000	1 642 000	2 107 000	2 225 000
Czechoslovakia	15 400 000	15 970 000	15 600 000	12 459 000	12 819 000
Finland	972 529	1 161 788	1 530 234	1 790 979	1 736 929
German Democratic Republic (b)	2 053 300	2 267 000	2 046 000	2 033 000	2 088 000
Greece	370 309	645 893	235 127	391 000	288 000
Hungary	4 234 000	4 280 590	4 200 053	4 044 624	3 285 591
Norway	163 512	119 993	121 106	312 434	87 101
Poland	15 829 000	16 943 000	17 198 000	18 872 000	20 150 000
Portugal	534 395	447 360	389 350	619 651	494 918
Romania	11 740 000	12 402 200	13 843 000	15 065 000	15 984 000
Spain	6 149 472	4 898 661	4 627 766	5 194 919	4 757 000
Sweden	189 000	120 000	121 000	33 000	...
Switzerland (a)	31 835	31 406	59 552	58 723	49 431
Turkey	412 790	666 719	172 816	732 756	...
Yugoslavia	481 892	515 443	547 006	1 059 699	1 639 947
Kenya	10 500	7 644	35 602	—	22 603
Libya	9 000	2 844	—	—	...
Nigeria	1 944	—	1 329	...	...
South Africa	2	—	—	78	—
Tanzania	1 050	2 336	817	...	...
Canada	3 020 131	2 505 204	4 685 843	5 912 550	5 874 839
Mexico	159	7	148 773	571 916	...
USA (a)	45 101 857	38 512 962	34 155 820	34 318 178	25 460 384
Argentina	1 744 805	2 377 249	2 395 419	...	...
Venezuela (a)	267 265	73 612	110 593	...	...
Abu Dhabi	8 500	—	88 959	122 552	173 897
Dubai	39	3 217	11 000	12 661	12 400
India	181	1 049	464	179	...
Indonesia	21	209	55 020	53 159	285 047
Japan					
Iron ore (c)	133 749 526	132 596 591	114 688 039	130 274 295	133 721 259
Burnt pyrites	8 924	17 556	2 891	1 495	—
Korea, Republic of	1 187 669	2 360 179	3 623 000	7 514 298	9 129 893
Philippines	...	2 406 905	3 405 249	3 363 322	4 650 570
Singapore	77	143 934	16 459	6 781	9 605
Taiwan					
Iron ore	151 143	1 176 079	2 488 737	2 648 963	2 843 526
Burnt pyrites	29 479	77 560	74 209	50 980	49 142
Australia	50 716	27 210	30 731	26 400	46 856

(a) Including burnt pyrites

(b) Fe content of concentrates

(c) Including manganiferous iron ore

**Production of Pig-Iron and Blast-Furnace Ferro-alloys**

thousand tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	13 835	12 232	11 434	12 898	6 316
Belgium (a)	9 864	8 916	10 128	10 776	9 846
France	19 023	18 257	18 497	19 415	19 230
Germany, Federal Republic of	31 849	28 959	30 218	35 166	33 873
Italy	11 714	11 495	11 434	11 397	* 11 520
Luxembourg (a)	3 756	3 568	3 721	3 801	3 568
Netherlands (a)	4 265	3 922	4 613	4 814	4 328
Austria (a)	3 273	2 969	3 077	3 702	3 485
Bulgaria (a)	1 558	1 614	1 493	1 451	1 539
Czechoslovakia	9 475	9 715	9 944	9 529	9 819
Finland	1 370	1 797	1 903	2 177	2 125
German Democratic Republic	2 528	2 628	2 560	2 386	2 458
Hungary (a)	2 221	2 286	2 330	2 369	2 214
Norway (a)	656	512	554	651	618
Poland	8 320	10 079	11 668	11 527	11 953
Portugal (a)	344	357	353	360	308
Romania (a)	7 415	7 784	8 155	8 879	9 012
Soviet Union	105 384	107 368	110 702	119 000	107 280
Spain (a)	6 626	6 705	6 249	6 464	6 364
Sweden (a)	2 952	2 330	2 363	2 942	* 2 420
Switzerland (a)	23	27	35	—	—
Turkey	1 518	1 360	1 569	1 190	* 2 000
Yugoslavia (a)	1 918	1 938	2 081	2 360	2 425
Algeria (a)	455	429	455	480	* 580
Egypt (a)	569	* 250	* 300	* 190	* 360
South Africa (a)	5 722	5 807	5 895	7 031	* 7 200
Tunisia (a)	103	132	134	150	* 140
Zimbabwe (a)	181	21	16	24	93
Canada (a)	9 826	9 661	10 338	10 906	10 893
Mexico (a)	3 528	4 329	5 136	5 027	5 267
USA (a)	78 787	73 930	79 551	78 902	62 323
Argentina (a)	1 367	1 101	1 434	1 115	1 806
Brazil (a)	8 170	9 380	10 043	11 594	* 12 500
Chile (a)	403	427	539	611	648
Colombia (a)	286	223	297	240	279
Peru (a)	231	244	246	257	261
Venezuela (a)	427	351	418	1 332	1 695
China (a)	* 30 000	25 050	34 790	36 730	38 020
India (a)	9 727	9 796	9 432	8 748	8 459
Japan (a)	86 576	85 886	78 588	83 827	87 800
Korea, Dem. P.R. of (a)	* 2 600	* 2 700	* 2 800	* 2 900	* 3 000
Korea, Republic of (a)	1 937	2 425	2 741	5 063	5 577
Taiwan (a)	191	275	316	325	272
Thailand (a)	12	13	17	30	18
Australia (a)	7 417	6 753	7 337	7 811	6 960
World total	498 000	486 000	506 000	537 000	507 000

(a) Pig-iron only

## Production of Steel Ingots and Castings

thousand tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	22 274	20 411	20 311	21 464	11 277
Belgium	12 144	11 266	12 604	13 553	12 324
Denmark	722	686	863	804	734
France	23 221	22 094	22 841	23 360	23 100
Germany, Federal Republic of	42 415	38 985	41 253	46 040	43 838
Irish Republic	58	58	66	* 80	* 60
Italy	23 447	23 334	24 283	24 250	26 501
Luxembourg	4 566	4 329	4 790	4 950	4 619
Netherlands	5 189	4 927	5 590	5 806	5 272
Austria	4 477	4 093	4 335	4 917	4 624
Bulgaria	2 460	2 589	2 469	2 482	2 566
Czechoslovakia	14 693	15 064	15 294	14 817	15 225
Finland	1 644	2 196	2 333	2 463	2 509
German Democratic Republic	6 732	6 850	6 976	7 023	7 308
Greece	700	760	900	1 141	* 1 100
Hungary	3 712	3 782	3 877	3 908	3 764
Norway	898	711	813	923	866
Poland	15 639	17 841	19 251	19 218	19 485
Portugal	464	504	614	649	583
Romania	10 733	11 457	11 779	12 909	13 175
Soviet Union	144 805	146 655	151 436	149 099	147 931
Spain	11 002	11 102	11 269	12 304	* 11 500
Sweden	5 178	3 979	4 325	4 733	4 237
Switzerland	545	656	784	886	929
Turkey	1 469	1 397	1 628	1 789	1 700
Yugoslavia	2 751	3 184	3 452	3 536	3 634
Algeria	356	400	395	416	* 500
Egypt	457	263	* 600	* 635	* 760
South Africa	6 926	7 378	7 902	8 875	* 9 000
Tunisia	103	156	168	176	182
Zimbabwe	733	734	778	740	800
Canada	13 290	13 631	14 898	16 078	15 901
Cuba	250	330	324	328	* 350
Mexico	5 298	5 601	6 775	7 117	7 065
USA	116 120	113 700	124 312	123 686	101 455
Argentina	2 431	2 537	2 564	2 967	* 2 500
Brazil	9 169	11 164	12 106	13 893	15 324
Chile	448	509	574	642	695
Colombia	252	209	265	230	* 260
Peru	349	379	377	426	471
Uruguay	15	17	9	16	15
Venezuela	752	678	698	1 480	2 077
Bangladesh (b)	90	108	117	126	138
China	* 27 000	23 740	31 780	34 430	37 120
India	9 403	9 852	9 917	9 936	9 356
Indonesia	139	145	150	* 450	* 600
Iran	549	544	* 780	* 700	* 700
Israel	* 80	* 100	* 100	* 100	* 100
Japan	107 399	102 405	102 103	111 737	111 408
Jordan	* 98	* 100	* 100	* 100	306
Korea, Dem. P.R. of	* 3 000	* 3 000	* 3 200	* 3 300	* 3 500
Korea, Republic of	2 698	2 737	3 138	5 200	5 790
Malaysia	200	* 200	* 200	* 230	* 220
Philippines	393	364	276	397	* 390
Singapore	203	206	280	297	* 300
Syria	* 80	* 115	* 120	* 90	* 100
Taiwan	634	910	1 269	1 570	1 412
Thailand	285	300	331	* 435	* 450
Australia (a)	7 774	7 313	7 589	8 125	7 594
New Zealand	200	225	226	* 200	* 200
World total	679 000	669 000	709 000	738 000	706 000

Note: The figures in this table refer to crude steel and cast semi-manufactures are not included

(a) Includes recovery from scrap

(b) Years ended 30 June of that stated

**Production of Ferro-alloys**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ferro-manganese	122 000	97 000	69 000	137 000	52 000
Belgium					
Ferro-manganese	84 000	55 000	87 000	91 000	* 85 000
France					
Blast furnace ferro-alloys – Spiegeleisen & ferro- manganese	367 000	373 000	397 000	449 000	480 000
Electric furnace & alumino- thermic ferro-alloys – Ferro-chrome & ferro-silico- chrome	111 975	105 716	96 980	97 319	86 183
Ferro-silicon (50% Si)	236 531	241 048	192 829	285 487	257 640
Silico-spiegeleisen & ferro- silico-manganese	36 164	42 205	18 863	12 890	19 958
Ferro-titanium, ferro- tungsten, ferro- molybdenum, ferro- vanadium (a)	7 222	6 358	4 216	7 786	...
Other ferro-alloys	93 097	92 883	123 781	138 245	122 470
Silicon metal	41 000	43 000	42 000	54 089	54 300
Germany, Federal Republic of					
Blast furnace ferro-alloys – Spiegeleisen & ferro- manganese	220 000	175 000	209 000	233 000	200 000
Ferro-silicon	91 000	87 000	78 000	79 000	64 000
Electric furnace ferro-alloys – Ferro-chrome	* 60 000	* 55 000	* 50 000	* 60 000	* 60 000
Ferro-manganese & ferro- silico-manganese	* 60 000	* 50 000	* 15 000	* 30 000	* 25 000
Ferro-silicon	* 60 000	* 50 000	* 30 000	* 50 000	* 50 000
Other ferro-alloys	* 59 000	* 55 000	* 45 000	* 51 000	* 50 000
Italy					
Blast furnace ferro-alloys – Spiegeleisen	2 635	5 930	2 592	3 019	4 990
Ferro-manganese	78 459	75 160	89 929	89 270	83 588
Silicon pig-iron (10-12% Si)	2 246	2 861	1 026	...	...
Electric furnace ferro-alloys – Ferro-chrome	45 264	39 753	36 877	42 541	41 150
Ferro-silico-chrome	13	—	230	...	—
Ferro-silico-magnesium	2 063	4 320	2 381	...	...
Ferro-manganese	15 000	17 000	27 000	21 800	* 21 800
Ferro-silico-manganese	41 386	40 050	42 615	54 400	* 45 000
Ferro-molybdenum	1 931	2 043	1 756	...	...
Ferro-phosphorus	416	651	631	...	...
Ferro-silicon	78 934	76 511	67 700	80 521	71 857
Ferro-titanium & ferro- silico-titanium	1 126	1 517	2 188	...	...
Ferro-vanadium	258	237	526	...	...
Calcium-silicide	2 473	5 723	3 177	...	...
Silicon metal	17 703	* 16 000	* 14 500	* 15 400	* 15 400
Austria					
Electric furnace ferro- alloys	8 000	7 000	6 000	6 000	10 000
Bulgaria					
Electric furnace ferro-alloys – Ferro-manganese & ferro- silico-manganese	* 32 000	* 30 000	* 28 000	* 28 000	* 28 000
Ferro-silicon	* 25 000	* 19 000	* 17 000	* 16 000	* 16 000
Other ferro-alloys	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000

**Production of Ferro-alloys**

tonnes

Country	1976	1977	1978	1979	1980
<b>Czechoslovakia</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	* 30 000	* 30 000	* 30 000	* 28 000	28 155
Ferro-manganese & ferro-silico-manganese	* 70 000	* 100 000	* 100 000	* 100 000	* 98 000
Ferro-silicon	* 27 000	* 35 000	* 35 000	* 33 000	28 582
Other ferro-alloys	* 9 000	* 10 000	* 12 000	* 9 000	* 8 000
Silicon metal	* 3 600	* 4 500	* 5 400	* 5 400	* 5 400
<b>Finland</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	40 353	33 616	44 801	49 116	52 670
Other ferro-alloys	10 265	43 443	45 269	90 000	53 000
<b>German Democratic Republic</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	* 30 000	* 23 500	* 25 000	* 21 000	* 20 000
Ferro-manganese & ferro-silico-manganese	* 80 000	* 89 000	* 80 000	* 80 000	* 78 000
Ferro-silicon	* 23 000	* 20 000	* 31 000	* 30 000	* 29 000
Other ferro-alloys	* 20 000	* 19 000	* 21 000	* 20 000	* 19 000
Silicon metal	* 3 000	* 3 000	* 4 000	* 4 000	* 4 000
<b>Greece</b>					
Electric furnace ferro-alloys –					
Ferro-nickel	60 918	35 593	55 137	62 937	* 73 000
<b>Hungary</b>					
Electric furnace ferro-alloys –					
Ferro-manganese & ferro-silico-manganese	* 2 400	* 2 400	* 2 500	* 2 700	* 2 700
Ferro-silicon	6 925	6 846	7 636	7 726	10 390
Silicon metal	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
<b>Norway</b>					
Electric furnace ferro-alloys –					
Ferro-chrome & ferro-silico-chrome	32 351	22 630	15 763	12 229	11 793
Ferro-manganese	375 196	283 800	310 293	337 884	286 670
Ferro-silico-manganese	168 476	126 694	133 647	184 415	163 293
Ferro-silicon	278 027	223 422	266 190	337 008	307 111
Other ferro-alloys	30 506	30 899	30 264	29 674	6 350
Silicon metal	* 57 000	* 51 000	* 64 000	* 70 000	* 85 000
<b>Poland</b>					
Blast furnace ferro-alloys –					
Spiegeleisen	8 000	11 000	6 800	8 300	8 900
Ferro-manganese	116 000	123 000	118 800	130 200	122 700
Electric furnace ferro-alloys –					
Ferro-chrome	* 50 000	* 50 000	* 50 000	* 50 000	* 48 000
Ferro-manganese & ferro-silico-manganese	* 45 000	* 50 000	* 50 000	* 50 000	* 48 000
Ferro-silicon	* 52 000	* 55 000	* 53 000	* 52 000	* 50 000
Other ferro-alloys	* 17 000	* 19 000	* 16 000	* 14 000	* 12 000
Silicon metal	* 11 000	* 11 000	* 11 000	* 11 000	* 10 000
<b>Portugal</b>					
Electric furnace ferro-alloys	11 669	16 618	14 341	99 604	170 390
Silicon metal	...	* 13 600	* 15 400	* 32 000	* 33 000
<b>Soviet Union</b>					
Blast furnace ferro-alloys –					
Spiegeleisen	* 102 000	* 100 000	* 72 000	* 72 000	* 72 000
Ferro-manganese	* 700 000	* 700 000	* 530 000	* 520 000	* 520 000
Other ferro-alloys	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Electric furnace ferro-alloys –					
Ferro-chrome	* 480 000	* 635 000	* 660 000	* 690 000	* 700 000
Ferro-silico-chrome	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Ferro-manganese	* 520 000	* 550 000	* 790 000	* 820 000	* 800 000
Ferro-silico-manganese	* 25 000	* 30 000	* 30 000	* 30 000	* 32 000
Ferro-silicon	* 600 000	* 600 000	* 620 000	* 630 000	* 630 000
Other ferro-alloys	* 175 000	* 180 000	* 185 000	* 185 000	* 185 000
Silicon metal	* 45 000	* 47 000	* 47 000	* 57 000	* 59 000

**Production of Ferro-alloys**

tonnes

Country	1976	1977	1978	1979	1980
<b>Spain</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	20 039	16 507	13 795	20 340	16 510
Ferro-manganese	133 737	141 477	134 475	148 350	120 160
Ferro-silico-manganese	90 610	63 070	108 685	119 570	92 470
Ferro-silicon	56 604	68 316	97 647	124 870	123 430
Silicon metal	* 6 000	* 16 000	* 20 000	* 20 000	* 20 000
<b>Sweden</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	120 005	134 452	166 238	189 299	* 189 000
Ferro-silico-chrome	36 998	37 386	25 255	28 825	* 20 000
Ferro-silico-manganese	7 549	—	—	—	—
Ferro-molybdenum	1 830	1 003	1 131	1 365	...
Ferro-silicon	37 498	22 383	652	—	—
Ferro-tungsten	422	487	440	500	...
Ferro-vanadium	575	423	616	500	...
Silicon metal	* 18 000	* 13 000	* 9 000	* 16 000	* 16 000
<b>Turkey</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	* 25 000	* 35 000	* 40 000	* 30 000	* 33 000
<b>Yugoslavia</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	42 769	36 150	51 213	65 622	* 64 000
Ferro-silico-chrome	7 123	5 257	7 998	6 785	* 6 400
Ferro-manganese	21 611	54 639	37 470	45 591	* 44 500
Ferro-silico-manganese	25 848	8 737	27 857	28 786	* 29 000
Ferro-silicon	71 333	55 513	60 189	67 884	* 66 000
Other ferro-alloys	3 717	1 719	3 132	3 521	* 2 700
Silicon metal	20 751	27 476	30 670	31 598	* 30 000
<b>Egypt</b>					
Electric furnace ferro-alloys –					
Ferro-silicon	4 443	4 557	* 4 600	* 6 000	...
<b>South Africa</b>					
Ferro-chrome	* 350 000	* 380 000	* 480 000	* 555 000	565 200
Ferro-silico-chrome	* 22 000	* 28 900	* 30 800	* 35 000	* 30 000
Ferro-manganese	* 350 000	* 400 000	* 460 000	* 780 000	763 800
Ferro-silico-manganese	* 22 000	* 25 000	* 30 000	* 34 000	* 29 000
Ferro-silicon	* 79 000	* 100 000	* 120 000	* 160 000	156 000
Other ferro-alloys	* 300	* 300	* 300	* 900	* 900
Silicon metal	* 23 000	* 28 000	* 33 000	* 35 000	* 33 000
<b>Zimbabwe</b>					
Ferro-chrome	182 303	149 786	139 046	175 306	194 630
Ferro-silico-chrome	29 943	17 044	—	25 116	25 116
Ferro-manganese	2 364	2 211	2 211	2 164	2 164
<b>Canada</b>					
Electric furnace ferro-alloys –					
Ferro-manganese	* 80 000	* 60 000	* 70 000	* 50 000	* 73 000
Ferro-silicon	85 983	99 880	113 590	81 963	* 100 000
Other ferro-alloys	* 54 000	* 12 000	* 23 000	* 18 000	* 23 000
Silicon metal	20 000	23 000	28 000	26 000	30 000
<b>Dominican Republic</b>					
Electric furnace ferro-alloys –					
Ferro-nickel	* 64 200	* 65 500	37 629	64 988	* 35 000
<b>Mexico</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	3 246	2 739	3 995	4 790	* 3 600
Ferro-manganese	54 418	99 304	107 276	123 640	* 123 700
Ferro-silico-manganese	17 580	26 911	33 735	31 037	* 36 000
Ferro-silicon	17 957	22 888	24 606	24 286	* 26 000
Other ferro-alloys	241	156	1 120	776	* 1 000



## Production of Ferro-alloys

Country	1976	1977	1978	1979	1980
<b>USA</b>					
Ferro-chrome	195 103	196 418	176 848	243 773	) 216 468
Ferro-silico-chrome	49 153	48 328	21 509	23 494	)
Ferro-manganese	437 864	303 121	247 235	287 670	171 886
Ferro-silico-manganese	116 952	108 638	128 756	149 730	170 838
Ferro-niobium	1 093	1 015	1 093	679	1 413
Ferro-phosphorus	100 610	80 417	81 714	79 217	105 671
Ferro-silicon	664 000	704 000	638 000	646 000	507 000
Other ferro-alloys (b)	51 242	41 758	110 612	138 912	114 624
Silicon metal	117 000	107 000	105 000	132 000	115 000
<b>Argentina</b>					
Electric furnace ferro-alloys –					
Ferro-manganese	23 309	34 644	26 291	33 951	* 30 000
Ferro-silicon	18 947	15 575	12 038	16 731	* 17 000
Other ferro-alloys	6 169	6 381	10 406	17 545	* 13 000
<b>Brazil</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	59 730	65 969	62 180	84 514	93 400
Ferro-silico-chrome	5 880	4 121	4 698	7 239	8 200
Ferro-manganese	98 738	128 922	117 843	133 563	140 600
Ferro-silico-manganese	63 843	75 108	106 249	127 503	134 300
Ferro-molybdenum	863	1 117	1 690	1 469	(d)
Ferro-nickel	9 971	10 860	10 976	12 000	10 900
Ferro-silicon	45 252	60 290	72 842	80 924	108 900
Ferro-silico-calcium-magnesium	7 531	11 916	15 698	21 063	)
Ferro-niobium	10 010	6 809	10 251	13 113	) 43 000
Other ferro-alloys	921	1 194	1 239	2 166	)
Silicon metal	5 349	4 885	5 831	6 554	12 700
<b>Chile</b>					
Electric furnace ferro-alloys –					
Ferro-manganese	8 301	5 000	* 5 000	* 5 000	* 5 000
Ferro-silico-manganese	1 550	528	* 500	* 500	* 500
Ferro-silicon	4 480	2 993	* 1 800	* 5 000	* 4 500
Other ferro-alloys	685	* 500	* 1 000	* 1 000	* 1 000
<b>China</b>					
Ferro-chrome	* 60 000	* 70 000	* 90 000	* 90 000	* 90 000
Ferro-manganese	* 190 000	* 230 000	* 310 000	* 340 000	* 340 000
Ferro-silicon	* 100 000	* 110 000	* 150 000	* 160 000	* 165 000
Other ferro-alloys	* 27 000	* 36 000	* 40 000	* 50 000	* 50 000
Silicon metal	* 4 000	* 4 000	* 8 000	* 9 000	* 13 500
<b>India</b>					
Electric furnace ferro-alloys –					
Ferro-chrome	17 005	18 068	21 545	22 249	16 012
Ferro-silico-chrome	5 100	4 155	3 892	3 851	4 037
Ferro-manganese	175 760	193 908	219 993	186 803	162 650
Ferro-silico-manganese	4 689	10 240	2 891	5 282	4 404
Ferro-silicon	53 947	44 675	52 274	53 087	42 606
Other ferro-alloys	304	592	743	752	570
Silicon metal	—	919	2 824	2 342	2 464
<b>Japan</b>					
Electric furnace ferro-alloys –					
Ferro-calcium-silicon	3 992	5 634	(d)	(d)	(d)
Ferro-chrome	463 541	398 782	273 970	364 688	427 300
Ferro-silico-chrome	11 046	11 411	9 072	17 237	16 330
Ferro-manganese	632 160	527 418	455 407	643 194	606 900
Ferro-silico-manganese	373 196	333 692	303 000	452 685	433 600
Ferro-molybdenum	4 501	3 705	(d)	(d)	(d)
Ferro-nickel	199 581	224 339	198 673	303 910	279 400
Ferro-silicon	313 077	291 446	270 341	329 308	316 600
Ferro-tungsten	3 447	404	)		
Ferro-vanadium	3 940	2 546	) 19 958	15 422	15 400
Other ferro-alloys	3 536	8 576	)		
Silicon metal	44 452	37 195	14 515	15 422	15 400

**Production of Ferro-alloys**

tonnes

Country	1976	1977	1978	1979	1980
Korea, Dem. P.R. of					
Ferro-manganese	* 40 000	* 56 000	* 65 000	* 65 000	* 70 000
Ferro-silicon	* 20 000	* 23 000	* 30 000	* 30 000	* 30 000
Other ferro-alloys	* 10 000	* 12 000	* 14 000	* 14 000	* 20 000
Korea, Republic of					
Electric furnace ferro-alloys –					
Ferro-manganese	* 29 000	* 36 300	* 47 200	* 70 800	* 54 000
Ferro-silicon	34 733	26 826	30 800	39 900	30 000
Taiwan					
Electric furnace ferro-alloys –					
Ferro-silicon	23 342	24 672	29 785	37 500	35 326
Thailand					
Electric furnace ferro-alloys –					
Ferro-manganese	1 509	706	747	2 187	112
Ferro-silicon	1 159	—	1 635	3 041	60
Australia (c)					
Electric furnace ferro-alloys –					
Ferro-manganese	49 927	71 012	95 393	* 96 000	* 96 000
Ferro-silico-manganese (60% Mn)	14 651	23 430	—	—	—
Ferro-silicon	6 954	18 667	18 943	* 19 000	* 19 000
New Caledonia					
Electric furnace ferro-alloys –					
Ferro-nickel	156 766	116 245	77 908	178 279	* 180 000

(a) Ti, W, Mo, V content

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

(c) Years ended 30 November of that stated

(d) Included with 'other ferro-alloys'

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Pig-iron	60 892	47 204	33 753	22 535	30 246
Sponge & powder	2 123	1 480	515	896	534
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	6 029	5 194	4 357	4 805	3 587
Ferro-chrome	588	1 919	1 593	1 305	626
Ferro-silico-chrome	987	75	52	705	—
Ferro-manganese	617	684	1 959	6 964	972
Ferro-silico-manganese	105	—	169	763	615
Ferro-molybdenum	1 811	1 701	1 507	1 958	2 179
Ferro-nickel	39	—	—	—	—
Ferro-niobium & ferro- niobium-tantalum	857	352	395	416	420
Ferro-silicon	1 224	1 480	1 948	1 782	1 353
Ferro-titanium	3 675	2 592	3 844	3 661	3 813
Ferro-tungsten	3 503	3 172	3 732	3 306	78
Ferro-vanadium	144	99	137	190	75
Other ferro-alloys	1 937	1 959	1 497	1 548	4 240
Ingots, blooms, billets	257 619	415 131	332 569	321 509	186 440
Scrap (a)	597 807	937 985	1 557 902	1 334 852	2 805 348
Belgium-Luxembourg					
Pig-iron	33 503	56 473	35 675	22 555	7 593
Spiegeleisen	351	405	235	61	85
Sponge & powder	348	258	258	585	410
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	71	146	72	130	91
Ferro-chrome	9 376	14 665	9 559	1 572	1 544
Ferro-manganese	70 377	49 539	30 450	44 152	37 282
Ferro-silicon	1 356	5 094	4 223	4 187	3 283
Ferro-titanium & ferro- silico-titanium	1 664	1 212	1 894	1 637	925
Ferro-tungsten & ferro- silico-tungsten	495	90	176	18	0
Ferro-silico-manganese, ferro- molybdenum & ferro-vanadium	12 241	15 215	24 451	35 494	29 659
Other ferro-alloys	401	1 022	1 286	2 569	1 169
Ingots, blooms, billets	1 071 544	644 272	642 768	850 298	708 304
Scrap	527 292	501 333	537 558	550 135	536 641
Denmark					
Ingots, blooms, billets	1 084	6 734	2 736	26 675	4 057
Scrap	115 673	57 006	81 429	90 641	100 299
France					
Pig-iron	226 780	192 285	127 570	360 260	284 911
Spiegeleisen	433	2 683	689	1 311	851
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	1 661	1 021	1 600	2 323	1 761
Ferro-chrome	22 526	8 256	9 834	7 812	1 306
Ferro-silico-chrome	6 264	4 369	2 564	2 594	2 217
Ferro-manganese	266 616	269 411	321 088	347 504	321 437
Ferro-silico-manganese	11 792	9 299	10 778	11 523	9 361
Ferro-molybdenum	1 178	837	372	498	486
Ferro-nickel	55 424	50 574	34 569	98 023	61 559
Ferro-silicon	84 797	78 631	78 704	92 671	80 338
Ferro-silico-magnesium	5 808	8 636	7 744	7 331	6 915
Ferro-silico-zirconium	2 141	3 194	3 592	4 137	3 145
Ferro-titanium & ferro- silico-titanium	1 486	1 258	1 608	2 019	1 412
Ferro-tungsten & ferro- silico-tungsten	859	662	1 046	330	337
Ferro-vanadium	553	112	513	497	184
Other ferro-alloys	22 550	23 922	26 991	25 120	23 298
Ingots, blooms, billets	435 725	339 266	265 339	292 670	365 356
Scrap	3 421 382	3 357 071	3 662 495	3 526 074	3 312 365

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

tonnes

Country	1976	1977	1978	1979	1980
<b>Germany, Federal Republic of</b>					
Pig-iron	821 077	704 029	736 119	948 489	1 002 225
Spiegeleisen	1 514	520	2 716	1 752	4 763
Sponge & powder	50 718	15 987	51 941	31 638	30 388
Ferro-chrome	65 495	36 426	31 419	27 655	33 482
Ferro-silico-chrome	5 124	1 629	1 623	3 583	1 417
Ferro-manganese	45 918	74 037	49 391	95 273	36 397
Ferro-silico-manganese	2 052	2 215	742	3 590	5 598
Ferro-molybdenum	1 540	1 328	375	481	1 227
Ferro-nickel	35	54	9	422	86
Ferro-silicon	16 612	23 244	25 818	31 553	55 714
Ferro-titanium & ferro-silico-titanium	148	232	277	702	541
Ferro-tungsten & ferro-silico-tungsten	137	133	216	201	140
Ferro-vanadium	1 595	1 373	1 511	1 462	887
Other ferro-alloys	13 003	12 905	11 057	13 479	11 518
Ingots, blooms, billets	1 048 794	981 046	1 174 858	1 334 228	1 487 341
Scrap	2 596 883	2 481 079	2 765 240	2 998 078	3 076 793
<b>Irish Republic</b>					
Scrap	8 207	7 910	54 100	40 991	84 458
<b>Italy</b>					
Pig-iron	103	672	5 457	6 947	1 915
Sponge & powder	2 053	819	2 035	4 460	3 453
Ferro-chrome & ferro-silico-chrome	18 523	11 682	8 455	27 038	10 327
Ferro-manganese	2 155	2 152	10 450	7 982	1 896
Ferro-silico-manganese	327	247	1 001	905	862
Ferro-molybdenum	376	954	760	732	1 273
Ferro-silicon	9 456	4 336	7 345	11 001	5 579
Ferro-silico-magnesium	1 081	2 075	1 162	1 633	1 093
Ferro-titanium	889	1 069	1 751	1 556	931
Ferro-vanadium	232	264	265	435	190
Other ferro-alloys	83	144	572	756	1 198
Ingots, blooms, billets	123 363	65 779	154 897	152 109	188 443
Scrap	23 936	11 022	6 683	13 514	8 480
<b>Netherlands</b>					
Pig-iron	756	139	1 876	22 962	9 694
Sponge & powder	68	20	41	107	55
Ferro-chrome (f)	7 770	9 523	10 402	1 916	6 641
Ferro-manganese (f)	2 339	2 606	1 326	449	351
Ferro-molybdenum (f)	184	131	60	172	143
Ferro-nickel (f)	63	23	4	129	0
Ferro-silicon (f)	3 724	3 236	1 000	4 400	2 616
Ferro-vanadium (f)	776	620	700	804	49
Other ferro-alloys (f)	106	293	442	537	2 194
Ingots, blooms, billets	669 512	500 088	589 780	727 913	880 096
Scrap	1 103 234	925 075	1 190 000	1 241 281	1 194 467
<b>Austria</b>					
Pig-iron	412	143	—	—	236
Ferro-alloys	9 130	9 383	9 280	10 088	8 904
Ingots & blooms	54 033	4 283	5 181	7 009	8 272
Scrap	43 806	7 530	7 344	13 904	12 721
<b>Bulgaria</b>					
Pig-iron	26 500	37 100	48 000	12 000	34 000
Ferro-alloys	32 000	27 000	24 000	22 000	23 000
Ingots, blooms, billets	* 326 000	* 317 000	* 302 000	...	...
Scrap	135 000	61 000	167 000	130 000	155 000
<b>Finland</b>					
Pig-iron	85 205	68 633	...	32 513	14 845
Ferro-chrome & ferro-silico-chrome	32 745	26 199	39 332	31 409	16 637
Other ferro-alloys	3	811	3 469	326	345
Blooms & billets	232 963	214 306	190 809	163 265	129 462
Scrap	3 662	3 235	973	3 661	194

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1976	1977	1978	1979	1980
German Democratic Republic					
Pig-iron	95 000	7 600	58 100	...	...
Ingots, blooms, billets	471 000	505 000	374 000	296 000	...
Scrap	17 000	26 200	13 700	...	...
Greece					
Ferro-nickel	57 030	44 697	67 458	65 526	49 468
Hungary					
Pig-iron	136 050	116 093	47 262	15 477	2 149
Scrap	37 000	71 000	42 414	36 766	30 955
Iceland					
Scrap	2 992	2 224	8 842	3 343	2 906
Malta					
Scrap	4 260	4 338	9 351	3 441	5 828
Norway					
Pig-iron	96 613	88 185	106 518	140 198	140 260
Ferro-chrome	27 956	14 887	17 952	12 950	8 009
Ferro-silico-chrome	67	140	433	7 441	13 332
Ferro-manganese	327 222	244 041	266 733	293 874	245 525
Ferro-silico-manganese	153 044	117 499	162 498	171 920	164 019
Ferro-silicon	247 787	228 180	314 673	304 519	268 894
Ferro-vanadium	733	903	821	1 107	788
Other ferro-alloys	16 740	14 946	16 909	16 601	8 554
Ingots, blooms, billets	207 116	149 801	217 526	239 469	211 615
Scrap	17 826	14 124	36 146	38 025	38 691
Portugal					
Pig-iron	4 328	238	0	116	8
Ferro-manganese	44 438	45 094	63 778	66 581	56 456
Ferro-silico-manganese	—	4 533	26 804	14 723	(c)
Ferro-silicon	11 699	14 216	12 994	11 131	7 518
Ferro-tungsten	290	169	140	193	)
Other ferro-alloys	1 053	—	—	30	)
Scrap	2 808	4 166	9 716	4 796	4 515
Romania					
Pig-iron & ferro-alloys	* 48 500	* 61 000	* 117 600	...	...
Ingots, blooms, billets	* 481 300	* 545 000	* 641 000	* 541 000	* 34 000
Scrap	* 7 300	* 2 200	* 3 400	...	...
Soviet Union					
Pig-iron	4 527 340	* 4 500 000	* 4 500 000	* 4 600 000	* 4 600 000
Ferro-chrome	48 777	)			
Ferro-manganese	125 273	)			
Ferro-silicon	160 246	) * 420 000	* 420 000	* 420 000	* 420 000
Ferro-vanadium	1 658	)			
Scrap	1 836 591	2 189 347	1 678 578	1 987 827	2 505 260
Spain					
Pig-iron	827	56	64 411	81 973	31 291
Ferro-silico-aluminium, ferro-silico-mangano- aluminium & ferro-silico- alumino-calcium	234	361	—	—	(c)
Ferro-chrome	6 376	3 465	3 882	9 230	(c)
Ferro-manganese	39 532	29 444	47 242	53 481	31 334
Ferro-silico-manganese	15 952	5 427	28 770	40 613	(c)
Ferro-molybdenum	75	26	588	461	(c)
Ferro-silicon	16 483	17 126	39 760	67 632	54 703
Ferro-titanium & ferro- silico-titanium	18	0	16	14	)
Other ferro-alloys	651	1 019	1 387	2 396	)
Ingots, blooms, billets	48 801	22 562	36 155	221 472	488 945

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

tonnes

Country	1976	1977	1978	1979	1980
Sweden					
Pig-iron	53 904	156 208	510 538	150 319	179 571
Sponge & powder	86 092	96 244	95 035	116 524	97 664
Ferro-chrome	47 722	86 080	152 742	137 982	92 305
Ferro-silico-chrome	6 830	4 677	10 503	3 603	1 125
Ferro-manganese	3 039	293	463	1 000	1 025
Ferro-silico-manganese	3 482	325	209	385	—
Ferro-molybdenum	1 217	1 581	872	1 239	760
Ferro-nickel	124	501	1 006	5	17
Ferro-silicon	20 051	15 350	663	258	3 683
Ferro-titanium	25	80	892	686	552
Ferro-tungsten	200	309	176	163	184
Ferro-vanadium	151	418	446	405	226
Other ferro-alloys	67	60	100	107	628
Ingots, blooms, billets	185 934	274 900	520 743	520 329	408 426
Scrap	8 624	74 652	78 832	17 366	16 231
Switzerland					
Pig-iron	—	191	338	229	670
Ferro-silicon	563	428	128	114	126
Other ferro-alloys	124	708	1 582	340	596
Ingots, blooms, billets	8 737	15 778	22 394	18 808	8 465
Scrap	70 689	61 938	88 080	100 690	63 738
Turkey					
Pig-iron	—	10 725	19 963	17 744	...
Ferro-chrome	8 050	7 965	25 921	32 075	...
Yugoslavia					
Pig-iron	50 148	73 971	22 330	62 155	47 362
Ferro-chrome	23 389	35 939	59 980	57 170	50 130
Ferro-manganese	4 625	20 460	29 585	20 767	8 049
Ferro-silico-manganese	10 278	10 305	19 970	20 685	23 240
Ferro-silicon	50 039	40 502	46 878	46 210	37 705
Other ferro-alloys	6	55	231	3 625	2 435
Ingots, blooms, billets	35 174	9 901	16 551	22 494	21 405
Scrap	19 641	42 399	76 407	48 302	44 833
Algeria					
Pig-iron	107 887	99 147	102 300	...	...
Scrap	113 905	74 246	82 474	...	...
Cameroon					
Scrap	8 278	8 272	800	2 552	...
Egypt					
Pig-iron & spiegeleisen	38 584	14 671	1 439	—	...
Ivory Coast					
Scrap	17 576	19 806	19 031	21 714	...
Kenya					
Scrap	4 827	3 211	3 949	68	...
Morocco					
Scrap	48 954	18 648	44 774	88 559	34 667
Mozambique					
Scrap	8 487	...	...	...	...
Senegal					
Scrap	...	12 613	11 562	...	...
South Africa (g)					
Pig-iron	* 250	...	* 15 500	* 88 000	* 76 000
Ferro-chrome	* 419 000	* 400 000	* 580 000	* 716 200	* 768 200
Ferro-manganese	* 302 000	* 236 400	* 368 100	* 469 600	* 338 500
Ferro-silicon	* 31 500	* 28 100	* 26 500	* 35 300	* 29 000
Other ferro-alloys	* 6 000	* 5 600	* 13 400	* 14 500	* 15 100
Ingots, blooms, billets	* 23 000	* 155 400	* 85 200	* 48 500	* 32 500
Scrap	* 14 700	* 10 400	* 22 500	* 4 300	* 7 000
Sudan					
Scrap	5 179	4 500	—	4 547	...

## Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1976	1977	1978	1979	1980
Tunisia					
Ingots, blooms, billets	—	—	20 400	5 797	...
Scrap	1 300	11	1 280	14	791
Zimbabwe					
Pig-iron	...	...	...	7 594	...
Ferro-chrome	...	...	) 101 548	143 861	) 257 306
Ferro-silico-chrome	...	...	)	27 088	)
Blooms & billets	...	...	324 466	237 891	305 545
Scrap	...	...	...	4 685	...
Canada					
Pig-iron	281 558	505 277	544 713	255 522	562 348
Sponge	103 618	51 929	57 401	138 333	178 307
Ferro-manganese	9 861	23 150	20 221	12 043	11 298
Ferro-silicon	34 710	45 512	60 198	40 733	52 377
Other ferro-alloys	7 321	2 034	13 011	9 965	8 418
of which: Re-exports	5 543	236	3 133	2 887	2 184
Ingots, blooms, billets	130 149	239 964	280 960	120 787	326 662
Scrap	1 025 957	678 418	874 324	1 032 705	765 293
Trinidad & Tobago					
Scrap	7 722	865	1 822	1 001	...
USA					
Pig-iron	52 424	58 622	) 69 610	149 751	79 807
Spiegeleisen	4 988	36	)		
Sponge & powder	22 725	14 728	14 593	18 824	23 780
Ferro-chrome	12 865	13 786	18 717	14 516	29 807
Ferro-manganese	6 445	5 821	8 966	23 480	11 419
Ferro-silico-manganese	...	...	4 360	4 756	6 094
Ferro-molybdenum	1 631	724	665	762	799
Ferro-phosphorus	1 484	2 160	3 781	33 831	40 544
Ferro-silicon	14 910	48 252	11 549	20 430	25 039
Ferro-vanadium	1 098	624	1 187	818	728
Other ferro-alloys	6 132	7 299	12 912	6 019	4 297
Ingots, blooms, billets	236 847	225 171	219 757	328 566	829 493
Scrap (a)	7 371 317	5 606 707	8 452 531	10 133 680	10 174 603
Brazil					
Pig-iron	774 947	850 604	1 026 479	989 343	...
Ferro-chrome	47 461	46 661	42 393	48 205	...
Ferro-manganese	11 028	33 876	40 115	40 256	...
Ferro-nickel	1 736	415	—	—	...
Ferro-niobium	9 155	7 052	10 852	12 787	...
Ferro-silicon	6 118	2 347	12 308	17 615	...
Ferro-silico-spiegeleisen & silico-manganese	4 087	5 453	33 573	42 915	...
Ferro-silico-mangan- aluminium	7 180	17 600	6 700	300	...
Other ferro-alloys	36	276	1 573	5 204	...
Ingots, blooms, billets	92 139	113 392	332 920	479 585	...
Chile					
Ferro-molybdenum	...	877	358	...	...
Ferro-silicon	...	647	358	...	...
Venezuela					
Ferro-silicon	77	4 492	11 999	...	...
Brunei					
Scrap	1 626	19	4 021	6 533	...
Hong Kong					
Scrap	176 602	227 285	286 379	304 230	329 649
of which: Re-exports	3 708	5 571	19 978	39 955	55 173
India					
Pig-iron	855 868	853 998	298 743	104 470	...
Ferro-chrome	4 813	9 992	9 093	9 001	...
Ferro-manganese	24 154	19 300	76 200	52 681	...
Ferro-silicon	8 316	4 249	7 379	14 014	...
Ingots, blooms, billets (d)	327 959	306 277	121 443	27 130	...
Scrap	218 154	152 330	75 828	11 772	...

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

tonnes

Country	1976	1977	1978	1979	1980
Israel (b)					
Scrap	3 414	2 473	3 969	11 054	13 942
Japan					
Pig-iron	146 331	563 911	32 678	50 225	5 852
Powder	2 422	2 076	2 582	2 951	2 578
Ferro-chrome	54 509	16 307	6 365	19 852	8 896
Ferro-manganese	121 934	48 634	37 147	92 886	40 271
Ferro-silico-manganese	9 863	3 112	342	2 377	420
Ferro-nickel	13 262	2 268	21 773	13 193	17 125
Ferro-silicon	8 224	2 972	2 336	2 003	2 695
Ferro-vanadium	39	13	71	13	97
Other ferro-alloys	2 995	2 502	2 266	2 121	1 035
Ingots, blooms, billets	1 060 057	427 861	107 256	118 295	188 933
Scrap	202 659	210 740	164 395	150 562	159 366
Korea, Dem. P.R. of					
Pig-iron	* 187 000	* 51 200	* 67 200	* 51 500	...
Korea, Republic of					
Pig-iron	419	15 070	)	32 461	150 674
Ferro-manganese	15	110	)	—	32
Ferro-silico-manganese	1 995	4 302	) 30 000	1 100	220
Ferro-silicon	17 212	14 336	)	6 855	348
Other ferro-alloys	24	516	)	3 294	1 897
Ingots, blooms, billets	11 662	18 077	166 000	717 655	942 779
Kuwait					
Scrap	29 351	14 334	6 019	21 460	...
Malaysia					
Scrap	14 070	8 418	...	...	...
Philippines					
Ferro-silicon	7 298	4 778	11 399	10 117	14 691
Saudi Arabia					
Scrap	1 269	49	110	730	...
Singapore					
Pig-iron	5 130	3 715	3 784	11 095	9 164
Ingots & blooms	5 726	1 476	7 872	6 521	6 641
Scrap	3 102	6 858	3 745	1 710	5 475
Syria					
Scrap	6 000	5 002	5 217	2 190	...
Taiwan					
Pig-iron	1 000	1 170	527	331	761
Ferro-chrome	723	432	602	1 925	691
Ferro-manganese	9 192	6 612	3 516	7 343	9 107
Ferro-silicon	30 400	9 642	12 481	10 415	7 910
Other ferro-alloys	1 665	659	2 827	1 245	5 574
Ingots, blooms, billets	858	15 147	187 297	408 464	120 237
Scrap	63 290	35 473	156 420	73 465	12 863
Australia					
Pig-iron	698 176	646 560	710 514	642 510	514 898
Ferro-alloys	783	20 630	33 743	49 804	...
Ingots, blooms, billets	1 538 060	1 280 410	1 007 746	610 803	306 074
Scrap	643 995	576 644	515 804	610 351	749 203
Fiji					
Scrap (Re-exports)	846	1 232	...	...	...
New Caledonia					
Ferro-nickel	124 180	124 325	98 984	180 793	128 796
New Zealand (e)					
Scrap	1 847	2 161	1 391	1 519	2 159

Note: In this table the term "ingots, blooms, billets" corresponds to items 672.4 and 5 of the Standard International Trade Classification (Revision 2) which includes those of alloy and high carbon steel

(a) Excluding ships intended for breaking up

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

(c) Included with 'other ferro-alloys'

(d) Years ended 31 March following that stated

(e) Years ended 30 June of that stated

(f) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(g) IGS estimates, based on known imports into certain countries



## Imports of Iron, Steel and Ferro-alloys

Country	1976	1977	1978	1979	1980
<b>United Kingdom</b>					
Pig-iron	165 564	150 138	131 270	132 248	168 260
Sponge & powder	53 089	26 834	34 635	37 688	21 770
Ferro-chrome	99 414	73 337	48 460	75 400	43 095
Ferro-silico-chrome	8 974	3 866	2 529	2 004	435
Ferro-manganese	118 257	86 116	83 695	80 766	52 004
Ferro-silico-manganese	21 260	21 985	22 023	25 730	24 660
Ferro-molybdenum	834	880	779	766	597
Ferro-nickel	11 746	16 857	15 406	18 854	2 449
Ferro-niobium	1 157	504	724	830	758
Ferro-silicon	112 315	93 088	95 458	115 257	68 996
Ferro-titanium	254	192	349	355	174
Ferro-tungsten	360	335	249	282	138
Ferro-vanadium	281	446	445	544	483
Other ferro-alloys	13 682	14 770	13 866	14 772	10 588
Ingots, blooms, billets	398 107	244 251	254 811	337 206	351 117
Scrap (a)	693 301	100 388	43 104	35 247	26 439
<b>Belgium-Luxembourg</b>					
Pig-iron	203 410	166 925	119 227	104 925	97 605
Spiegeleisen	74	366	407	173	892
Sponge & powder	2 577	1 623	1 329	2 967	14 035
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	2 015	2 052	1 546	2 508	1 555
Ferro-chrome	42 114	35 927	24 205	31 031	27 588
Ferro-silico-chrome	1 394	992	965	3 927	1 340
Ferro-manganese	100 658	71 741	77 262	84 315	71 291
Ferro-silico-manganese	13 411	10 642	18 854	22 336	23 454
Ferro-molybdenum	216	163	269	359	260
Ferro-nickel	5 386	1 441	2 566	7 602	2 660
Ferro-silicon	31 313	30 496	35 587	38 237	32 584
Ferro-titanium & ferro- silico-titanium	250	307	314	264	219
Ferro-tungsten & ferro- silico-tungsten	194	46	149	33	15
Ferro-vanadium	68	91	100	190	121
Other ferro-alloys	1 547	1 486	1 877	1 895	1 655
Ingots, blooms, billets	430 625	647 800	683 683	685 017	665 631
Scrap	586 001	493 209	979 683	970 474	859 319
<b>Denmark</b>					
Pig-iron	35 672	24 984	19 184	21 647	36 496
Sponge & powder	898	897	940	537	1 677
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	2 044	2 042	2 828	2 908	2 844
Ferro-chrome & ferro- silico-chrome	979	1 411	1 152	1 431	1 198
Ferro-manganese	8 621	6 000	9 995	7 254	6 258
Ferro-silico-manganese	1 604	1 670	2 952	3 984	2 534
Ferro-molybdenum	22	11	18	16	16
Ferro-silicon	5 681	5 677	5 142	5 334	4 648
Other ferro-alloys	165	129	1 109	143	63
Ingots, blooms, billets	14 968	19 449	10 397	9 702	82 677
Scrap	7 072	12 815	262 825	284 249	216 796

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

tonnes

Country	1976	1977	1978	1979	1980
France					
Pig-iron	404 287	459 512	407 362	446 367	450 490
Spiegeleisen	205	233	76	90	1 137
Sponge & powder	47 631	23 238	12 781	23 656	54 772
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	186	102	44	127	134
Ferro-chrome	41 397	38 711	47 484	64 959	119 516
Ferro-silico-chrome	401	40	5	193	334
Ferro-manganese	32 620	34 916	30 114	48 592	48 598
Ferro-silico-manganese	2 651	4 270	12 779	29 489	33 748
Ferro-molybdenum	1 032	666	1 145	1 272	1 462
Ferro-nickel	104 316	96 728	72 364	159 817	114 640
Ferro-silicon	9 337	12 788	12 308	11 132	20 735
Ferro-titanium & ferro- silico-titanium	229	449	425	356	264
Ferro-tungsten & ferro- silico-tungsten	82	119	95	116	116
Ferro-vanadium	202	315	340	316	450
Other ferro-alloys	779	1 034	1 514	1 748	1 674
Ingots, blooms, billets	871 806	847 923	1 013 801	1 252 259	1 130 772
Scrap	273 632	287 030	393 803	422 289	455 684
Germany, Federal Republic of					
Pig-iron	291 534	311 445	293 221	246 036	249 972
Spiegeleisen	301	41	37	17	99
Sponge & powder	14 924	14 669	15 696	38 170	38 543
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	331	107	141	323	266
Ferro-chrome	138 673	129 125	194 540	230 291	300 020
Ferro-silico-chrome	20 086	18 922	5 491	11 472	12 844
Ferro-manganese	174 052	158 512	160 026	152 106	136 633
Ferro-silico-manganese	70 649	68 585	101 215	115 644	129 854
Ferro-molybdenum	3 681	3 392	3 140	3 393	4 863
Ferro-nickel	55 650	38 997	60 668	71 060	71 714
Ferro-niobium	1 939	1 660	2 082	3 346	2 363
Ferro-silicon	136 137	141 033	159 410	186 795	216 857
Ferro-titanium & ferro- silico-titanium	2 743	2 142	3 952	3 573	2 947
Ferro-tungsten & ferro- silico-tungsten	517	209	499	253	553
Ferro-vanadium	1 513	1 554	1 961	2 206	1 199
Other ferro-alloys	7 021	9 169	4 932	4 942	3 862
Ingots, blooms, billets	1 154 391	1 166 408	1 305 977	1 151 522	755 350
Scrap	1 540 029	1 419 455	1 546 633	1 605 401	1 504 194
Irish Republic					
Pig-iron & sponge	739	785	2 309	3 012	2 325
Ferro-alloys	1 379	1 013	1 594	1 051	651
Ingots, blooms, billets	1 483	2 139	1 389	4 730	10 352
Scrap	1 261	2 328	9 051	5 428	7 926

## Imports of Iron, Steel and Ferro-alloys

Country	1976	1977	1978	1979	1980
<b>Italy</b>					
Pig-iron	770 184	679 103	386 800	513 962	665 678
Spiegeleisen	3 069	1 038	413	3 237	6 752
Sponge & powder	30 573	28 453	57 947	97 080	53 169
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	1 305	1 113	1 297	2 140	2 389
Ferro-chrome	55 753	58 102	84 085	94 329	86 905
Ferro-silico-chrome	8 011	3 559	4 243	5 242	4 491
Ferro-silico-magnesium	1 220	1 110	2 008	1 796	1 630
Ferro-manganese	117 185	127 571	106 151	121 808	120 184
Ferro-silico-manganese	19 846	25 597	28 553	30 807	35 837
Ferro-molybdenum	3 190	2 732	1 175	1 045	694
Ferro-nickel	19 555	16 652	14 562	21 905	18 259
Ferro-niobium	2 204	1 708	1 125	1 882	2 783
Ferro-silicon	40 588	42 134	47 099	57 019	52 901
Ferro-titanium & ferro- silico-titanium	801	723	1 254	1 290	776
Ferro-tungsten & ferro- silico-tungsten	55	75	53	117	233
Ferro-vanadium	330	270	661	930	822
Other ferro-alloys	1 018	981	989	1 601	2 093
Ingots, blooms, billets	583 547	552 243	499 713	871 468	1 063 303
Scrap	6 329 498	5 867 835	6 566 082	6 891 233	7 410 888
<b>Netherlands</b>					
Pig-iron	41 557	38 146	41 252	64 769	54 797
Sponge & powder	3 887	3 206	2 803	3 755	3 273
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium (c)	146	127	27	12	19
Ferro-chrome (c)	7 194	12 264	10 709	2 983	9 028
Ferro-silico-chrome (c)	124	40	76	450	433
Ferro-manganese (c)	30 177	25 221	25 576	26 526	19 031
Ferro-silico-manganese (c)	3 167	2 303	4 163	4 094	6 536
Ferro-molybdenum (c)	215	156	91	122	127
Ferro-silicon (c)	10 157	7 827	7 731	8 898	9 877
Ferro-titanium & ferro- silico-titanium (c)	73	44	83	62	137
Ferro-tungsten & ferro- silico-tungsten (c)	25	42	0	25	3
Ferro-vanadium (c)	58	23	9	96	30
Other ferro-alloys (c)	651	596	316	406	853
Ingots, blooms, billets	458 721	208 916	229 725	254 712	169 594
Scrap	199 037	112 868	166 358	125 018	153 115
<b>Austria</b>					
Pig-iron	101 587	89 718	136 317	87 402	91 133
Spiegeleisen	87	75	85	108	92
Sponge & powder	4 662	4 170	6 153	5 566	10 373
Ferro-chrome	25 643	24 879	26 085	28 520	24 578
Ferro-manganese	21 364	18 461	20 525	26 275	23 070
Ferro-molybdenum	7	729	145	255	109
Ferro-niobium & ferro- niobio-tantalum	52	96	245	396	202
Ferro-silicon	14 071	12 643	15 411	16 046	14 020
Ferro-titanium	371	332	385	523	414
Ferro-tungsten	173	278	424	88	64
Ferro-vanadium	89	152	284	245	207
Other ferro-alloys	9 771	11 289	12 817	15 715	11 810
Ingots & blooms	122 408	183 041	305 990	141 548	141 810
Scrap	44 802	79 099	115 474	134 169	143 216
<b>Bulgaria</b>					
Pig-iron	335 897	367 000	408 000	356 000	413 000
Ingots, blooms, billets	* 178 000	* 238 000	* 401 000	* 386 000	* 595 000
<b>Czechoslovakia</b>					
Pig-iron	826 000	833 000	919 000	732 000	809 000
Ingots, blooms, billets	* 323 000	* 86 000	* 98 000	* 152 000	* 36 000
Scrap	* 34 000	* 44 000	* 49 000	1 689 000	...

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

tonnes

Country	1976	1977	1978	1979	1980
<b>Finland</b>					
Pig-iron	371	548	2 212	14 364	36 881
Sponge & powder	2 274	1 121	1 878	1 877	4 285
Ferro-chrome & ferro-silico-chrome	904	1 171	2 556	1 889	4 698
Ferro-manganese	2 326	2 336	2 955	4 272	3 881
Ferro-silico-manganese	11 201	10 902	12 924	16 049	17 148
Ferro-molybdenum	200	168	170	294	375
Ferro-silicon	8 725	10 918	8 728	10 492	10 125
Ferro-titanium	31	126	201	201	239
Ferro-vanadium	40	36	83	104	78
Other ferro-alloys	555	1 015	5 416	14 134	1 171
Blooms & billets	65 434	5 773	13 639	1 814	5 914
Scrap	54 191	63 215	22 832	88 213	104 581
<b>German Democratic Republic</b>					
Pig-iron	628 000	618 600	773 900	654 000	675 000
Ferro-alloys	26 600	29 000	22 000	44 000	...
Ingots, blooms, billets	1 660 000	1 761 000	1 911 000	2 057 000	...
Scrap	541 000	496 000	546 000	708 000	...
<b>Greece</b>					
Pig-iron	14 588	17 387	15 275	15 014	9 512
Ferro-manganese	3 649	3 284	2 054	2 844	2 664
Ferro-silico-manganese	1 008	2 878	5 634	(j)	(j)
Ferro-silicon	3 000	3 930	2 534	4 264	2 489
Other ferro-alloys	383	547	361	(d) 8 121	(d) 8 778
Ingots, blooms, billets	30 539	54 895	298 630	129 695	260 087
Scrap	90 679	93 359	198 132	231 282	238 992
<b>Hungary</b>					
Pig-iron	288 952	227 435	251 068	223 978	255 823
Ferro-chrome	4 989	6 066	6 602	8 861	7 662
Ferro-manganese	46 536	29 331	40 136	46 084	62 023
Ferro-molybdenum	569	251	198	322	397
Ferro-silicon	4 775	4 109	6 530	6 525	6 556
Other ferro-alloys	8 337	19 053	17 732	13 682	10 818
Ingots, blooms, billets	7 162	42 858	13 351	7 101	7 083
<b>Malta</b>					
Ingots, blooms, billets	445	3 925	4 194	4 531	5 552
<b>Norway</b>					
Pig-iron	11 725	10 913	6 362	8 916	10 835
Ferro-alloys	1 379	490	1 265	2 639	1 925
Ingots, blooms, billets	10 169	2 869	2 135	18 079	36 975
Scrap	71 326	18 346	10 064	6 418	52 925
<b>Poland</b>					
Pig-iron & ferro-alloys	1 995 836	1 820 950	1 817 877	1 483 909	1 584 372
Scrap	47 099	30 064	9 000	32 000	20 000
<b>Portugal</b>					
Pig-iron	4 166	3 234	1 941	8 289	10 116
Ferro-manganese	152	20	2 210	122	132
Ferro-silico-manganese	71	106	1	88	(j)
Ferro-silicon	571	443	435	276	518
Other ferro-alloys	675	488	404	413	(d) 724
Ingots, blooms, billets	1 250	1 825	755	348	...
Scrap	28 588	95 329	663 603	145 809	149 177
<b>Romania</b>					
Pig-iron	560 600	646 300	526 600	573 300	634 000
Ferro-alloys	223 300	160 000	169 300	190 400	145 100
Ingots, blooms, billets	* 202 000	* 28 000	* 556 000	* 596 000	* 201 000
<b>Soviet Union</b>					
Pig-iron	228 855	* 200 000	* 200 000	* 200 000	* 200 000
Ferro-alloys	33 269	* 35 000	* 35 000	* 35 000	* 35 000

## Imports of Iron, Steel and Ferro-alloys

Country	1976	1977	1978	1979	1980
<b>Spain</b>					
Pig-iron	53 713	37 092	33 783	44 312	54 163
Ferro-aluminium & ferro-silico-aluminium	133	109	0	22	)
Ferro-chrome	16 426	15 286	26 836	33 694	) (j)
Ferro-silico-chrome	1 250	491	590	1 548	)
Ferro-manganese	233	965	188	192	) 4 327
Ferro-silico-manganese	572	2	44	55	)
Ferro-molybdenum	722	749	156	110	) (j)
Ferro-nickel	1 081	1 216	2 392	6 114	)
Ferro-silicon	3 280	2 619	2 115	2 109	) 2 156
Ferro-titanium & ferro-silico-titanium	355	289	497	676	)
Ferro-tungsten & ferro-silico-tungsten	53	30	2	33	) (j)
Ferro-vanadium	390	473	449	298	)
Other ferro-alloys	1 198	1 134	1 311	1 702	) 63 548
Ingots, blooms, billets	1 960 077	1 41 853	51 175	215 168	) 93 517
Scrap	2 657 123	1 993 353	1 949 810	2 927 406	) 3 925 608
<b>Sweden</b>					
Pig-iron	227 306	82 038	40 489	51 817	45 921
Sponge & powder	308	688	827	1 632	2 152
Ferro-chrome	48 520	15 872	29 482	39 070	27 798
Ferro-silico-chrome	1 138	992	2 937	4 224	3 638
Ferro-manganese	50 146	24 900	37 427	42 053	32 686
Ferro-silico-manganese	16 065	5 468	7 894	9 189	10 296
Ferro-molybdenum	2 439	2 093	1 953	1 810	1 681
Ferro-nickel	29 633	20 037	21 425	36 320	17 530
Ferro-niobium	523	219	226	286	184
Ferro-silicon	21 991	22 477	32 805	37 585	32 538
Ferro-titanium	957	824	2 044	1 880	1 909
Ferro-tungsten	602	376	217	504	453
Ferro-vanadium	757	602	940	808	921
Other ferro-alloys	3 177	1 325	554	1 388	1 123
Ingots, blooms, billets	138 695	103 489	87 501	83 718	108 519
Scrap	137 046	32 592	117 642	129 833	75 605
<b>Switzerland</b>					
Pig-iron	61 922	74 883	69 493	89 331	85 383
Ferro-aluminium	127	103	227	167	213
Ferro-silicon	5 751	4 550	3 962	6 717	6 715
Other ferro-alloys	16 046	13 776	14 583	17 411	14 825
Ingots, blooms, billets	32 760	25 269	21 906	24 920	73 897
Scrap	43 793	57 751	87 236	179 051	136 853
<b>Turkey</b>					
Pig-iron	79 759	14 870	5 416	16 316	...
Ferro-manganese	25 204	22 997	21 197	9 360	...
Ferro-silicon	9 398	7 767	7 124	6 267	...
Other ferro-alloys	428	549	272	176	...
Ingots, blooms, billets	540 830	672 263	616 372	349 717	...
Scrap	235 975	299 989	323 024	362 300	...
<b>Yugoslavia</b>					
Pig-iron	40 248	17 757	71 612	99 495	46 554
Ferro-chrome	88	137	167	125	130
Ferro-manganese	998	799	815	902	903
Ferro-molybdenum	519	596	503	506	740
Ferro-phosphorus	1 399	2 728	1 478	1 816	376
Ferro-silicon	1 180	1 122	1 219	790	1 519
Ferro-tungsten	126	126	90	126	57
Ferro-vanadium	210	194	329	184	224
Other ferro-alloys	2 442	2 886	2 798	3 537	2 934
Ingots, blooms, billets	411 054	627 102	607 575	551 816	456 789
Scrap	342 345	409 022	402 594	264 800	395 759

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

tonnes

Country	1976	1977	1978	1979	1980
<b>Algeria</b>					
Pig-iron	8 630	8 379	15 511	...	...
Ferro-manganese	1 371	1 026	501	...	...
Ferro-silico-manganese	70	72	87	...	...
Ferro-silicon	1 751	959	1 694	...	...
Other ferro-alloys	18	263	100	...	...
Ingots, blooms, billets	21 782	57 895	142 964	...	...
<b>Cameroon</b>					
Ingots & blooms	7 021	13 963	14 001	...	...
<b>Egypt</b>					
Pig-iron & spiegeleisen	36 571	32 649	28 518	11 406	...
Ferro-alloys	1 078	7 835	3 681	1 665	...
Ingots & billets	8 878	2 488	47 139	33 545	...
Scrap	69 323	115 402	41 679	15 829	...
<b>Ethiopia</b>					
Ingots, blooms, billets	...	2 347	7 164	...	...
Scrap	...	2 367	429	...	...
<b>Ghana</b>					
Pig-iron	961	502	...	...	...
Ferro-manganese	1 005	1 737	...	...	...
Other ferro-alloys	275	417	...	...	...
Scrap	7 483	15 920	...	...	...
<b>Ivory Coast</b>					
Ingots, blooms, billets	10 858	13 070	11 231	9 482	...
<b>Kenya</b>					
Pig-iron & ferro-alloys	641	1 015	1 063	289	...
Ingots & blooms	29 906	18 995	30 690	17 808	32 196
<b>Libya</b>					
Pig-iron & ferro-alloys (i)	157	43	139	33	...
Ingots, blooms, billets	2 674	3 643	7 954	5 872	...
<b>Mauritius</b>					
Pig-iron & ingots	10 427	9 405	...	...	...
<b>Morocco</b>					
Pig-iron	3 690	3 269	1 964	625	1 423
Ferro-chrome	34	37	26	20	66
Ferro-manganese	219	224	178	155	180
Ferro-silico-manganese	40	60	50	—	—
Ferro-silicon	199	125	73	124	142
Ingots, blooms, billets	21 707	21 025	17 432	19 462	13 046
Scrap	218	705	1 090	1	174
<b>Nigeria</b>					
Ferro-manganese	814	399	837	...	...
Ingots & blooms	63 946	58 295	91 514	...	...
<b>South Africa</b>					
Pig-iron	79 252	204	217	20 663	28 066
Ferro-chrome	2 705	7 390	3 187	9 232	6 965
Ferro-silicon	1 054	182	316	4 385	1 813
Other ferro-alloys	795	588	1 310	937	2 017
Ingots & blooms	10 892	2 116	7 994	5 839	6 853
Scrap	34 261	30 486	16 345	7 910	27 161
<b>Sudan</b>					
Ingots, blooms, billets	35	6 025	7 472	9 361	...
<b>Tanzania</b>					
Pig-iron & ferro-alloys	1 187	2 936	882	...	...
Ingots & blooms	11 857	5 719	12 198	...	...
<b>Tunisia</b>					
Pig-iron	51	546	100	87	733
Ferro-alloys	317	1 257	1 455	2 117	785
Scrap	1 586	2 051	2 487	483	49
<b>Zaire</b>					
Ferro-alloys	478	622	404	450	...
<b>Zambia</b>					
Pig-iron	171	231	...	...	...
Ferro-alloys	604	709	...	...	...
<b>Zimbabwe</b>					
Ferro-chrome	...	...	...	1 234	...
Ferro-manganese	...	...	...	3 790	...

## Imports of Iron, Steel and Ferro-alloys

Country	1976	1977	1978	1979	1980
Canada					
Pig-iron	8 836	11 913	2 556	9 913	2 076
Sponge & powder	7 869	8 617	8 032	9 868	8 676
Ferro-chrome	22 493	32 947	30 426	34 718	41 364
Ferro-manganese & spiegeleisen	25 098	29 404	26 809	83 679	26 702
Ferro-silico-manganese & silico-spiegeleisen	12 056	4 835	15 842	21 876	20 899
Ferro-silicon	10 424	9 131	10 482	19 800	18 500
Ferro-tungsten	77	103	75	28	8
Ferro-vanadium	105	138	152	352	522
Other ferro-alloys	24 972	17 115	17 357	7 073	10 503
Ingots, blooms, billets	22 397	61 388	53 915	180 239	104 642
Scrap	823 552	583 989	951 846	1 046 541	1 012 634
Costa Rica					
Ingots & blooms	44 549	43 152	...	...	...
El Salvador					
Ingots, blooms, billets	10 626	17 432	...	...	...
Scrap	30	46	...	...	...
Honduras					
Ingots & blooms	5 618	2 836	3 263	...	...
Jamaica					
Pig-iron & sponge	237	20	32	17	...
Ingots & blooms	326	3 988	3 087	12 985	...
Mexico					
Pig-iron	110 021	23 154	46 472	44 717	...
Ferro-chrome	1 878	1 542	)		
Ferro-manganese	7 058	220	)		
Ferro-nickel	39	38	)		
Ferro-silicon	1 111	700	)	9 375	11 804
Ferro-vanadium	52	—	)		
Other ferro-alloys	645	358	)		
Ingots, blooms, billets	49 795	26 216	36 595	86 121	...
Scrap	522 904	356 150	481 600	328 637	...
Panama					
Ingots, blooms, billets	3 320	4 641	9 092	15 437	...
Trinidad & Tobago					
Pig-iron	51	38	55	42	...
Ingots, blooms, billets	11 776	2 950	10 135	7 849	...
USA					
Pig-iron	376 176	338 169	594 580	432 167	362 904
Sponge & powder	113 131	127 306	88 579	94 485	59 688
Ferro-chrome	220 079	203 284	296 637	219 959	269 633
Ferro-silico-chrome	14 265	14 722	500	38	4 610
Ferro-manganese	487 530	484 820	617 247	744 992	552 070
Ferro-silico-manganese	72 682	79 742	85 860	85 884	68 016
Ferro-molybdenum	5	87	165	28	21
Ferro-nickel	50 549	70 644	67 911	56 783	46 939
Ferro-niobium	1 549	1 868	2 902	3 849	...
Ferro-silicon	89 171	104 134	123 032	103 014	64 548
Ferro-titanium & ferro-silico-titanium	816	1 031	783	875	565
Ferro-tungsten & ferro-silico-tungsten	473	281	327	334	247
Ferro-vanadium	393	506	485	669	297
Ferro-zirconium	609	867	1 024	1 826	890
Ingots, blooms, billets	217 824	270 228	375 509	312 782	141 965
Scrap	460 000	557 323	720 263	689 702	527 539
Argentina					
Pig-iron	71 534	135 619	47 429	...	...
Ferro-manganese	1 034	1 028	396	...	...
Ferro-silico-manganese	...	—	—	...	...
Ferro-molybdenum	412	326	49	...	...
Ferro-silicon	2 008	381	46	...	...
Ferro-titanium	64	99	31	...	...
Blooms & billets	423 362	256 676	72 518	...	...
Scrap	72 372	160 189	16 390	...	...

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

Country	1976	1977	1978	1979	1980
<b>Brazil</b>					
Ferro-chrome	542	4 511	1 331	407	220
Ferro-silico-chrome	320	465	548	64	254
Ferro-manganese	68	99	—	1	0
Ferro-silicon	1 173	11 382	1 087	647	1 214
Other ferro-alloys	336	188	132	437	815
Ingots, blooms, billets	266	4	10 329	49 321	20 069
<b>Chile</b>					
Ferro-chrome	...	584	808	...	...
Ferro-silicon	...	107	284	...	...
Scrap	...	10 429	7 358	...	...
<b>Colombia</b>					
Ferro-manganese	6 208	2 524	...	...	...
Ferro-silicon	1 144	1 157	...	...	...
Ingots, blooms, billets	4 778	9 929	...	33 907	24 402
Scrap	8 814	11 996	...	21 796	5 450
<b>Peru</b>					
Ferro-chrome	154	159	...	...	...
Ferro-manganese	399	2 880	...	...	...
Ferro-silicon	174	285	...	...	...
<b>Uruguay</b>					
Ferro-alloys	354	409	233	461	...
Ingots, blooms, billets	13 608	25 336	22 580	58 966	...
<b>Venezuela</b>					
Pig-iron	96 760	76 395	33 170	...	...
Ferro-manganese	18 410	17 790	3 918	...	...
Ferro-silico-manganese	7 083	2 675	973	...	...
Ferro-silicon	501	726	127	...	...
Other ferro-alloys	340	3 978	1 034	...	...
Ingots, blooms, billets	333 485	484 555	314 882	...	...
Scrap	44 493	6 235	4 629	...	...
<b>China</b>					
Pig-iron & ferro-alloys (g)	* 420 000	* 251 000	* 472 000	* 493 000	...
Scrap (g)	* 46 000	* 100	...	...	...
<b>Cyprus</b>					
Pig-iron	553	1 971	1 717	1 000	...
<b>Hong Kong</b>					
Pig-iron	16 449	19 286	15 411	18 120	18 711
Ferro-manganese	958	1 053	3	234	3
Other ferro-alloys	308	53	1 207	3 011	1 920
Ingots, blooms, billets	70 575	137 526	183 770	257 273	156 083
Scrap	122 291	40 513	126 132	105 260	87 326
<b>India</b>					
Ferro-chrome	106	178	56	35	...
Ferro-manganese	—	184	...	41	...
Ferro-molybdenum	128	183	107	409	...
Ferro-nickel	271	...	4 084	1 893	...
Ferro-phosphorus	70	123	93	40	...
Ferro-silicon	43	66	70	198	...
Other ferro-alloys	176	79	121	123	...
Ingots, blooms, billets (e)	4 685	3 872	3 005	153 947	...
Scrap	28 135	73 843	109 326	144 697	...
<b>Indonesia</b>					
Pig-iron	14 812	34 411	32 429	42 253	34 963
Ferro-manganese	1 200	1 251	2 594	4 238	3 142
Other ferro-alloys	2 310	1 381	1 578	2 828	12 303
Ingots, blooms, billets	120 432	163 756	198 557	276 216	468 238
Scrap	29 462	47 084	80 690	29 770	39 009
<b>Iran (f)</b>					
Pig-iron	9 810	9 230	* 14 100	* 400	...
Ferro-manganese	2 214	) 7 367	* 5 800	* 4 800	...
Other ferro-alloys	11 731	)	...	...	...
Ingots, blooms, billets	266 549	584 352	* 986 000	* 316 000	...
Scrap	502	1 289	...	...	...
<b>Iraq</b>					
Pig-iron	416	...	...	...	...



## Imports of Iron, Steel and Ferro-alloys

Country	1976	1977	1978	1979	1980
Israel (b)					
Pig-iron	451	426	260	352	611
Spiegeleisen	400	51	—	—	—
Ferro-manganese	25	584	236	667	630
Other ferro-alloys	509	747	1 156	690	1 032
Ingots, blooms, billets	24 567	4 640	62 063	6 202	64 403
Japan					
Pig-iron	584 093	542 746	639 506	550 584	738 528
Sponge & powder	8 855	7 301	6 276	12 789	42 231
Ferro-chrome	93 002	104 098	168 597	250 317	257 157
Ferro-silico-chrome	13 657	5 497	5 951	23 046	23 210
Ferro-manganese	1 850	5 777	17 017	18 758	2 662
Ferro-molybdenum	1 036	222	651	547	448
Ferro-nickel	14 307	19 858	20 485	33 152	31 119
Ferro-niobium	1 723	905	1 177	1 989	1 419
Ferro-silicon	46 717	45 293	100 316	133 494	122 012
Ferro-tungsten	555	209	118	483	186
Ferro-vanadium	1 559	877	1 692	1 265	306
Other ferro-alloys	4 708	8 265	45 185	40 745	38 774
Ingots, blooms, billets	112 131	158 793	119 277	534 398	448 961
Scrap	1 802 320	1 440 286	3 229 156	3 345 998	2 986 171
Jordan					
Pig-iron	10 030	1 021	5 601	16 614	...
Ingots, blooms, billets	87 678	51 362	55 642	68 872	...
Korea, Republic of					
Pig-iron	8 770	19 680	...	79 917	16 971
Ferro-chrome	904	1 694	...	3 339	2 550
Ferro-manganese	1 245	1 682	...	2 583	857
Ferro-silicon	1 100	1 217	...	678	1 989
Other ferro-alloys	369	844	...	1 415	1 337
Ingots & blooms	132 882	274 149	...	273 342	74 693
Scrap	1 093 699	1 571 429	...	1 579 761	1 932 127
Kuwait					
Scrap	23	814	609	...	...
Malaysia					
Pig-iron	7 093	5 195	...	...	...
Ferro-manganese	1 824	2 083	...	...	...
Other ferro-alloys	1 191	3 043	...	...	...
Ingots, blooms, billets	24 724	10 723	...	...	...
Scrap	2 478	2 550	...	...	...
Pakistan (h)					
Scrap	138 334	103 818	210 623	113 570	213 243
Philippines					
Pig-iron	62 851	52 419	35 133	44 560	19 939
Ferro-manganese	1 279	1 743	2 936	5 537	3 214
Ferro-silicon	155	205	262	177	697
Other ferro-alloys	567	946	694	1 279	969
Ingots, blooms, billets	259 707	350 653	276 083	440 452	292 534
Scrap	95 715	62 234	79 282	95 465	8 966
Saudi Arabia					
Pig-iron	7 748	8 445	)	47 061	...
Ferro-alloys	242	863	)	1 178	...
Ingots, blooms, billets	5 348	5 102	17 086	288 807	...
Scrap	2 052	225	757	38 741	...
Singapore					
Pig-iron	21 800	7 852	55 807	79 861	31 490
Ferro-manganese	705	110	2 143	6 328	3 534
Other ferro-alloys	4 082	2 310	3 920	1 409	4 878
Ingots & blooms	136 697	32 288	63 452	109 520	96 126
Scrap	54 754	23 458	92 940	109 055	172 028
Sri Lanka					
Ingots, blooms, billets	16 537	19 175	25 243	58 920	56 745
Syria					
Pig-iron	10 682	12 048	5 494	4 272	...
Ingots, blooms, billets	204 797	80 245	75 359	160 756	...
Scrap	6 105	4 211	3 020	5 436	...

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

tonnes

Country	1976	1977	1978	1979	1980
<b>Taiwan</b>					
Pig-iron	68 556	10 278	68 686	65 416	152 464
Sponge & powder	1 489	1 411	2 726	7 569	9 962
Ferro-chrome	297	543	1 204	2 887	556
Ferro-manganese	421	438	633	859	799
Ferro-silicon	110	135	206	335	669
Other ferro-alloys	5 260	400	584	848	902
Ingots, blooms, billets	81 305	94 205	26 673	70 440	266 435
Scrap	297 090	571 057	622 219	760 688	1 232 365
<b>Thailand</b>					
Pig-iron	553	20 337	50	22 460	...
Ferro-manganese	2 060	2 315	2 356	2 468	...
Ferro-silicon	2 728	3 484	2 052	3 311	...
Other ferro-alloys	336	826	271	776	...
Ingots, blooms, billets	12 362	333	4 272	13 992	...
Scrap	275 609	423 615	801 963	614 808	...
<b>Australia</b>					
Ferro-chrome	6 019	12 482	18 730	13 826	16 044
Ferro-manganese (i)	4 882	3 101	5 460	16 985	6 366
Ferro-silico-manganese	603	115	414	489	(j)
Ferro-molybdenum	92	205	191	220	283
Ferro-nickel	5	38	—	55	430
Ferro-silicon	11 800	6 437	3 244	7 149	14 598
Other ferro-alloys	3 196	1 869	1 475	4 379	(d) 3 083
Ingots & billets	300	578	469	15 801	* 39 000
Scrap (h)	359	191	659	...	...
<b>Fiji</b>					
Pig-iron	132	35	...	...	...
Ingots, blooms, billets	9 183	8 207	...	...	...
<b>New Zealand (h)</b>					
Pig-iron	2 718	1 039	891	803	841
Spiegeleisen	142	108	183	108	—
Ferro-manganese	993	2 335	1 681	1 617	1 570
Other ferro-alloys	1 022	1 914	1 779	2 458	3 012
Billets & blooms	7 095	4 141	4 938	8 798	4 307
Scrap	18 190	17 036	16 962	1 475	938
<b>Solomon Islands</b>					
Billets & blooms	575	876	1 446	2 443	2 289

Note: In this table the term "ingots, blooms, billets" corresponds to items 672.4 and 5 of the Standard International Trade Classification (Revision 2) which includes those of alloy and high carbon steel

(a) Excluding ships intended for breaking up

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

(c) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(d) Including ferro-silico-manganese

(e) Years ended 31 March following that stated

(f) Years ended 20 March following that stated

(g) IGS estimates, based on known exports from certain countries

(h) Years ended 30 June of that stated

(i) Including powder

(j) Included with 'other ferro-alloys'

## Production of Kaolin

Country	1976	1977	1978	1979	1980
United Kingdom (a)	2 533 000	2 775 000	2 859 000	3 102 000	2 859 000
Belgium	* 120 000	* 120 000	* 120 000	* 120 000	* 120 000
France (b)	612 541	578 516	265 000	315 000	338 000
Germany, Federal Republic of (g)	365 000	399 000	413 000	432 000	367 000
Italy	85 958	83 772	69 075	67 194	66 711
Austria (a)	71 579	74 147	69 503	78 553	83 723
Bulgaria	* 194 000	* 194 000	* 200 000	* 200 000	* 200 000
Czechoslovakia (c)	545 000	580 000	499 000	513 000	518 000
Greece	70 350	67 686	64 933	32 478	54 035
Hungary (c)	72 000	77 600	75 000	71 000	59 000
Poland	42 600	41 800	38 600	42 900	51 000
Portugal	63 895	72 860	73 555	80 039	61 729
Romania	* 90 000	* 90 000	* 90 000	* 90 000	* 90 000
Soviet Union	* 2 200 000	* 2 300 000	* 2 400 000	* 2 500 000	* 2 500 000
Spain (h)	207 180	232 145	193 136	* 113 000	* 110 000
Sweden (h)	...	298	344	327	...
Turkey	55 611	59 162	43 685	70 584	60 979
Yugoslavia	(h) 54 000	(h) 41 000	180 079	177 958	* 180 000
Algeria	7 784	11 465	17 200	18 100	* 18 100
Burundi	2 362	* 2 500	* 2 750	* 2 750	* 2 750
Egypt	28 969	45 000	45 600	41 538	* 49 000
Ethiopia	* 45 000	* 40 000	* 30 000	* 30 000	* 30 000
Kenya	2	495	2 719	530	1 487
Madagascar	25 397	2 152	2 596	* 1 800	2 720
Nigeria	1 526	1 338	1 819	620	...
South Africa	59 733	88 619	122 024	148 740	137 854
Swaziland	989	—	—	—	—
Tanzania	2 385	77	7 345	12 468	7 434
Zimbabwe	4 346	4 543	1 017	2 686	4 450
Mexico	71 350	178 211	179 500	76 944	...
USA (e)	5 559 011	5 860 943	6 326 085	7 040 299	7 147 700
Argentina	83 726	74 284	45 940	132 107	138 800
Brazil	209 704	259 836	300 750	349 446	410 197
Chile	66 735	55 712	48 117	59 222	* 58 000
Colombia	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Ecuador	1 138	8 790	4 613	* 4 000	* 4 000
Paraguay	* 14 000	* 22 000	* 35 000	* 40 000	* 45 000
Peru	9 116	10 600	3 824	* 4 500	* 5 400
Venezuela	8 000	12 000	69 000	* 20 000	* 20 000
Bangladesh (d)	3 367	4 186	5 778	7 305	* 7 000
Hong Kong	1 305	2 466	25 046	2 841	748
India (c)	438 000	445 000	418 000	495 000	445 000
Indonesia	29 323	36 676	34 500	52 600	* 64 000
Iran	127 400	* 110 000	* 180 000	* 160 000	* 150 000
Israel	10 000	5 500	* 6 400	22 700	* 20 000
Japan	212 965	203 327	227 895	161 739	* 150 000
Jordan	3 000	4 000	10 000	25 000	25 147
Korea, Republic of	379 595	356 550	366 370	374 423	273 767
Malaysia	26 252	31 856	31 174	32 934	46 324
Pakistan	505	566	1 992	15 502	27 162
Sri Lanka	4 334	5 159	5 512	5 870	6 614
Taiwan	27 484	29 230	66 180	85 041	79 802
Thailand	16 660	24 810	33 764	42 769	19 934

## Kaolin

**Production of Kaolin**

tonnes

Country	1976	1977	1978	1979	1980
Australia (c)(f)	69 303	88 884	89 200	145 326	* 150 000
New Zealand	58 834	94 742	33 471	25 590	46 112
World total	15 150 000	16 100 000	16 600 000	17 800 000	17 600 000

Note: In addition to the countries listed, China, German Democratic Republic, Lebanon and Vietnam are also believed to produce kaolin

- (a) Sales
- (b) Including kaolinitic clay
- (c) Partly 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

## Exports of Kaolin

Country	1976	1977	1978	1979	1980
United Kingdom	2 061 921	2 267 534	2 303 513	2 628 237	2 468 058
Belgium-Luxembourg	9 220	6 187	3 176	20 346	12 605
Denmark	856	738	937	1 553	990
France	104 472	120 996	121 325	154 671	181 617
Germany, Federal Republic of	97 734	101 120	102 600	114 578	102 005
Italy	51 012	64 596	42 544	29 447	30 008
Netherlands	71 535	71 194	84 085	88 931	79 203
Austria	16 630	13 404	21 271	25 269	29 075
Czechoslovakia	397 000	412 000	382 000	382 000	367 000
German Democratic Republic	108 260	83 475	87 413	106 356	133 984
Greece	17 154	15 565	13 171	...	...
Hungary	7 236	7 724	7 025	6 791	6 496
Soviet Union (a)	* 39 400	* 25 000	* 22 200	* 26 900	* 32 800
Spain	59 237	57 720	59 802	71 794	...
Sweden	78	744	131	376	886
Turkey	66	—	55	3 090	...
Yugoslavia	7 668	10 638	9 812	5 618	6 587
Algeria (b)	460	150	100	...	...
South Africa	941	1 047	988	1 263	1 798
Swaziland	989	—	—	—	...
USA	764 135	864 427	1 065 860	1 438 676	1 263 341
Argentina	20	85	75	...	...
Brazil	818	11 470	21 445	46 543	...
Surinam	...	2 500	2 500	2 500	...
Hong Kong	1 843	2 941	2 336	5 554	10 250
of which: Re-exports	13	—	6	3 182	9 750
India	3 778	5 265	4 112	3 430	...
Indonesia	500	2 175	2 558	1 574	5 313
Japan	3 926	2 386	2 470	2 328	4 522
Korea, Republic of	119 818	104 781	88 112	82 416	76 920
Malaysia	11 921	11 845	...	...	...
Singapore	611	893	1 593	1 613	1 941

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

(b) Including bentonite

## Imports of Kaolin

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	5 350	7 363	6 560	5 853	4 535
Belgium-Luxembourg	252 834	275 973	289 598	290 085	259 510
Denmark	25 162	32 746	33 464	40 598	38 428
France	288 500	322 324	306 755	332 710	338 623
Germany, Federal Republic of	653 325	679 510	716 893	800 114	802 862
Italy	565 442	649 280	673 576	767 543	791 216
Netherlands	377 792	371 919	393 188	438 693	469 562
Austria	89 085	96 950	102 546	111 887	107 643
Finland	290 678	361 648	330 644	419 969	390 021
German Democratic Republic	27 825	27 500	47 400	15 000	15 200
Greece	65 593	69 624	51 104	...	...
Hungary	28 797	24 871	34 563	41 685	34 903
Norway	76 585	77 512	79 369	83 765	80 144
Poland	163 651	161 034	185 221	218 032	151 252
Portugal	6 211	9 334	10 357	12 413	...
Spain	134 504	165 756	165 311	172 379	...
Sweden	224 857	245 800	257 343	291 381	273 914
Turkey	4 973	5 041	693	1 899	...
Yugoslavia	60 389	67 062	73 464	75 805	86 363
Algeria (d)	12 769	12 393	7 193	...	...
Egypt (c)	22 314	18 846	—	—	...
Ivory Coast	120	114	167	138	...
Morocco	4 583	3 303	2 119	2 601	3 455
Tunisia	(d) 11 032	(d) 17 234	(d) 15 034	(d) 21 450	7 129
Canada	176 751	153 775	181 890	273 427	254 354
Costa Rica	1 694	1 244	...	...	...
Guatemala	13 457	6 779	...	...	...
Mexico	39 598	45 507	56 148	71 450	...
USA	20 962	17 838	11 592	28 537	14 362
Argentina	16 853	17 778	3 846	...	...
Brazil	14 813	4 096	2 453	3 307	3 614
Chile	...	1 605	1 617	...	...
Colombia	3 208	5 550	...	...	...
Peru	1 028	3 387	...	...	...
Uruguay	1 638	1 864	2 110	3 313	...
Venezuela	24 530	30 087	21 539	...	...
Hong Kong	3 387	1 088	387	5 086	22 078
India	5	13	65	73	...
Indonesia	4 116	3 500	8 247	11 429	13 318
Iran (a)	22 663	16 618	...	...	...
Japan	373 820	404 320	467 410	578 548	565 404
Korea, Republic of	14 301	116 028	...	18 414	19 557
Malaysia	1 544	1 816	...	...	...
Pakistan (b)	2 483	3 756	3 824	10 603	12
Philippines	5 226	7 168	9 107	9 441	9 023
Saudi Arabia	9 931	7 538	...	6 472	...
Singapore	2 741	4 925	4 802	5 983	5 286
Taiwan	28 119	32 418	42 171	40 425	66 753
Thailand	6 844	1 342	2 296	3 452	...
Australia	5 262	6 432	10 202	6 193	3 083
New Zealand (b)	1 394	3 927	2 345	956	1 280

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) May include other clays

(d) Including bentonite

## Mine Production of Lead

tonnes (metal content)

Country	1976	1977	1978	1979	1980
United Kingdom	7 053	8 178	4 582	4 701	3 600
France	27 996	31 481	35 500	29 531	28 847
Germany, Federal Republic of	31 667	31 132	22 374	25 200	23 000
Irish Republic	32 612	41 012	47 744	69 000	58 000
Italy	29 300	30 475	27 308	27 326	23 612
Austria	5 393	5 002	5 524	5 214	4 300
Bulgaria	* 110 000	* 110 000	* 110 000	* 112 000	* 110 000
Czechoslovakia	* 4 700	* 4 300	* 4 000	* 3 500	2 904
Finland	1 100	627	791	1 390	1 140
Greece	* 27 000	16 024	20 300	21 638	21 617
Greenland	27 000	28 800	30 600	31 900	30 100
Hungary	259	175	1 023	965	1 064
Norway	3 861	3 163	3 076	2 996	2 560
Poland	72 000	66 900	63 000	57 000	47 500
Romania	* 42 500	* 42 000	* 33 500	* 33 500	* 30 000
Soviet Union	* 600 000	* 625 000	* 600 000	* 590 000	* 580 000
Spain	66 396	65 540	71 341	71 102	72 548
Sweden	81 625	88 132	83 496	79 400	72 200
Turkey	4 926	8 718	9 992	7 334	6 700
Yugoslavia	122 466	129 977	124 389	129 776	121 400
Algeria	2 100	900	1 500	2 200	2 400
Congo	2 100	2 100	4 200	7 000	7 000
Morocco	64 146	104 308	109 420	108 264	115 500
Namibia	46 400	41 200	38 600	41 000	47 700
Nigeria	276	112	118	* 114	* 100
South Africa	—	—	—	—	86 059
Tunisia	9 694	10 200	8 349	10 000	8 310
Zambia	15 606	13 533	15 803	17 554	14 131
Canada	243 956	327 593	365 782	341 115	296 641
Guatemala	(b) 109	(b) 108	(b) 119	100	100
Honduras	18 590	23 538	21 804	16 416	13 315
Mexico	200 027	163 479	170 533	173 455	145 500
USA (a)	552 971	537 499	529 661	525 569	549 484
Argentina	33 004	33 601	30 252	31 775	31 600
Bolivia	18 581	18 441	18 042	15 359	17 225
Brazil	22 615	24 039	21 203	27 927	25 100
Chile	1 816	876	553	252	* 300
Colombia	* 140	* 115	* 120	* 120	* 100
Peru (a)	159 758	166 068	170 500	175 000	* 180 600
Burma	7 100	8 000	9 200	14 500	14 200
China	* 140 000	* 150 000	* 150 000	* 155 000	* 160 000
India	12 800	14 400	13 100	13 200	10 800
Iran (c)	40 000	30 000	30 000	15 000	12 000
Japan	48 906	50 132	51 770	46 259	44 800
Korea, Dem. P.R. of	* 120 000	* 110 000	* 110 000	* 120 000	* 125 000
Korea, Republic of	14 533	16 552	16 100	11 073	11 406
Philippines	4 530	3 695	1 448	1 949	1 596
Thailand	851	476	1 578	8 206	9 939
Australia	397 403	432 204	400 291	421 581	405 647
World total	3 500 000	3 600 000	3 600 000	3 600 000	3 600 000

(a) Recoverable

(b) Smelter

(c) Years ended 20 March following that stated

Lead

**Production of Refined Lead**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom (a)	341 868	351 078	345 788	368 330	324 790
Belgium (a)	121 524	122 796	125 040	113 412	127 910
Denmark	18 600	23 200	26 200	25 166	11 861
France	172 231	184 100	183 678	219 712	218 831
Germany, Federal Republic of	160 100	158 700	189 900	194 800	191 109
Italy	46 000	34 200	31 108	26 840	42 057
Netherlands	21 890	21 132	18 172	16 432	13 902
Austria	9 800	8 400	7 100	8 000	7 800
Bulgaria	* 112 000	* 112 000	* 125 000	* 120 000	* 118 000
Czechoslovakia	19 116	19 015	19 042	19 020	20 014
German Democratic Republic	36 000	45 000	45 000	42 000	42 000
Greece	18 700	20 400	22 600	15 630	21 067
Norway	—	500	400	—	—
Poland	80 600	85 400	86 700	84 200	82 000
Portugal	388	241	176	...	...
Romania	42 465	41 702	42 815	40 900	40 991
Soviet Union	* 700 000	* 720 000	* 770 000	* 780 000	* 780 000
Spain	73 241	89 173	83 600	87 200	83 300
Sweden	22 231	23 733	26 915	22 675	20 300
Turkey	3 200	3 000	3 567	3 553	5 300
Yugoslavia	111 220	129 890	116 703	111 040	101 751
Morocco	24 700	33 100	28 500	35 200	40 300
Namibia	39 600	42 700	39 500	41 700	42 700
Tunisia	23 870	19 501	16 570	17 441	19 195
Zambia	13 493	13 400	12 701	12 758	10 047
Canada	175 720	187 457	194 054	183 769	162 500
Guatemala	109	108	119	100	100
Mexico	172 665	143 742	159 342	166 916	140 700
USA	596 491	551 687	568 087	578 207	550 561
Argentina	40 000	38 000	25 300	27 600	21 500
Brazil	43 672	48 303	47 236	55 084	44 519
Peru	85 500	84 300	79 300	85 700	82 300
Burma (b)	2 882	5 498	5 548	5 957	6 592
China (a)	* 140 000	* 150 000	* 160 000	* 170 000	* 175 000
India	5 435	7 588	10 059	9 820	14 846
Japan	219 053	221 398	228 442	221 247	220 934
Korea, Dem. P.R. of	* 70 000	* 70 000	* 75 000	* 70 000	* 65 000
Korea, Republic of	7 781	6 742	7 218	7 600	5 479
Australia	181 941	181 501	204 022	215 584	200 451
World total	4 000 000	4 000 000	4 100 000	4 200 000	4 100 000

Note: This table includes lead content of antimonial lead

(a) Including secondary metal

(b) Years ended 31 March following that stated



Lead

tonnes

## Exports of Lead

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates	9 272	5 558	6 860	5 187	3 535
Unwrought	77 072	103 751	105 195	125 081	127 945
Unwrought alloys	26 562	22 320	16 914	11 467	13 880
Scrap	11 616	6 874	16 615	32 369	30 662
Belgium-Luxembourg					
Ore	7	16	25	1 197	8 058
Unwrought	67 383	69 312	76 206	63 437	72 012
Unwrought alloys	5 827	7 617	9 782	10 743	12 250
Scrap	8 328	12 698	15 653	22 531	16 718
Denmark					
Ore	633	600	580	515	—
Unwrought	4 028	9 559	9 834	5 887	4 276
Unwrought alloys	6 892	8 796	8 127	9 302	10 471
Scrap	468	1 189	801	1 322	1 707
France					
Ore	64	29	40	34	69
Unwrought	16 829	16 932	34 959	40 647	42 621
Unwrought alloys	16 016	20 330	18 466	17 880	15 006
Scrap	15 055	76 642	32 661	30 191	7 852
Germany, Federal Republic of					
Ore	7 094	6 639	10	2 577	2 000
Unwrought	52 817	81 642	82 124	73 981	65 952
Unwrought alloys	19 381	23 761	24 686	33 050	32 810
Scrap	21 710	18 564	16 801	18 414	19 032
Irish Republic					
Ores & concentrates	56 836	71 886	69 175	115 276	110 238
Unwrought (a)	2 194	3 079	3 231	3 196	1 857
Scrap	—	—	1 976	954	1 881
Italy					
Ore	26 554	26 980	19 207	19 359	21 353
Unwrought (a)	4 145	5 123	8 313	20 504	4 199
Netherlands					
Unwrought	7 795	5 951	5 663	3 768	6 023
Unwrought alloys	15 118	9 002	16 059	14 939	13 673
Scrap	16 671	39 874	32 825	35 362	36 153
Austria					
Unwrought	204	766	673	413	391
Scrap	877	665	12	79	3
Czechoslovakia					
Ores & concentrates	* 7 700	* 7 600	* 7 100	3 700	2 800
Finland					
Ore	4 089	...	2 022	2 035	2 047
Unwrought (a)	9	1 303	808	992	869
Greece					
Ore	37 708	20 832	47 795	55 610	39 124
Greenland					
Ores & concentrates	35 581	41 660	43 205	39 057	* 35 000
Norway					
Ore	4 599	5 846	4 432	6 293	3 754
Unwrought (a)	430	90	36	254	126
Scrap	7 017	6 687	6 303	7 598	8 753
Poland					
Concentrates	17 827	...	...	...	...
Unwrought	3 845	5 380	500	7 098	...
Portugal					
Ore	—	140	740	1 635	1 420
Unwrought (a)	40	1	504	13	5
Soviet Union					
Unwrought	* 99 000	* 95 000	* 95 000	* 95 000	* 100 000
Spain					
Unwrought (a)	1 444	1 769	10 548	19 644	7 633
Sweden					
Ore	61 036	68 445	58 385	59 190	56 788
Unwrought	37 590	46 827	52 779	43 185	39 856
Unwrought alloys	1 621	1 965	1 555	1 735	2 754
Scrap	118	99	86	36	65

Lead

**Exports of Lead**

tonnes

Country	1976	1977	1978	1979	1980
Switzerland					
Unwrought	1 512	3 387	2 796	4 874	4 063
Scrap	7 549	9 443	8 530	11 608	8 174
Turkey					
Ore (e)	9 450	8 448	—	—	...
Concentrates	—	4 525	—	—	...
Yugoslavia					
Concentrates	11 288	5 430	39 893	13 496	10 070
Unwrought	47 035	50 848	41 015	33 852	24 322
Unwrought alloys	118	563	3 401	3 121	3 243
Algeria					
Ore	4 555	2 682	1 000	5 400	...
Scrap	1 200	790	—	...	...
Congo					
Ore	11 404	9 656	...	...	...
Ivory Coast					
Scrap	434	563	547	776	...
Kenya					
Ores & concentrates	800	—	—	4	...
Scrap	459	663	360	392	...
Morocco					
Ore	71 239	120 571	119 614	118 540	111 637
Unwrought	17 547	29 942	21 335	34 250	32 806
Senegal					
Unwrought & scrap	...	159	198	...	...
South Africa					
Concentrates	1 626	—	—	—	(b) 65 164
Unwrought	16 700	24 000	39 000	26 000	24 000
Sudan					
Scrap	598	43	297	661	...
Tanzania					
Scrap	145	...	145	...	...
Tunisia					
Ore	5 859	1 550	—	—	—
Unwrought	20 750	14 549	12 153	11 116	11 943
Scrap	—	14 580	—	554	338
Zambia					
Unwrought	15 000	11 400	10 000	10 000	8 900
Canada					
Ore (b)	140 942	137 820	142 641	151 497	147 226
Unwrought	114 571	130 823	131 955	117 994	126 541
Scrap	14 911	15 963	17 636	21 884	21 103
Honduras					
Ores & concentrates	28 651	36 354	34 338	...	...
Mexico					
Ores & concentrates	7 434	9 965	11 108	2 564	...
Unwrought –					
Refined	56 354	75 904	73 642	67 297	...
Base bullion	9 116	1 670	3 222	6 293	...
Nicaragua					
Ores & concentrates	1 718	2 318	1 915	39	...
Panama					
Unwrought (a)	446	410	500	688	428
USA					
Ores & concentrates (b)	...	...	54 231	33 090	38 021
Unwrought	2 020	1 842	2 145	6 587	148 355
Unwrought alloys	1 946	2 741	1 024	800	9 216
Scrap	42 553	77 692	98 687	119 854	119 759
Bolivia					
Ore (b)	18 580	19 878	16 482	15 633	15 936
Colombia					
Ore	234	346	...	...	...
Peru					
Ores & concentrates	162 983	127 732	147 900	...	...
Unwrought	83 084	96 406	) 92 525	69 900	59 300
Unwrought alloys	2 347	1 349	)		

**Exports of Lead**

Country	1976	1977	1978	1979	1980
Burma					
Unwrought	1 916	2 625	...	...	...
Hong Kong					
Scrap	2 001	490	1 122	1 482	1 891
Iran (c)					
Ore	4 444	...	* 7 000	* 9 000	...
Japan					
Ores & concentrates	3 728	6 964	9 312	8 266	6 139
Unwrought (a)	8 641	8 297	7 815	9 152	6 296
Scrap	2 855	3 673	1 425	6 178	3 711
Korea, Republic of					
Ore	8 360	7 640	10 685	6 600	4 000
Philippines					
Concentrates	7 395	6 555	2 268	5 574	3 232
Taiwan					
Unwrought	1 104	1 303	4 577	10 421	11 370
Thailand					
Ore	1 234	3 710	2 500	16 796	...
Australia					
Ores & concentrates (b)(d)	40 278	57 668	95 091	38 847	28 261
Unwrought					
Base bullion (b)	172 032	167 533	147 101	162 235	153 930
Refined	157 852	125 108	149 816	) 164 978	165 200
Alloys	6 644	7 730	8 454	)	
Scrap	1 027	2 440	9 757	7 614	9 563

Note: In this table the term 'unwrought' lead corresponds to item 685.1 of the Standard International Trade Classification (Revision 2) and comprises base bullion, pigs, unwrought bars, etc

(a) Including alloys

(b) Pb content

(c) Years ended 20 March following that stated

(d) Including Pb content of matte, slags, etc

(e) Complex lead-zinc ore

## Lead

## Imports of Lead

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates (b)	* 7 900	30 217	42 932	67 812	56 060
Unwrought	232 990	180 277	191 480	199 805	199 516
Unwrought alloys	3 726	4 391	6 766	5 398	4 699
Scrap	1 762	7 268	2 598	9 081	10 571
Belgium-Luxembourg					
Ore	132 588	52 912	74 541	82 218	75 709
Unwrought	28 334	48 478	50 557	50 242	47 458
Unwrought alloys	5 048	6 222	5 837	7 558	6 828
Scrap	9 619	12 682	14 593	12 632	11 944
Denmark					
Unwrought	6 516	7 060	6 932	6 355	3 231
Unwrought alloys	835	1 048	349	2 522	3 292
Scrap	12 545	20 273	21 869	19 012	16 546
France					
Ore	96 536	125 561	134 738	134 824	139 509
Unwrought	47 433	39 775	34 048	45 749	47 456
Unwrought alloys	8 955	7 856	4 190	6 068	7 633
Scrap	6 611	58 893	17 246	26 411	31 189
Germany, Federal Republic of					
Ore	190 104	195 020	170 055	191 179	181 679
Unwrought	93 500	94 208	107 567	105 236	135 259
Unwrought alloys	16 954	20 611	23 535	23 797	25 390
Scrap	23 769	50 538	45 621	62 566	43 309
Irish Republic					
Unwrought (a)	2 424	2 627	4 443	4 007	3 352
Scrap	1 818	3 482	2 974	3 906	4 203
Italy					
Ore	19 969	14 264	18 589	48 761	44 264
Unwrought (a)	159 586	163 624	138 268	151 411	173 235
Scrap	22 312	41 124	38 275	48 707	44 139
Netherlands					
Unwrought	39 641	45 323	45 884	44 069	49 325
Unwrought alloys	12 216	15 362	14 034	12 004	13 295
Scrap	9 805	16 706	10 882	10 022	9 752
Austria					
Ore	7 561	7 822	4 258	6 193	4 156
Unwrought	22 999	23 198	24 510	29 539	32 396
Scrap	2 435	2 114	1 203	1 920	2 628
Czechoslovakia					
Unwrought (a)	35 000	35 000	39 000	40 000	40 000
Finland					
Unwrought (a)	14 605	14 613	12 332	16 306	20 498
Greece					
Ore	19 292	7 277	...	3 468	7 022
Unwrought (a)	10 196	7 022	5 616	4 964	7 807
Hungary					
Unwrought & semi-manufactures	14 319	16 582	15 005	13 240	12 891
Iceland					
Unwrought	98	68	66	34	115
Norway					
Unwrought	7 211	7 282	7 430	7 065	8 430
Unwrought alloys	7 453	4 772	5 748	5 037	5 179
Poland					
Unwrought	12 076	9 384	9 579	9 805	6 654
Portugal					
Unwrought (a)	13 796	12 349	16 623	14 896	16 469
Scrap	182	51	82	91	1 050
Soviet Union					
Ore	41 554	49 818	47 695	...	...
Unwrought	* 60 000	* 55 000	* 60 000	* 80 000	* 80 000
Spain					
Ore	17 887	24 372	33 344	15 155	...
Unwrought (a)	8 995	1 396	3 653	1 165	...
Scrap	2 494	462	4 024	286	...

## Imports of Lead

Lead

tonnes

Country	1976	1977	1978	1979	1980
Sweden					
Unwrought	2 031	443	426	1 186	604
Unwrought alloys	2 541	2 808	1 263	1 749	1 165
Scrap	2 456	6 030	5 045	6 988	3 971
Switzerland					
Unwrought	14 748	14 477	15 048	11 592	17 981
Turkey					
Unwrought (a)	7 468	7 406	3 328	2 921	...
Scrap	1 286	103	—	...	...
Yugoslavia					
Concentrates	8 123	22	1 923	1 978	2 731
Unwrought	3 824	5 321	8 188	9 521	10 060
Scrap	938	2 187	...	1 124	—
Algeria					
Unwrought	3 495	1 098	7 866	...	...
Unwrought alloys	467	976	1 540	...	...
Egypt					
Unwrought & scrap	6 545	10 066	15 955	4 803	...
Ghana					
Unwrought (a)	197	211	...	...	...
Kenya					
Unwrought (a)	563	2 185	878	272	...
Libya					
Unwrought	343	3 251	812	1 587	...
Madagascar					
Unwrought (a)	223	344	379	258	...
Mozambique					
Unwrought	478	465	...	...	...
Nigeria					
Unwrought (a)	154	557	694	...	...
South Africa					
Ore	5 766	—	—	—	950
Unwrought	5 009	2 202	5 662	3 365	9 304
Scrap	12 474	4 957	29 699	31 517	5 911
Sudan					
Unwrought	360	440	56	...	...
Tunisia					
Ore	18 523	5 850	1 456	8 277	9 985
Canada					
Unwrought	1 941	822	1 715	2 133	2 602
Costa Rica					
Unwrought & semi-manufactures (a)	277	288	...	...	...
El Salvador					
Unwrought (a)	65	100	...	...	...
Mexico					
Unwrought & scrap	509	818	286	253	...
Nicaragua					
Unwrought (a)	207	255	231	198	...
Trinidad & Tobago					
Unwrought (a)	286	484	563	282	...

Lead

**Imports of Lead**

tonnes

Country	1976	1977	1978	1979	1980
USA (b)					
Ores & concentrates	69 278	66 533	52 984	39 998	44 095
Unwrought –					
Base bullion	2 117	7 319	4 307	1 709	315
Other	119 852	218 955	202 617	174 279	71 641
Alloys	8 454	12 966	21 451	20 238	11 693
Scrap	2 023	3 158	2 767	3 645	5 244
Argentina					
Unwrought	299	69	60	...	...
Brazil					
Ore	29 799	42 601	44 765	41 994	34 801
Unwrought (a)	9 144	14 857	754	602	12
Chile					
Unwrought (a)	...	2 051	1 746	...	...
Colombia					
Unwrought (a)	2 924	...	...	...	...
Uruguay					
Unwrought	1 235	1 341	1 586	3 094	...
Venezuela					
Unwrought (a)	2 468	2 823	2 430	...	...
Scrap	5 856	6 984	2 034	...	...
China					
Refined (f)	26 300	10 600	24 000	34 700	26 500
Hong Kong					
Unwrought	1 017	1 112	(a) 1 190	(a) 1 902	(a) 2 065
Scrap	540	241	288	458	471
India					
Ore	145	20	101	47	...
Unwrought (c)	45 825	43 453	25 411	35 723	...
Unwrought alloys (c)	412	3 152	1 950	5 349	...
Indonesia					
Unwrought	3 414	4 299	6 547	4 833	7 397
Iran (d)					
Unwrought	1 001	997	* 11 000	* 4 000	...
Iraq					
Unwrought (a)	2 547	...	...	...	...
Israel (g)					
Unwrought	1	706	2 266	1 089	2 883
Japan					
Ore	154 601	193 875	222 447	218 544	258 634
Unwrought	32 203	28 478	50 923	50 372	73 129
Unwrought alloys	2 826	3 597	8 436	12 300	17 583
Scrap	1 402	2 856	6 704	2 023	5 020
Jordan					
Unwrought & scrap	3 176	1 687	3 786	1 481	...
Korea, Republic of					
Unwrought (a)	6 568	11 493	20 500	19 750	20 616
Scrap	4 394	15 251	...	29 437	23 387
Malaysia					
Unwrought (a)	1 497	2 228	...	...	...
Scrap	903	757	...	...	...
Philippines					
Unwrought (a)	4 978	6 651	7 698	7 649	5 422
Singapore					
Unwrought	3 629	3 946	4 560	3 132	6 163
Syria					
Unwrought & scrap	3 169	3 774	3 711	2 154	...

**Imports of Lead**

Country	1976	1977	1978	1979	1980
Taiwan					
Unwrought (a)	6 361	8 654	8 794	8 856	10 777
Scrap	7 575	12 869	22 061	46 964	44 690
Thailand					
Unwrought (a)	7 528	6 429	8 482	2 400	...
New Zealand (e)					
Unwrought (a)	8 889	7 497	8 625	7 522	6 758

Note: In this table the term 'unwrought' lead corresponds to item 685.1 of the Standard International Trade Classification (Revision 2) and comprises base bullion, pigs, unwrought bars, etc

(a) Including alloys

(b) Pb content

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

(e) Years ended 30 June of that stated

(f) Imports from western countries only

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

## Lithium

**Production of Lithium Minerals**

tonnes

Country	1976	1977	1978	1979	1980
Portugal					
Lepidolite	1 200	1 200	1 200	1 200	200
Soviet Union	* 45 000	* 50 000	* 50 000	* 50 000	* 50 000
Mozambique					
Lepidolite	* 730	—	—	—	—
Spodumene	* 25	—	—	—	—
Namibia	5 892	2 548	...	...	* 3 000
Rwanda					
Amblygonite	* 30	* 30	* 28	...	...
Zimbabwe	40 722	8 050	16 688	13 197	21 030
USA (a)(b)	* 4 000	* 4 000	* 4 000	* 5 000	* 5 000
Argentina	675	412	803	106	* 500
Brazil					
Amblygonite	185	489	431	187	* 450
Lepidolite	1 332	579	50	58	* 300
Petalite	968	1 028	1 996	1 501	* 2 000
Spodumene	413	112	885	* 800	* 800
China	* 9 000	* 10 000	* 10 000	* 10 000	* 14 000
World total (a)	* 6 000	* 5 500	* 5 700	* 6 600	* 6 900

(a) Li content

(b) Mostly spodumene



**Exports of Lithium**

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	0	1	1	0	0
Belgium-Luxembourg					
Lithium minerals	1 390	61	...	...	...
France					
Lithium minerals	421	24	...	...	...
Oxides	63	3	70	75	52
Germany, Federal Republic of					
Lithium minerals	505	1 307	...	...	...
Metal	8	13	16	12	23
Oxides	544	625	557	717	859
Netherlands					
Oxides (c)	53	133	221	302	34
Mozambique					
Lithium minerals (a)	—	* 1 000	...	...	...
South Africa					
Lithium minerals (a)	* 6 000	* 5 000	...	...	...
USA					
Lithium minerals, compounds & metal (b)	* 1 500	* 1 600	* 1 800	* 2 200	* 2 300
Argentina					
Lithium minerals	50	—	—	...	...
Brazil					
Lithium minerals	1 187	758	—	1 075	2 000

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

(b) Li content

(c) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

## Lithium

**Imports of Lithium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	3	3	2	3	5
Oxides	356	460	427	611	428
Belgium-Luxembourg					
Lithium minerals	1 310	297	...	...	...
Metal	—	0	10	6	1
Oxides	91	159	135	159	255
France					
Lithium minerals	1 980	1 942	...	...	...
Metal	5	22	19	4	27
Oxides	383	435	485	520	451
Germany, Federal Republic of					
Lithium minerals	4 308	5 662	...	...	...
Metal	17	18	17	9	8
Oxides	343	727	469	464	568
Italy					
Lithium minerals	643	1 389	...	...	...
Metal	4	2	26	0	9
Oxides	150	389	260	385	277
Netherlands					
Oxides (a)	167	228	309	400	81
Spain					
Lithium minerals	92	435	313	416	...
Metal	0	10	—	49	...
Oxides	...	119	96	138	...
South Africa					
Lithium minerals	5 880	11 722	9 262	4 452	5 327
USA					
Lithium minerals	62	—	...	3 983	5 247

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

**Production of Magnesite**

tonnes

Country	1976	1977	1978	1979	1980
Austria	926 540	1 003 041	982 320	1 103 649	1 318 156
Czechoslovakia	654 000	661 000	658 000	654 000	666 000
Greece	1 284 355	1 358 805	1 058 211	1 079 468	1 166 998
Poland	26 300	24 000	23 746	20 010	19 610
Soviet Union	* 1 800 000	* 1 850 000	* 1 900 000	* 1 950 000	* 2 000 000
Spain	133 923	161 869	128 627	* 180 000	* 180 000
Turkey	409 276	516 162	418 002	729 442	806 997
Yugoslavia	491 000	345 000	333 000	293 000	262 000
South Africa	62 858	49 219	37 407	65 336	59 975
Zimbabwe	95 051	54 204	65 756	84 495	78 217
Canada (b)	* 27 000	* 42 000	40 356	52 553	* 53 000
Mexico	23 186	66 400	76 035	81 620	* 80 000
Brazil	195 877	205 719	217 270	265 067	315 851
Colombia	1 632	1 770	1 400	1 582	* 1 600
China	* 1 000 000	* 1 500 000	* 1 800 000	* 2 000 000	* 2 000 000
India	329 698	402 007	414 166	392 211	370 573
Iran (a)	5 000	* 5 000	* 5 000	* 5 000	* 4 000
Korea, Dem. P.R. of	* 1 500 000	* 1 500 000	* 1 600 000	* 1 800 000	* 1 900 000
Pakistan	3 309	1 269	* 1 852	2 728	778
Australia	14 706	18 531	21 350	29 301	31 493
New Zealand	805	557	840	—	—
World total	9 000 000	9 800 000	9 800 000	10 800 000	11 300 000

Note: In addition to the countries listed, Bulgaria, Egypt, Kenya, New Caledonia and USA are also believed to produce magnesite

(a) Years ended 20 March following that stated

(b) Officially described as magnesitic dolomite and brucite

## Magnesite

**Exports of Magnesite**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Crude	341	2 093	9 446	2 678	114
Calcined	41 785	48 165	10 412	5 777	4 850
Belgium-Luxembourg					
Crude	878	159	20	1 592	30 640
Calcined	3 069	3 159	3 514	3 070	3 769
France					
Crude	26	364	11	51	141
Calcined	435	187	1 679	514	1 152
Germany, Federal Republic of					
Crude	351	132	168	135	42
Calcined	5 279	11 146	16 259	13 314	11 367
Irish Republic	...	37 341	51 146	35 901	73 395
Italy					
Crude	86	98	302	285	274
Calcined	4 003	19 991	57 404	49 336	49 760
Netherlands					
Crude (a)	2 172	1 671	1 690	1 919	2 024
Calcined (a)	29 712	29 981	33 554	32 334	28 601
Austria					
Crude	3 262	2 585	1 263	607	) 137 837
Calcined	108 232	100 461	108 274	111 414	)
Czechoslovakia	364 000	367 000	382 000	377 000	385 000
Greece					
Crude	15 982	18 545	18 857	) 476 813	423 809
Calcined	338 546	338 827	348 099	)	
Norway	8	—	18 210	17 534	17 120
Spain					
Crude & calcined	74 621	92 936	79 029	93 459	91 166
Sweden	64	105	138	520	225
Switzerland					
Calcined	27	10	60	32	35
Turkey					
Crude	21 073	10 756	12 650	2 360	...
Calcined	34 523	60 378	56 336	39 146	...
Yugoslavia					
Calcined	34 631	29 093	31 342	28 325	24 321
South Africa (c)	£70 000	£52 000	£44 000	£302 000	£139 000
Zimbabwe	...	...	...	57 055	...
Brazil					
Calcined	27 919	63 788	56 219	104 399	88 836
Hong Kong					
Crude & calcined (Re-exports)	135	616	903	1 000	5 074
India					
Crude	108	3 106	2 410	14	...
Calcined	8 132	9 972	8 742	5 415	...
Israel (b)	21 266	24 384	20 948	9 183	4 168
Japan	405	5 299	17	4 487	7 304
Korea, Dem. P.R. of	* 621 400	* 612 100	* 667 700	* 757 800	...
Korea, Republic of					
Crude & calcined	450	2 100	550	900	1 000
Singapore	182	114	50	102	337
Australia	13 460	173	3 832	4 228	4 627

## Notes:

- 1 So far as possible sea water magnesia has been excluded from this table if specifically identified in trade accounts. Countries known to produce sea water magnesia and which do not specifically identify it in their trade accounts are Irish Republic, Israel and Norway
- 2 The term "calcined", as used here, includes dead-burned, sintered and caustic-burned (caustic calcined) material

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

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

(c) Values shown are for the common customs union

**Imports of Magnesite**

Country	1976	1977	1978	1979	1980
United Kingdom					
Crude	2 198	3 656	8 241	9 750	12 296
Calcined	82 379	124 638	90 036	102 111	60 747
Belgium-Luxembourg					
Crude	1 229	1 612	888	864	759
Calcined	27 081	23 740	23 129	20 834	12 037
Denmark					
Crude	203	27	443	355	395
Calcined	9 607	9 607	18 431	15 853	13 024
France					
Crude	9 300	9 830	6 832	412	1 022
Calcined	63 333	71 073	77 906	94 488	106 223
Germany, Federal Republic of					
Crude	5 819	3 550	3 430	3 356	2 097
Calcined	341 312	332 710	314 334	373 291	408 462
Irish Republic	10 166	16 591	22 479	29 776	32 116
Italy					
Crude	6 933	6 361	6 390	8 496	15 531
Calcined	54 384	51 605	58 245	74 407	89 262
Netherlands					
Crude (a)	2 739	2 688	2 589	5 589	2 203
Calcined (a)	68 185	58 771	63 032	62 711	68 356
Austria					
Crude	13 608	3 375	454	2	6
Calcined	72 131	85 214	88 107	113 184	125 512
Finland	2 397	1 215	7 176	15 379	15 865
Greece					
Crude	2 515	2 757	210	) 457	881
Calcined	382	1 338	459	)	
Hungary					
Calcined	98 824	119 718	108 011	120 346	118 258
Norway	2 523	4 249	2 662	6 030	4 508
Poland					
Calcined	278 367	296 472	316 668	319 921	310 000
Portugal	594	919	729	422	...
Soviet Union					
Calcined	378 955	452 186	480 644	518 021	539 601
Spain					
Crude & calcined	42 362	50 307	49 070	53 822	72 749
Sweden	7 073	3 898	21 693	22 672	20 584
Switzerland					
Calcined	3 485	3 012	3 955	3 953	4 186
Yugoslavia					
Crude	9 695	6 874	6 531	2 232	30 232
Calcined	8 093	14 708	21 139	41 650	46 197
Algeria					
Crude	3	5	60	...	...
Calcined	313	417	376	...	...
Egypt	...	...	3 705	1 198	...
Morocco	291	204	125	109	140
Senegal	...	151	41	...	...
South Africa					
Crude & calcined	103 814	85 841	83 792	124 827	98 478
Tanzania	...	...	165	...	...
Zaire	859	268	228	274	...
Canada					
Calcined	42 627	54 028	65 285	88 909	76 601
Mexico					
Crude & calcined	15 034	18	4 392	28 794	...
USA					
Crude & calcined	87 318	74 070	85 944	90 286	77 267

## Magnesite

**Imports of Magnesite**

tonnes

Country	1976	1977	1978	1979	1980
Argentina					
Calcined	24 738	24 519	5 359	...	...
Brazil					
Crude & calcined	94	109	7	48	3 193
Chile					
Calcined	...	3 655	3 072	...	...
Peru					
Crude & calcined	20	1 363	...	...	...
Uruguay					
Crude & calcined	119	55	80	116	...
Venezuela					
Crude	332	627	28	...	...
Calcined	45	5 025	10 128	...	...
Brunei	1	35	350	—	...
Hong Kong	1 221	1 396	2 413	2 475	8 493
India	—	57	7 641	27 153	...
Indonesia	95	109	440	967	1 085
Israel	623	1 535	1 458	1 426	2 097
Japan					
Crude	2 448	5 567	11 302	25 292	38 017
Calcined	104 549	46 096	59 736	96 741	142 700
Malaysia	332	778	...	...	...
Pakistan (b)	829	55	274	1 014	112
Philippines					
Crude & calcined	1 378	1 037	1 261	3 913	6 856
Singapore	59	97	180	288	638
Syria	—	35	33	20	...
Taiwan	852	1 145	750	4 272	7 685
Thailand					
Crude	4 356	5 081	5 181	5 682	...
Calcined	—	1 544	1 984	1 594	...
Australia					
Calcined	2 603	37	9 790	15 477	17 461
New Zealand (b)	3 149	1 088	976	4 617	6 190

## Notes:

- 1 So far as possible sea water magnesia has been excluded from this table if specifically identified in trade accounts
- 2 The term "calcined", as used here, includes dead-burned, sintered and caustic-burned (caustic calcined) material

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Years ended 30 June of that stated

## Production of Manganese Ore

tonnes

Country		1976	1977	1978	1979	1980
Italy	(30%)	5 016	9 314	9 741	9 782	9 165
Austria (e)		70 595	64 734	51 351	58 969	58 141
Bulgaria	(30%)	40 000	* 40 000	* 40 000	* 42 000	* 40 000
Czechoslovakia (d)	(17%)	1 100	910	* 910	* 910	* 910
Greece	(50%)	6 730	8 860	7 000	5 750	5 555
Hungary	(30%)	125 000	119 700	114 000	83 000	82 564
Romania	(22%)	* 81 600	* 81 600	* 81 600	* 81 600	* 81 600
Soviet Union	(35%)	8 636 000	8 595 000	9 057 000	10 244 000	9 750 000
Turkey	(40%)	33 783	38 443	68 184	41 584	41 634
Yugoslavia	(34%)	19 000	24 750	27 400	30 150	30 000
Egypt	(35%)	4 256	3 509	173	—	—
Gabon	(50%)	2 217 000	1 918 000	1 718 000	2 300 000	2 147 000
Ghana	(40%)	311 872	291 585	315 576	272 160	252 450
Morocco	(50%)	117 304	113 585	126 222	135 709	132 200
South Africa						
Metallurgical	(40%)	5 354 387	4 876 365	4 179 995	4 952 920	5 328 737
Chemical	(55%)	97 871	171 590	137 049	229 423	366 689
Ferruginous	(20%)	50 964	242 155	95 699	—	—
Sudan	(48%)	465	457	—	—	—
Zaire	(48%)	182 185	41 019	—	21 183	16 586
Mexico	(36%)	* 452 800	* 486 622	* 523 167	* 492 664	* 447 128
USA (a)	(13%)	232 813	195 855	283 154	218 356	157 748
Argentina	(30%)	53 086	82 385	18 497	10 190	* 9 700
Brazil	(45%)	1 545 429	1 257 597	1 650 262	1 950 801	2 044 059
Chile	(38%)	23 639	18 002	23 243	24 969	* 27 000
Peru	(32%)	613	...	...	...	...
China	(30%)	* 1 000 000	* 1 100 000	* 1 300 000	* 1 500 000	* 1 600 000
India (c)	(35%)	1 835 000	1 865 000	1 619 000	1 771 000	1 645 000
Indonesia	(50%)	9 833	5 981	5 290	5 900	* 7 000
Iran (b)	(34%)	40 000	40 000	30 000	* 23 000	* 20 000
Japan	(35%)	142 885	127 387	105 629	92 375	* 78 000
Korea, Republic of	(40%)	1 383	664	747	35	81
Malaysia (d)		94 112	94 732	* 43 000	* 32 000	4 000
Philippines	(44%)	10 576	20 599	3 911	3 769	1 966
Thailand	(45%)	50 225	76 962	72 211	35 366	54 310
Australia	(48%)	2 154 167	1 389 004	1 257 254	1 724 098	1 960 892
Vanuatu	(42%)	31 444	34 293	19 288	5 694	...
World total		25 000 000	23 600 000	23 000 000	26 300 000	26 400 000

## Notes:

- 1 Estimated average manganese content is given in parentheses for each country, relating where possible to the later years
- 2 In addition to the countries listed, Colombia, Cuba and Vietnam are also believed to produce manganese ore

(a) Shipments of manganiferous iron ore only

(b) Years ended 20 March following that stated

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

(d) Manganiferous iron ore

(e) Mn content of domestic iron ore

## Manganese

**Exports of Manganese**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore (a)	8 087	6 767	7 169	4 043	8 331
Metal	673	961	425	363	405
Belgium-Luxembourg					
Ore	9 507	9 888	11 324	6 107	5 929
France					
Ore (a)	9 225	8 323	5 606	7 092	6 396
Metal	3 308	1 945	2 138	2 325	2 276
Germany, Federal Republic of					
Ore (a)	4 919	6 983	2 089	1 946	1 406
Metal	205	101	31	59	124
Netherlands					
Ore	31 854	31 557	37 452	37 422	39 536
Metal (c)	2 241	2 101	2 768	2 083	2 487
Greece					
Ore	1 515	2 109	1	200	750
Hungary					
Ore	13 739	37 961	49 649	56 795	37 745
Norway					
Ore	420	950	—	1 287	1 955
Portugal					
Ore	14 005	4 993	4 000	2 050	650
Soviet Union					
Ore	1 342 000	1 352 000	1 186 000	1 317 000	1 255 000
Sweden					
Ore	2 672	215	166	164	...
Metal	214	186	183	104	77
Turkey					
Ore	20	14 314	—	8 450	...
Yugoslavia					
Ore	1 611	3 070	—	922	—
Angola					
Ore	* 32 000	...	...	...	...
Gabon					
Ore (d)	* 1 754 500	* 1 449 500	* 1 152 000	* 1 432 000	* 1 372 000
Ghana					
Ore	360 235	321 560	(d) * 253 000	(d) * 232 000	(d) * 211 000
Morocco					
Ore	104 438	130 663	140 623	139 351	112 317
South Africa					
Ore (d)	* 3 300 000	* 2 600 000	* 2 600 000	* 3 500 000	* 3 200 000
Zaire					
Ore	306 000	192 000	...	...	...
Mexico					
Ore	179 165	257 213	246 776	220 902	...
USA					
Ore	173 547	157 754	219 105	59 848	222 483
Metal	4 237	3 905	5 701	6 062	11 374
Brazil					
Ore	1 072 697	560 110	894 458	1 187 311	1 244 366
China					
Ore (d)	* 39 700	* 51 400	* 45 100	* 44 200	* 21 600
India					
Ore (b)	714 438	554 375	577 292	629 944	...
Indonesia					
Ore	265 076	260 044	88 528	1 770	9 574
Japan					
Ore	6 128	5 206	4 831	6 230	1 855
Malaysia					
Ore	23 737	12 697	...	...	...



**Exports of Manganese**

Country	1976	1977	1978	1979	1980
Philippines					
Ore (a)	6 800	10 660	7 715	7 383	1 000
Singapore					
Ore	6 356	12 949	18 501	20 706	32 788
Thailand					
Ore	42 710	55 322	37 972	35 738	...
Australia					
Ore	1 711 008	810 794	936 152	1 156 785	1 328 000
Vanuatu					
Ore	45 208	27 530	24 740	12 080	3 520

(a) Includes manganiferous iron ore

(b) Includes ferruginous manganese ore

(c) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(d) IGS estimates, based on known imports into certain countries

## Manganese

**Imports of Manganese**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ore (b)	498 869	327 784	260 853	544 220	126 549
Metal	4 318	3 946	2 824	3 072	3 292
Belgium-Luxembourg					
Ore	328 969	206 726	252 842	432 140	299 848
Metal	572	529	522	1 133	1 178
Denmark					
Ore	2 520	1 286	1 384	1 168	819
France					
Ore (b)	1 014 559	922 709	958 428	1 274 849	1 225 877
Metal	1 110	1 121	1 030	3 471	6 931
Germany, Federal Republic of					
Ore (b)	610 496	453 243	672 978	716 780	489 548
Metal	6 209	4 824	5 438	5 848	5 731
Irish Republic					
Ore	3 859	26 039	37 120	27 035	32 391
Italy					
Ore (b)	356 078	269 243	284 320	424 231	409 846
Metal	1 769	1 145	1 165	1 887	1 397
Netherlands					
Ore	45 654	81 242	73 223	89 268	46 779
Metal (a)	2 161	2 856	2 388	2 090	2 558
Austria					
Ore	573	643	520	433	1 726
Bulgaria					
Ore	123 000	95 000	72 000	100 000	92 000
Czechoslovakia					
Ore	448 000	1 324 000	526 000	541 000	525 000
Finland					
Ore	27 813	17 297	19 737	18 916	10 735
German Democratic Republic					
Ore (c)	79 700	81 700	73 400	73 800	46 600
Greece					
Ore	11 088	103	18 208	4 726	29 278
Hungary					
Ore	15 130	15 054	14 787	15 569	15 537
Norway					
Ore	982 384	591 350	803 130	815 148	807 700
Metal	1 216	916	1 025	1 173	713
Poland					
Ore	538 351	697 863	651 414	739 889	666 000
Portugal					
Ore	37 658	201 054	144 616	235 709	173 823
Spain					
Ore	410 151	433 184	369 679	487 333	432 648
Metal	649	449	266	351	...
Sweden					
Ore	40 101	9 424	3 290	14 111	354
Metal	2 621	1 371	917	1 259	1 459
Turkey					
Ore	3 130	760	1 978	2 214	...
Yugoslavia					
Ore	101 684	126 860	96 346	115 041	131 053
Metal	318	437	...	...	...
Ivory Coast					
Ore	720	802	1 078	1 103	...
Kenya					
Ore	1 056	1 672	1 595	3 199	1 404
South Africa					
Ore	3 112	4 906	3 339	29 842	3 974
Zimbabwe					
Ore	...	...	...	5 850	...
Canada					
Ore (c)	118 972	57 644	136 449	45 151	95 163
Metal	6 560	6 850	7 939	8 275	6 957

**Imports of Manganese**

Country	1976	1977	1978	1979	1980
USA					
Ore (d)	1 194 592	844 541	496 974	453 395	632 776
Metal	6 425	6 206	8 327	6 108	6 937
Argentina					
Ore	67 263	121 416	43 509	...	...
Brazil					
Ore	18 276	65 997	152 276	101 395	28 501
Metal	515	797	746	1 104	1 019
Hong Kong					
Ore	547	554	515	1 000	374
India					
Ore	190	5 048	4 045	5 143	...
Metal	88	217	167	392	...
Indonesia					
Ore	4 826	7 940	8 605	6 966	11 968
Japan					
Ore	3 356 101	2 753 503	2 011 670	2 692 042	2 953 309
Korea, Dem. P.R. of					
Ore	* 20 300	* 11 000	* 21 000	* 21 000	...
Korea, Republic of					
Ore	111 743	67 003	127 193	230 636	208 200
Malaysia					
Ore	2 027	2 410	...	...	...
Philippines					
Ore (b)	3 216	9 501	6 982	3 456	6 626
Singapore					
Ore	18 293	21 820	44 980	33 517	60 468
Taiwan					
Ore	41 310	64 293	96 254	148 013	142 975
Thailand					
Ore	4 838	5 275	2 841	2 304	...
Australia					
Ore	1 120	2 421	2 962	119	2 422
Metal	1 307	842	1 209	957	1 838

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Includes manganiferous iron ore

(c) Mn content

(d) Over 35% Mn

## Mercury

**Production of Mercury**

kilograms

Country	1976	1977	1978	1979	1980
Germany, Federal Republic of	110 000	99 000	84 000	91 000	56 000
Italy	757 000	14 351	2 725	—	3 303
Czechoslovakia	191 000	183 000	196 000	171 000	159 000
Finland	13 186	21 718	39 477	45 000	75 000
Soviet Union	* 1 932 000	* 2 000 000	* 2 070 000	* 2 105 000	* 2 140 000
Spain	1 384 140	931 845	1 069 949	1 150 000	* 1 140 000
Turkey	168 896	161 529	173 062	162 771	153 801
Yugoslavia	431 000	108 000	—	—	—
Algeria	1 066 568	1 049 525	1 055 803	* 1 035 000	* 1 035 000
Mexico	518 000	333 000	76 000	23 000	...
USA	797 464	973 657	832 972	1 017 609	1 056 839
Chile	448	684	—	—	—
China	* 900 000	* 700 000	* 700 000	* 700 000	* 700 000
Australia	140	50	—	—	—
World total	8 300 000	6 600 000	6 300 000	6 500 000	6 500 000

**Exports of Mercury**

Country	1976	1977	1978	1979	1980
United Kingdom	38 741	45 692	51 092	137 320	79 888
Belgium-Luxembourg	34 000	43 400	56 000	17 800	19 900
France	39 000	42 000	122 000	132 000	39 100
Germany, Federal Republic of	70 300	58 000	76 000	80 800	219 600
Italy	1 426 507	355 112	773 000	328 250	230 300
Netherlands (a)	79 000	64 000	62 000	101 000	189 000
Austria	12 400	7 800	28 200	15 100	5 200
Finland	6 300	11 600	13 900	21 000	55 000
Norway	0	0	39 000	47 000	98 000
Spain	801 000	773 069	1 480 000	1 303 000	665 100
Sweden	16 000	54 000	26 000	19 000	29 000
Switzerland	1 083	1 252	2 048	6 005	9 023
Turkey	108 429	196 611	295 625	83 283	...
Yugoslavia	289 632	48 272	...	...	...
Algeria	51 923	271 404	406 410	...	...
Mexico	296 960	478 130	216 428	183 271	...
USA	17 660	32 877	* 35 000	* 35 000	* 35 000
China (b)	* 137 000	* 229 000	* 163 600	* 228 000	* 347 000
Japan	42 166	79 256	238 847	539 922	321 970
Singapore	4 125	1 921	1 249	776	2 337

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

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

## Imports of Mercury

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom	407 550	303 168	421 567	306 392	231 607
Belgium-Luxembourg	72 700	94 800	96 000	120 300	224 200
Denmark	19 900	6 600	13 500	14 000	10 100
France	221 000	212 000	182 000	138 000	146 200
Germany, Federal Republic of	686 900	244 500	434 100	461 300	436 400
Irish Republic	4 100	3 300	32 900	4 700	7 600
Italy	26 353	19 658	20 000	59 790	176 500
Netherlands (d)	104 000	42 000	85 000	120 000	205 000
Austria	34 200	13 100	14 300	23 800	19 500
Finland	20 200	9 700	10 900	3 000	4 000
German Democratic Republic	* 93 100	* 64 500	* 192 900	...	...
Greece	1 000	4 211	9 102	3 000	3 000
Hungary	...	* 79 000	67 000	39 000	38 000
Norway	14 000	5 000	1 000	1 000	1 000
Poland	...	* 1 000	* 193 100	...	...
Portugal	43 800	28 100	34 700	28 100	32 000
Romania	* 230 000	* 117 000	* 200 000	...	...
Sweden	74 000	11 000	25 000	24 000	16 000
Switzerland	21 311	24 587	24 201	25 183	38 114
Yugoslavia	15 006	2 012	7 946	10 372	18 636
Algeria	5 021	286	2 112	...	...
Madagascar	228	208	2 055	40	...
Morocco	597	2 123	4 355	7 213	9 903
South Africa	39 500	67 700	71 900	53 000	103 500
Tunisia	524	21 829	3 559	5 715	188
Zaire	—	1 000	...	25	...
Canada	62 641	21 909	43 046	50 000	50 000
USA	1 529 407	991 101	1 528 131	1 002 642	472 523
Argentina	82 755	67 812	28 917	...	...
Brazil	178 705	151 476	144 361	158 448	201 443
Chile	...	20 800	25 600	...	...
Peru	9 318	14 689	...	...	...
Uruguay	1 600	1 800	1 200	300	...
Venezuela	16 542	51 572	20 169	...	...
Hong Kong	93 855	23 967	53 380	74 221	91 690
India	329 000	334 000	74 000	211 000	...
Indonesia	5 688	9 974	22 515	3 628	53 997
Iran (b)	22 600	15 892	* 18 000	* 16 500	...
Iraq	5 172	...	...	...	...
Israel (a)	1 000	—	3 000	14 000	10 000
Japan	77 299	89 447	105 697	108 350	91 759
Korea, Republic of	42 075	41 065	34 155	26 217	28 805
Malaysia	12 823	7 000	...	...	...
Philippines	29 966	35 395	26 039	11 552	354
Singapore	9 661	333	4 188	4 002	3 099
Syria	705	4 205	1 023	57	...
Taiwan	54 407	54 338	91 859	56 678	12 848
Thailand	7 448	8 455	5 829	12 529	...
Australia	44 736	43 899	75 941	47 990	38 874
New Zealand (c)	2 521	3 000	1 624	...	...

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

(b) Years ended 20 March following that stated

(c) Years ended 30 June of that stated

(d) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

## Production of Mica

tonnes

Country	1976	1977	1978	1979	1980
France (e)	* 6 500	* 7 000	7 300	7 100	8 838
Norway (b)	* 6 000	* 6 000	* 6 000	* 6 000	* 5 000
Soviet Union	* 43 000	* 44 000	* 45 000	* 46 000	* 46 000
Spain	3 876	2 934	3 345	5 169	* 5 200
Yugoslavia	68	139	69	338	* 350
Madagascar					
Phlogopite (c)	69	80	1 567	1 168	1 642
Mozambique	* 900	* 800	* 900	* 250	* 200
South Africa					
Waste	2 380	2 890	2 542	1 720	2 528
Sudan	* 550	* 400	* 1 000	* 2 000	* 1 500
Tanzania					
Sheet	10	4	15	9	3
Zimbabwe	1 832	3 670	2 764	1 275	1 022
Mexico	1 303	771	401	243	* 400
USA (d)					
Waste (e)	112 000	117 000	126 000	122 000	106 000
Argentina					
Sheet	329	302	356	860	* 400
Waste	2 291	1 840	2 276	1 140	* 1 500
Brazil (a)	2 799	1 955	4 553	4 075	* 4 000
India					
Crude	9 485	9 352	9 592	9 073	7 829
Waste	4 305	5 319	4 681	5 107	4 281
Sri Lanka	36	...	140	369	145
Taiwan	448	1 334	1 388	1 150	338
World total	198 000	206 000	220 000	215 000	197 000

Note: In addition to the countries listed, Canada, China, Namibia, Pakistan and Romania are also believed to produce mica

- (a) Exports
- (b) Crude only
- (c) Block and splittings
- (d) Sold or used by producers
- (e) Including mica recovered from mica schists and/or kaolin beneficiation

**Exports of Mica**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Unmanufactured	225	476	810	966	966
Ground & waste	2 275	3 113	2 540	3 911	2 807
Belgium-Luxembourg					
Unmanufactured	322	24	52	22	41
Ground	54	91	43	138	23
Denmark					
Ground	61	13	65	58	30
France					
Unmanufactured	62	71	46	173	353
Ground	3 080	2 869	3 074	3 111	3 461
Germany, Federal Republic of					
Unmanufactured	14	11	68	25	20
Ground	910	743	709	618	640
Italy					
Unmanufactured	58	87	133	191	440
Ground	1 026	983	666	471	687
Netherlands					
Unmanufactured	527	831	713	1 230	981
Austria					
Unmanufactured	15	12	57	185	230
Norway					
Unmanufactured	3 083	2 818	2 688	2 915	2 112
Portugal					
Unmanufactured	498	138	360	232	...
Spain					
Unmanufactured	2 042	738	2 900	3 939	6 059
Sweden					
Unmanufactured	4	3	5	10	—
Switzerland					
Unmanufactured	92	66	73	46	117
Madagascar					
Unmanufactured	841	204	316	1 205	...
Morocco					
Unmanufactured	13	10	556	1	485
Mozambique					
Unmanufactured	515	200	...	...	...
South Africa					
Ground	932	343	1 994	1 316	1 091
Waste	244	58	571	—	—
Tanzania					
Unmanufactured	7	7	6	2	—
Zimbabwe					
Ground	...	...	...	1 203	...
USA					
Unmanufactured	6 667	8 356	8 693	10 673	13 530
Argentina					
Unmanufactured	1 367	3 884	3 069	...	...
Brazil					
Unmanufactured	2 799	1 955	4 553	4 075	* 4 000
India					
Block	882	1 071	1 363	1 181	...
Splittings	3 546	3 797	4 345	4 135	...
Condenser films	146	66	54	71	...
Ground	9 238	7 505	8 548	3 637	...
Waste	8 055	10 301	9 674	7 248	...
Japan					
Unmanufactured	162	144	303	246	326
Korea, Republic of					
Unmanufactured	1 057	1 719	...	656	—
Singapore					
Unmanufactured	150	79	14	110	272
Sri Lanka					
Waste	165	149	381	555	628

Note: In this table the term 'Unmanufactured' includes sheet, block, splittings, ground and waste, unless these are separately specified. Mica powder is included under the term 'ground'



**Imports of Mica**

Country	1976	1977	1978	1979	1980
United Kingdom					
Block	205	92	98	69	74
Splittings	350	469	462	289	475
Ground & waste	11 304	12 592	14 778	17 561	20 674
Belgium-Luxembourg					
Unmanufactured	266	3 076	2 526	621	3 755
Ground	1 768	1 039	1 104	1 183	1 250
Denmark					
Unmanufactured	274	226	255	274	175
France					
Unmanufactured	3 316	2 672	9 171	2 701	5 944
Ground	922	942	993	717	1 013
Germany, Federal Republic of					
Unmanufactured	4 631	4 741	6 691	5 563	7 098
Ground	3 427	3 381	3 038	3 068	3 233
Irish Republic					
Unmanufactured	240	202	594	847	358
Italy					
Unmanufactured	320	553	512	455	437
Ground	833	1 034	735	568	652
Netherlands					
Unmanufactured	22	261	52	57	69
Ground	2 193	1 552	1 866	2 094	1 930
Austria					
Unmanufactured	296	313	340	250	318
Finland					
Unmanufactured	245	273	246	291	253
German Democratic Republic	2 779	1 116	1 767	1 234	1 424
Greece					
Unmanufactured	47	124	117	173	272
Norway					
Unmanufactured	202	89	147	94	657
Waste	2 585	2 322	1 825	1 991	1 512
Poland					
Unmanufactured	1 152	1 902	1 641	1 756	1 844
Portugal					
Unmanufactured	448	393	399	469	334
Soviet Union					
Unmanufactured	* 500	* 500	* 550	* 680	* 850
Spain					
Unmanufactured	1 041	1 153	837	1 030	1 430
Sweden					
Unmanufactured	534	366	345	467	408
Switzerland					
Unmanufactured	657	544	638	598	546
Turkey					
Unmanufactured	123	76	52	45	...
Yugoslavia					
Unmanufactured	315	523	541	1 134	686
Kenya					
Unmanufactured	14	25	34	33	...
Morocco					
Ground	23	18	19	15	9
South Africa					
Unmanufactured	775	559	567	685	1 189
Mica & micanite sheets	58	43	44	62	83
Tanzania					
Unmanufactured	18	16	16	...	...
Tunisia					
Unmanufactured	68	249	28	75	94

## Mica

## Imports of Mica

tonnes

Country	1976	1977	1978	1979	1980
Canada					
Unmanufactured	4 696	6 309	3 492	3 130	2 598
Guatemala					
Unmanufactured	59	35	...	...	...
Jamaica					
Unmanufactured	143	98	138	89	...
Mexico					
Unmanufactured	149	191	61	65	...
Waste	54	3	—	—	...
Trinidad & Tobago					
Unmanufactured	110	137	174	170	...
USA					
Block	158	210	112	110	32
Splittings	776	971	1 740	1 776	1 916
Ground	248	132	1 568	4 112	5 146
Waste	1 911	1 065	554	80	—
Other unmanufactured	593	782	2 164	2 888	3 439
Argentina					
Unmanufactured	20	15	16	...	...
Brazil					
Unmanufactured	4	1	6	99	153
Peru					
Unmanufactured	73	66	...	...	...
Uruguay					
Unmanufactured	10	19	10	22	...
Venezuela					
Unmanufactured	282	898	869	...	...
Brunei					
Unmanufactured	152	5	11	94	...
Hong Kong					
Unmanufactured	61	51	31	585	31
Indonesia					
Unmanufactured	418	270	339	105	260
Iran (a)					
Unmanufactured	2 291	359	* 70	* 20	...
Japan					
Block	2 234	185	272	209	2 620
Splittings	400	635	527	621	708
Waste	4 209	4 307	4 092	611	3 502
Other unmanufactured	2 480	4 279	3 707	3 011	4 830
Korea, Republic of					
Unmanufactured	151	102	207	163	134
Malaysia					
Unmanufactured	141	56	...	...	...
Philippines					
Unmanufactured	38	133	87	61	109
Saudi Arabia					
Unmanufactured	189	880	270	769	...
Singapore					
Unmanufactured	389	704	270	265	1 415
Taiwan					
Unmanufactured	108	119	153	160	92
Ground	199	144	282	364	245
Thailand					
Unmanufactured	44	78	91	116	...

**Imports of Mica**

Country	1976	1977	1978	1979	1980
Australia					
Unmanufactured	415	387	203	293	338
Ground	555	701	277	336	621
New Zealand (b)					
Unmanufactured	£76 500	£37 700	£50 000	£70 000	£44 000

Note: In this table the term 'Unmanufactured' 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

## Molybdenum

**Mine Production of Molybdenum**tonnes (MoS<sub>2</sub> content or equivalent)

Country	1976	1977	1978	1979	1980
Bulgaria	* 230	* 250	* 250	* 250	* 250
Soviet Union	* 15 600	* 16 200	* 16 500	* 17 000	* 17 350
Canada	24 365	27 613	23 238	18 625	20 330
Mexico	27	2	18	80	* 100
USA	85 603	92 538	99 672	108 837	113 917
Chile	18 165	18 230	21 993	22 600	22 235
Peru	755	772	1 215	1 970	* 1 700
China	* 2 500	* 2 500	* 3 300	* 3 300	* 3 300
Japan	408	337	241	230	* 200
Korea, Republic of	200	169	367	315	501
Philippines	—	—	92	207	* 250
World total	148 000	159 000	167 000	173 000	180 000

Note: In addition to the countries listed, Australia, Korea Dem. P.R., Mongolia and Romania are also believed to produce molybdenum

## Exports of Molybdenum

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates	1 442	3 471	3 921	4 301	2 290
Metal	121	144	147	332	174
Oxides	1 557	215	552	381	1 937
Belgium-Luxembourg					
Ores & concentrates	6 542	4 338	5 872	5 945	5 542
Metal	49	77	121	177	117
Oxides	31	30	117	105	176
France					
Ores & concentrates	10	162	336	395	1 181
Metal	145	93	136	166	139
Oxides	273	245	34	22	21
Germany, Federal Republic of					
Ores & concentrates	631	1 173	1 117	6 669	6 984
Metal	259	217	236	391	488
Italy					
Ores & concentrates	—	459	269	184	179
Oxides	10	84	177	95	—
Netherlands					
Ores & concentrates (b)(c)	21 259	22 850	24 239	23 363	29 159
Metal	137	187	153	185	181
Oxides (b)	1 576	1 609	1 621	1 445	2 247
Austria					
Metal	763	922	872	1 101	1 017
Sweden					
Ores & concentrates	730	1 241	921	1 206	1 330
Metal	11	154	13	11	7
Canada					
Ores & concentrates (a)	14 681	15 326	15 144	11 483	11 585
USA					
Ores & concentrates (a)	28 352	29 786	31 422	32 789	31 011
Metal	352	517	776	1 097	937
Peru					
Ores & concentrates	814	1 061	...	...	...
Japan					
Metal	18	43	40	71	37
Korea, Republic of					
Ores & concentrates	50	90	120	374	322
Philippines					
Ores & concentrates	—	11	19	210	180

(a) Mo content

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(c) May include other ores

**Imports of Molybdenum**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates	13 617	13 934	14 383	15 285	13 757
Metal	133	162	224	274	237
Oxides	57	159	413	284	296
Belgium-Luxembourg					
Ores & concentrates	11 909	12 517	13 381	15 856	15 922
Metal	110	118	332	189	149
Oxides	22	64	331	28	17
France					
Ores & concentrates	7 633	7 314	6 963	7 413	7 104
Metal	168	149	114	206	267
Oxides	75	55	359	119	227
Germany, Federal Republic of					
Ores & concentrates	41 674	17 987	19 203	22 065	18 087
Metal	482	533	640	797	1 102
Oxides	125	309	457	515	453
Italy					
Ores & concentrates	5 397	5 808	5 638	5 866	6 039
Metal	260	189	176	251	163
Oxides	196	623	819	619	158
Netherlands					
Ores & concentrates (a)	24 000	27 000	27 644	27 944	28 247
Metal	201	208	153	235	175
Austria					
Metal	5	44	87	366	366
Oxides	1 421	1 489	1 375	1 639	1 527
Finland					
Ores & concentrates	79	269	40 111	512	675
Metal	74	91	2	4	5
Sweden					
Ores & concentrates	7 477	5 305	6 484	7 927	6 014
Metal	50	84	75	69	103
Switzerland					
Metal	9	20	19	15	24
Yugoslavia					
Metal	10	12	18	16	15
South Africa					
Metal	18	19	17	32	20
Canada					
Oxides	111	192	330	370	362
Mexico					
Ores & concentrates	589	459	710	693	...
USA					
Ores & concentrates	* 2 100	* 2 000	2 723	2 408	4 050
Metal	197	1 022	246	238	305
Argentina					
Oxides	152	348	259	...	...
Brazil					
Ores & concentrates	1 413	2 169	2 874	8 535	2 123
India					
Metal	106	14	35	37	...
Japan					
Ores & concentrates	17 916	16 495	16 645	18 431	20 388
Metal	84	113	184	182	146
Oxides	482	498	497	613	826
Malaysia					
Metal	13	8	...	...	...
Philippines					
Metal	3	169	60	71	4
Singapore					
Metal	2	11	8	0	1
Taiwan					
Metal	6	27	41	48	44
Australia					
Ores & concentrates	91	309	326	243	...

(a) May include other ores

## Mine Production of Nickel

tonnes (metal content)

Country	1976	1977	1978	1979	1980
Albania	* 7 000	* 7 500	* 8 000	* 8 500	* 8 500
Finland	6 400	5 810	4 377	5 510	6 030
German Democratic Republic	2 500	2 500	2 700	2 500	2 700
Greece (d)	16 448	9 610	15 100	14 632	13 900
Norway	400	500	500	600	600
Poland	* 1 400	* 1 400	* 1 300	* 1 200	* 1 100
Soviet Union	* 130 000	* 135 000	* 140 000	* 145 000	* 143 000
Yugoslavia	...	...	* 1 000	* 1 500	* 1 500
Botswana	12 581	12 099	16 049	16 173	15 442
Morocco	200	200	100	500	500
South Africa (a)	22 371	21 955	* 22 500	* 25 300	* 25 700
Zimbabwe	13 616	16 671	15 701	14 591	15 075
Canada (b)	240 825	232 512	128 310	126 482	194 947
Cuba (c)	37 021	36 750	34 787	32 324	38 200
Dominican Republic (d)	24 400	24 905	14 302	25 400	15 500
Guatemala	—	298	1 439	8 265	6 940
USA	14 940	13 015	12 255	13 667	13 293
Brazil	5 273	4 241	3 600	2 964	5 838
Burma (e)	24	17	18	18	* 14
China	* 9 000	* 10 000	* 10 000	* 11 000	* 11 000
Indonesia	13 800	16 100	30 200	35 800	40 600
Philippines	15 239	36 781	29 528	33 287	38 280
Australia	82 532	85 868	82 359	69 709	63 159
New Caledonia (f)	118 945	116 795	67 156	83 019	89 424
World total	775 000	791 000	641 000	678 000	751 000

(a) Refined nickel and nickel in matte

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

(c) Ni and Co content of sulphide slurry and oxide

(d) Ni content of ferro-nickel

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

(f) Ni and Co content

## Nickel

## Exports of Nickel

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Mattes, sinters etc.	72	445	265	1 383	2 911
Unwrought	28 100	24 487	19 002	13 518	9 652
Unwrought alloys	1 553	1 834	1 411	1 348	1 332
Scrap	5 550	6 552	3 392	4 341	4 455
Oxides	380	228	220	252	58
Belgium-Luxembourg					
Unwrought	99	60	90	290	258
Unwrought alloys	152	222	243	116	55
Scrap	1 603	1 309	1 219	1 656	1 440
Denmark					
Scrap	131	130	52	178	95
France					
Mattes, sinters etc.	402	211	850	2 754	273
Unwrought	4 398	4 769	5 324	4 404	5 872
Unwrought alloys	71	220	536	774	885
Scrap	2 746	2 429	2 454	2 708	2 177
Oxides	690	810	521	1 033	546
Germany, Federal Republic of					
Mattes, sinters, etc.	—	17	7	1 332	302
Unwrought	1 328	5 573	2 760	8 246	3 441
Unwrought alloys	74	1 242	2 416	3 091	2 995
Scrap	5 682	8 025	7 150	8 381	5 317
Oxides	129	103	290	147	135
Italy					
Unwrought (a)	101	282	100	226	169
Scrap	215	212	161	299	271
Netherlands					
Mattes, sinters etc.	) 3 764	681	2 568	4 034	3 686
Unwrought (a)	) 3 764	1 968	3 246	3 816	4 446
Scrap	3 933	1 795	1 845	2 071	2 168
Oxides	83	137	273	488	572
Austria					
Scrap	973	367	42	471	302
Finland					
Mattes, sinters etc.	...	...	...	686	1 657
Unwrought (a)	6 143	7 928	5 882	9 578	11 104
Norway					
Ore	12 522	14 222	12 212	12 692	13 773
Unwrought	34 071	20 732	40 854	33 088	31 250
Scrap	394	453	562	994	391
Soviet Union					
Unwrought (b)	* 12 400	* 10 900	* 21 400	* 25 600	* 24 100
Spain					
Scrap	652	439	359	302	169
Sweden					
Mattes, sinters etc.	51	358	798	64	—
Unwrought (a)	2 382	2 449	1 720	1 640	1 906
Scrap	845	831	498	482	503
Switzerland					
Unwrought, mattes, sinters, etc. & scrap	594	476	245	679	413
Yugoslavia					
Scrap	446	301	289	210	288
South Africa (b)					
Mattes, sinters etc.	* 4 500	* 4 400	* 7 900	* 10 400	* 12 200
Unwrought	* 17 600	* 16 600	* 25 200	* 27 800	* 23 300
Canada					
Ores, concentrates, mattes, sinters etc. (c)	74 296	80 546	39 078	42 736	42 648
Unwrought	94 739	79 039	107 256	85 357	88 110
Scrap	2 600	2 208	2 308	2 401	2 429
Oxides (c)	47 958	35 005	27 792	17 191	16 989
Cuba					
Oxides (e)	15 956	24 825	) * 37 000	...	...
Sulphide (e)	18 678	19 015	)	...	...



Nickel

tonnes

**Exports of Nickel**

Country	1976	1977	1978	1979	1980
Dominican Republic					
Ferro-nickel	68 139	59 946	50 007	64 500	* 30 000
USA					
Unwrought (a)	13 284	13 844	11 332	20 650	13 854
Scrap	14 493	7 665	4 238	9 241	18 806
Hong Kong					
Unwrought (Re-exports)	89	275	1 063	1 550	2 169
Indonesia					
Ore	565 357	640 631	576 377	781 881	883 055
Mattes, sinters etc	—	2 830	15 627	29 280	42 763
Japan					
Unwrought (a)	2 340	3 914	2 989	1 752	1 330
Philippines					
Ores & concentrates	—	488 597	578 034	704 299	608 825
Unwrought (a)	11 030	15 861	12 016	14 791	18 823
Taiwan					
Unwrought	275	188	152	41	54
Scrap	639	364	349	641	572
Australia (d)	* 62 000	* 62 600	* 61 400	* 61 000	* 53 000
New Caledonia					
Ores	2 692 729	2 604 354	1 540 093	2 142 152	2 012 082
Mattes, sinters etc.	27 830	31 314	21 752	17 810	21 980
Ferro-nickel	124 180	124 325	98 984	180 793	128 796

Note: In this table the term 'unwrought' nickel corresponds to item 683.1 of the Standard International Trade Classification (Revision 2) which excludes all electro-plating anodes

(a) Including alloys

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

(c) Ni content

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

(e) Ni-Co content (mainly nickel)

## Nickel

## Imports of Nickel

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Mattes, sinters etc.	54 382	61 418	31 693	27 822	38 325
Unwrought	18 609	20 009	15 535	17 083	16 762
Unwrought alloys	2 130	1 506	1 274	876	1 478
Scrap	4 199	3 476	2 772	3 078	2 255
Oxides	667	451	700	341	1 020
Belgium-Luxembourg					
Mattes, sinters etc.	83	267	401	177	300
Unwrought	2 348	1 443	2 492	3 680	3 624
Unwrought alloys	1 091	148	573	570	437
Scrap	1 171	1 376	1 072	754	519
Oxides	132	137	137	402	164
Denmark					
Unwrought	166	128	152	193	131
Unwrought alloys	46	51	45	13	49
France					
Mattes, sinters etc.	16 730	20 427	12 986	10 500	15 048
Unwrought	15 370	10 648	12 177	16 005	18 028
Unwrought alloys	673	1 489	2 566	3 833	4 534
Scrap	1 499	1 340	719	1 444	764
Oxides	190	177	226	141	244
Germany, Federal Republic of					
Mattes, sinters etc.	13 820	16 136	16 465	15 746	14 116
Unwrought (a)	43 080	36 422	38 881	47 708	39 329
Scrap	7 408	4 636	4 003	6 505	7 552
Oxides	569	487	595	612	391
Irish Republic					
Unwrought (a)	141	149	284	108	254
Italy					
Mattes, sinters etc.	5 426	5 702	7 202	5 322	2 710
Unwrought	6 839	10 199	11 374	15 318	17 969
Unwrought alloys	1 102	1 311	859	1 534	769
Scrap	1 450	970	299	313	677
Oxides	3 070	2 179	3 720	3 755	2 534
Netherlands					
Mattes, sinters, etc. (e)	446	697	3 224	4 267	3 695
Unwrought (e)	3 095	2 264	3 975	4 949	5 518
Unwrought alloys (e)	64	178	79	129	49
Scrap	1 576	2 245	728	875	1 021
Oxides	579	825	887	725	1 127
Austria					
Mattes, sinters etc.	1 165	1 278	1 362	1 533	1 279
Unwrought (a)	2 255	2 288	2 401	2 849	2 378
Scrap	902	2 767	262	1 504	1 597
Czechoslovakia					
Unwrought (a)	8 188	6 410	4 862	5 580	7 919
Finland					
Ore	12 876	13 193	14 275	14 798	14 676
Mattes, sinters etc.	1 030	2 191	2 249	7 170	7 522
Unwrought (a)	558	1 093	2 297	2 846	4 299
Scrap	327	1 749	925	1 176	1 944
Norway					
Ore	188	376	—	89	—
Mattes, sinters etc.	71 329	71 330	54 429	78 897	89 855
Unwrought (a)	685	220	65	85	79
Scrap	—	3	573	1	7
Spain					
Mattes, sinters etc.	234	221	2 654	2 074	1 779
Unwrought (a)	(f) 7 724	(f) 10 798	6 708	6 500	6 281
Sweden					
Mattes, sinters etc.	4 651	2 438	5 249	3 475	4 453
Unwrought	10 921	7 928	8 138	11 257	10 518
Unwrought alloys	347	295	285	358	287
Scrap	3 464	2 322	2 002	2 713	2 614
Switzerland					
Unwrought, mattes, sinters, etc. & scrap	2 321	1 539	1 520	1 806	1 504
Yugoslavia					
Unwrought	1 207	1 915	1 487	1 507	1 960

## Imports of Nickel

Country	1976	1977	1978	1979	1980
South Africa					
Mattes, sinters etc.	321	1 653	909	362	—
Unwrought	951	742	2 394	651	542
Scrap	51	300	236	37	89
Canada					
Ores, concentrates & scrap (b)	24 566	32 498	31 879	21 176	26 150
Unwrought (a)	17 312	2 988	4 018	4 355	5 224
Mexico					
Unwrought	1 428	2 997	2 929	4 411	...
Oxides	309	249	395	320	...
USA					
Ore	6 084	101	—	4 515	1 120
Slurry (b)	22 722	16 855	33 017	26 692	31 452
Unwrought (a)	101 157	94 629	136 160	101 530	107 497
Scrap	2 140	2 880	3 351	3 262	3 240
Oxides	5 379	4 452	5 518	1 650	3 794
Argentina					
Unwrought	415	650	629	...	...
Brazil					
Unwrought (a)	1 894	2 310	3 016	4 579	5 850
Venezuela					
Unwrought	86	112	203	...	...
Hong Kong					
Unwrought	526	727	1 943	2 248	3 487
India					
Unwrought (c)	3 391	3 371	3 774	2 474	...
Unwrought alloys (c)	1 235	703	639	802	...
Scrap	852	1 227	2 690	2 377	...
Japan					
Ore	3 450 189	3 951 141	2 999 406	4 014 772	3 950 321
Mattes, sinters etc.	45 245	41 008	30 044	43 257	51 751
Unwrought	11 986	11 046	10 603	19 263	15 202
Unwrought alloys	277	154	287	456	415
Scrap	4 737	3 883	3 522	1 948	1 806
Oxides	112	160	296	1 216	1 797
Korea, Republic of					
Unwrought	1 583	653	...	1 927	2 853
Scrap	226	104	...	77	10
Malaysia					
Unwrought (a)	239	178	...	...	...
Taiwan					
Unwrought (a)	968	1 457	4 188	2 324	2 230
Australia					
Mattes, sinters etc.	1 931	3 380	1 502	2 683	...
Unwrought	1 436	677	3 065	752	1 359
Unwrought alloys	172	353	172	98	276
New Zealand (d)					
Unwrought (a)	38	6	100	38	107

Note: In this table the term 'unwrought' nickel corresponds to item 683.1 of the Standard International Trade Classification (Revision 2) which excludes all electro-plating anodes

(a) Including alloys

(b) Ni content

(c) Years ended 31 March following that stated

(d) Years ended 30 June of that stated

(e) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(f) Including some intermediate products

**Production of Crude Petroleum**

thousand tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	11 632	37 420	52 932	76 596	78 917
Denmark	199	514	430	421	* 290
France	1 058	1 037	1 117	1 191	1 414
Germany, Federal Republic of	5 524	5 401	5 059	4 774	4 631
Italy	1 109	1 083	1 452	1 682	1 800
Netherlands	1 371	1 382	1 402	1 316	1 280
Albania	2 350	* 2 300	* 2 300	* 3 300	* 3 750
Austria	1 931	1 787	1 790	1 726	1 475
Bulgaria	117	129	* 250	* 250	* 250
Czechoslovakia	131	123	117	108	93
German Democratic Republic	53	67	50	* 50	* 50
Hungary	2 142	2 191	2 198	2 027	2 031
Norway	13 799	13 554	16 957	18 819	24 408
Poland	455	364	363	331	329
Romania	14 700	14 650	13 724	12 323	11 511
Soviet Union	519 677	545 799	571 531	585 571	603 207
Spain	1 772	989	979	* 1 100	* 1 500
Turkey	2 568	2 714	2 735	2 845	2 330
Yugoslavia	3 880	3 951	4 076	4 143	4 229
Algeria	50 123	53 518	57 200	56 900	51 560
Angola	5 093	8 920	7 060	7 270	7 610
Cameroon	...	...	650	1 730	2 790
Congo	2 002	1 678	2 570	2 784	3 130
Egypt	16 568	20 900	25 890	28 220	31 200
Gabon	11 325	11 267	10 500	9 760	8 880
Libya	92 887	98 900	95 027	100 270	86 020
Morocco	8	22	24	18	14
Nigeria	102 302	103 381	93 424	113 694	100 286
Tunisia	3 710	4 304	4 944	5 536	5 600
Zaire	1 259	1 215	916	1 057	* 1 000
Canada	69 397	69 737	69 330	79 281	76 807
Cuba	235	256	288	288	* 280
Mexico	41 256	50 392	62 127	75 480	* 99 950
Trinidad & Tobago	11 113	11 965	11 987	11 197	* 11 300
USA	401 211	405 671	428 425	420 775	424 173
Argentina	20 437	22 075	20 179	23 836	25 000
Bolivia	2 155	1 838	1 718	1 476	1 262
Brazil	9 127	8 809	8 791	9 056	9 100
Chile	1 215	1 033	911	1 097	...
Colombia	7 747	7 286	6 929	6 575	6 668
Ecuador	9 922	9 725	10 690	11 344	10 856
Peru	3 716	4 427	7 342	9 500	9 600
Venezuela	120 170	117 189	113 628	124 106	114 400
Abu Dhabi	77 687	79 700	69 282	71 000	65 000
Bahrain	2 902	2 895	2 760	2 560	2 400
Brunei	10 004	10 540	11 146	12 257	10 458
Burma (d)	1 246	1 387	1 298	1 419	1 404
China (a)	* 85 000	93 640	104 050	106 200	105 950
Dubai	15 702	15 962	18 130	17 728	17 476
India	8 430	10 185	11 270	12 841	9 397
Indonesia	74 894	83 712	81 206	78 993	78 549
Iran	294 200	282 230	258 215	149 558	73 800
Iraq	112 284	111 000	128 750	168 000	132 600
Israel	38	28	24	22	21
Japan	616	603	575	516	400
Kuwait	113 965	104 233	107 022	132 240	83 625
Malaysia	8 026	8 985	10 552	13 639	13 245
Neutral Zone (c)	25 153	19 937	24 922	29 400	27 800
Oman	18 227	16 793	15 521	14 574	13 978
Pakistan	305	405	499	523	497

**Production of Crude Petroleum**

thousand tonnes

Country	1976	1977	1978	1979	1980
Qatar	24 018	23 554	25 783	* 26 000	22 784
Saudi Arabia	427 809	458 839	457 618	470 000	493 000
Sharjah	1 802	1 368	1 058	700	500
Syria	10 039	9 117	8 941	* 8 500	* 8 500
Taiwan	226	232	225	210	192
Australia	22 122	22 793	22 976	23 141	20 288
New Zealand (b)	548	785	660	435	382
World total	2 903 000	3 009 000	3 082 000	3 160 000	3 014 000

Note: The figures shown in this table exclude natural gasoline

- (a) Including oil from shale and coal
- (b) Petroleum condensate
- (c) Neutral zone of Kuwait and Saudi Arabia
- (d) Years ended 31 March following that stated

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

Country	1976	1977	1978	1979	1980
United Kingdom	38 513	40 565	39 108	40 292	38 716
Belgium	33	40	44	39	47
France	6 938	7 598	7 610	7 769	7 529
Germany, Federal Republic of	18 659	19 104	20 450	20 685	18 645
Italy	15 640	13 717	13 701	13 466	12 531
Netherlands	97 302	96 899	88 730	96 488	91 153
Austria	2 144	2 393	2 414	2 312	1 903
Bulgaria	31	10	32	137	...
Czechoslovakia	801	940	740	851	626
German Democratic Republic	* 8 600	* 8 500	* 8 600	* 8 800	...
Hungary	6 082	6 611	7 346	6 521	6 127
Norway	—	3 139	14 891	21 581	26 110
Poland	6 699	7 296	7 991	7 335	6 329
Romania	36 330	35 281	35 543	34 057	35 171
Soviet Union	320 953	346 003	372 194	406 597	435 217
Yugoslavia	1 730	1 897	1 935	1 857	1 820
Algeria	8 501	7 945	13 200	21 030	14 600
Angola	* 2 000	* 2 500	* 2 500	* 2 500	...
Gabon	50	60	57	...	...
Libya	17 945	20 007	21 243	23 470	...
Morocco	79	86	81	75	* 80
Nigeria	485	665	799	1 019	1 343
Tunisia	214	230	286	330	* 355
Canada	87 684	91 147	88 324	94 473	84 402
Mexico	16 365	16 992	21 093	* 24 600	* 30 700
Trinidad & Tobago	1 704	2 031	2 401	2 477	* 2 700
USA	564 990	567 058	565 602	579 681	570 443
Argentina	8 234	8 609	7 954	8 686	8 400
Bolivia	1 769	1 856	1 819	1 971	2 104
Brazil	738	1 056	1 016	* 1 100	* 1 150
Chile	4 017	3 791	3 500	3 000	3 200
Colombia	1 711	2 102	* 2 100	2 300	1 700
Peru	1 205	1 218	* 1 500	...	...
Venezuela	13 587	14 828	14 729	16 298	* 15 000
Afghanistan (c)	2 546	2 582	* 2 565	* 2 400	* 2 000
Bahrain	2 178	2 364	* 2 360	...	* 2 500
Bangladesh (d)	887	916	971	1 112	1 180
Brunei	7 910	9 070	8 890	9 360	9 290
Burma (b)	240	249	358	400	* 360
China	* 9 900	* 12 000	* 13 700	* 14 500	* 13 700
India	1 514	1 631	1 731	1 925	1 462
Indonesia	8 839	15 370	23 223	28 272	29 612
Iran	22 477	22 000	19 500	* 14 200	* 10 000
Iraq	2 107	1 580	1 609	...	...
Israel	58	57	51	68	142
Japan	2 462	2 764	2 628	2 421	2 500
Kuwait (a)	5 600	5 130	5 562	6 519	4 388
Malaysia	90	93	94	98	827
Pakistan	5 141	5 047	5 187	6 797	8 133
Qatar	1 476	1 607	1 395	...	...
Saudi Arabia (a)	5 600	* 6 000	* 6 800	* 7 000	8 800
Taiwan	1 836	1 886	1 841	1 721	1 708
Australia	5 929	6 728	7 320	8 382	9 571
New Zealand	1 421	2 257	2 125	1 307	1 069
World total	1 380 000	1 436 000	1 477 000	1 565 000	1 565 000

Note: So far as possible the figures in this table represent gas utilised as fuel

- (a) Includes one-half of the output of the Neutral Zone  
(b) Years ended 31 March following that stated  
(c) Years ended 20 March following that stated  
(d) Years ended 30 June of that stated

## Exports of Crude Petroleum

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	3 397 242	15 470 043	23 138 777	38 833 712	38 462 565
Belgium-Luxembourg	335	51	80 903	3	2
Germany, Federal Republic of	31 061	33	31	44	70 197
Norway	13 623 874	13 556 881	16 685 295	18 710 771	23 197 329
Soviet Union	* 110 790 000	* 110 000 000	* 115 000 000	* 120 000 000	* 120 000 000
Algeria	43 372 077	47 456 571	47 360 501	* 49 000 000	...
Angola	579 378	7 574 900	* 7 220 000	...	...
Congo	1 845 844	1 301 196	1 109 533	3 721 086	...
Egypt	3 922 421	3 990 570	4 270 009	5 245 837	...
Gabon	9 911 525	10 167 288	8 829 814	...	...
Libya	89 183 262	103 051 406	98 262 445	92 978 302	...
Nigeria	95 871 533	100 234 929	85 529 262	...	...
Tunisia	3 686 782	4 144 877	4 673 652	5 253 953	4 609 280
Canada	26 514 965	17 546 865	14 221 630	15 277 740	11 349 029
Mexico	6 214 000	10 379 000	18 757 000	...	...
Netherlands Antilles	908 000	1 874 000	* 1 000 000	...	...
Trinidad & Tobago	7 259 185	7 818 153	7 950 743	7 872 600	...
USA	323 189	2 483 182	4 725 147	4 185 611	5 259 570
Bolivia	1 169 654	651 055	415 245	26 455	—
Ecuador	8 426 900	6 883 322	* 7 200 000	...	...
Peru	364 213	84 856	* 1 200 000	...	...
Venezuela	71 937 000	69 160 000	65 157 000	73 729 000	...
Brunei	10 351 980	10 762 801	11 200 833	12 239 044	...
Indonesia	59 267 473	68 030 214	69 560 158	60 417 683	50 886 849
Iran (b)	122 350 711	53 711 000	219 143 000	118 611 000	...
Iraq	102 635 000	112 688 000	116 773 000	...	...
Kuwait	89 180 290	81 164 521	88 500 000	105 481	...
Malaysia	7 217 652	7 354 577	7 479 958	...	...
Neutral Zone (a)	23 101 000	15 511 800	...	...	...
Oman	19 492 700	17 695 331	15 602 165	...	...
Qatar	23 200 000	17 395 655	25 431 046	24 042 481	22 506 645
Saudi Arabia	400 604 400	428 189 200	383 306 900	440 137 000	...
Singapore	1	187 637	90 487	124 214	75 243
Syria	9 661 691	7 948 610	8 109 942	...	...
United Arab Emirates	94 021 000	95 891 000	87 892 000	87 624 000	...
Australia	201 292	196 322	269 670	304 828	...

(a) Neutral zone of Kuwait and Saudi Arabia

(b) Years ended 20 March following that stated

## Imports of Crude Petroleum

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	88 618 428	70 202 450	65 458 875	57 830 226	44 783 237
Belgium-Luxembourg	28 811 418	34 998 483	30 795 740	31 596 685	29 913 668
Denmark	7 583 897	7 335 965	7 724 824	7 951 692	5 727 569
France	122 354 540	118 274 281	116 387 810	126 010 262	110 157 642
Germany, Federal Republic of	97 669 209	96 289 675	94 375 050	107 354 974	96 875 766
Irish Republic	1 698 738	2 218 546	2 067 755	2 027 219	2 113 988
Italy	100 590 258	99 740 178	107 837 605	109 265 764	88 534 643
Netherlands	62 587 039	65 969 575	57 827 057	61 161 661	50 448 982
Austria	7 267 468	6 786 993	8 066 333	8 827 011	8 318 277
Bulgaria	10 839 000	11 763 000	* 11 900 000	...	...
Czechoslovakia	17 082 000	18 322 000	18 577 000	18 834 000	19 262 000
Finland	11 135 668	11 517 229	10 453 872	12 716 457	12 876 406
German Democratic Republic	18 036 000	19 042 000	19 925 000	20 694 000	21 876 000
Greece	11 637 777	9 403 074	12 371 250	15 495 000	10 187 000
Hungary	8 785 000	8 538 312	9 960 047	9 638 368	8 336 292
Norway	8 076 284	8 557 892	8 391 833	7 611 074	6 197 743
Poland	15 095 000	16 404 000	16 615 000	16 608 000	16 347 000
Portugal	5 926 172	5 949 028	6 437 121	7 690 682	7 939 542
Romania	8 475 000	8 844 000	12 937 000	14 298 000	15 961 000
Soviet Union	6 425 000	* 6 500 000	* 6 000 000	* 3 500 000	* 5 000 000
Spain	48 955 999	39 035 773	39 136 394	42 717 210	49 609 074
Sweden	13 566 219	14 278 448	15 641 573	16 160 000	17 898 000
Switzerland	4 014 478	4 144 882	3 872 225	4 203 409	3 832 443
Turkey	11 512 727	11 750 450	10 762 108	7 191 341	10 466 000
Yugoslavia	8 312 569	9 652 760	10 379 841	11 813 749	10 944 393
Canary Islands	6 207 563	6 871 572	5 934 783	6 031 883	...
Egypt	640 800	—	—	—	...
Ethiopia	469 900	620 081	611 633	...	...
Ghana	578 556	695 569	* 1 207 000	...	...
Ivory Coast	1 529 627	1 601 868	1 550 623	1 973 807	...
Kenya	2 489 976	2 460 109	2 369 217	2 471 453	2 124 539
Liberia	601 576	—	99 590	548 366	...
Madagascar	554 024	449 859	467 608	299 237	...
Morocco	2 802 013	2 849 846	2 872 440	4 541 618	4 001 187
Mozambique	360 760	327 317	...	...	...
Senegal	* 710 000	765 460	852 016	...	...
Sierra Leone	219 620	231 441	246 331	315 972	...
South Africa	* 16 000 000	* 16 175 000	* 15 865 000	...	...
Sudan	1 132 300	—	1 023 600	...	...
Tanzania	957 211	710 000	1 106 452	...	...
Tunisia	1 156 018	1 034 711	942 498	1 454 996	1 146 325
Zaire	483 040	218 400	208 300	...	...
Zambia	994 070	863 416	* 900 000	...	...
Bahamas	* 9 255 000	* 9 500 000	* 9 300 000	...	...
Barbados	107 223	128 273	108 256	...	...
Canada	40 193 291	34 729 430	33 614 032	32 144 509	29 707 978
Costa Rica	251 388	335 247	* 341 000	...	...
Cuba	5 783 000	6 201 000	* 6 400 000	...	...
Dominican Republic	1 767 000	1 546 315	1 736 062	1 712 594	...
El Salvador	514 298	859 685	744 200	...	...
Guatemala	2 155 596	805 616	753 300	...	...
Honduras	397 000	450 810	228 145	...	...
Jamaica	1 290 000	1 026 675	1 011 389	38 376	...
Netherlands Antilles	35 060 000	28 979 000	* 28 500 000	...	...
Nicaragua	565 298	642 104	507 220	437 136	...
Panama	2 843 940	2 853 159	2 330 355	2 165 654	...
Trinidad & Tobago	12 057 702	8 525 499	7 749 670	6 118 448	...
USA	307 108 329	365 731 800	347 232 619	358 113 260	286 983 297
Argentina	2 979 459	3 306 801	1 970 002	...	...
Brazil	40 094 943	40 089 067	44 749 557	50 158 455	43 590 021
Chile	3 128 000	2 824 964	3 563 881	...	...
Colombia	350 528	909 058	* 1 500 000	1 057 067	672 136
Paraguay	229 816	226 563	319 904	284 100	197 391
Peru	2 734 020	2 284 860	...	...	...
Uruguay	1 896 063	1 360 343	600 798	1 149 271	...



**Imports of Crude Petroleum**

tonnes

Country	1976	1977	1978	1979	1980
Bahrain	10 511 500	9 984 000	9 575 600	...	...
Bangladesh	1 242 700	2 025 100	2 025 100	...	...
Cyprus	426 450	447 303	486 120	514 253	...
India	14 032 000	14 548 000	14 892 000	15 467 000	...
Indonesia	47 717	2 941 677	2 180 800	3 069 846	4 903 138
Israel	7 677 100	7 682 300	8 142 600	...	...
Japan	231 843 542	241 750 785	238 729 354	249 255 344	223 917 000
Jordan	1 168 566	1 181 000	1 332 285	1 730 735	...
Korea, Republic of	18 298 761	20 743 348	23 790 300	25 047 873	24 721 110
Kuwait	4 065 700	4 477 600	...	...	...
Lebanon	2 271 900	1 747 900	1 721 600	...	...
Malaysia	3 625 098	3 771 711	3 452 600	...	...
Pakistan	2 839 500	2 946 500	4 165 400	...	...
Philippines	9 562 189	9 530 599	10 021 582	9 122 255	8 831 761
Singapore	21 254 959	23 631 341	27 651 237	28 163 001	25 085 274
Sri Lanka	1 544 320	1 529 629	1 516 127	1 438 009	1 860 653
Syria	2 763 745	2 916 065	2 371 185	3 322 276	...
Taiwan	12 392 048	13 569 489	17 129 796	17 435 865	18 107 629
Thailand	8 031 895	8 844 627	8 876 435	9 232 530	...
Yemen, People's Dem. Rep. of	1 707 292	2 030 800	2 030 000	...	...
Australia	8 591 330	9 209 819	10 328 206	9 934 125	9 688 736
New Zealand (a)	2 762 561	2 165 972	1 566 841	1 836 321	2 017 872

(a) Years ended 30 June of that stated

**Production of Phosphate Rock**

tonnes

Country	1976	1977	1978	1979	1980
France	28 250	19 340	24 500	* 24 000	* 25 400
Germany, Federal Republic of	85 624	80 497	—	—	—
Finland	4 187	2 550	4 218	2 700	138 000
Soviet Union	* 24 200 000	* 24 250 000	* 24 800 000	* 25 000 000	* 26 100 000
Sweden	25 000	50 000	83 000	58 000	* 88 000
Turkey	67 000	65 418	32 205	37 571	76 755
Algeria	743 100	1 173 100	1 124 000	1 132 000	1 025 400
Egypt	488 973	513 000	638 734	643 605	658 000
Kenya					
Guano	219	55	20	6	—
Morocco	15 829 155	17 809 254	19 273 200	20 030 768	18 824 200
Senegal					
Phosphate rock	1 591 000	1 800 000	1 460 000	1 523 000	1 289 543
Aluminium phosphates	208 000	275 000	(a) 356 723	(a) 390 963	(a) 83 060
South Africa	1 731 300	2 403 100	2 699 100	3 145 700	3 185 000
Togo	2 067 000	2 857 000	2 827 000	2 915 800	2 930 000
Tunisia	3 293 943	3 614 617	3 712 338	4 184 000	4 501 907
Uganda	* 15 000	* 1 000	—	—	—
Zimbabwe	110 554	104 800	106 639	136 238	130 337
Mexico	224 428	285 470	322 076	171 069	...
Netherlands Antilles	54 000	79 000	81 000	48 000	...
USA (c)	44 671 000	47 256 000	50 037 000	51 611 000	54 400 000
Brazil	489 617	650 486	1 023 287	1 588 823	2 500 000
Chile					
Guano	16 107	7 017	240	—	—
Colombia	9 300	5 800	1 360	* 2 000	...
Venezuela	5 000	...	65 000	75 000	* 75 000
China	* 3 750 000	* 4 100 000	* 4 400 000	* 5 000 000	* 6 000 000
Christmas Island (b)(e)	1 036 950	1 262 608	1 378 046	1 360 852	1 638 315
India	682 338	740 322	789 270	681 486	540 932
Indonesia	5 000	4 000	5 000	5 000	...
Israel	639 000	1 228 000	1 553 900	2 085 500	2 307 100
Jordan	1 683 141	1 771 141	2 328 700	2 825 823	3 911 166
Korea, Dem. P.R. of	* 450 000	* 500 000	* 500 000	* 550 000	* 550 000
Philippines					
Phosphate rock	11 923	10 323	1 074	2 495	...
Guano	1 757	162	821	3 158	...
Syria	511 000	425 000	800 000	1 170 000	1 139 000
Thailand	7 250	3 100	3 485	4 542	5 570
Vietnam	* 1 500 000	* 1 600 000	* 1 600 000	* 400 000	* 400 100
Australia	275 600	449 631	248 328	7 557	6 621
Banaba (b)	422 050	418 650	468 400	(d) 445 700	—
Nauru(b)	754 474	1 145 674	1 998 900	1 828 420	2 086 676
World total	108 000 000	117 000 000	125 000 000	129 000 000	135 000 000

(a) Including lime phosphates

(b) Exports

(c) Marketable production

(d) Figure is for 11 months only; mining ceased in November 1979

(e) Including phosphate dust

**Exports of Phosphate Rock**

Country	1976	1977	1978	1979	1980
Belgium-Luxembourg	9 104	11 553	14 203	18 433	11 291
France	1 952	10 085	16 503	26 017	15 499
Germany, Federal Republic of	1 880	1 280	1 230	952	1 555
Netherlands	73 676	75 915	66 605	71 427	64 064
Soviet Union (c)	* 5 926 000	* 5 925 000	* 6 025 000	* 6 025 000	* 6 025 000
Sweden	13 868	42 187	65 045	43 816	60 675
Algeria	568 760	775 501	614 450	860 000	768 000
Egypt	119 383	59 166	64 093	...	...
Morocco	14 684 162	15 783 537	17 284 372	17 856 090	16 527 145
Senegal					
Calcium phosphate	1 568 000	1 712 190	1 569 492	) 1 502 000	1 252 000
Aluminium phosphate	202 000	149 214	170 151	)	
Seychelles					
Guano	5 670	5 277	6 089	6 383	...
South Africa	11 118	4 510	—	5 321	2 841
Togo	1 997 000	2 886 000	2 849 000	2 991 000	2 895 000
Tunisia	1 961 841	2 091 426	1 669 010	1 598 246	1 317 125
Western Sahara	277 000	25 000	441 000	...	...
Mexico	747	2 344	1 021	—	...
Netherlands Antilles	77 483	75 206	78 800	* 48 000	...
USA	9 995 786	14 016 378	13 692 646	14 786 811	14 320 352
Christmas Island (a)	1 036 950	1 262 608	1 378 046	1 360 852	1 638 315
Israel (b)	341 445	479 708	479 401	474 653	601 887
Jordan	1 653 244	1 788 414	2 159 920	2 754 615	3 571 000
Singapore	30 986	22 550	13 019	12 465	18 653
Syria	421 376	610 219	919 804	1 253 389	823 000
Australia	* 264 000	* 212 000	* 284 300	* 40 000	...
Banaba	422 050	418 650	468 400	445 700	—
Nauru	754 474	1 145 674	1 998 900	1 828 420	2 086 676

(a) Including phosphate dust

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

(c) Including apatite ore

**Imports of Phosphate Rock**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	1 764 068	1 826 694	1 771 722	1 751 800	1 755 115
Belgium-Luxembourg	1 582 138	1 926 116	1 941 348	2 155 347	2 326 081
Denmark	260 718	271 580	281 525	264 651	312 163
France	4 069 956	4 736 195	4 965 571	5 385 589	5 449 734
Germany, Federal Republic of	2 369 873	2 694 445	2 441 220	2 584 042	2 560 313
Irish Republic	188 292	120 995	104 728	106 400	87 059
Italy	1 540 881	1 601 809	1 618 707	1 624 800	1 739 619
Netherlands	1 762 720	1 991 525	2 207 702	2 451 072	2 485 238
Austria	307 865	347 705	314 341	410 100	409 810
Czechoslovakia (a)	347 000	348 000	317 000	322 000	323 000
Finland	337 963	407 366	429 807	672 526	613 628
German Democratic Republic (a)	518 000	506 300	460 200	544 700	533 500
Greece	346 542	132 467	99 064	82 864	244 261
Hungary	503 845	646 416	759 076	595 111	671 784
Norway	318 641	367 935	419 329	427 397	477 212
Poland	3 232 000	3 558 000	3 232 000	3 327 000	3 185 000
Portugal	333 718	349 717	389 748	355 748	452 105
Romania (a)	684 900	778 900	879 100	923 500	896 800
Spain	1 367 345	2 762 471	2 947 057	2 926 065	2 606 821
Sweden	580 913	582 049	574 401	619 160	579 657
Switzerland	8 124	10 393	11 393	13 020	13 055
Turkey	793 112	642 831	591 842	513 122	...
Yugoslavia	880 487	1 066 091	902 610	896 443	1 382 685
Canary Islands	2 663	11 579	8 270	6 350	...
Ivory Coast	1 584	7 175	9 315	6 207	...
Mozambique	2 000	5 000	3 000	3 000	...
Nigeria	12 000	16 000	3 000	25 000	...
Tanzania	49 387	27 102	20 588	20 000	...
Tunisia	1 395	2 468	1 801	1 000	1
Canada	2 241 086	2 439 021	2 961 362	3 258 458	3 816 494
Mexico	172 722	1 420 008	1 349 427	1 195 906	...
USA	46 434	252 950	920 305	893 495	487 049
Brazil	1 434 440	1 617 126	1 155 826	753 687	772 154
Colombia (b)	16 733	52 433	69 099	47 941	41 279
Peru	10 115	9 999	...	...	...
Uruguay	47 266	75 275	65 140	130 145	...
Venezuela	0	39 803	40 781	...	...
Bangladesh	40 000	94 000	86 000	93 000	...
China	1 229 000	1 336 000	1 412 000	427 000	* 455 000
India	471 521	951 032	851 078	1 145 464	* 1 339 000
Japan	2 334 970	2 652 308	2 599 162	2 827 538	2 762 404
Korea, Dem. P.R. of	119 000	107 000	217 000	325 000	...
Korea, Republic of	746 367	1 169 231	1 645 000	1 845 039	1 670 321
Lebanon	—	300 730	236 000	438 000	313 000
Malaysia	152 026	169 303	221 100	...	...

**Imports of Phosphate Rock**

tonnes

Country	1976	1977	1978	1979	1980
Pakistan (c)	34 444	25 022	42 432	56 447	143 777
Philippines	60 776	79 918	21 776	96 632	55 747
Singapore	27 199	26 071	14 108	5 405	20 393
Sri Lanka	195	319	—	9	27 500
Taiwan	227 578	309 750	287 758	359 569	297 797
Australia	1 200 691	1 437 511	2 051 862	2 368 694	2 683 000
New Zealand (c)	935 597	1 049 744	1 137 193	1 349 279	1 209 305

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

(b) Exports from the USA

(c) Years ended 30 June of that stated

**Production of Platinum Group Metals**

kilograms (metal content)

Country	1976	1977	1978	1979	1980
Finland	43	14	57	(a)* 20	(a)* 20
Soviet Union	* 87 100	* 90 200	* 95 000	* 100 000	* 101 000
Yugoslavia					
Platinum	31	23	13	21	* 20
Palladium	120	154	173	163	* 200
Ethiopia (f)	7	6	4	3	* 4
South Africa					
Platinum	* 83 900	* 89 200	* 88 900	) * 93 800	* 96 400
Osmiridium (c)(d)	* 75	* 75	* 75	)	
Canada (e)	12 965	14 475	10 768	6 157	12 584
USA					
Platinum metals (b) –					
Platinum	85	26	34	62	17
Palladium	125	134	225	199	55
Iridium	8	2	—	—	—
Osmium	1	0	—	—	—
Rhodium	1	0	—	—	—
Colombia	522	539	447	402	* 400
Japan					
Platinum	270	303	317	378	* 400
Palladium	563	707	753	700	* 900
Australia					
Platinum	98	115	92	86	* 80
Palladium	247	298	230	214	* 200
World total	186 000	196 000	197 000	202 000	212 000

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

(a) Recovered from copper refining

(b) Recovered by refineries from domestic platinum, gold and copper ores

(c) From gold ores

(d) Sales

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

(f) Years ended 6 July of that stated

## Exports of Platinum Group Metals

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Platinum	20 159	19 658	22 075	21 451	28 967
Palladium	15 738	9 162	10 807	8 695	10 375
Other platinum metals	2 974	3 077	5 377	12 463	14 176
Waste & scrap	4 549	17 344	313	232	1 275
Belgium-Luxembourg					
Platinum	928	1 172	1 365	995	1 204
Platinum metals	2 912	2 025	2 295	2 527	2 901
France					
Platinum	23 848	2 121	1 889	2 484	3 120
Platinum metals	3 409	2 870	1 352	2 586	915
Waste & scrap	79	142	3 150	443	7 701
Germany, Federal Republic of					
Platinum	7 846	8 559	7 853	8 958	8 579
Palladium	6 369	6 031	3 450	4 067	3 250
Other platinum metals	2 798	3 429	2 518	3 564	2 579
Waste & scrap	29 966	111 380	25 386	44 562	37 568
Irish Republic					
Platinum & platinum metals	300	600	441	119	30 417
Italy					
Platinum	1 165	1 681	2 064	1 352	1 973
Platinum metals	112	231	45	383	1 757
Netherlands					
Platinum	410	394	723	905	813
Platinum metals	620	1 056	454	648	449
Austria					
Platinum & platinum metals	293	215	238	179	320
Norway					
Platinum & platinum metals	1 509	1 240	968	1 161	833
Soviet Union					
Platinum & platinum metals (a)	* 80 500	* 78 900	* 73 800	* 87 300	* 46 000
Switzerland					
Platinum	17 755	19 065	27 869	19 645	18 389
Yugoslavia					
Platinum	76	145	2 076	1 997	126
Palladium	210	2 193	...	—	—
South Africa					
Platinum & platinum metals (a)	* 67 800	* 69 600	* 81 300	* 98 600	* 89 600
Canada					
Ores & concentrates (b)	12 072	12 391	10 557	4 905	12 367
Platinum metals	2 039	2 159	1 080	1 779	1 165
of which: Re-exports	384	1 040	169	43	9
Waste & scrap	975	994	1 324	1 665	1 096
USA					
Ores & concentrates (b)	194	558	451	466	87
Platinum	6 938	4 950	4 911	6 045	8 608
of which: Re-exports	2 924	685	368	192	693
Platinum metals	7 024	5 452	11 441	16 276	9 919
of which: Re-exports	1 635	1 374	766	1 552	924
Waste & scrap	5 634	3 829	5 139	5 476	5 296
Colombia					
Platinum	428	234	...	...	...
Hong Kong					
Platinum & platinum metals (Re-exports)	886	424	689	606	441
Japan					
Platinum	2 214	2 271	1 282	1 701	1 101
Platinum metals	1 317	1 546	2 519	1 816	1 780
Taiwan					
Platinum & platinum metals	—	22	42	* 2	—
Australia					
Platinum & platinum metals	623	2 236	1 838	339	...

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

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

(b) Platinum metals content

**Imports of Platinum Group Metals**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates (a)	* £62 468 000	* £61 380 000	* £80 880 000	* £90 332 000	* £188 747 000
Platinum	3 536	5 631	3 859	7 815	8 024
Palladium	2 464	1 985	5 135	1 625	7 444
Other platinum metals	1 776	2 476	2 138	2 623	4 317
Waste & scrap	7 700	5 646	8 314	11 640	10 510
Belgium-Luxembourg					
Platinum	227 692	1 923	2 159	1 605	2 137
Platinum metals	388	1 100	494	1 006	537
Denmark					
Platinum & platinum metals	715	634	1 041	693	482
France					
Platinum	5 615	6 494	5 396	9 281	6 340
Platinum metals	3 955	4 023	2 544	4 048	5 465
Waste & scrap	4 721	3 198	2 578	2 100	3 092
Germany, Federal Republic of					
Platinum	9 831	11 703	9 374	15 853	12 930
Palladium	18 276	13 404	11 458	11 882	11 443
Other platinum metals	3 139	2 562	3 982	3 543	3 723
Waste & scrap	204 303	97 594	48 536	29 929	59 061
Irish Republic					
Platinum & platinum metals	3 500	300	1 445	535	935
Italy					
Platinum	2 324	2 458	2 807	3 050	3 451
Platinum metals	4 452	3 547	4 140	4 613	4 388
Netherlands					
Platinum	2 038	1 202	965	1 108	1 379
Platinum metals	835	1 532	943	896	586
Austria					
Platinum & platinum metals	684	748	2 118	705	813
Czechoslovakia					
Platinum & platinum metals (e)	* 100	* 400	* 200	* 100	* 400
Finland					
Platinum & platinum metals	715	183	104	112	182
Hungary					
Platinum & platinum metals (e)	* 600	* 300	* 400	* 300	* 400
Norway					
Platinum & platinum metals	90	149	298	210	172
Poland					
Platinum & platinum metals (e)	* 100	* 500	* 600	* 400	* 100
Portugal					
Platinum & platinum metals	151	188	186	272	...
Romania					
Platinum & platinum metals (e)	* 400	* 500	* 400	* 400	* 300
Spain					
Platinum & platinum metals	1 163	878	362	2 431	15 200
Sweden					
Platinum & platinum metals	1 000	2 000	3 000	4 000	4 000
Switzerland					
Platinum	20 110	18 033	15 741	15 410	30 876
Turkey					
Platinum & platinum metals	83	1 587	344	135	...
Yugoslavia					
Platinum	136	601	2 220	2 474	202
Palladium	1 658	2 481	...	...	—
Algeria					
Platinum & platinum metals	54	68	178	...	...
Nigeria					
Platinum & platinum metals	56	55	220	...	...
South Africa					
Platinum & platinum metals	509	329	669	854	715
Tunisia					
Platinum	8	40	3	91	11
Zambia					
Platinum	17	51	...	...	...



**Imports of Platinum Group Metals**

kilograms

Country	1976	1977	1978	1979	1980
Canada					
Platinum & platinum metals (c)	1 325	1 091	1 747	827	1 061
Costa Rica					
Platinum & platinum metals	283	206	...	...	...
Mexico					
Platinum	17	5	4	2	...
Palladium	49	30	133	147	...
Other platinum metals	19	8	8	11	...
USA					
Ores & concentrates (d)	—	150	308	345	21
Platinum	31 114	25 595	36 523	44 610	44 721
Platinum metals –					
Palladium	34 940	35 822	38 075	46 795	40 951
Iridium, osmium & osmiridium	902	706	1 501	1 263	4 165
Rhodium	1 995	2 486	3 202	3 245	3 409
Ruthenium	2 385	1 672	2 287	3 885	3 063
Waste & scrap	4 565	7 710	5 860	4 873	11 711
Argentina					
Platinum	17	71	70	...	...
Palladium	40	54	393	...	...
Brazil					
Platinum	157	263	119	302	161
Palladium	317	406	388	515	656
Venezuela					
Platinum & platinum metals	2 020	51	245	...	...
China					
Platinum & platinum metals (e)	* 250	* 300	* 1 700	* 1 200	* 300
Hong Kong					
Platinum & platinum metals	8 643	5 244	3 834	1 995	1 544
India					
Platinum	560	398	417	393	...
Iran (f)					
Platinum & scrap	£72 000	£77 000	* £147 000	* £280 000	...
Israel					
Platinum metals	...	...	* 130	126	192
Japan					
Platinum	38 519	36 879	38 946	30 486	31 410
Platinum metals	20 713	17 324	25 143	33 247	26 074
Korea, Republic of					
Platinum	556	1 607	1 263	2 662	2 350
Malaysia					
Platinum & platinum metals	15	53	...	...	...
Singapore					
Platinum	199	425	44	161	600
Taiwan					
Platinum & platinum metals	3 386	4 538	3 868	8 800	3 203
Thailand					
Platinum & platinum metals	19	44	6	7	...
Australia					
Platinum metals	784	26 413	4 669	4 157	...
New Zealand (b)					
Platinum & platinum metals	87	39	63	84	44

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

(a) Values shown refer to imports of 'ores and concentrates of silver, platinum and platinum metals', assuming that the imports of silver ores and concentrates are negligible

(b) Years ended 30 June of that stated

(c) Derived from Canadian ores and concentrates exported for treatment

(d) Platinum metals content

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

(f) Years ended 20 March following that stated

## Potash

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

Country	1976	1977	1978	1979	1980
United Kingdom					
Chloride	48 645	85 365	157 342	277 684	321 469
France					
Potassic salts	1 640 000	1 678 000	1 928 000	2 075 000	2 040 000
Germany, Federal Republic of					
Potassic salts	2 036 000	2 341 000	2 470 000	2 616 000	2 737 000
Italy					
Potassic salts	203 000	342 567	248 310	182 429	130 164
German Democratic Republic					
Potassic salts	3 161 000	3 229 000	3 323 000	3 395 000	3 422 000
Soviet Union	* 8 310 000	* 8 347 000	* 8 193 000	* 6 635 000	* 8 800 000
Spain					
Potassic salts	630 252	693 789	722 301	661 137	660 440
Congo	254 000	* 83 000	—	—	—
Canada					
Chloride	4 995 863	6 088 587	6 109 555	6 698 504	* 7 300 000
USA					
Potassic salts	2 177 000	2 229 000	2 253 000	2 225 000	2 239 000
Chile					
Nitrate	* 17 900	* 11 200	* 14 900	* 21 600	* 21 000
China	* 12 000	* 18 000	* 21 000	* 16 000	* 12 000
Israel					
Chloride	680 000	707 000	695 000	730 000	797 000
World total	24 200 000	25 900 000	26 100 000	25 500 000	28 500 000

Potash

tonnes

**Exports of Potash**

Country	1976	1977	1978	1979	1980
United Kingdom					
Sulphate	500	13	326	40	92
Chloride	23 566	35 047	62 951	164 700	200 222
Potassic chemicals	802	939	549	1 742	1 765
Belgium-Luxembourg					
Fertiliser salts (a)	101	63	138	566	729
Sulphate (a)	217 450	237 810	274 416	297 668	325 076
Chloride (a)	4 407	7 189	8 551	5 138	6 060
Potassic chemicals	1 662	2 383	1 651	1 389	1 700
France					
Fertiliser salts	12 869	12 420	11 533	18 453	13 293
Chloride	543 828	597 544	492 681	412 820	311 854
Other potassic fertilisers	34 471	36 903	30 621	33 937	23 554
Potassic chemicals	15 101	16 542	14 819	20 189	19 023
Germany, Federal Republic of					
Fertiliser salts	40 492	32 795	32 280	49 296	35 585
Sulphate	415 007	440 665	485 992	569 272	) 2 503 623
Chloride	1 158 250	1 314 663	1 891 526	1 863 298	
Potassic chemicals	35 238	37 815	33 628	34 132	32 413
Italy					
Sulphate	93 535	132 075	106 804	105 194	72 040
Potassic chemicals	1 845	3 038	301	303	219
Netherlands					
Chloride (a)	587	483	473	1 504	3 423
Potassic chemicals (d)	283	612	1 719	1 738	1 351
German Democratic Republic					
Fertiliser salts (a)	2 428 000	2 740 000	2 744 000	2 745 000	2 817 000
Potassic chemicals	16 774	1 866	1 412	...	...
Poland					
Potassic chemicals	8 633	8 437	8 342	6 762	...
Portugal					
Sulphate	500	3 699	1 315	—	...
Chloride	193	—	—	—	...
Potassic chemicals	13	1	0	30	...
Soviet Union					
Fertiliser salts	5 566 833	6 024 367	5 771 093	4 773 334	6 603 144
Spain					
Sulphate	62 320	61 785	64 466	80 369	78 477
Chloride	346 309	430 979	340 268	597 132	495 868
Potassic chemicals	2 115	6 751	12 771	19 473	...
Sweden					
Chloride	1 244	1 705	3 371	441	—
Potassic chemicals	2 838	3 291	3 128	3 643	3 692
Yugoslavia					
Potassic chemicals	...	1 733	1 073	2 349	2 115
Congo					
Potassic fertilisers	400 379	291 002	37	...	...
Ivory Coast					
Potassic fertilisers	71	201	57	52	...
Canada					
Chloride	8 278 284	9 206 094	9 387 451	10 642 875	10 537 560

**Exports of Potash**

tonnes

Country	1976	1977	1978	1979	1980
USA					
Fertiliser salts	9 603	6 895	...	...	...
Sulphate	...	...	183 531	227 805	147 731
Chloride	1 206 011	1 181 582	1 126 000	891 378	1 174 548
Other potassic fertilisers	299 104	308 560	227 239	310 483	324 265
Potassic chemicals	10 030	17 501	22 457	27 323	34 155
India					
Potassic chemicals (c)	648	813	1 518	705	...
Israel (b)					
Potassic chemicals	2 946	2 575	3 413	2 435	3 938
Japan					
Sulphate	3 751	543	4 149	2 002	3
Chloride	1 307	1 622	4	4	3
Potassic chemicals	5 778	5 225	5 617	5 415	7 096
Singapore					
Potassic fertilisers	153 045	128 271	203 616	234 167	188 654
Taiwan					
Potassic chemicals	947	1 155	1 110	1 082	1 172
Thailand					
Potassic chemicals	376	561	1 220	2 674	...

Note: So far as possible the term 'potassic chemicals', as used in this table, relates to items 522. 54,523. 1 and 2 of the Standard International Trade Classification (Revision 2) and includes caustic potash, carbonate, chlorate, nitrate and sulphate

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

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

(c) Years ended 31 March following that stated

(d) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

## Imports of Potash

Country	1976	1977	1978	1979	1980
United Kingdom					
Fertiliser salts	30 727	20 443	23 552	37 626	25 453
Sulphate	25 965	23 537	21 973	21 803	17 110
Chloride	705 663	710 980	644 822	607 860	536 178
Potassic chemicals	23 313	24 798	25 969	25 700	22 963
Belgium-Luxembourg					
Fertiliser salts (a)	9 831	9 520	8 419	10 827	8 010
Sulphate (a)	18 939	7 364	18 959	17 398	12 005
Chloride (a)	467 575	542 188	558 428	595 927	655 843
Potassic chemicals	8 257	9 377	8 079	8 846	8 205
Denmark					
Fertiliser salts	1 050	925	825	825	849
Sulphate	450	4 101	24 898	62 616	44 737
Chloride	204 201	221 180	194 748	177 777	190 680
Potassic chemicals	3 437	4 043	4 602	5 247	5 764
France					
Sulphate	138 072	157 155	155 548	177 885	177 713
Chloride	178 282	245 427	164 869	184 458	276 909
Potassic chemicals	15 955	18 472	23 660	27 954	27 410
Germany, Federal Republic of					
Chloride	76 509	83 452	92 365	88 086	91 601
Potassic chemicals	8 271	9 243	13 215	14 142	16 272
Irish Republic					
Sulphate	)	7 970	4 266	4 078	7 559
Chloride	) 256 290	269 352	327 357	373 008	258 761
Other potassic fertilisers	)	1 831	2 399	40	6 092
Potassic chemicals (f)	1 157	748	583	861	677
Italy					
Fertiliser salts	24 156	22 948	19 153	22 316	16 983
Sulphate	11 280	58 350	51 793	64 990	41 925
Chloride	314 161	397 654	479 212	632 046	631 325
Potassic chemicals	17 501	19 620	21 513	16 614	16 738
Netherlands					
Fertiliser salts (a)(e)	701	526	403	881	578
Sulphate (a)	30 712	51 918	38 781	44 617	30 961
Chloride (a)	145 033	165 082	154 944	160 386	157 754
Potassic chemicals (e)	18 175	20 300	21 671	27 670	28 277
Austria					
Fertiliser salts	19 982	24 738	19 231	16 302	12 216
Sulphate	36 538	43 793	36 784	36 967	25 547
Chloride	188 417	253 598	215 872	257 027	269 149
Potassic chemicals	4 102	4 057	3 909	3 815	4 676
Czechoslovakia					
Fertiliser salts (a)	634 000	627 000	670 000	624 000	578 000

## Potash

**Imports of Potash**

tonnes

Country	1976	1977	1978	1979	1980
<b>Finland</b>					
Sulphate	12 355	—	—	10 517	17 544
Chloride	193 500	240 664	243 382	289 498	288 983
Potassic chemicals	1 548	2 055	2 065	1 524	3 504
<b>Greece</b>					
Sulphate	51 304	5 600	18 803	9 116	40 480
Potassic chemicals	4 108	1 490	2 110	...	...
<b>Hungary</b>					
Fertiliser salts	3 591	3 460	3 140	1 897	2 312
Potassic fertilisers	1 172 000	1 248 000	1 525 000	1 110 300	1 322 200
Potassic chemicals	1 228	1 189	1 629	1 642	1 754
<b>Iceland</b>					
Sulphate	1 000	1 499	1 448	3 500	200
Chloride	5 555	8 619	4 353	2 173	6 999
Potassic chemicals	304	247	236	169	177
<b>Norway</b>					
Sulphate	72 217	90 650	106 612	98 338	122 527
Chloride	146 765	142 525	161 677	203 879	196 714
Other potassic fertilisers	151	228	380	373	231
Potassic chemicals	4 676	2 762	5 602	3 042	2 265
<b>Poland</b>					
Fertiliser salts	2 857 000	2 958 000	2 436 000	1 761 000	2 428 000
Chloride	19 650	21 094	22 599	21 646	18 230
Potassic chemicals	7 206	7 421	8 852	10 095	10 856
<b>Portugal</b>					
Sulphate	0	0	0	1 040	...
Chloride	58 349	79 765	72 983	89 944	...
Potassic chemicals	2 159	2 527	2 385	2 521	...
<b>Romania</b>					
Fertiliser salts (a)	109 500	128 500	161 900	179 000	150 100
<b>Sweden</b>					
Fertiliser salts	418	567	920	1 042	1 074
Chloride	62	4	3	53	—
Potassic chemicals	3 626	4 604	3 180	2 982	3 549
<b>Switzerland</b>					
Fertiliser salts	80 564	80 314	84 004	87 606	87 735
Potassic chemicals	6 920	7 917	7 059	8 843	9 413
<b>Turkey</b>					
Sulphate	4 974	6 093	—	28 465	...
Other potassic fertilisers	16 765	9 765	4 163	4 593	...
Potassic chemicals	5 635	5 994	4 843	6 711	...
<b>Yugoslavia</b>					
Sulphate	14 905	12 240	17 768	13 455	13 582
Chloride	318 090	366 491	425 403	381 541	448 216
Potassic chemicals	1 104	176	198 043	264 897	260 310

**Imports of Potash**

Country	1976	1977	1978	1979	1980
Algeria					
Sulphate	37 728	78 535	54 760	...	...
Potassic chemicals	194	571	295	...	...
Angola					
Sulphate (a)	...	1 500	500	...	...
Chloride (a)	...	1 200	600	...	...
Cameroon					
Fertiliser salts	1 610	6 925	7 146	9 000	...
Potassic fertilisers	4 691	10 825	4 148	4 820	...
Canary Islands					
Potassic chemicals	900	1 430	1 359	2 251	...
Ivory Coast					
Chloride	33 665	26 886	41 176	32 537	...
Other potassic fertilisers	1 750	10	8 314	9 801	...
Potassic chemicals	131	622	140	110	...
Kenya					
Potassic fertilisers	3 917	7 338	10 752	91	...
Liberia					
Potassic fertilisers	1 847	1 070	546	863	...
Libya					
Potassic fertilisers	—	19 960	16 165	17 576	...
Madagascar					
Potassic fertilisers	7 552	4 348	6 900	7 443	...
Malawi					
Potassic fertilisers	140	—	1 568	...	...
Mauritius					
Potassic fertilisers	20 866	22 674	...	...	...
Morocco					
Sulphate	40 750	37 416	31 285	47 195	36 734
Chloride	18 491	24 409	22 428	35 636	41 660
Potassic chemicals	1 727	1 034	1 406	1 644	1 436
Mozambique					
Potassic fertilisers	2 514	3 291	...	...	...
Nigeria					
Potassic fertilisers	5 762	30 993	354 590	...	...
Potassic chemicals	6 751	4 553	5 989	...	...
Senegal					
Potassic fertilisers	...	29 161	27 470	...	...
Sierra Leone					
Potassic fertilisers	264	—	0	60	...
South Africa					
Fertiliser salts	205 279	222 043	153 627	42 901	92 268
Potassic fertilisers	11 613	3 958	111 244	158 470	136 566
Potassic chemicals	428	1 828	3 950	4 473	16 713
Sudan					
Potassic chemicals	78	102	36	151	...
Tanzania					
Potassic fertilisers	5 695	11 718	...	...	...
Tunisia					
Potassic fertilisers	4 982	4 851	6 719	12 228	15 112
Zaire					
Potassic fertilisers	1 869	4 397	1 495	2 593	...
Zimbabwe					
Sulphate	...	...	...	21 815	...
Chloride	...	...	...	28 644	...
Barbados					
Potassic fertilisers	307	866	2	...	...

**Imports of Potash**

tonnes

Country	1976	1977	1978	1979	1980
<b>Belize</b>					
Potassic fertilisers	1 165	14	508	...	...
<b>Canada</b>					
Sulphate	7 831	11 447	19 819	20 106	9 414
Chloride	13 370	30 456	1 795	2 043	28 890
Other potassic fertilisers	35 963	63 731	53 818	49 667	44 550
Potassic chemicals	8 053	7 658	8 752	8 124	8 175
<b>Costa Rica</b>					
Potassic fertilisers	45 715	58 795	...	...	...
<b>El Salvador</b>					
Potassic fertilisers	1 268	13 720	...	...	...
<b>Guatemala</b>					
Potassic fertilisers	63	8 579	...	...	...
<b>Honduras</b>					
Potassic fertilisers	6 122	10 819	9 443	...	...
<b>Jamaica</b>					
Potassic fertilisers	15 076	8 717	5 722	8 779	...
<b>Martinique</b>					
Potassic fertilisers	2 024	2 419	624	...	...
<b>Mexico</b>					
Sulphate	35 361	22 295	24 727	37 989	...
Chloride	94 351	49 923	111 493	116 887	...
Potassic chemicals	6 027	3 890	4 341	5 275	...
<b>Nicaragua</b>					
Potassic fertilisers	3 592	3 952	8 525	18	...
<b>Panama</b>					
Potassic fertilisers	10 219	1 063	4 564	8 743	...
<b>St. Kitts-Nevis-Anguilla</b>					
Potassic fertilisers	1 120	925	1 500	...	...
<b>Trinidad &amp; Tobago</b>					
Potassic fertilisers	4 485	2 189	5 076	1 782	4 919
<b>USA</b>					
Sulphate	42 500	68 981	58 097	20 190	45 302
Chloride	6 780 784	7 465 454	7 610 926	8 413 900	8 039 331
Other potassic fertilisers	2 995	3 947	3 404	86	2 878
Potassic chemicals	16 352	25 421	67 817	35 119	38 412
<b>Argentina</b>					
Sulphate	2 337	2 330	1 843	...	...
Chloride	6 824	3 961	6 392	...	...
Potassic chemicals	2 125	3 157	1 338	...	...
<b>Brazil</b>					
Sulphate	32 824	28 382	34 904	46 944	34 946
Chloride	1 157 614	1 554 049	1 602 315	1 758 874	2 119 950
Other potassic fertilisers	13 650	24 040	23 416	24 224	31 029
Potassic chemicals	13 979	23 017	25 250	25 612	29 735
<b>Chile</b>					
Sulphate	...	3 795	13 997	...	...
Chloride	...	11 795	11 658	...	...
<b>Colombia</b>					
Chloride	16 700	95 251	* 65 000	73 790	120 608
<b>Guyana</b>					
Potassic fertilisers	3 486	3 482	661	...	...
<b>Peru</b>					
Sulphate	4 000	13 500	...	...	...
Chloride	11 108	19 007	...	...	...



## Imports of Potash

Country	1976	1977	1978	1979	1980
Uruguay					
Sulphate	85	1 175	927	2 001	...
Chloride	5 121	5 845	4 942	11 117	...
Potassic chemicals	101	169	177	120	...
Venezuela					
Chloride	3.	11 002	5	...	...
Potassic chemicals	5 108	30 868	3 479	...	...
Brunei					
Potassic fertilisers	3 127	1 101	11	259	...
China					
Potassic fertilisers	...	* 50 000	* 207 000	* 210 000	...
Cyprus					
Potassic fertilisers	270	765	606	1 037	...
Hong Kong					
Potassic chemicals	1 067	1 703	948	676	1 589
India (b)					
Sulphate	1 000	6 702	10 665	8 445	...
Chloride	291 251	626 048	347 478	406 513	...
Other potassic fertilisers	112 682	162 677	67 282	70 568	...
Potassic chemicals	959	780	123	204	...
Indonesia					
Sulphate	7 249	3 572	315	2 950	5 852
Other potassic fertilisers	35 152	34 401	107 352	107 175	136 314
Potassic chemicals	672	642	1 305	913	901
Iran (c)					
Potassic chemicals	297	729	...	...	...
Japan					
Sulphate	118 087	177 500	200 703	208 435	234 658
Chloride	972 586	1 102 303	1 088 061	1 098 918	1 263 195
Other potassic fertilisers	18 499	30 936	33 687	34 419	35 547
Potassic chemicals	11 111	11 439	8 664	3 146	9 566
Jordan					
Potassic fertilisers	4 425	—	1 850	994	...
Korea, Republic of					
Sulphate	33 655	30 910	...	32 098	27 799
Chloride	195 757	96 393	...	242 688	231 237
Other potassic fertilisers	—	36 168	...	84 516	—
Potassic chemicals	2 855	4 022	...	5 404	4 796
Malaysia					
Fertiliser salts	10 716	24 826	...	...	...
Potassic fertilisers	229 208	239 726	...	...	...
Philippines					
Sulphate	4 600	4 800	4 560	8 246	4 899
Other potassic fertilisers	68 819	65 041	5 380	99 245	14 049
Potassic chemicals	126	637	738	1 220	1 189
Singapore					
Potassic fertilisers	186 924	260 396	247 697	270 786	308 627

## Potash

**Imports of Potash**

tonnes

Country	1976	1977	1978	1979	1980
<b>Sri Lanka</b>					
Potassic fertilisers	28 301	0	20 786	38 529	94 932
<b>Taiwan</b>					
Chloride	170 133	165 092	107 110	161 647	224 387
Potassic chemicals	4 718	6 784	5 533	7 814	6 512
<b>Thailand</b>					
Sulphate	5 500	550	3 000	7 900	...
Chloride	150	3 630	15 952	—	...
Other potassic fertilisers	6 800	2 750	3 800	7 700	...
Potassic chemicals	5 052	7 165	2 669	11 239	...
<b>Australia</b>					
Sulphate	16 910	16 736	6 366	8 546	19 013
Chloride	98 694	158 012	173 463	158 064	183 522
Other potassic fertilisers	240	58	2 443	15 037	...
Potassic chemicals (d)	8 027	3 971	7 463	...	...
<b>Fiji</b>					
Potassic fertilisers	1 924	3 072	...	...	...
<b>New Zealand (d)</b>					
Sulphate	2 906	2 000	4 479	1 134	1 874
Chloride	194 988	226 088	230 502	220 463	149 752
Other potassic fertilisers	26	—	592	136	72
Potassic chemicals	413	739	1 230	1 778	1 292

Note: So far as possible the term 'potassic chemicals', as used in this table, relates to items 522. 54, 523.1 and 2 of the Standard International Trade Classification (Revision 2) and includes caustic potash, carbonate, chlorate, nitrate and sulphate.

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

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Years ended 30 June of that stated

(e) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(f) May include some sodium peroxide

**Production of Rare Earth Minerals**

tonnes

Country	1976	1977	1978	1979	1980
Burundi					
Bastnaesite	139	165	40	* 30	...
Nigeria					
Monazite	* 20	* 20	* 20	* 20	* 20
Zaire					
Monazite	125	96	77	92	51
USA					
Bastnaesite (a)	13 039	15 359	14 148	16 515	15 986
Monazite (a)	* 600	* 600	* 1 250	* 1 200	* 700
Brazil					
Monazite	1 610	2 441	2 841	1 900	* 2 200
India					
Monazite (d)	2 994	2 734	3 143	* 2 800	* 2 900
Malaysia					
Monazite (b)	1 879	1 976	1 263	669	* 800
Xenotime (b)	79	35	—	—	—
Sri Lanka					
Monazite	1	—	18	4	63
Thailand					
Monazite	—	—	—	32	152
Xenotime	—	50	—	6	52
Australia					
Monazite	5 310	9 379	14 992	16 340	13 748
Xenotime	7	12	23	19	...
World total (c)	34 900	43 500	48 100	51 400	47 800
World total (REO content)	* 20 900	* 26 100	* 28 800	* 30 800	* 28 600

## Notes:

- 1 With the exception of the data for USA, figures in this table refer to gross tonnage of rare earth concentrates
- 2 Rare earth minerals are also believed to be produced in China and the Soviet Union (about 2 300 tonnes REO per annum) and possibly, on a small scale, in Indonesia, Democratic Republic of Korea and South Africa.

(a) REO content

(b) Exports

(c) Expressed as weight of concentrates produced; USA production has been grossed up to concentrate equivalent on the assumption that both its bastnaesite and monazite concentrates contain 60% REO

(d) Years ended 31 March following that stated

**Exports of Rare Earths**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ferro-cerium & other pyrophoric alloys	35	32	29	22	31
Metals	7	17	110	48	56
France					
Cerium compounds	2 013	2 951	1 579	...	...
Other rare earth compounds	939	1 411	2 128	...	...
Ferro-cerium & other pyrophoric alloys	63	64	20	10	15
Metals	22	20	13	109	36
Germany, Federal Republic of					
Cerium compounds	484	1 264	943	1 773	1 874
Other rare earth compounds	197	289	220	126	86
Ferro-cerium & other pyrophoric alloys	61	58	62	39	75
Metals	148	445	249	154	157
Italy					
Ferro-cerium & other pyrophoric alloys	0	2	1	5	...
Metals	7	218	141	107	26
Austria					
Metals	596	585	310	300	196
Algeria					
Cerium metal	...	477	245	...	...
South Africa (a)					
Rare earth compounds	£2 800	£22 900	£1 550	£1 500	£1 000
Ferro-cerium & other pyrophoric alloys	£4 990	£11 900	£15 000	£5 500	£1 300
USA					
Ores & concentrates	* 4 000	* 6 500	7 494	8 334	9 115
Rare earth compounds	287	876	...	...	...
Ferro-cerium & other pyrophoric alloys	56	239	17	38	16
Brazil					
Cerium compounds	1 090	734	530	120	—
Ferro-cerium & other pyrophoric alloys	189	481	592	) 598	453
Metals	46	48	29	)	
Japan					
Ferro-cerium & other pyrophoric alloys	74	76	81	76	76
Malaysia					
Ores & concentrates	1 879	1 976	1 263	669	* 800
Thailand					
Ores & concentrates	...	114	696	47	...
Australia					
Ores & concentrates	3 154	7 544	11 600	13 154	10 250

## Notes:

- 1 Trade in rare earth compounds has been omitted from this table in those cases where it is not separately distinguished from the trade in compounds of thorium and uranium, as under the Standard International Trade Classification (Revision 2), item 524.92
- 2 Rare earths are here taken to include yttrium and scandium; the term 'metals' includes intermixtures and interalloys thereof

(a) Values shown are for the common customs union

**Imports of Rare Earths**

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates (a)	349	...	...	...	...
Ferro-cerium & other pyrophoric alloys	4	4	25	30	44
Metals	...	7	29	95	108
Belgium-Luxembourg					
Cerium compounds	32	35	15	53	52
Other rare earth compounds	2	4	18	6	23
Ferro-cerium & other pyrophoric alloys	3	2	1	1	28
Metals	91	15	29	43	21
Denmark					
Cerium compounds	2	5	1	2	1
Ferro-cerium & other pyrophoric alloys	7	4	3	2	2
France					
Cerium compounds	94	131	127	149	66
Other rare earth compounds	140	507	367	423	328
Ferro-cerium & other pyrophoric alloys	32	34	43	119	130
Metals	26	55	88	15	11
Germany, Federal Republic of					
Cerium compounds	807	819	831	965	752
Other rare earth compounds	193	198	146	230	152
Ferro-cerium & other pyrophoric alloys	30	44	67	37	14
Metals	78	155	110	107	60
Italy					
Ferro-cerium & other pyrophoric alloys	14	13	12	14	9
Metals	371	442	122	28	138
Netherlands					
Cerium compounds	539	1 178	1 356	1 075	1 263
Other rare earth compounds	254	44	36	54	29
Metals	0	—	1	5	0
Austria					
Metals	27	45	6	170	2
Finland					
Ferro-cerium & other pyrophoric alloys	...	1	1	4	1
Norway					
Ferro-cerium & other pyrophoric alloys	3	2	...	...	...
Portugal					
Ferro-cerium & other pyrophoric alloys	3	3	4	...	...
Switzerland					
Ferro-cerium & other pyrophoric alloys	0	9	4	4	3
Metals	1	3	3	7	6
Turkey					
Metals	2	—	7	2	...
South Africa					
Rare earth compounds	£51 600	£30 100	£68 800	£130 100	£84 300
Ferro-cerium & other pyrophoric alloys	6	7	16	7	25

**Imports of Rare Earths**

tonnes

Country	1976	1977	1978	1979	1980
<b>USA</b>					
Ores & concentrates	1 908	4 972	6 996	6 287	5 147
Cerium compounds	8	6	3	6	6
Other rare earth compounds	...	...	169	385	524
Ferro-cerium & other pyrophoric alloys	18	21	59	56	65
Metals	21	227	378	70	330
<b>Argentina</b>					
Cerium compounds	12	15	10	...	...
Other rare earth compounds	5	2	1	...	...
Ferro-cerium & other pyrophoric alloys	0	1	1	...	...
Metals	8	14	9	...	...
<b>Brazil</b>					
Cerium compounds	15	30	23	65	51
Ferro-cerium & other pyrophoric alloys	3	5	0	0	2
Metals	1	1	3	14	21
<b>Venezuela</b>					
Ferro-cerium & other pyrophoric alloys	3	4	8	...	...
<b>Hong Kong</b>					
Rare earth compounds	2	6	9	4	6
<b>Indonesia</b>					
Ferro-cerium & other pyrophoric alloys	90	33	47	58	61
<b>Japan</b>					
Cerium compounds	120	173	62	70	52
Other rare earth compounds	2 563	2 864	3 226	4 648	4 809
Ferro-cerium & other pyrophoric alloys	14	10	13	15	7
Metals	3	48	53	86	42

**Notes:**

- 1 Trade in rare earth compounds has been omitted from this table in those cases where it is not separately distinguished from the trade in compounds of thorium and uranium, as under the Standard International Trade Classification (Revision 2), item 524.92
- 2 Rare earths are here taken to include yttrium and scandium; the term "metals" includes intermixtures and interalloys thereof

(a) REO content

## Production of Salt

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Rock salt	611 000	905 000	1 311 000	1 590 000	1 746 000
Brine salt	1 918 000	1 871 000	1 760 000	1 915 000	1 607 608
Salt in brine (a)	5 477 000	5 426 000	4 239 000	4 315 000	3 799 900
Denmark	349 020	313 717	325 093	380 448	347 423
France					
Rock salt	618 000	603 000	966 500	1 274 000	851 000
Salt in brine	3 300 000	3 490 000	4 100 000	5 042 000	4 415 310
Sea salt	1 431 000	557 000	864 500	1 814 000	1 275 000
Germany, Federal Republic of					
Rock salt	6 623 000	7 409 000	7 211 000	9 270 000	7 197 000
Brine salt	816 000	841 000	868 313	893 000	880 000
Salt in brine	4 105 000	4 306 454	4 880 030	5 182 885	4 578 299
Italy					
Rock salt & brine salt	3 410 280	3 600 388	3 721 266	4 490 118	3 997 096
Sea salt	433 236	1 429 700	1 210 200	1 179 000	* 1 270 000
Netherlands	3 026 000	3 111 000	2 939 000	3 951 000	3 464 000
Albania	* 50 000	* 50 000	* 50 000	* 64 000	* 70 000
Austria					
Rock salt	953	1 031	1 173	968	1 018
Salt in brine	245 000	145 000	156 000	208 000	* 200 000
Evaporated salt	332 330	323 345	320 886	380 329	410 000
Bulgaria	* 75 000	* 87 000	* 87 000	* 86 000	122 000
Czechoslovakia	336 439	348 085	351 293	372 277	371 242
German Democratic Republic	2 559 600	2 642 200	2 741 400	3 052 000	3 127 700
Greece	140 918	191 029	124 711	162 534	123 000
Malta (c)	800	797	759	823	* 900
Poland					
Rock salt	1 652 000	1 562 000	1 435 000	1 458 000	1 465 000
Brine salt	428 000	783 000	880 000	) 2 971 000	3 069 000
Other salt	1 738 000	2 012 000	2 078 000	)	
Portugal					
Rock salt	306 492	350 688	326 255	408 959	402 739
Sea salt	163 436	148 484	149 835	166 620	* 130 000
Romania	4 210 000	4 535 000	4 739 000	4 720 000	5 056 000
Soviet Union	* 14 200 000	* 14 300 000	* 14 500 000	* 14 300 000	* 14 500 000
Spain					
Rock salt	1 999 869	1 901 335	2 091 919	* 1 420 000	* 1 450 000
Sea salt	1 136 314	1 175 668	1 252 020	) * 1 250 000	* 1 340 000
Other salt	22 198	24 448	25 000	)	
Switzerland					
Evaporated salt	38 113	30 599	35 651	) * 350 000	330 379
Other salt	224 509	291 943	311 004	)	
Turkey	579 430	776 673	929 349	1 087 843	* 1 088 000
Yugoslavia					
Sea salt	12 881	19 899	20 966	20 500	)
Rock salt	91 230	85 210	85 231	137 441	) 377 000
Other salt	185 000	189 828	193 987	194 111	)
Algeria					
Brine salt & sea salt	136 316	146 671	171 458	165 108	* 172 000
Angola	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Cape Verde Is.	13 701	31 317	16 891	...	...
Egypt	605 886	718 000	754 843	615 979	* 699 000
Ethiopia (d)	105 881	* 80 000	* 60 000	107 955	* 106 000
Ghana	* 52 000	* 50 000	* 50 000	* 50 000	* 50 000
Kenya	49 906	39 932	19 827	38 004	47 016
Libya	—	8 400	11 330	* 10 000	* 10 000
Madagascar	27 000	26 000	30 000	* 30 000	* 30 000
Mali	5 000	* 5 000	* 5 000	* 5 000	* 5 000
Mauritius (c)	6 000	6 000	* 6 000	* 6 000	* 6 000
Morocco	15 232	12 442	17 164	102 000	* 104 000
Mozambique	* 28 000	* 28 000	* 28 000	* 28 000	* 28 000
Namibia	* 220 000	* 220 000	* 227 000	* 227 000	* 227 000
Senegal	142 000	129 731	147 295	140 000	* 140 000
South Africa	223 662	242 254	489 925	538 785	567 270
Sudan	82 817	91 712	100 000	81 210	* 82 000

## Salt

## Production of Salt

tonnes

Country	1976	1977	1978	1979	1980
Tanzania	46 441	39 118	33 993	34 352	36 734
Tunisia (c)	285 000	337 000	442 000	421 000	436 516
Bahamas	1 353 000	1 670 000	* 1 600 000	440 000	684 000
Canada					
Rock salt	4 354 684	4 320 304	4 625 528	4 934 574	) 7 029 000
Other salt (e)	1 639 335	1 719 178	1 826 366	1 948 066	)
Costa Rica	20 000	27 000	34 000	46 000	* 40 000
Cuba	88 099	79 838	84 544	70 452	...
Dominican Republic	36 295	65 798	36 073	36 000	* 36 000
El Salvador (c)	40 987	* 45 000	* 45 000	* 45 000	...
Guatemala (c)	10 924	11 000	11 000	15 000	10 000
Honduras	* 32 000	* 32 000	* 32 000	* 32 000	* 32 000
Mexico	4 591 000	4 899 000	5 635 000	6 169 426	* 6 000 000
Nicaragua (c)	* 14 000	* 16 000	* 18 000	* 18 000	* 20 000
Panama (c)	12 274	19 567	15 201	17 085	18 583
USA (f)					
Rock salt	14 214 000	13 570 000	13 325 000	13 509 000	10 710 000
Salt in brine	20 790 000	20 663 000	20 263 000	22 390 000	20 168 000
Evaporated salt	5 087 000	5 150 000	5 302 000	5 644 000	5 728 000
Argentina					
Rock salt	1 454	1 594	1 196	865	1 000
Other salt	659 935	1 145 505	699 482	618 692	626 000
Brazil (c)	2 472 638	2 481 330	2 726 951	2 866 000	* 3 000 000
Chile	427 766	424 165	394 000	590 000	* 500 000
Colombia					
Rock salt	338 870	347 020	365 908	350 000	* 300 000
Sea salt	739 364	594 415	459 559	450 000	* 400 000
Peru	304 000	310 000	492 000	450 000	* 500 000
Venezuela (c)	* 300 000	241 000	158 000	* 155 000	243 000
Afghanistan (g)	72 700	77 700	80 700	* 20 000	* 5 000
Bangladesh (j)	784 000	542 000	785 490	* 674 000	* 699 000
Burma (b)(c)(h)	199 000	201 000	243 000	* 250 000	268 500
China	* 30 000 000	* 17 100 000	19 530 000	14 770 000	17 280 000
Cyprus	3 320	—	3 293	5 920	7 581
India					
Rock salt	4 438	3 759	4 281	4 363	4 683
Other salt	3 068 000	1 757 000	...	...	...
Indonesia	560 000	787 000	235 000	* 710 000	* 650 000
Iran (g)	700 000	700 000	700 000	* 700 000	* 600 000
Iraq	* 64 000	* 60 000	* 82 000	* 100 000	* 91 000
Israel	86 561	* 100 000	121 563	107 000	* 110 000
Japan (i)	1 020 600	1 056 000	1 073 000	* 1 090 000	* 1 088 000
Jordan (b)	20 000	...	17 000	18 000	30 583
Korea, Dem. P.R. of	* 544 000	* 550 000	* 560 000	* 560 000	* 570 000
Korea, Republic of	690 000	794 000	650 000	500 000	455 400
Kuwait	15 426	16 703	18 972	19 670	20 496
Lebanon (c)	* 35 000	* 35 000	* 12 000	* 10 000	* 12 000
Pakistan					
Rock salt	417 000	385 000	402 000	512 000	506 000
Sea salt	142 000	114 000	217 600	191 700	192 300
Philippines (c)	203 386	200 000	225 650	322 131	346 387
Sri Lanka	140 555	47 104	115 320	121 443	114 270
Syria	54 000	48 400	* 100 000	* 75 000	* 80 000
Taiwan (c)	496 873	496 058	340 552	366 355	722 425
Thailand					
Rock salt	5 575	12 750	11 839	11 000	16 744
Other salt	* 160 000	* 160 000	* 160 000	* 160 000	* 160 000



**Production of Salt**

Country	1976	1977	1978	1979	1980
Vietnam	* 580 000	* 580 000	* 530 000	* 530 000	* 520 000
Yemen Arab Republic	* 100 000	* 75 000	* 27 000	* 60 000	* 65 000
Yemen Democratic Republic	* 75 000	* 75 000	* 75 000	* 75 000	* 80 000
Australia	5 488 753	4 715 873	5 873 070	5 215 201	* 5 300 000
New Zealand	41 000	53 000	65 000	55 000	5 500
World total	168 000 000	157 000 000	162 000 000	167 000 000	160 000 000

## Notes:

- 1 This table does not include production of refined salt
  - 2 Salt is known to have been produced in many countries for which statistics are not available. Among these are Democratic Kampuchea, Laos, Martinique, Mauritania, Mongolia, Netherlands Antilles, Nigeria and Somalia
- (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

Salt

**Exports of Salt**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	575 964	467 589	404 744	424 187	393 323
Belgium-Luxembourg	106 011	137 723	139 470	144 225	115 384
Denmark	95 917	61 531	67 094	38 212	46 148
France	128 836	197 195	167 728	230 393	129 729
Germany, Federal Republic of	1 820 887	2 021 929	1 934 742	2 499 321	1 840 658
Italy	91 833	192 618	497 315	1 235 023	740 051
Netherlands	2 072 079	1 988 435	1 891 672	2 475 143	2 159 021
German Democratic Republic	1 102 000	1 145 000	1 213 000	1 232 000	1 210 000
Norway	2 553	1 765	1 863	1 594	1 576
Poland	279 900	292 274	307 848	253 056	296 711
Portugal	16 311	23 431	4 083	15 025	1 523
Romania	667 500	714 600	780 600	841 200	1 024 700
Soviet Union	429 767	398 772	402 720	402 660	480 865
Spain	345 941	644 524	816 355	782 339	479 727
Sweden	5 837	340	2 619	5 037	1 314
Switzerland	1 004	1 995	377	3 459	234
Algeria	21 298	4 400	4 000	...	...
Cape Verde Islands	21 850	20 650	14 501	16 301	...
Egypt	7 006	72 102	98 925	84 960	...
Ghana	11 593	9 863	...	...	...
Ivory Coast	259	13	53	1 012	...
Kenya	312	815	85	146	20
Madagascar	1 845	2 671	1 343	2 575	...
Mozambique	1 921	558	...	...	...
Senegal	77 700	111 809	128 116	...	...
South Africa	19 596	10 672	38 260	53 612	53 745
Sudan	1 288	681	241	148	...
Tanzania	9 141	6 826	6 816	15 554	17 111
Tunisia	267 490	382 015	382 618	352 050	272 972
Bahamas	1 962 561	1 377 565	...	...	...
Canada	1 423 848	1 163 301	1 608 538	1 822 229	1 637 591
El Salvador	20 296	23 238	...	...	...
Honduras	507	117	62	...	...
Mexico	3 281 676	3 691 209	4 460 079	5 233 356	...
Nicaragua	8 413	2 728	3 594	4 904	...
USA	913 867	916 507	704 203	719 398	2 181 445
Argentina	24 201	25 395	23 590	...	...
Brazil	1	—	111 679	138 240	...
Chile	...	222 056	37 384	...	...
India (b)	240 224	231 607	29 377	45 794	...
Iran (c)	1 603	2 103	...	* 200	...
Israel (a)	63	94	3 136	4 328	19 227
Japan	1 059	958	2 934	2 774	2 299
Jordan	2 948	392	...	554	...
Korea, Republic of	221	236	1 111	1 827	99
Kuwait	...	2 001	1 510	745	...
Malaysia	1 267	995	...	...	...
Pakistan (d)	4 363	8 033	11 236	17 215	20 120
Saudi Arabia	1 726	1 298	3 597	1 970	...
Singapore	11 996	18 146	17 029	14 131	13 695
Taiwan	7 948	14 078	12 377	16 106	13 950

**Exports of Salt**

Country	1976	1977	1978	1979	1980
Thailand	90 002	77 157	92 942	113 271	...
Australia	4 258 319	4 057 442	4 653 612	4 512 965	4 514 000

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

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

(d) Years ended 30 June of that stated

Salt

**Imports of Salt**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	19 515	84 758	235 235	748 017	483 415
Belgium-Luxembourg	934 670	906 665	805 395	1 218 636	988 386
Denmark	205 686	377 889	279 107	366 142	267 229
France	127 494	156 397	104 968	187 546	139 160
Germany, Federal Republic of	776 954	795 845	700 421	914 847	599 406
Irish Republic	69 429	72 259	77 248	87 656	87 333
Italy	139 149	205 770	195 252	240 246	305 538
Netherlands	32 123	27 057	39 567	313 733	71 173
Austria	107	29 678	63 418	49 453	1 277
Czechoslovakia	* 193 100	* 153 900	* 130 200	...	...
Faeroe Islands	20 014	27 545	20 106	18 102	...
Finland	480 889	482 916	547 251	659 660	726 593
Greece	1 040	—	42 928	7 468	39 241
Greenland	405	1 976	5 015	8 503	...
Hungary	477 000	512 547	659 959	683 251	820 520
Iceland	35 931	48 913	56 998	49 243	105 556
Malta	£57 900	£86 600	£85 000	£100 600	£136 900
Norway	288 615	343 767	340 717	455 230	453 607
Portugal	15 011	22 110	92 812	48 800	91 072
Soviet Union	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Spain	2 629	4 417	1 999	838	1 300
Sweden	1 210 308	1 306 462	1 239 766	1 195 040	1 156 587
Switzerland	1 737	1 735	1 840	1 967	1 994
Turkey	41 613	76 964	132 293	50 015	...
Yugoslavia	141 761	158 055	149 216	194 103	282 389
Burundi	5 253	12 677	...	...	...
Cameroon	28 980	24 292	27 264	32 017	...
Canary Islands	290	287	236	423	...
Central African Empire	6 940	3 142	...	...	...
Congo	2 106	2 424	3 837	32 636	...
Gabon	1 685	...	...	...	...
Ivory Coast	30 716	36 267	38 852	43 850	...
Kenya	1 914	19 364	35 354	27 981	...
Liberia	372	4 003	300	0	...
Libya	863	4 878	7 745	4 920	...
Malawi	10 669	11 930	3 434	...	...
Mali	32 600	...	...	...	...
Mauritius	392	797	...	...	...
Morocco	4	5	9 103	9 454	5
Mozambique	271	...	...	...	...
Niger	6 785	16 238	...	...	...
Nigeria	289 859	214 610	331 431	...	...
Reunion	1 868	3 489	...	...	...
Seychelles	252	...	252	275	...
Sierra Leone	6 710	8 833	5 773	7 123	...
South Africa	46 585	35 637	15 142	23 413	20 086
Tanzania	2 240	...	...	...	...
Togo	6 428	4 748	...	...	...
Uganda	15 103	...	...	...	...
Upper Volta	14 654	11 454	13 574	14 372	...
Zaire	31 748	41 622	...	...	...
Zambia	13 091	38 316	...	...	...
Zimbabwe	...	...	...	47 603	...

## Imports of Salt

Country	1976	1977	1978	1979	1980
Bahamas	22 844	7 860	...	...	...
Barbados	4 694	2 231	16	...	...
Belize	665	971	320	...	...
Canada	1 523 407	1 126 226	1 330 465	1 276 171	1 151 198
Costa Rica	8 931	4 005	...	...	...
Dominica	...	508	...	...	...
Guadeloupe	2 163	2 940	2 061	...	...
Guatemala	18 924	19 440	...	...	...
Honduras	133	396	210	...	...
Jamaica	1 477	16 100	9 307	27 904	...
Martinique	2 642	1 968	2 232	...	...
Mexico	1 548	1 022	1 378	864	...
Nicaragua	34 181	29 984	30 043	16 513	...
Panama	614	725	550	683	...
St Kitts-Nevis-Anguilla	57	235	182	203	...
St Lucia	2 146	984	572	1 053	644
St Vincent	565	410	476	502	...
Trinidad & Tobago	9 183	13 119	18 112	29 207	28 694
USA	3 948 000	4 109 000	5 001 808	4 868 002	4 806 341
French Guiana	198	389	234	...	...
Guyana	3 349	5 338	4 090	...	...
Paraguay	23 687	24 895	23 036	22 490	18 040
Surinam	1 521	1 333	...	...	...
Uruguay	74 668	51 856	55 217	62 098	...
Abu Dhabi	981	1 253	883	6 806	7 883
Brunei	4 745	5 707	1 026	194	...
Cyprus	504	2 067	6 446	713	...
Dubai	—	17 250	8 540	10 563	9 023
Hong Kong	54 306	55 144	37 895	73 206	73 410
India	252	558	1 044	89	...
Indonesia	319 684	2 327	2 734	2 608	542
Iran (a)	28	4 130	* 3 000	* 100	...
Japan	6 341 503	6 415 321	6 436 106	6 817 626	7 477 049
Jordan	250	1 657	1 410	1 739	...
Korea, Republic of	517 967	380 315	387 391	489 880	716 288
Kuwait	...	5 186	5 674	5 701	...
Malaysia	114 182	142 166	...	...	...
Philippines	55 151	61 600	45 261	63 989	60 022
Qatar	1 891	1 336	1 666	1 406	1 039
Saudi Arabia	4 780	4 331	13 501	7 332	...
Singapore	46 898	51 090	50 993	47 139	48 064
Taiwan	1 260 852	393 374	492 751	677 456	563 710
Thailand	209	293	273	332	...
Australia	33 051	24 752	19 444	19 620	8 783
Fiji	2 546	537	...	...	...
New Zealand (b)	48 080	61 859	58 737	32 610	62 761
Papua New Guinea (b)	3 208	...	...	...	...
Solomon Islands	382	689	501	897	1 206
Vanuatu	52	...	...	...	240
Western Samoa	729	684	702	...	...

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

## Sillimanite

**Production of Sillimanite Minerals**

tonnes

Country	1976	1977	1978	1979	1980
France					
Andalusite	18 131	26 834	32 572	28 982	* 40 000
Soviet Union					
Kyanite (a)	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Spain					
Andalusite & kyanite	5 541	2 981	5 087	* 6 000	* 6 000
South Africa					
Andalusite	77 464	113 076	112 040	134 177	196 516
Sillimanite	25 733	15 455	9 540	19 574	16 194
USA					
Kyanite (b)	* 91 000	* 100 000	* 100 000	* 100 000	* 125 000
Brazil					
Kyanite	256	110	6 908	8 193	...
India					
Andalusite	...	387	225	—	—
Kyanite	48 779	42 123	30 897	40 709	46 522
Sillimanite	14 859	15 023	13 471	16 108	12 987
Korea, Republic of					
Andalusite	520	115	61	60	82
Australia					
Sillimanite (c)	567	550	568	568	661
World total	332 900	366 700	361 400	404 400	502 000

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

(a) May include other sillimanite minerals

(b) Includes related minerals

(c) Excluding sillimanite clay

**Exports of Sillimanite Minerals**

Country	1976	1977	1978	1979	1980
United Kingdom					
Sillimanite minerals	4 126	4 601	4 959	4 889	5 037
Belgium-Luxembourg					
Sillimanite minerals –					
Crude	200	129	62	30	334
Other	981	651	405	162	68
Denmark					
Sillimanite minerals	22	890	298	328	46
France					
Sillimanite minerals –					
Crude	72	72	16	10	18
Other	4 391	5 809	2 074	163	420
Germany, Federal Republic of					
Sillimanite minerals –					
Crude	344	356	540	1 974	1 995
Calcined	2 351	5 190	5 659	7 538	7 495
Italy					
Sillimanite minerals –					
Crude & calcined	25	—	—	734	75
Other	45	—	—	273	116
Netherlands					
Sillimanite minerals –					
Crude (b)	458	413	54	275	733
Other (b)	1 356	267	207	244	1 163
South Africa					
Andalusite	16 357	71 739	54 457	69 810	106 786
Sillimanite	12 960	14 235	14 195	19 672	14 531
USA					
Kyanite & related minerals (a)	57 451	35 254	* 36 000	* 36 000	...
Brazil					
Kyanite	...	3 019	1 874	3 379	...
India					
Kyanite –					
Crude	6 096	6 052	) 3 875	1 659	...
Calcined	5 295	2 778	)		...
Sillimanite	455	550	151	25	...
Iran (c)					
Sillimanite minerals, chamotte & dinas earth	1 168	...	...	...	...
Japan					
Sillimanite minerals, chamotte & dinas earth	10 165	16 496	16 470	22 721	21 460

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

(a) Including mullite

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(c) Years ended 20 March following that stated

## Sillimanite

**Imports of Sillimanite Minerals**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Sillimanite minerals	31 147	62 979	37 480	35 524	46 331
Belgium-Luxembourg					
Sillimanite minerals –					
Crude	3 204	770	982	441	1 349
Other	481	1 563	1 331	1 572	1 729
Denmark					
Sillimanite minerals	277	107	77	276	1 135
France					
Sillimanite minerals –					
Crude	1 418	2 274	2 930	2 782	3 195
Other	2 495	2 576	3 266	2 344	8 568
Germany, Federal Republic of					
Sillimanite minerals –					
Crude	14 889	19 444	15 327	22 120	50 729
Calcined	18 234	34 878	41 931	43 192	51 095
Italy					
Sillimanite minerals –					
Crude	5 517	4 508	6 851	10 277	11 511
Other	3 137	16 401	6 015	7 366	19 988
Netherlands					
Sillimanite minerals –					
Crude (b)	87	189	1 726	1 114	1 693
Other (b)	490	345	417	350	1 666
Austria					
Sillimanite minerals	68 778	72 674	70 380	82 043	90 394
Greece					
Sillimanite minerals	2 805	114	—	9 162	...
Norway					
Sillimanite minerals, chamotte & dinas earth	1 826	1 091	1 538	1 127	1 097
USA					
Sillimanite minerals	100	48	...	...	...
Argentina					
Sillimanite minerals	124	306	739	...	...
Iran (a)					
Sillimanite minerals, chamotte & dinas earth	2 557	2 352	...	...	...
Japan					
Sillimanite minerals	22 139	22 432	22 987	22 801	26 682
Mullite, chamotte & dinas earth	39 690	48 768	50 534	77 961	66 849
Australia					
Sillimanite minerals & dinas earth	1 304	1 451	385	3 033	...

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

(a) Years ended 20 March following that stated

(b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any



## Mine Production of Silver

kilograms (metal content)

Country	1976	1977	1978	1979	1980
United Kingdom (b)	3 345	4 166	1 272	—	1 089
France	84 632	93 449	85 667	74 935	73 772
Germany, Federal Republic of	32 000	33 000	24 900	32 300	32 300
Irish Republic	29 000	29 100	19 600	32 900	24 000
Italy (a)	48 403	37 543	30 708	33 121	42 499
Bulgaria	* 28 000	* 25 000	* 28 000	* 25 000	* 24 000
Czechoslovakia	* 37 000	* 37 000	* 36 000	* 35 000	* 35 000
Finland (a)	24 051	25 284	35 245	31 966	44 465
German Democratic Republic	* 50 000	* 50 000	* 50 000	* 48 000	* 47 000
Greece	57 400	33 300	42 300	54 500	* 52 000
Greenland	14 900	16 200	17 400	23 800	17 000
Poland	* 550 000	* 644 000	* 680 000	702 000	766 000
Portugal	881	801	703	1 095	900
Romania	* 38 000	* 35 000	* 32 000	* 30 000	* 28 000
Soviet Union	* 1 370 000	* 1 400 000	* 1 430 000	* 1 430 000	* 1 430 000
Spain	103 816	92 115	89 077	97 300	177 600
Sweden	143 617	169 153	263 556	225 200	* 225 000
Yugoslavia (a)	144 000	145 500	159 392	162 181	149 000
Algeria	* 2 500	* 1 250	* 3 100	* 3 100	* 2 500
Morocco	21 066	21 739	12 652	10 573	* 10 000
Namibia	34 200	40 400	43 544	49 800	47 000
South Africa	87 736	97 364	96 559	100 664	97 213
Tunisia	7 850	7 351	1 962	3 170	7 332
Zaire (b)	71 300	84 900	89 100	91 700	85 003
Zambia (b)	33 100	24 903	33 261	28 417	23 752
Zimbabwe	6 228	6 442	34 505	30 418	29 681
Canada	1 281 437	1 313 685	1 266 927	1 146 908	1 037 000
Dominican Republic	28 212	42 216	57 343	70 249	48 200
El Salvador	5 088	3 484	5 754	4 728	4 821
Honduras	99 036	87 683	86 719	67 994	53 530
Mexico	1 326 243	1 462 798	1 579 393	1 536 772	1 472 600
Nicaragua	6 345	4 759	14 992	9 953	9 300
USA	1 067 752	1 187 123	1 225 050	1 183 677	974 395
Argentina	69 993	76 225	63 466	68 714	71 700
Bolivia	176 914	183 098	200 284	178 592	189 715
Brazil	626	11 583	15 723	33 139	22 919
Chile	228 350	263 179	255 374	271 836	298 500
Colombia	3 288	2 833	2 388	* 3 000	* 4 500
Ecuador	1 471	1 776	1 991	2 200	* 2 200
Peru (c)	1 117 325	1 235 801	1 152 255	1 350 000	1 232 000
Burma	21 800	24 600	25 000	30 700	29 700
China	* 30 000	* 31 000	* 46 600	* 62 200	* 77 800
India	3 183	13 228	12 083	11 515	11 381
Indonesia	3 397	2 832	2 506	1 645	2 355
Japan	259 457	285 673	281 640	270 725	276 200
Korea, Dem. P.R. of	* 50 000	* 50 000	* 50 000	* 48 000	* 45 000
Korea, Republic of	57 793	65 512	43 073	70 848	71 301
Philippines	46 053	50 429	51 014	57 167	65 742
Taiwan	3 109	2 112	2 343	2 656	2 957
Australia	778 658	856 110	812 524	834 061	769 733
Fiji	615	457	323	324	214
New Zealand	16	236	63	51	23
Papua New Guinea	45 803	47 704	52 820	44 877	37 198
World total	9 735 000	10 461 000	10 648 000	10 720 000	10 283 000

(a) Smelter and/or refinery production

(b) Recovered as a byproduct of base metal refining

(c) Recoverable

## Silver

**Exports of Silver**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	2 137 734	1 649 353	1 705 080	1 668 387	2 493 727
Waste & scrap	176 042	516 939	310 182	552 346	296 810
Belgium-Luxembourg					
Metal	753 015	708 268	639 178	661 338	1 511 492
Denmark					
Metal	21 503	17 424	27 232	45 919	52 402
France					
Metal	472 648	897 453	428 783	401 468	947 144
Waste & scrap	154 695	287 371	308 164	459 869	337 595
Germany, Federal Republic of					
Metal	947 578	889 057	1 032 626	844 323	1 611 396
Waste & scrap	617 990	86 006	90 135	162 526	185 435
Italy					
Metal	31 181	36 311	33 831	28 723	231 400
Netherlands					
Metal	230 890	493 564	277 663	314 142	252 792
Austria					
Metal	27 100	36 300	60 200	81 934	44 660
Waste & scrap	25 100	—	1 000	15 038	8 352
Finland					
Metal	6 946	17 926	22 430	17 277	44 000
Norway					
Metal	33 332	36 965	24 160	23 306	26 574
Poland					
Metal	285 000	333 000	348 000	347 000	516 000
Spain					
Metal	1 013	1 442	52 000	103 000	5 694 000
Sweden					
Metal	171 000	208 000	245 000	227 000	241 000
Switzerland					
Metal	860 322	1 087 182	1 212 793	1 040 984	1 039 455
Yugoslavia					
Metal	110 495	87 246	67 369	91 082	59 183
Waste & scrap	...	...	2 657	4 604	830
Morocco					
Metal	26 333	22 306	18 036	39 150	24 176
South Africa (d)					
Metal	* 60 000	* 65 000	* 70 900	* 94 200	* 75 000
Tunisia					
Metal	5 012	7 000	—	—	4 143
Canada					
Ores & concentrates (b)	435 800	464 086	479 827	414 534	397 353
Metal	961 552	1 144 873	1 077 059	918 838	881 690
El Salvador					
Metal	5 242	3 489	...	...	...
Honduras					
Concentrates (b)	99 840	82 710	85 920	...	...
Metal	5 974	50 426	33 181	...	...
Mexico					
Ores & concentrates (c)	32 819 000	29 315 035	29 285 168	15 327 057	...
Metal (e)	830 618	711 573	816 863	941 725	...
Nicaragua					
Metal (a)	3 738	5 424	18 775	8 786	...
USA					
Ores & concentrates (b)	4 960	3 038	1 065	1 355	9 564
Metal	405 690	364 861	339 469	540 636	2 104 201
Waste & scrap	213 977	426 467	393 004	596 914	726 100
Argentina					
Metal	1 017	114	2 704	...	...
Bolivia					
Ores & concentrates (b)	176 914	209 294	197 746	181 399	176 464

**Exports of Silver**

Country	1976	1977	1978	1979	1980
Peru					
Metal	669 535	777 593	700 885	...	...
Burma					
Metal	5 397	—	...	...	...
Hong Kong					
Metal	29 435	20 094	13 341	45 266	61 192
of which: Re-exports	29 435	20 094	13 341	45 266	57 424
Waste & scrap	—	688	—	26 817	222 871
of which: Re-exports	—	—	—	16 411	74 770
India					
Metal	1 271 354	532 101	675 486	118 611	...
Japan					
Metal	112 613	69 260	97 554	121 210	214 828
Waste & scrap	...	5 000	15 000	24 000	29 000
Korea, Republic of					
Metal	74 706	32 696	...	46 956	34 660
Philippines					
Metal	2 746	282	3 041	5 232	347
Singapore					
Metal	100	539	2 268	2 869	32 678
Thailand					
Metal	29 000	30 012	11 487	113 151	...
Australia					
Silver-lead bullion	376 596	370 849	290 207	354 556	385 270
Silver in all ores, concentrates etc.	141 911	153 687	166 097	79 543	52 283
Metal	100 140	134 955	75 972	84 830	85 195
Fiji					
Metal	733	401	...	...	...
Papua New Guinea					
Metal	45 803	47 704	52 820	44 877	37 198

## Notes:

- 1 This table excludes silver coin but includes silver shipped for minting
- 2 In this table the term 'metal' as used here includes both unwrought and partly worked silver and alloys

- (a) Including waste and scrap
- (b) Ag content
- (c) Gross weight
- (d) IGS estimates, based on known imports into certain countries
- (e) Refined only

## Silver

**Imports of Silver**

kilograms

Country	1976	1977	1978	1979	1980
United Kingdom					
Metal	1 560 198	1 118 911	1 450 508	1 220 010	3 791 505
Waste & scrap	547 200	386 674	364 756	701 254	591 521
Belgium-Luxembourg					
Metal	646 382	1 246 443	864 801	768 940	1 407 086
Denmark					
Metal	96 839	76 066	82 173	103 661	82 273
France					
Metal	1 482 256	1 535 899	1 343 305	931 601	832 048
Waste & scrap	26 177	48 779	192 624	76 389	148 613
Germany, Federal Republic of					
Metal	1 322 775	1 658 856	1 358 517	1 288 516	1 071 739
Waste & scrap	601 930	592 945	663 247	595 016	667 656
Italy					
Metal	951 851	939 870	897 658	768 907	567 800
Netherlands					
Metal	485 583	281 530	251 933	146 279	216 149
Austria					
Metal	306 300	451 300	358 700	196 083	134 530
Finland					
Metal	78 285	57 198	48 557	47 622	112 000
Greece					
Metal	95 000	134 000	137 000	132 000	35 000
Iceland					
Metal	1 500	1 500	1 700	853	920
Malta					
Metal	3 096	1 913	3 123	2 642	1 793
Norway					
Metal	103 810	136 886	109 842	82 884	60 385
Portugal					
Metal	20 207	35 941	38 979	44 236	13 000
Spain					
Metal	141 000	117 000	59 676	49 957	629 000
Sweden					
Metal	271 000	247 000	466 000	474 000	423 000
Switzerland					
Metal	1 074 674	1 183 586	1 120 040	789 323	1 577 818
Turkey					
Metal (b)	2 046	4 442	6 297	1 475	...
Yugoslavia					
Metal	38 034	237 625	39 917	20 746	510 504
Algeria					
Metal	337	11 152	8 068	...	...
Ivory Coast					
Metal	6 982	4 641	6 858	4 941	...
Kenya					
Metal	608	554	192	280	...
Libya					
Metal	10 791	9 303	15 401	14 215	...
Madagascar					
Metal	257	417	121	602	...
Morocco					
Metal	1 687	3 644	894	623	248
Nigeria					
Metal	39	2	191	...	...
Senegal					
Metal	...	5 640	9 384	...	...
South Africa					
Metal	49 756	12 647	29 983	23 051	23 602
Tunisia					
Metal	460	1 658	741	200	488
Zaire					
Metal (c)	* 1 100	* 1 500	* 140	* 100	...
Zambia					
Metal	46	82	...	...	...

## Imports of Silver

Country	1976	1977	1978	1979	1980
Canada					
Metal	59 137	33 004	35 576	36 564	338 997
Costa Rica					
Metal	2 026	963	...	...	...
Guatemala					
Metal	71	313	...	...	...
Jamaica					
Metal	596	1 809	1 134	4 418	...
Mexico					
Metal	234	476	...	...	...
Nicaragua					
Metal (a)	140	297	417	329	...
Panama					
Metal (a)	1 010	522	560	1 226	...
Trinidad & Tobago					
Metal	3 140	3 655	2 379	2 331	1 145
USA					
Ores & concentrates	556 764	573 777	670 372	588 461	535 954
Metal (e)	2 089 800	2 160 191	1 916 299	2 437 713	2 014 362
Waste & scrap	101 713	60 677	76 763	74 951	95 752
Brazil					
Metal	135 112	135 738	152 080	170 954	109 418
Chile					
Metal	...	2 400	3 200	...	...
Uruguay					
Metal	1 200	600	1 100	1 900	...
Venezuela					
Metal	21 917	25 320	38 812	...	...
Brunei					
Metal	401	—	11	544	...
Hong Kong					
Metal	24 317	27 641	18 538	26 437	32 465
Waste & scrap	...	...	2 944	8 816	2 812
India					
Metal	1 767	944	425	1 247	...
Indonesia					
Metal	497	3 200	506	2 296	145
Iran (d)					
Metal (a)	64 552	18 134	...	...	...
Japan					
Ores & concentrates	4 250 000	4 000 000	4 109 000	4 113 000	3 400 000
Metal	638 388	557 127	535 253	731 613	593 694
Korea, Republic of					
Metal	18 978	24 892	...	21 780	71 930
Philippines					
Metal	44	1 344	3 061	2 654	189
Saudi Arabia					
Metal	11 627	47 944	...	3 063	...
Singapore					
Metal	12 783	13 036	21 377	24 905	22 345
Taiwan					
Metal	65 897	47 774	59 118	118 209	20 521
Thailand					
Metal	144 999	224 572	112 222	15 275	...
Australia					
Metal	887	2 330	1 115	405	6 850
New Zealand (f)					
Metal	(b) 52 126	(b) 51 441	(b) 42 766	54 393	47 795

## Notes:

- 1 This table excludes silver coin but includes silver shipped for minting
- 2 In this table the term 'metal' as used here includes both unwrought and partly worked silver and alloys

(a) Including waste and scrap

(b) Including gilt

(c) IGS estimates, based on part figures given in trade account

(d) Years ended 20 March following that stated

(e) Refined only

(f) Years ended 30 June of that stated

**Production of Sulphur and Pyrites**

thousand tonnes (sulphur content)

Country	1976	1977	1978	1979	1980
United Kingdom					
Recovered (a)(c)	41	58	53	57	61
Recovered (d)	77	60	70	80	82
Belgium					
Recovered (c)(d)	248	257	267	270	* 270
Denmark					
Recovered (d)	10	11	14	8	8
France					
Recovered (d)	1 874	2 020	2 075	2 120	2 000
Germany, Federal Republic of					
Pyrites (45%)	233	235	221	203	* 200
Recovered (c)	390	385	348	361	* 380
Recovered (d)	579	910	856	904	* 920
Recovered (e)	162	197	195	343	* 300
Irish Republic					
Pyrites (47%)	30	22	20	14	12
Italy					
Pyrites (43%)	367	371	338	302	331
Recovered (d)	211	259	299	225	* 250
Sulphur ore	35	63	65	19	23
Netherlands					
Recovered (c)(d)	* 150	* 128	* 125	* 163	* 165
Austria					
Recovered	26	32	31	34	* 33
Anhydrite	23	27	27	27	* 27
Bulgaria					
Pyrites (42%)	* 280	* 305	* 310	* 315	* 300
Recovered	* 60	* 65	* 70	* 75	* 70
Czechoslovakia					
Pyrites (42%)	50	55	60	60	* 60
Recovered	10	9	10	10	* 10
Sulphur ore	12	5	5	5	* 5
Finland					
Pyrites (44%)	318	193	150	85	96
Recovered (c)	370	280	232	263	247
Recovered (d)	25	25	29	38	37
German Democratic Republic					
Pyrites (42%)	* 10	* 10	* 10	* 10	* 10
Recovered	243	340	* 350	* 350	* 350
Greece					
Pyrites (45%)	97	58	62	75	71
Norway					
Pyrites (45%)	188	152	149	121	193
Recovered (c)(d)	* 40	* 45	* 44	* 46	* 46
Poland					
Frasch (g)	4 891	4 765	5 051	4 830	5 185
Recovered (c)	* 239	* 314	* 315	* 310	* 300
Recovered (d)	* 25	* 35	* 35	* 35	* 30
Anhydrite	* 55	* 30	* 20	* 20	* 20
Sulphur ore	* 550	* 450	* 505	* 520	* 500
Portugal					
Pyrites (44%)	183	159	139	152	170
Romania					
Pyrites (42%)	* 375	* 395	* 400	* 425	* 450
Recovered	* 98	* 110	* 120	* 130	* 140
Soviet Union					
Frasch	* 500	* 500	* 800	* 800	* 900
Pyrites (46%)	* 3 300	* 3 500	* 3 500	* 3 500	* 3 550
Recovered (c)	* 2 040	* 2 180	* 2 210	* 2 210	* 2 310
Recovered (d)	* 1 060	* 1 120	* 1 300	* 1 300	* 1 300
Recovered (e)	* 40	* 40	* 40	* 40	* 40
Sulphur ore	* 2 200	* 2 400	* 2 700	* 2 700	* 2 800
Spain					
Pyrites (47%)	1 100	1 099	1 046	1 094	1 125
Recovered (c)(d)	* 128	* 136	* 130	* 133	* 140

**Production of Sulphur and Pyrites**

thousand tonnes (sulphur content)

Country		1976	1977	1978	1979	1980
Sweden						
Pyrites	(48%)	194	193	232	215	* 190
Recovered (c)(d)		140	135	130	130	* 130
Sulphur ore		27	32	33	35	* 35
Turkey						
Pyrites	(45%)	40	18	18	16	* 14
Recovered		69	80	80	80	89
Sulphur ore		21	20	20	21	23
Yugoslavia						
Pyrites	(42%)	185	165	171	190	255
Recovered (c)(d)		205	174	187	* 207	* 198
Egypt						
Recovered (d)		5	5	3	3	* 3
Morocco						
Pyrites	(48%)	23	45	61	* 60	* 60
South Africa						
Pyrites	(48%)	353	398	367	319	267
Recovered (d)		27	28	25	* 25	* 25
Recovered (c)		91	105	100	* 100	* 100
Zaire						
Recovered (c)		37	31	30	* 30	* 30
Zambia						
Pyrites	(42%)	9	9	1	1	1
Recovered		91	87	109	74	* 100
Zimbabwe						
Pyrites	(42%)	21	22	23	28	29
Canada						
Pyrites	(50%)	15	12	5	16	16
Recovered (c)		705	736	676	667	903
Recovered (d)		6 422	6 500	6 311	6 086	5 891
Mexico						
Frasch		2 054	1 723	1 650	1 773	* 1 800
Recovered (c)		* 75	* 80	* 100	* 100	* 150
Recovered (d)		96	133	168	252	* 300
Netherlands Antilles						
Recovered (d)		95	95	95	95	* 95
Trinidad & Tobago						
Recovered (d)		74	34	54	77	* 80
USA						
Frasch		6 365	5 915	5 648	6 357	6 390
Pyrites	(40%)	291	169	301	400	322
Recovered (c)		1 035	1 019	1 164	1 274	1 081
Recovered (d)		3 187	3 624	4 062	4 070	4 046
Argentina						
Recovered (c)(d)		* 19	* 20	* 20	* 20	* 20
Sulphur ore (f)		20	27	18	—	—
Bolivia (h)						
Sulphur ore		15	6	15	14	11
Brazil						
Recovered (d)		30	44	57	65	* 65
Chile						
Recovered (c)		29	29	21	27	27
Sulphur ore (b)		18	32	32	77	51
Colombia						
Recovered (d)		2	3	3	3	* 3
Sulphur ore		24	22	18	20	* 20
Ecuador						
Recovered (d)		* 8	* 8	* 10	* 10	* 10
Sulphur ore		* 4	* 5	* 5	* 5	* 5
Venezuela						
Recovered (d)		90	95	95	85	* 85
China						
Pyrites	(45%)	* 900	* 1 252	* 1 605	* 1 682	* 1 700
Recovered		* 300	* 300	* 350	* 400	* 400
Sulphur ore		* 150	* 170	* 200	* 200	* 200
Cyprus						
Pyrites	(44%)	83	64	56	20	24

**Production of Sulphur and Pyrites**

thousand tonnes (sulphur content)

Country		1976	1977	1978	1979	1980
India						
Pyrites	(37%)	19	12	24	25	31
Recovered (c)		111	117	115	* 115	* 115
Recovered (d)		7	8	8	4	5
Iran						
Recovered (d)		399	527	542	244	* 150
Sulphur ore		* 188	* 188	* 150	* 75	* 70
Iraq						
Frasch		582	620	600	550	* 600
Recovered (d)		* 40	* 40	* 40	* 70	* 60
Israel						
Recovered (d)		* 10	* 10	* 10	* 10	* 10
Japan						
Pyrites	(49%)	471	389	327	303	* 300
Recovered (c)(g)		1 252	1 336	1 296	* 1 350	* 1 300
Recovered (d)		925	1 100	1 105	1 241	* 1 300
Korea, Dem. P.R. of						
Pyrites	(40%)	* 245	* 250	* 255	* 255	* 255
Recovered (c)		* 20	* 12	* 10	* 10	* 10
Kuwait						
Recovered (d)		61	79	100	114	82
Pakistan						
Recovered		12	12	14	14	* 14
Philippines						
Pyrites	(46%)	77	50	51	55	* 56
Saudi Arabia						
Recovered (d)		* 12	* 12	* 14	* 125	* 700
Singapore						
Recovered (d)		7	23	25	26	* 25
Taiwan						
Pyrites	(36%)	3	3	0	0	0
Recovered		6	7	10	9	8
Australia						
Pyrites	(48%)	108	108	93	29	—
Recovered (c)		315	337	327	360	...
Total Frasch		14 400	13 500	13 700	14 300	14 900
Total Pyrites		9 600	9 700	10 000	10 000	10 400
Total Recovered		24 200	26 100	26 700	27 100	27 400
Total Sulphur ore		3 300	3 400	3 800	3 700	3 700
World total (all forms)		51 500	52 700	54 200	55 100	56 400

Note: Pyrites: nominal sulphur content is shown in parentheses

- (a) 'Spent Oxide'
- (b) Includes 'caliche' at 45% S content
- (c) From smelter gases
- (d) From petroleum refining and/or natural gas
- (e) Other
- (f) Caliche
- (g) Includes S content of 'sulphur ore'
- (h) Exports



## Exports of Sulphur and Pyrites

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Sulphur –					
Crude	1 768	1 387	1 421	1 344	1 116
Sublimed & precipitated	195	211	123	247	133
Belgium-Luxembourg					
Pyrites	57	412	53	522	32
Sulphur –					
Crude	36 525	17 255	10 026	11 578	14 032
Sublimed & precipitated	113	99	635	42	148
Denmark					
Sulphur –					
Sublimed & precipitated	3 621	5 409	4 441	1	0
France					
Sulphur –					
Crude	740 815	941 767	1 154 784	1 245 258	1 290 920
Refined	681	840	194	361	376
Sublimed	2 660	5 847	3 605	2 843	2 209
Precipitated	34	4	7	157	125
Germany, Federal Republic of					
Pyrites	3 863	636	1 361	1 238	968
Sulphur –					
Crude	144 197	341 928	304 693	356 669	394 400
Sublimed & precipitated	2 420	2 496	1 568	1 238	952
Italy					
Pyrites	13 632	23 832	3 189	3 379	3 797
Sulphur –					
Crude	303	60	—	—	59
Other	2 870	3 577	3 612	5 449	3 758
Sublimed & precipitated	126	625	187	142	48
Netherlands					
Sulphur –					
Crude	13 180	10 759	9 648	10 997	16 002
Sublimed & precipitated	2	17	57	18	36
Finland					
Sulphur	17 630	1 633	8	4	6
Greece					
Sulphur	9 532	23 937	20 259	10 756	2 036
Norway					
Pyrites	140 290	59 623	63 139	27 256	190 107
Sulphur	42	442	2 298	3 283	1 842
Poland					
Sulphur	3 530 000	4 399 000	4 294 000	3 892 000	3 915 000
Portugal					
Pyrites	20 218	782	135	133	1
Sulphur	—	64	92	205	82
Soviet Union					
Pyrites	873 000	826 000	852 000	915 000	911 000
Sulphur	* 440 000	* 440 000	* 440 000	* 430 000	* 430 000
Spain					
Pyrites –					
Iron	334 810	243 924	228 372	118 953	234 888
Cupreous	—	50 328	13 930	8 010	...
Sulphur –					
Crude	1 403	4 437	17 445	14 629	6 265
Sublimed & precipitated	9 821	16 178	8 508	2 966	6 993
Sweden					
Pyrites	0	0	—	7 046	84 705
Sulphur	19 394	19 838	17 332	20 597	29 513
Switzerland					
Sulphur –					
Crude	11	11	13	15	20
Sublimed & precipitated	4	8	10	5	10
Yugoslavia					
Pyrites	209 015	214 214	93 421	75 828	67 942
Sulphur	1 185	4 235	3 520	5 273	1 000

**Exports of Sulphur and Pyrites**

tonnes

Country	1976	1977	1978	1979	1980
Zimbabwe					
Pyrites	...	...	...	5 776	...
Canada					
Pyrites	£85 000	£114 000	£26 000	£113 000	£142 000
Sulphur	3 719 992	4 291 032	4 984 523	5 154 806	6 850 109
Mexico					
Sulphur	1 020 288	1 013 008	1 230 584	1 204 171	...
USA					
Pyrites	912	1 829	...	...	...
Sulphur –					
Crude	1 202 173	1 076 237	) 832 581	1 962 851	1 681 189
Sublimed & precipitated	15 545	11 761	)		
Bolivia					
Sulphur	14 883	6 276	14 726	13 532	11 244
Venezuela					
Sulphur	18 929	42 136	28 074	...	...
Cyprus					
Pyrites	146 853	174 361	123 671	143 224	...
India					
Sulphur –					
Crude	311	553	791	271	...
Sublimed & precipitated	488	172	204	207	...
Iran (a)					
Sulphur –					
Crude	30 971	210 009	* 36 000	* 22 500	...
Sublimed & precipitated	287 346	...	...	...	...
Japan					
Sulphur –					
Crude	335 660	467 929	320 986	414 884	364 268
Sublimed & precipitated	457	519	220	221	1 029
Kuwait					
Sulphur	...	70 436	164 257	72 531	...
Singapore					
Sulphur –					
Crude	14 110	13 371	17 137	5 190	3 130
Sublimed & precipitated	8 158	2 075	4 905	16 068	17 451
Taiwan					
Sulphur –					
Crude	902	1 949	2 252	3 695	1 310
Sublimed & precipitated	206	225	188	139	631
Australia					
Zinc concentrates (b)	116 500	87 900	119 800	96 500	...

(a) Years ended 20 March following that stated

(b) Recoverable sulphur

## Imports of Sulphur and Pyrites

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Pyrites	10 604	19 624	)		
Sulphur –			) 1 132 716	1 194 448	1 140 390
Crude	1 177 905	1 110 053	)		
Sublimed & precipitated	5 413	451	561	491	475
Belgium-Luxembourg					
Pyrites	220 452	214 322	202 917	195 210	189 433
Sulphur –					
Crude	460 970	451 692	482 732	549 346	481 737
Sublimed & precipitated	540	450	1 076	5 128	1 353
Denmark					
Pyrites	—	3	31	1	19
Sulphur –					
Crude	61 629	63 376	74 020	74 184	79 687
Sublimed & precipitated	1 022	119	126	115	114
France					
Pyrites	30 991	691	617	672	732
Sulphur –					
Crude	504 018	660 584	662 560	715 224	630 948
Refined	751	704	741	1 153	2 007
Sublimed & precipitated	267	334	415	412	586
Germany, Federal Republic of					
Pyrites	175 247	154 291	116 670	98 943	132 716
Sulphur –					
Crude	480 574	419 352	385 843	385 973	360 317
Sublimed & precipitated	461	548	572	732	661
Irish Republic					
Sulphur	12 374	10 900	8 611	647	648
Italy					
Pyrites	161 091	163 512	247 158	286 351	291 010
Sulphur –					
Crude	560 082	628 495	606 052	754 861	609 564
Sublimed & precipitated	1 212	1 954	1 573	1 591	1 297
Netherlands					
Pyrites	75	61	103	169	153
Sulphur –					
Crude	398 392	424 685	452 920	455 504	467 883
Sublimed & precipitated	277	233	133	248	215
Austria					
Pyrites	13 874	10 781	5 856	3 264	3 834
Sulphur –					
Crude	81 419	97 787	101 332	112 019	124 693
Sublimed & precipitated	2 919	16	234	62	117
Czechoslovakia					
Pyrites (a)	9 000	...	...	...	...
Sulphur	477 000	422 000	456 000	501 000	485 000
Finland					
Sulphur –					
Crude	10 426	23 349	26 580	42 132	58 357
Sublimed & precipitated	2 001	6 347	1 859	3 205	16
German Democratic Republic					
Pyrites (a)	71 473	63 400	39 200	8 200	...
Greece					
Pyrites	106 584	37 198	18 944	14 414	...
Sulphur –					
Crude	161 777	68 783	81 004	58 054	...
Sublimed & precipitated	53	16	112	339	48
Hungary					
Pyrites	81 417	59 318	81 451	83 518	89 676
Sulphur	143 447	171 477	162 043	167 344	250 960
Malta					
Sulphur	454	1 851	39	95	170
Norway					
Sulphur –					
Crude	17 899	11 926	6 014	2 583	2 853
Sublimed & precipitated	30	12	13	24	17

**Imports of Sulphur and Pyrites**

tonnes

Country	1976	1977	1978	1979	1980
Portugal					
Sulphur –					
Crude	29 870	30 943	43 524	90 433	92 978
Sublimed & precipitated	37	3	1	1	0
Romania					
Pyrites	* 196 200	* 135 700	* 74 700	...	...
Sulphur	* 117 700	* 123 200	* 173 000	...	...
Soviet Union					
Sulphur	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Spain					
Sulphur –					
Crude	92 583	168 179	119 401	109 576	94 116
Sublimed & precipitated	42	21	133	6 230	266
Sweden					
Pyrites	102 223	59 715	60 372	26 441	79 938
Sulphur –					
Crude	69 551	56 059	58 377	48 332	41 424
Sublimed & precipitated	18	15	2	32	1 138
Switzerland					
Pyrites	8 116	24 110	164	16 020	10 556
Sulphur –					
Crude	33 676	44 859	46 656	46 560	48 188
Sublimed & precipitated	251	287	213	158	231
Turkey					
Pyrites	19 605	197 474	116	—	...
Sulphur –					
Crude	6 475	26 250	61 085	52 682	...
Sublimed & precipitated	329	126	115	77	...
Yugoslavia					
Pyrites	11 980	72 625	19 126	124 227	68 413
Sulphur –					
Crude	12 618	2 428	3 833	12 268	11 700
Refined	35 639	54 301	55 339	54 374	44 718
Sublimed & precipitated	205	1 852	1 763	1 078	506
Algeria					
Sulphur –					
Crude	28 940	87 870	76 334	...	...
Sublimed & precipitated	10 804	19 238	8 000	...	...
Canary Islands					
Sulphur	4 195	10 167	5 250	—	...
Egypt					
Pyrites	20 179	66 521	23 000	—	...
Sulphur	75 954	110 966	83 170	46 177	...
Ethiopia					
Sulphur	...	115	1 325	...	...
Ivory Coast					
Sulphur	5 363	5 337	8 750	7 797	...
Kenya					
Sulphur	1 099	2 132	2 526	1 199	6 901
Madagascar					
Sulphur	11	9	5	23	...
Morocco					
Sulphur –					
Crude	183 345	427 714	77 136	517 145	702 271
Refined	85	30 095	297 400	45 407	115
Sublimed	2	5	3	7	3
Mozambique					
Sulphur	5 236	349	...	...	...
Nigeria					
Sulphur	865	1 195	1 530	...	...
Senegal					
Sulphur –					
Crude	...	15	6	...	...
Sublimed	...	20 824	24 432	...	...

## Imports of Sulphur and Pyrites

tonnes

Country	1976	1977	1978	1979	1980
South Africa					
Pyrites	47	30	53	904	10 775
Sulphur –					
Crude	451 480	548 225	638 411	811 732	913 557
Sublimed & precipitated	1 342	10 236	1 250	1 308	2 431
Tanzania					
Sulphur	27 679	12 610	10 677	...	...
Tunisia					
Sulphur	387 587	406 061	371 584	581 665	678 489
Zaire					
Sulphur	7 085	8 686	14 724	...	...
Zambia					
Sulphur –					
Crude	67	68	...	...	...
Refined	16	—	...	...	...
Precipitated	18	2 132	...	...	...
Zimbabwe					
Sulphur	...	...	...	18 440	...
Canada					
Sulphur	15 717	14 065	8 133	1 699	1 767
Costa Rica					
Sulphur	100	41	...	...	...
Cuba					
Sulphur	153 401	155 173	...	...	...
El Salvador					
Sulphur	5 186	5 556	...	...	...
Guatemala					
Sulphur	4 296	4 428	...	...	...
Jamaica					
Sulphur	932	9 561	10 818	5 766	...
Mexico					
Sulphur –					
Crude	705	504	866	15 480	...
Sublimed & precipitated	129	191	243	574	...
Nicaragua					
Sulphur	296	443	280	381	...
Trinidad & Tobago					
Sulphur	24	7 728	23	14 986	3 058
USA					
Pyrites	30 982	24 730	9 870	31 166	32 977
Sulphur	1 754 746	2 010 059	2 177 593	2 494 422	2 520 944
Argentina					
Sulphur	105 745	80 558	71 201	...	...
Brazil					
Sulphur –					
Crude	606 875	657 252	631 410	671 899	937 650
Refined	1 451	1 412	867	8 142	1 442
Sublimed & precipitated	222	218	277	317	657
Chile					
Sulphur –					
Crude	...	66 490	90 024	...	...
Sublimed & precipitated	...	106	117	...	...
Colombia					
Sulphur	24 750	23 033	...	...	...
Peru					
Sulphur	4 332	7 990	...	...	...
Uruguay					
Sulphur	11 810	15 735	19	22 452	...
Venezuela					
Sulphur –					
Crude	118	97	115	...	...
Sublimed & precipitated	78	89	36	...	...

**Imports of Sulphur and Pyrites**

tonnes

Country	1976	1977	1978	1979	1980
China					
Sulphur	* 26 000	* 250 000	* 205 000	...	...
Cyprus					
Sulphur	2 518	2 420	1 442	1 547	...
Hong Kong					
Sulphur –					
Crude	253	209	264	344	1 104
Sublimed	1 765	2 101	1 360	779	109
India					
Sulphur –					
Crude	588 257	767 019	820 625	959 152	...
Sublimed	506	327	2 066	470	...
Indonesia					
Sulphur –					
Crude	616	2 132	1 335	2 643	2 623
Sublimed & precipitated	18 164	28 273	45 155	29 367	50 609
Iran (c)					
Sulphur	744	503	* 1 100	* 400	...
Japan					
Pyrites	59 403	34 060	30 000	7 300	—
Sulphur	603	781	563	582	818
Jordan					
Sulphur –					
Crude	527	2 462	1 430	758	...
Sublimed & precipitated	524	289	440	644	...
Korea, Republic of					
Sulphur –					
Crude	292 153	421 913	) 513 784	582 055	519 184
Sublimed & precipitated	298	1 160		673	343
Malaysia					
Sulphur –					
Crude	14 098	13 843	...	...	...
Sublimed & precipitated	835	740	...	...	...
Pakistan (b)					
Sulphur	7 031	3 818	8 355	5 942	22 366
Philippines					
Sulphur –					
Crude	12 173	12 301	7 587	5 466	4 808
Sublimed & precipitated	6 770	159	16 972	12 675	23 820
Singapore					
Sulphur –					
Crude	267	188	373	568	245
Sublimed & precipitated	405	362	315	168	596
Sri Lanka					
Sulphur	1 307	46	143	520	431
Syria					
Sulphur –					
Crude	2 546	2 763	3 194	7 696	...
Sublimed & precipitated	298	1 151	338	84	...
Taiwan					
Sulphur –					
Crude	89 122	198 952	176 855	186 479	122 737
Sublimed & precipitated	121 124	117 780	187 499	130 629	250 497
Thailand					
Sulphur –					
Crude	2 226	27 110	31 718	13 878	...
Refined	109	4 854	11 682	13 185	...
Sublimed & precipitated	29	87	148	643	...
Australia					
Sulphur	205 766	407 675	496 804	436 221	686 865
New Zealand (b)					
Sulphur –					
Crude	196 215	229 803	234 899	257 986	249 187
Sublimed & precipitated	197	232	263	275	325

(a) S content

(b) Years ended 30 June of that stated

(c) Years ended 20 March following that stated

## Production of Talc

Country	1976	1977	1978	1979	1980
United Kingdom	14 800	14 700	18 000	16 600	17 297
France	256 000	267 000	275 000	268 000	316 000
Germany, Federal Republic of	18 282	15 971	15 446	14 986	* 15 400
Italy	153 836	162 437	169 000	157 382	165 905
Austria	100 649	103 743	106 848	116 420	116 708
Finland	148 531	156 584	195 159	267 200	* 272 200
Greece	5 543	2 723	1 078	...	2 129
Hungary	5 318	5 272	4 053	2 932	3 492
Norway	118 211	98 087	96 716	87 485	* 93 000
Portugal	1 505	1 610	1 709	2 748	2 598
Romania	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Soviet Union	* 440 000	* 450 000	* 470 000	* 480 000	* 490 000
Spain	47 617	60 070	61 892	71 000	* 70 000
Sweden	20 441	21 214	21 322	17 746	* 21 000
Egypt	5 655	7 291	5 905	4 406	* 4 400
South Africa					
Talc	7 039	8 095	7 487	9 451	9 466
Wonderstone (pyrophyllite)	5 784	5 109	5 159	5 795	4 900
Zimbabwe	1 909	1 415	758	1 170	456
Canada	68 834	72 400	61 661	90 330	87 000
Mexico	192	163	2 639	2 500	* 2 500
USA					
Talc	) 991 039	997 000	1 150 000	1 150 000	1 233 000
Pyrophyllite	)	96 000	105 000	168 000	103 000
Argentina					
Talc	44 185	43 306	41 117	24 059	)
Pyrophyllite	9 132	10 947	4 731	9 886	) 59 318
Steatite	840	454	964	882	)
Brazil					
Talc (b)	141 035	180 474	190 674	310 397	) * 430 000
Pyrophyllite (b)	72 813	73 408	69 846	55 081	)
Chile	1 109	427	432	850	* 700
Colombia	1 200	1 380	1 320	6 085	* 6 000
Paraguay	140	130	160	210	* 190
Peru	14 560	15 000	12 913	14 970	* 14 700
Uruguay	1 170	1 659	1 945	1 800	* 1 800
Afghanistan (a)	8 700	6 800	* 2 000	* 500	—
China	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
India					
Steatite	220 461	247 000	298 000	351 862	310 188
Pyrophyllite	34 080	34 619	38 883	34 708	35 924
Japan					
Talc	74 384	97 782	95 834	122 987	)
Pyrophyllite	1 158 498	1 253 587	1 016 095	933 790	) 1 750 000
Korea, Dem. P.R. of	* 130 000	* 130 000	* 150 000	* 160 000	* 170 000
Korea, Republic of					
Talc	147 774	171 925	202 078	236 824	204 662
Pyrophyllite	348 694	433 304	463 005	541 383	514 511
Pakistan	5 035	8 879	9 453	32 721	29 613
Philippines	1 411	1 200	4 061	3 570	* 4 000
Taiwan	15 481	10 160	9 946	11 194	9 911
Thailand	6 557	10 368	14 888	13 542	11 726
Australia					
Talc	77 447	112 920	137 553	138 266	158 333
Pyrophyllite	14 650	16 039	9 401	19 209	* 5 000
World total	5 200 000	5 600 000	5 800 000	6 200 000	7 000 000

(a) Years ended 20 March following that stated

(b) Includes beneficiated and direct shipping ore

Talc

**Exports of Talc**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	2 894	4 348	3 978	5 604	5 806
Belgium-Luxembourg	32 185	19 857	18 286	21 186	23 332
France	59 426	73 578	77 310	75 159	81 353
Germany, Federal Republic of	7 057	7 056	7 949	5 608	5 625
Italy	51 247	59 065	56 591	55 181	54 014
Netherlands	2 051	2 785	3 674	4 066	8 011
Austria	85 032	87 811	87 097	98 139	97 760
Czechoslovakia	* 4 190	* 4 560	* 6 670	7 000	7 000
Finland	11 190	31 876	27 509	59 317	54 044
Greece	915	426	50	1 405	...
Norway	61 674	60 771	59 166	52 446	55 729
Portugal	18	63	127	18	32
Spain	4 775	9 608	6 128	15 030	11 358
Sweden	4 275	3 812	4 703	3 776	5 649
Switzerland	60	58	71	71	97
Turkey	375	12	42	615	...
South Africa					
Talc	—	614	—	69	500
Wonderstone (pyrophyllite)	3 834	753	6 837	6 353	...
Mexico	5	190	213	0	...
USA	192 740	291 928	242 047	287 034	274 946
Argentina	183	362	191	...	...
Brazil	247	190	159	320	495
China (a)	* 195 300	* 209 100	* 271 600	* 338 200	* 362 700
Hong Kong (Re-exports)	2 422	4 843	5 729	8 908	5 302
India	8 783	18 000	12 479	13 355	...
Japan	1 499	1 721	1 803	1 145	1 691
Korea, Dem. P.R. of	* 47 500	* 43 700	* 54 600	* 74 500	...
Korea, Republic of	68 244	82 110	77 878	69 134	53 478
Malaysia	473	160	...	...	...
Singapore	1 156	1 658	735	807	554
Taiwan	982	2 348	1 312	1 401	1 043
Australia	62 306	87 271	106 177	107 849	83 059

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



## Imports of Talc

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	61 281	60 552	62 576	65 757	62 376
Belgium-Luxembourg	39 026	35 579	22 758	36 915	52 903
Denmark	11 525	10 842	10 507	8 775	7 991
France	8 392	12 147	19 258	18 028	20 516
Germany, Federal Republic of	111 223	113 164	127 515	125 688	130 765
Irish Republic	2 444	1 950	1 988	2 016	2 569
Italy	18 546	18 400	18 892	21 791	24 046
Netherlands	17 183	17 473	21 192	23 404	32 827
Austria	1 901	2 860	2 427	2 746	2 118
Finland	715	656	656	868	805
Greece	1 633	1 666	2 680	2 564	2 267
Norway	3 047	4 597	3 419	6 654	6 878
Poland	19 960	24 081	25 540	26 043	23 180
Portugal	3 485	3 459	4 145	3 336	3 636
Soviet Union	* 100 000	* 100 000	* 120 000	* 120 000	* 120 000
Spain	12 282	15 729	11 948	10 945	15 181
Sweden	22 872	18 857	18 780	45 745	36 716
Switzerland	9 379	11 042	10 766	10 911	12 951
Turkey	506	877	189	235	...
Yugoslavia	2 461	3 261	5 127	4 611	5 121
Algeria	2 829	5 169	1 835	...	...
Cameroon	184	261	346	297	...
Ghana	375	771	...	...	...
Ivory Coast	748	1 558	1 030	915	...
Kenya	...	4 123	3 572	2 556	...
Morocco	1 270	1 048	936	797	917
Mozambique	140	217	...	...	...
Senegal	...	334	229	...	...
South Africa	2 132	1 962	1 744	1 823	2 381
Tunisia	1 591	3 563	1 580	1 676	1 875
Zaire	218	120	174	183	...
Canada	46 397	33 769	33 349	50 322	50 527
Costa Rica	591	925	...	...	...
El Salvador	127	292	...	...	...
Guatemala	325	490	...	...	...
Honduras	71	148	152	...	...
Mexico					
Talc	110 027	118 130	129 786	159 847	...
Pyrophyllite	281	50	80	246	...
Nicaragua	378	327	382	160	...
Panama	273	371	405	488	...
Trinidad & Tobago	394	679	789	3 642	619
USA	18 208	20 040	17 526	20 297	18 688
Argentina	327	253	245	...	...
Brazil	174	122	131	111	117
Chile	...	562	446	...	...
Peru	792	746	...	...	...
Venezuela	8 227	9 166	9 236	...	...
Cyprus	297	606	281	517	...
Hong Kong	4 037	7 207	7 684	10 793	7 488
Indonesia	7 744	12 834	11 159	10 533	10 977
Iran (a)	327	525	* 500	* 150	...
Iraq	407	...	...	...	...
Israel (c)	519	80	120	711	655
Japan	301 945	360 612	447 718	550 265	501 086
Malaysia	4 798	6 027	...	...	...

Talc

## Imports of Talc

tonnes

Country	1976	1977	1978	1979	1980
Philippines	5 306	4 722	8 547	4 347	8 098
Singapore	8 025	8 746	6 054	4 885	5 143
Syria	490	5 112	3 892	745	...
Taiwan	1 868	3 758	3 943	5 297	4 775
Thailand	7 366	10 776	10 996	15 533	...
Australia	371	335	527	420	383
New Zealand (b)	2 481	3 963	3 623	3 181	3 161

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

**Production of Tantalum and Niobium (Columbium) Minerals**

tonnes

Country		1976	1977	1978	1979	1980
Portugal						
Columbite-tantalite	(25%, 25%)	5	3	7	3	4
Mozambique						
Tantalite	(14%, 42%)	30	39	39	* 34	...
Microlite	( 4%, 55%)	56	40	40	* 32	...
Nigeria						
Columbite	(43%, 6%)	670	860	567	563	* 550
Tantalite	(30%, 30%)	4	1	1	0	0
Rwanda						
Columbite-tantalite	(30%, 23%)	45	94	54	47	60
Uganda						
Columbite-tantalite	(25%, 20%)	* 2	* 2	* 2	* 2	—
Zaire						
Columbite-tantalite	(27%, 27%)	79	113	47	38	* 40
Zimbabwe						
Columbite-tantalite	(11%, 28%)	19	30	31	30	41
Canada						
Pyrochlore	(43%, — )	2 498	4 182	4 054	4 053	3 758
Tantalite	( 3%, 44%)	261	261	295	295	236
Brazil						
Pyrochlore	(42%, — )	19 003	15 613	17 877	28 909	* 28 500
Columbite-tantalite	(20%, 30%)	198	137	203	374	* 400
Djalmaite	( 1%, 50%)	24	19	19	10	* 10
Malaysia						
Columbite	(40%, 14%)	46	45	23	40	33
Thailand						
Columbite	(27%, 16%)	40	115	64	382	213
Tantalite	(20%, 30%)	7	41	—	25	143
Struverite	(— , 6%)	—	—	—	231	301
Australia						
Columbite-tantalite	(20%, 33%)	118	157	139	147	* 170
World total concentrates		23 000	22 000	23 000	35 000	35 000
Nb content		* 9 000	* 9 000	* 10 000	* 14 000	* 14 000
Ta content		* 400	* 400	* 400	* 500	* 500

## Notes:

- 1 Niobium and tantalum minerals are believed to have been produced also in the Soviet Union and China, and minor quantities in Argentina, Burundi, Namibia, Spain and Zambia
- 2 The figures in this table refer to gross tonnage of tantalum and niobium concentrates. Estimated average niobium and tantalum contents of these are given in the form (Nb%, Ta%) for each country and each mineral, relating where possible to the later years
- 3 Niobium and tantalum are also recovered from tin slags. This source is particularly important in the case of tantalum and is believed to account for well over 50% of all tantalum currently recovered. No detailed information on the production of tantalum bearing tin slags is available but the major producers are Thailand and Malaysia, with small amounts from Australia, Brazil, Nigeria, Portugal, South Africa, Spain and Zaire

**Exports of Tantalum and Niobium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Niobium & tantalum ores & concentrates (b)	117	44	86	144	6
Tantalum	5	24	36	43	35
France					
Niobium & tantalum ores (b)	356	10	—	12	4
Tantalum	19	19	12	22	21
Germany, Federal Republic of					
Niobium & tantalum ores (b)	921	940	1 041	1 276	2 211
Tantalum	61	61	48	81	97
Niobium	22	11	19	41	90
Italy					
Tantalum	4	3	10	5	16
Niobium	1	1	6	—	0
Netherlands					
Tantalum	6	7	7	8	182
Austria					
Tantalum	28	10	10	15	10
Portugal					
Columbite	4	3	4	—	...
Mozambique					
Columbite & tantalite	92	45	...	...	...
Nigeria					
Columbite	1 036	377	757	...	...
Zaire					
Columbite-tantalite (a)	* 40	* 60	* 100	* 50	...
Canada					
Pyrochlore	* 2 100	* 3 700	* 3 600	* 3 800	* 3 400
Tantalite	* 210	* 300	* 300	* 300	* 250
USA					
Tantalum ores & concentrates	27	67	29	149	212
Tantalum	266	320	411	334	362
Niobium	30	35	* 40	* 45	* 55
Brazil					
Pyrochlore	4 381	3 310	1 983	1 660	* 2 500
Columbite-tantalite	130	169	129	328	440
Japan					
Tantalum	15	45	42	30	40
Malaysia					
Columbite & tantalite	116	263	...	...	...
Tin slags	19 402	5 792	...	...	...
Thailand					
Columbite & tantalite	103	230	112	432	...
Tin slags	1 890	2 575	2 736	3 507	3 306
Australia					
Tantalite-columbite	124	158	125	312	373

(a) IGS estimates, based on part figures given in trade account

(b) Including vanadium ore, but this is thought to be negligible

## Imports of Tantalum and Niobium

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Niobium & tantalum ores & concentrates (a)	1 349	610	466	621	131
Tantalum	57	115	105	75	59
Niobium	2	4	7	36	23
Belgium-Luxembourg					
Niobium & tantalum ores (a)	944	1 984	1 952	2 245	2 537
Niobium	17	4	10	10	3
France					
Niobium & tantalum ores (a)	196	11	25	0	2
Tantalum	24	18	30	52	36
Niobium	1	...	11	5	4
Germany, Federal Republic of					
Niobium & tantalum ores (a)	1 651	1 557	870	1 458	1 341
Tantalum	125	219	251	252	255
Niobium	3	4	11	22	23
Italy					
Niobium & tantalum ores	5	—	(a) 1 818	(a) 449	24
Tantalum	4	9	8	7	11
Niobium	10	6	1	1	1
Netherlands					
Tantalum	1	2	3	1	2
Austria					
Tantalum	12	19	15	43	37
USA					
Tantalum concentrates	1 160	691	648	695	1 139
Niobium concentrates	1 800	1 557	1 941	1 708	2 197
Tantalum	47	103	102	106	118
Niobium	0	1	0	* 2	33
Tin slags (b) –					
Ta content	195	578	307	517	...
Nb content	134	399	198	514	...
Japan					
Niobium minerals	1 813	1 751	1 858	1 659	1 764
Tantalum ores & concentrates	62	170	128	304	309
Tantalum	54	53	54	77	47
Malaysia					
Tantalum	5	13	...	...	...

(a) Including vanadium ore, but this is thought to be negligible

(b) Ta and Nb content is approximately 10% and 7%, respectively, of gross weight

Tin

**Mine Production of Tin**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
United Kingdom	4 015	4 189	3 132	2 708	3 291
Czechoslovakia	* 180	* 180	* 180	* 180	125
German Democratic Republic	* 1 300	* 1 400	* 1 500	* 1 600	* 1 800
Portugal	332	267	282	240	271
Soviet Union	* 16 000	* 17 000	* 18 000	* 18 000	* 17 000
Spain	720	642	711	424	431
Cameroon	19	10	11	18	* 24
Namibia	735	* 1 000	* 1 000	* 1 000	* 1 000
Niger	84	99	89	* 96	* 96
Nigeria	3 710	3 267	2 935	2 750	2 527
Rwanda	* 1 440	* 1 450	* 1 400	* 1 400	* 1 600
South Africa	3 257	2 876	2 876	2 697	2 913
Uganda	* 120	264	239	37	67
Zaire	3 832	3 662	3 376	2 464	3 159
Zimbabwe	914	920	945	969	934
Canada (a)	274	328	360	337	264
Mexico	481	220	73	23	60
USA	* 100	* 100	* 100	* 100	* 100
Argentina	358	537	362	386	582
Bolivia	30 355	32 616	30 881	27 648	27 271
Brazil	5 743	5 744	6 470	7 005	6 930
Peru (b)	273	330	736	949	1 202
Burma	* 400	* 400	* 800	* 1 000	* 1 100
China	* 11 000	* 13 000	* 14 000	* 14 000	* 14 600
Indonesia	24 456	25 926	27 437	29 436	32 527
Japan	766	595	599	661	549
Korea, Republic of	* 24	* 24	56	40	9
Laos	576	* 600	* 600	* 600	* 600
Malaysia	63 401	58 703	62 650	62 995	61 404
Thailand	20 452	24 205	30 186	33 962	33 685
Australia	10 611	10 634	11 864	12 571	10 391
World total	206 000	211 000	224 000	226 000	227 000

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

(b) Recoverable

**Smelter Production of Tin**

Country	1976	1977	1978	1979	1980
United Kingdom	11 161	10 458	8 445	8 025	5 829
Belgium	4 068	3 520	3 295	2 165	2 822
Germany, Federal Republic of	1 449	2 897	3 241	2 488	2 257
Netherlands (a)	2 000	2 100	1 625	* 1 720	* 1 148
Czechoslovakia	120	120	120	120	125
German Democratic Republic	* 1 400	* 1 400	* 1 500	* 1 600	* 1 800
Portugal	319	588	490	445	400
Soviet Union	* 17 000	* 17 500	* 18 000	* 18 000	* 17 000
Spain	4 359	5 343	4 575	4 546	4 106
Nigeria	3 667	3 315	2 984	2 858	2 684
South Africa	683	582	637	819	* 1 100
Zaire	478	663	496	458	* 300
Zimbabwe	800	880	912	949	918
Mexico	800	1 000	1 000	600	400
USA	5 700	6 700	5 900	4 600	3 000
Argentina	* 120	* 120	* 120	* 120	* 200
Bolivia (a)	9 868	13 048	16 181	15 696	17 533
Brazil	6 423	7 421	9 309	10 133	8 792
China	* 11 000	* 13 000	* 14 000	* 14 000	* 14 600
Indonesia	23 322	24 005	25 830	27 790	30 465
Japan	1 145	1 271	1 140	1 252	1 319
Malaysia	78 017	66 305	71 953	73 068	71 318
Thailand	20 337	23 102	28 945	33 058	34 689
Australia	5 603	5 561	5 129	5 423	4 819
World total	210 000	211 000	226 000	230 000	228 000

(a) Refined, including alloys

Tin

**Exports of Tin**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Concentrates	185	180	3 608	4 019	3 035
Unwrought	6 867	6 800	6 971	6 243	7 030
Unwrought alloys	3 293	1 917	1 529	1 214	1 204
Scrap	114	212	49	22	115
Belgium-Luxembourg					
Unwrought	3 231	2 454	2 343	2 301	2 834
Unwrought alloys	102	161	74	72	120
Scrap	51	98	149	92	208
Denmark					
Unwrought	43	30	37	28	13
Unwrought alloys	609	835	620	740	471
Scrap	92	161	3	546	244
France					
Concentrates	54	18	10	7	8
Unwrought	80	259	739	564	245
Unwrought alloys	185	164	129	102	400
Scrap	538	753	717	881	915
Germany, Federal Republic of					
Unwrought	1 505	3 577	4 353	5 264	2 604
Unwrought alloys	698	785	460	520	535
Scrap	211	120	88	52	107
Italy					
Unwrought	138	251	228	123	282
Scrap	9	97	24	131	35
Netherlands					
Unwrought	) 1 439	852	437	525	1 101
Unwrought alloys	)	906	837	750	844
Scrap	742	698	549	513	361
Austria					
Unwrought	53	2	38	10	19
Czechoslovakia					
Concentrates	219	184	111	123	106
Norway					
Unwrought (a)	65	99	59	21	7
Spain					
Unwrought	2 253	1 624	153	435	) 296
Unwrought alloys	236	278	178	132	)
Scrap	124	121	37	94	66
Sweden					
Unwrought	56	209	40	61	57
Unwrought alloys	7	29	14	2	1
Switzerland					
Unwrought	65	91	84	168	186
Scrap	62	79	68	90	117
Yugoslavia					
Unwrought (a)	51	134	64	114	49
Niger					
Concentrates	(b) 63	90	72	...	...
Nigeria					
Unwrought (a)	3 419	2 169	2 093	2 581	2 719
Rwanda					
Concentrates (b)	1 370	1 607	1 398	1 286	1 270
South Africa					
Concentrates (b)	1 768	2 386	2 212	1 544	810
Tanzania					
Concentrates	22	18	24	17	9
Zaire					
Concentrates (b)	3 130	3 179	2 766	1 647	2 005
Unwrought	329	160	776	263	446
Canada					
Concentrates (b)	796	876	943	713	869



## Exports of Tin

Country	1976	1977	1978	1979	1980
USA					
Unwrought (a)	2 338	5 487	4 693	3 418	4 294
of which: Re-exports	1 798	4 941	4 194	2 849	3 699
Scrap	6 559	4 512	6 349	6 068	7 519
Argentina					
Tin-silver ore	2 097	2 011	2 847	1 406	...
Bolivia					
Concentrates (b)	20 487	18 413	13 818	11 304	8 313
Unwrought	9 868	12 047	14 198	14 222	13 682
Brazil					
Unwrought	1 845	2 112	1 665	1 508	...
Peru					
Concentrates	759	754	...	...	...
Burma					
Concentrates (b)	1 740	1 213	1 141	2 104	2 087
China					
Unwrought	* 7 000	* 3 400	* 5 400	* 3 200	* 2 600
Hong Kong					
Unwrought	65	135	223	84	159
of which: Re-exports	65	135	223	15	11
Indonesia					
Concentrates	1 526	1 968	976	1 624	4 857
Unwrought (a)	2 875	21 314	22 859	26 274	26 169
Scrap	14 517	2 695	676	475	1 404
Japan					
Unwrought (a)	56	205	66	84	44
Laos					
Concentrates (b)	438	264	72	42	83
Malaysia					
Unwrought	81 527	66 517	70 110	72 123	69 383
Singapore					
Concentrates	5 498	10 440	8 271	6 382	5 351
Unwrought	1 372	2 702	7 096	9 835	13 885
Unwrought alloys	735	742	751	781	755
Thailand					
Unwrought	20 048	21 439	28 944	31 309	33 955
Unwrought alloys	1 126	2 276	1 307	40	...
Australia					
Concentrates (b)	3 363	5 126	7 015	6 435	7 425
Unwrought (a)	2 315	2 320	2 146	2 108	1 594

Note: In this table the term 'unwrought' tin corresponds to item 687.1 of the Standard International Trade Classification (Revision 2) and comprises ingots, pigs, unwrought bars, sticks, etc

(a) Including alloys

(b) Sn content

Tin

## Imports of Tin

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Concentrates	41 712	45 104	39 105	35 987	36 656
Unwrought	6 692	8 360	7 834	7 747	5 157
Unwrought alloys	1 043	983	518	783	1 972
Scrap	1 219	1 477	1 355	1 314	940
Belgium-Luxembourg					
Concentrates	5 173	5 299	4 718	2 912	3 151
Unwrought	2 298	2 044	2 105	2 606	2 627
Unwrought alloys	209	108	128	188	361
Scrap	214	134	131	175	182
Denmark					
Unwrought	323	371	226	252	123
Unwrought alloys	98	104	122	71	124
Scrap	239	151	201	285	250
France					
Concentrates	5	—	504	941	—
Unwrought	10 602	10 079	10 650	10 348	10 363
Unwrought alloys	230	430	178	217	161
Scrap	188	268	136	99	194
Germany, Federal Republic of					
Concentrates	9 550	6 282	7 989	7 158	3 343
Unwrought	15 453	14 914	14 700	15 773	17 132
Unwrought alloys	837	705	781	1 325	1 172
Scrap	394	534	624	340	324
Irish Republic					
Unwrought (a)	27	21	50	25	22
Italy					
Unwrought	7 445	6 265	5 899	6 732	6 403
Unwrought alloys	463	493	527	380	471
Netherlands					
Concentrates	2 882	3 938	2 820	3 437	3 338
Unwrought	) 5 764	4 090	4 616	4 728	5 233
Unwrought alloys	)	1 209	814	811	528
Scrap	771	925	971	470	402
Austria					
Unwrought	555	479	469	497	557
Czechoslovakia					
Unwrought (a)	3 859	3 196	3 894	3 940	4 085
Finland					
Unwrought (a)	183	121	211	302	267
Greece					
Unwrought	325	401	320	799	468
Hungary					
Unwrought & semi-manufactures	1 718	1 520	1 739	1 724	1 662
Norway					
Unwrought	596	524	547	500	524
Unwrought alloys	200	98	97	83	91
Poland					
Unwrought	5 096	4 680	4 616	3 879	3 317
Portugal					
Concentrates	100	419	332	226	308
Unwrought	471	479	464	529	571
Soviet Union					
Concentrates	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Unwrought	* 8 000	* 6 000	* 7 000	* 7 000	* 7 000
Spain					
Concentrates	7 486	6 125	5 083	3 263	4 363
Sweden					
Unwrought	667	247	336	530	414
Unwrought alloys	165	90	79	98	61
Switzerland					
Unwrought	769	705	932	868	1 026
Turkey					
Unwrought	894	996	744	321	...

## Imports of Tin

Country	1976	1977	1978	1979	1980
Yugoslavia					
Unwrought (a)	1 366	1 960	1 833	1 604	1 032
Algeria					
Unwrought (a)	76	53	94	...	...
Egypt					
Unwrought & scrap	854	215	361	241	163
Kenya					
Unwrought (a)	28	44	22	17	22
Morocco					
Unwrought (a)	195	154	148	167	185
Nigeria					
Unwrought (a)	978	1 833	992	...	...
South Africa					
Unwrought	835	845	450	386	225
Tunisia					
Unwrought & scrap	55	40	51	74	92
Zambia					
Unwrought	53	14	...	...	...
Canada					
Unwrought	4 224	5 028	4 804	4 689	4 527
Mexico					
Concentrates	2 162	2 689	2 940	2 258	...
Unwrought	—	152	275	609	...
USA					
Concentrates (b)	5 733	6 724	3 873	4 529	841
Unwrought	45 055	48 350	46 776	48 355	45 982
Unwrought alloys	693	702	770	990	865
Scrap	2 390	712	498	628	870
Argentina					
Unwrought	984	631	664	...	...
Brazil					
Concentrates	1 493	3 911	4 074	7 542	3 605
Chile					
Unwrought	...	306	547	...	...
Colombia					
Unwrought (a)	321	364	...	264	351
Peru					
Unwrought (a)	229	458	...	...	...
Uruguay					
Unwrought	34	61	38	69	...
Venezuela					
Unwrought (a)	293	519	339	...	...
Hong Kong					
Unwrought	988	896	1 445	2 042	1 694
India					
Unwrought (a)	3 114	2 509	2 570	1 879	...
Scrap	4 127	2 995	4 553	7 466	...
Iran (d)					
Unwrought	602	172	* 300	* 300	...
Japan					
Unwrought	31 120	28 200	28 563	30 478	31 068
Korea, Republic of					
Concentrates	295	519	693	543	331
Unwrought (a)	1 093	4 271	...	6 426	1 234
Malaysia					
Concentrates	12 349	11 495	...	...	...
Unwrought (a)	126	35	...	...	...
Philippines					
Unwrought (a)	277	704	767	422	437
Singapore					
Concentrates	982	3 177	3 118	4 227	3 370
Unwrought	544	338	1 174	1 015	2 089
Unwrought alloys	309	450	498	537	503

Tin

## Imports of Tin

tonnes

Country	1976	1977	1978	1979	1980
Syria					
Unwrought & scrap	115	93	242	4 132	...
Taiwan					
Unwrought	814	1 777	3 199	703	615
Australia					
Unwrought	32	222	204	5	44
New Zealand (c)					
Unwrought (a)	290	341	249	236	263

Note: In this table the term 'unwrought' tin corresponds to item 687.1 of the Standard International Trade Classification (Revision 2) and comprises ingots, pigs, unwrought bars, sticks, etc

(a) Including alloys

(b) Sn content

(c) Years ended 30 June of that stated

(d) Years ended 20 March following that stated

**Production of Titanium Minerals**

tonnes

Country	1976	1977	1978	1979	1980
Finland					
Ilmenite	122 600	124 700	131 900	131 500	149 700
Norway					
Ilmenite	766 664	828 503	766 990	819 815	827 814
Portugal					
Ilmenite	367	229	251	268	232
Soviet Union					
Ilmenite	* 380 000	* 399 000	* 410 000	* 410 000	* 420 000
Rutile	* 9 000	* 9 000	* 9 000	* 9 000	* 9 000
Sierra Leone					
Rutile	—	—	—	7 500	45 440
South Africa					
Titanium concentrates	...	...	...	753 325	* 800 000
Canada (a)					
Slag (d)	814 060	692 330	850 030	671 500	875 000
USA					
Ilmenite (b)	591 851	579 240	535 013	579 956	497 937
Brazil					
Ilmenite	14 615	13 268	20 077	22 657	14 000
Rutile	51	128	365	439	* 450
India					
Ilmenite	175 492	153 979	172 541	162 909	184 556
Rutile	7 005	7 058	7 107	6 642	7 192
Malaysia (c)					
Ilmenite	180 004	153 679	* 186 816	* 186 896	* 126 327
Sri Lanka					
Ilmenite	64 654	33 946	35 904	55 370	33 956
Rutile	1 019	950	11 497	14 675	12 789
Australia					
Ilmenite	959 203	1 033 358	1 254 994	1 181 010	1 309 232
Rutile	389 750	325 281	257 075	274 533	293 748
Leucoxene	12 223	10 621	16 103	22 470	26 797
World total					
Ilmenite (Wt. of concs)	3 260 000	3 320 000	3 514 000	4 260 000	4 324 000
Rutile (Wt. of concs)	407 000	342 000	285 000	353 000	409 000
All forms (TiO <sub>2</sub> content)	* 2 595 000	* 2 479 000	* 2 638 000	* 2 957 000	* 3 187 000

Note: The figures in this table refer to gross tonnage of titanium concentrates

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

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

(c) Exports

(d) Gross weight of 70–72% TiO<sub>2</sub> slag produced

## Titanium

**Exports of Titanium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Titanium minerals	386	234	3 081	1 551	645
Oxides	86 425	97 709	94 888	94 602	108 155
Belgium-Luxembourg					
Titanium minerals	22	36	3	3 426	2 814
Metal	54	109	164	191	110
Oxides	51 112	60 417	57 964	58 418	56 755
France					
Titanium minerals	425	370	331	715	2 160
Metal	532	636	530	604	737
Oxides	103 289	101 969	110 843	126 370	107 598
Germany, Federal Republic of					
Ilmenite	187	27	639	1 535	3 149
Other titanium minerals	1 881	2 334	5 556	4 067	6 114
Metal	1 411	1 643	1 905	1 864	2 233
Oxides	156 233	172 682	190 086	204 353	178 572
Italy					
Metal	59	119	137	131	118
Oxides	33 063	29 065	25 648	24 579	19 744
Netherlands					
Ilmenite (c)	1 985	886	563	2 457	4 174
Other titanium minerals (c)	12 413	9 574	377	142	22 212
Metal (c)	151	109	135	114	77
Oxides	21 392	24 760	28 283	28 446	25 300
Finland					
Oxides	49 938	54 240	50 511	...	...
Norway					
Titanium minerals	728 346	723 543	714 108	741 430	779 741
Oxides	1 102	853	1 133	1 227	1 137
Soviet Union					
Metal (b)	* 1 000	* 2 300	* 2 400	* 3 500	* 2 800
Spain					
Oxides	7 061	16 078	27 260	38 974	11 494
Sweden					
Titanium minerals	—	—	—	388	23
Metal	578	412	520	420	506
Yugoslavia					
Oxides	14 219	13 355	13 453	12 132	11 353
South Africa					
Titanium minerals (b)	...	...	* 15 000	* 53 000	* 40 000
Canada					
Titanium dioxide slag (a)	...	...	...	...	...
Oxides (d)	10 237	14 185	15 642	17 970	...
USA					
Titanium minerals	4 576	23 108	5 070	9 780	16 567
Metal	6 569	4 080	7 086	7 903	8 094
Oxides	18 861	15 134	35 696	46 680	41 562
Hong Kong					
Oxides (Re-exports)	587	1 285	3 036	1 878	2 529
India					
Ilmenite	120 727	76 699	96 728	53 043	...
Oxides (e)	927	1 164	290	45	...
Japan					
Metal	2 555	3 444	5 741	7 113	8 065
Oxides	60 349	42 064	34 602	41 163	46 343
Malaysia					
Ilmenite	180 004	153 679	* 186 816	* 186 896	* 126 327
Other titanium minerals	—	16 004	...	...	...
Sri Lanka					
Ilmenite	70 615	39 995	40 700	32 640	23 970
Taiwan					
Oxides	13 992	8 471	468	961	789

**Exports of Titanium**

Country	1976	1977	1978	1979	1980
Australia					
Ilmenite	951 142	1 082 504	993 636	906 779	1 033 800
Rutile	346 862	246 724	371 268	317 780	315 314
Leucoxene	13 544	12 728	6 516	24 926	24 207
Oxides (b)	* 10 100	* 11 100	* 13 500	* 16 700	* 14 800

Note: 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 2) items 522.46 and 533.1

(a) Sorelslag (70–72% TiO<sub>2</sub>): estimated at 700 000 tonnes per year

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

(c) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(d) Exports to the USA only

(e) Years ended 31 March following that stated

## Titanium

**Imports of Titanium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom (a)					
Ilmenite	297 087	298 983	261 405	302 444	261 842
Other titanium minerals	84 232	89 055	45 302	80 546	50 809
Metal	5 866	3 952	7 981	...	...
Oxides	24 170	26 470	32 180	34 996	28 302
Belgium-Luxembourg					
Ilmenite	36	2 041	63 641	75 517	33 088
Other titanium minerals	101 941	67 244	36 979	26 577	45 020
Metal	1 659	607	1 463	4 097	1 420
Oxides	19 898	20 783	23 193	24 888	21 642
Denmark					
Oxides	7 806	7 042	7 559	7 898	7 403
France					
Ilmenite	185 073	135 944	146 577	119 708	85 377
Other titanium minerals	8 929	8 183	7 900	9 700	9 167
Metal	1 660	1 025	965	1 786	2 815
Oxides	39 414	37 620	45 576	45 211	43 887
Germany, Federal Republic of					
Ilmenite	384 357	478 333	406 992	521 534	451 088
Other titanium minerals	88 376	121 029	112 570	52 471	33 814
Metal	3 298	2 284	3 871	3 836	4 878
Oxides	57 328	61 308	69 603	73 206	70 834
Irish Republic					
Oxides	3 451	3 677	3 644	3 464	...
Italy					
Ilmenite	176 382	133 985	121 897	76 629	25
Other titanium minerals	3 372	7 527	4 531	5 538	5 425
Metal	1 609	1 954	2 770	2 856	1 539
Oxides	42 318	38 026	45 791	45 976	43 678
Netherlands					
Ilmenite (b)	5 807	2 021	412	2 885	3 312
Other titanium minerals (b)	5 213	5 971	934	1 372	33 826
Metal (b)	264	221	240	260	239
Oxides	22 240	20 714	23 068	27 723	20 127
Austria					
Oxides	9 176	8 792	10 557	9 195	8 967
Finland					
Titanium minerals	3 315	10 368	6 399	5 535	37 602
German Democratic Republic					
Oxides	16 171	16 163	16 751	...	...
Greece					
Oxides	7 005	3 313	2 179	837	680
Norway					
Oxides	4 179	3 445	3 168	4 582	4 490
Portugal					
Rutile	239	523	476	—	...
Oxides	6 632	7 528	7 834	8 278	8 749
Spain					
Ilmenite	101 302	133 272	106 200	162 977	...
Oxides	2 216	3 961	4 586	6 774	2 226
Sweden					
Titanium minerals	3 075	2 718	1 448	2 393	3 592
Metal	1 396	737	1 169	1 025	1 403
Oxides	19 460	16 705	17 819	18 419	16 384
Switzerland					
Oxides	6 754	7 768	7 194	6 141	3 773
Turkey					
Titanium minerals	2 350	3 226	700	1 930	...
Oxides	2 148	3 121	1 000	3 321	...
Yugoslavia					
Rutile	45 093	47 305	45 980	23 742	52 142
Oxides	2 419	2 853	6 686	6 876	5 397



## Imports of Titanium

Country	1976	1977	1978	1979	1980
Algeria					
Titanium minerals	462	277	288	...	...
Oxides	1 884	3 030	2 902	...	...
Morocco					
Oxides	1 685	1 939	2 624	3 245	2 333
South Africa					
Oxides	332	324	805	544	1 664
Canada					
Metal	439	372	631	725	983
Oxides	5 241	4 974	7 093	11 331	6 283
USA					
Ilmenite	152 772	303 898	280 022	167 356	324 308
Titanium slag	155 695	156 439	135 375	101 051	176 895
Rutile (c)	255 565	112 309	262 736	257 168	255 468
Metal	3 584	6 788	5 974	8 930	9 179
Oxides	62 454	103 966	106 529	95 203	88 533
Argentina					
Titanium minerals	1 809	2 053	2 493	...	...
Brazil					
Ilmenite	41 250	69 632	56 335	56 437	55 016
Rutile	4 800	2 066	4 070	2 942	4 964
Oxides	22 860	17 053	13 926	27 929	26 262
Hong Kong					
Oxides	3 833	4 349	6 968	6 077	5 406
India					
Oxides (d)	4 376	5 703	7 313	8 460	...
Indonesia					
Oxides	7 339	7 330	9 734	11 840	10 192
Japan					
Titanium minerals	496 750	495 967	399 131	420 433	409 080
Titanium slag	33 042	42 549	61 942	75 864	152 663
Oxides	13 416	11 644	13 416	20 486	21 011
Korea, Republic of					
Titanium minerals	15 861	22 292	31 963	12 314	31 150
Rutile sand	2 343	3 220	4 138	4 631	3 740
Oxides	5 700	7 689	...	15 113	10 099
Philippines					
Rutile	539	252	726	493	922
Oxides	5 323	4 796	6 443	6 802	4 393
Singapore					
Titanium minerals	397	491	655	1 177	541
Oxides	2 949	3 882	3 420	4 338	3 768
Taiwan					
Oxides	9 530	8 651	16 334	18 933	18 099
Thailand					
Rutile	—	441	618	799	...
Oxides	3 158	1 577	1 442	1 458	...
Australia					
Oxides (e)	885	1 016	1 605	...	...
New Zealand					
Oxides (e)	5 932	6 102	5 091	6 806	5 708

## Notes:

- 1 Significant quantities of titanium Sorelslag are believed to be imported into various Western European countries, but details are not available
- 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 2) items 522.46 and 533.1

(a) United Kingdom is known to import about 70 000 tonnes per annum of Sorelslag (70–72% TiO<sub>2</sub>)

(b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(c) Includes synthetic rutile

(d) Years ended 31 March following that stated

(e) Years ended 30 June of that stated

**Mine Production of Tungsten**tonnes (WO<sub>3</sub> est.)

Country	1976	1977	1978	1979	1980
United Kingdom	13	96	82	83	...
France	798	824	767	630	727
Austria	1 813	1 772	1 954	2 104	* 2 000
Czechoslovakia	* 100	* 100	* 100	* 100	* 100
Portugal (c)	1 588	1 267	1 392	1 749	1 971
Soviet Union	* 10 100	* 10 300	* 10 700	* 10 900	* 10 900
Spain	415	388	452	457	600
Sweden	245	251	480	470	* 500
Turkey	1 170	629	9	77	* 90
Namibia (d)	137	125	117	57	* 100
Rwanda	484	492	427	439	407
Uganda	* 139	47	129	0	0
Zaire (d)	303	216	187	141	91
Zimbabwe	32	* 75	* 75	139	* 130
Canada (a)	2 168	2 284	2 886	3 254	4 650
Mexico	296	241	295	318	340
USA (b)	3 357	3 444	3 944	3 799	3 472
Argentina	78	88	122	74	91
Bolivia	3 278	3 706	3 997	3 926	4 236
Brazil (a)	1 263	1 528	1 469	1 484	1 392
Peru	650	666	734	711	* 690
Burma (d)	219	277	254	372	410
China	* 11 350	* 11 350	* 15 100	* 16 400	* 16 400
Hong Kong	* 6	* 6	* 6	* 6	* 6
India	29	28	26	25	30
Japan	1 049	978	951	947	842
Korea, Dem. P.R. of	* 2 710	* 2 710	* 2 710	* 2 710	* 2 710
Korea, Republic of	3 262	3 322	3 381	3 421	3 451
Malaysia	81	125	* 100	* 90	* 50
Thailand	2 591	2 779	4 018	2 303	2 037
Australia (c)	2 508	2 973	3 414	4 026	4 182
New Zealand	9	7	10	10	18
World total	52 000	53 000	60 000	61 000	63 000

(a) Mainly scheelite

(b) Shipments from mine

(c) Wolframite and scheelite

(d) Including tin-wolframite concentrates

## Exports of Tungsten

Country	1976	1977	1978	1979	1980
United Kingdom					
Tungsten ore	206	366	135	30	222
Metal	337	455	336	227	333
Carbide	...	187	302	397	541
Belgium-Luxembourg					
Tungsten ore	36	49	45	9	—
Metal	116	230	217	159	165
France					
Tungsten ore	1 322	1 125	1 613	1 082	846
Metal	372	338	297	363	270
Germany, Federal Republic of					
Tungsten ore	30	172	87	174	139
Metal	585	573	541	606	704
Italy					
Metal	96	116	34	99	65
Netherlands					
Tungsten ore (b)	1 239	864	1 260	1 161	1 656
Metal	130	220	243	202	202
Austria					
Tungsten ore	450	252	130	25	—
Metal	183	363	581	848	1 111
Portugal					
Tungsten ore	1 875	1 555	1 692	1 704	2 091
Spain					
Scheelite ore	274	191	174	256	) 4 217
Other tungsten ore	193	276	213	359	)
Sweden					
Tungsten ore	135	86	103	431	330
Metal	110	28	49	54	50
Carbide	99	138	147	195	185
Switzerland					
Metal	132	64	23	24	51
Rwanda					
Tungsten ores & concentrates	808	845	665	* 650	...
South Africa					
Tungsten ore (c)	* 300	* 200	* 450	* 50	* 20
Uganda					
Wolframite ore	136	* 200	* 200	* 200	...
Zaire					
Tungsten ore	152	171	255	* 250	...
Canada (a)	* 1 430	* 1 690	* 2 200	* 2 300	* 3 000
Mexico					
Tungsten ores & concentrates	381	408	727	479	...
USA					
Tungsten ores & concentrates	1 923	1 190	1 639	1 749	1 834
Metal	1 049	973	1 191	1 130	1 481
Ammonium paratungstate (a)	85	66	99	2	3
Carbide	741	694	664	635	662
Bolivia					
Tungsten ore (a)	3 275	2 820	2 852	2 647	3 435
Brazil					
Tungsten ore	1 044	1 353	992	538	770
Peru					
Tungsten ores & concentrates	1 137	977	* 950	* 1 000	...
Burma					
Tungsten ores & concentrates	468	266	* 400	* 500	* 600
China					
Tungsten ores & concentrates (a)	* 3 000	* 3 000	9 387	10 999	10 490
Japan					
Metal	184	130	172	209	216

## Tungsten

**Exports of Tungsten**

tonnes

Country	1976	1977	1978	1979	1980
Korea, Dem. P.R. of (a)	* 1 000	* 1 000	* 1 000	* 1 000	...
Korea, Republic of					
Tungsten ore	2 366	2 029	2 361	1 915	1 721
Malaysia					
Wolframite ore	134	147	* 100	* 100	...
Singapore					
Tungsten ore	562	137	440	396	848
Metal	65	44	57	42	87
Thailand					
Tungsten ore	4 061	4 094	5 799	3 608	* 3 700
Australia					
Wolframite ores & concentrates	467	714	1 068	1 624	2 311
Scheelite ores & concentrates	2 688	2 873	3 936	3 442	3 715

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

(a) W content

(b) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

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

## Imports of Tungsten

Country	1976	1977	1978	1979	1980
United Kingdom					
Tungsten ore	3 829	3 365	3 655	2 996	2 622
Metal	153	208	567	245	298
Carbide	...	294	338	344	404
Belgium-Luxembourg					
Tungsten ore	418	98	—	—	3
Metal	165	237	199	300	224
France					
Tungsten ore	2 386	2 034	2 468	1 586	1 437
Metal	186	173	251	307	242
Germany, Federal Republic of					
Tungsten ore	4 362	2 981	3 422	4 097	2 931
Metal	603	924	1 150	831	970
Italy					
Tungsten ore	137	25	126	181	173
Metal	91	100	124	134	102
Netherlands					
Tungsten ore (a)	3 218	1 341	1 699	99	232
Metal	161	220	205	123	142
Austria					
Tungsten ore	2 722	2 205	4 533	4 835	4 297
Metal	196	744	492	728	418
Finland					
Metal	27	31	29	20	83
Poland					
Tungsten concentrates	3 762	3 360	4 103	2 898	1 662
Soviet Union					
Tungsten concentrates	* 2 000	* 2 000	* 3 000	* 3 000	* 3 000
Sweden					
Tungsten ore	3 201	2 665	2 420	2 180	3 711
Metal	117	102	43	28	131
Carbide	189	205	310	260	334
Switzerland					
Metal	24	73	92	39	113
Yugoslavia					
Metal	11	18	23	24	25
South Africa					
Tungsten ores & concentrates	341	483	508	333	2 506
Metal	13	32	142	201	177
USA					
Tungsten ore	5 604	7 101	9 574	11 454	11 720
Metal	280	255	345	769	553
Ammonium paratungstate (c)	264	168	233	198	202
Carbide	...	87	182	293	234
Venezuela					
Metal	32	37	11	...	...
India					
Tungsten ore	517	428	397	255	...
Metal	18	5	26	21	...
Japan					
Tungsten ore	2 605	3 247	2 264	3 133	3 480
Metal	106	113	126	162	159
Singapore					
Tungsten ore	163	68	417	487	1 347
Metal	44	42	54	3	23
Taiwan					
Metal	13	13	23	39	56
Australia (b)					
Metal	4	5	6	...	...

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

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Years ended 30 June of that stated

(c) W content

## Vanadium

**Mine Production of Vanadium**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
Finland	2 214	2 898	3 431	2 915	3 009
Norway	* 530	* 540	* 460	* 570	* 540
Soviet Union	* 9 000	* 9 000	* 9 500	* 10 000	* 10 000
Namibia	(a) 1 896	775	462	—	—
South Africa (c)	9 872	11 243	* 11 250	* 12 300	* 12 700
USA (d)	6 691	5 900	3 875	5 008	4 360
Chile (b)	* 1 100	* 860	* 690	* 450	* 360
China	—	—	* 2 000	* 3 600	* 4 500
World total	31 300	31 200	31 700	34 800	35 500

## Notes:

- 1 Vanadium pentoxide is also known to have been produced in France as a byproduct of alumina manufacture; the vanadium content of this was reported as 78 tonnes in 1970 but subsequent figures are not available
- 2 Argentina may produce vanadium from complex ores, Venezuela and Netherlands Antilles are thought to recover vanadium as a byproduct of petroleum refining

(a) Figure includes six months production for 1975

(b) Estimated V content of slag exported only

(c) Includes V content of slag

(d) Recoverable vanadium

**Exports of Vanadium**

Country	1976	1977	1978	1979	1980
United Kingdom					
Pentoxide	76	144	158	55	15
Metal	1	2	0	0	2
Belgium-Luxembourg					
Vanadiferous residues	713	294	260	1 423	—
Pentoxide	14	167	105	212	143
France					
Vanadiferous residues	23	—	422	1 563	168
Pentoxide	20	75	2	6	39
Germany, Federal Republic of					
Vanadiferous residues	1 280	860	1 137	904	705
Metal	0	1	55	109	124
Netherlands					
Vanadiferous residues (c)	23	80	107	199	17
Vanadium-titanium pig-iron (c)	—	2	95	3	9
Finland					
Pentoxide	2 571	3 500	4 931	4 928	...
Soviet Union					
Vanadiferous residues	12 913	* 12 000	* 12 000	* 12 000	* 12 000
South Africa					
Pentoxide (a)	* 5 400	* 4 600	* 6 100	* 7 900	* 6 300
Vanadiferous residues (d)	* 11 000	...	...	...	...
Lead vanadium concentrates (b)	7 240	* 7 600	* 4 500	—	...
USA					
Ores & concentrates (d)(f)	160	316	309	163	74
Pentoxide	...	...	1 128	1 057	662
Australia					
Ores & concentrates (e)	711	165	...	...	...

Note: In this table the term 'pentoxide' also includes vanadium oxides and hydroxides, if any

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

(b) Output from the South West Africa Co Ltd, years ended 30 June of that stated

(c) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(d) V<sub>2</sub>O<sub>5</sub> content

(e) Years ended 30 June of that stated

(f) Figures up to 1977 include oxides and vanadates

## Vanadium

**Imports of Vanadium**

tonnes

Country	1976	1977	1978	1979	1980
<b>United Kingdom</b>					
Vanadiferous residues	997	893	960	596	751
Pentoxide	989	702	875	937	925
Vanadium-titanium pig-iron	100	200	100	49	—
Metal	17	59	103	100	93
<b>Belgium-Luxembourg</b>					
Vanadiferous residues	6 790	7 815	5 085	6 272	7 001
Pentoxide	1 009	643	1 771	1 169	1 535
Metal	39	20	20	—	1
<b>France</b>					
Vanadiferous residues	47	5	—	—	—
Pentoxide	1 694	796	1 444	1 315	1 207
Vanadium-titanium pig-iron	173	101	51	50	49
Metal	1	1	1	19	19
<b>Germany, Federal Republic of</b>					
Vanadiferous residues	20 531	22 237	26 903	31 766	44 422
Pentoxide	433	1 324	1 851	710	1 383
Vanadium-titanium pig-iron	280	359	342	410	485
Metal	7	19	27	42	—
<b>Italy</b>					
Vanadiferous residues	2 094	3 169	3 611	4 891	3 462
Pentoxide	417	375	1 009	864	490
Vanadium-titanium pig-iron	200	392	225	250	252
<b>Netherlands</b>					
Vanadiferous residues (b)	3 809	7 675	8 802	737	—
Pentoxide (b)	81	74	8	8	14
Vanadium-titanium pig-iron (b)	60	100	100	75	50
<b>Sweden</b>					
Pentoxide	797	700	1 016	990	517
<b>USA</b>					
Vanadiferous residues (a)	4 853	4 552	3 617	3 952	2 891
Pentoxide	1 082	719	1 062	1 469	1 386
<b>Brazil</b>					
Pentoxide	358	667	796	1 215	1 042
<b>Japan</b>					
Pentoxide	3 225	2 052	2 656	4 633	3 404

Note: In this table the term 'pentoxide' also includes vanadium oxides and hydroxides, if any

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

(b) Figure for 1976 excludes imports from Belgium-Luxembourg, if any



## Mine Production of Zinc

tonnes (metal content)

Country	1976	1977	1978	1979	1980
United Kingdom (a)	4 786	7 528	2 718	572	4 444
France	34 700	41 828	39 900	36 583	36 810
Germany, Federal Republic of	115 345	115 638	88 863	117 100	120 800
Irish Republic	62 775	116 298	176 029	205 000	223 000
Italy	86 400	79 300	75 643	67 292	94 395
Austria	22 651	22 037	24 821	22 849	19 100
Bulgaria	85 500	80 000	78 000	80 000	78 000
Czechoslovakia	9 300	9 400	8 800	8 000	9 636
Finland (b)	59 200	61 317	53 225	54 499	58 400
Greece	29 815	18 427	25 600	24 102	24 605
Greenland	81 000	76 600	82 400	87 300	92 100
Hungary	2 235	2 962	2 827	3 074	2 807
Norway	29 319	31 277	29 592	28 361	27 642
Poland	180 000	218 500	218 500	209 000	215 000
Romania	38 000	50 000	51 000	50 000	48 000
Soviet Union	* 1 020 000	* 1 040 000	* 1 030 000	* 1 020 000	* 1 000 000
Spain	83 730	98 316	146 844	134 301	169 567
Sweden	128 326	140 233	167 373	169 200	167 400
Turkey	33 900	50 300	39 996	24 894	20 400
Yugoslavia	106 641	112 383	103 794	101 699	94 300
Algeria	7 900	3 100	4 100	4 700	8 200
Congo	5 100	5 200	4 800	—	—
Morocco	14 500	11 200	5 100	6 300	6 100
Namibia	26 900	38 300	36 600	29 000	25 400
South Africa	77 061	72 416	68 700	56 500	81 700
Tunisia	6 854	7 100	7 400	8 700	8 332
Zaire	70 298	81 832	88 533	76 244	67 000
Zambia	48 801	45 112	50 409	46 492	37 076
Canada	1 145 013	1 300 228	1 245 248	1 204 401	1 058 714
Honduras	25 000	26 500	24 339	19 845	16 026
Mexico	259 183	265 469	244 892	245 477	238 200
Nicaragua	14 287	10 142	3 600	—	—
USA (b)	439 543	407 888	302 669	267 341	334 862
Argentina	40 593	39 155	36 585	37 509	33 500
Bolivia	49 206	60 766	59 323	44 141	50 260
Brazil	46 500	52 500	60 200	68 500	70 000
Chile	5 056	3 918	1 814	1 847	1 100
Ecuador	123	1 229	1 339	700	2 700
Peru (b)	456 000	475 900	457 500	490 800	487 600
Burma	2 300	1 700	2 500	2 900	3 900
China	* 135 000	* 150 000	* 150 000	* 155 000	* 150 000
India	27 100	35 500	39 300	42 951	32 229
Iran	72 000	61 500	45 000	25 000	25 000
Japan	283 630	302 822	291 096	268 598	* 250 000
Korea, Dem. P.R. of	* 150 000	* 150 000	* 145 000	* 135 000	* 130 000
Korea, Republic of	59 136	68 355	66 440	62 477	56 787
Philippines	11 643	12 442	9 468	9 670	7 260
Vietnam	10 000	10 000	10 000	10 000	10 000
Australia	468 586	491 608	473 293	529 157	495 879
World total	6 200 000	6 600 000	6 400 000	6 300 000	6 200 000

(a) In a mixed copper-zinc concentrate

(b) Recoverable

Zinc

**Production of Slab Zinc**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	41 583	81 481	73 575	76 686	86 682
Belgium	236 100	273 600	232 900	252 600	247 500
France (a)	233 496	238 271	231 197	248 977	252 769
Germany, Federal Republic of	304 754	354 780	306 836	355 500	365 200
Italy	191 246	176 593	184 900	202 272	206 430
Netherlands	123 200	109 398	135 399	153 982	169 539
Austria (a)	16 547	16 774	21 655	23 238	22 100
Bulgaria	92 500	90 000	91 000	89 000	91 000
Finland	110 633	138 000	132 900	146 564	146 719
German Democratic Republic	* 15 000	* 15 500	* 16 000	* 17 000	* 16 000
Norway	64 352	69 790	71 628	77 763	79 056
Poland	237 000	228 200	222 041	209 246	217 485
Romania	53 370	51 860	49 790	46 486	45 906
Soviet Union	* 1 000 000	* 1 020 000	* 1 055 000	* 1 085 000	* 1 060 000
Spain	161 136	154 600	167 500	182 700	151 800
Turkey	2 300	16 100	17 300	17 200	13 100
Yugoslavia	95 469	98 845	95 232	98 906	84 537
Algeria	6 000	16 000	25 700	27 300	30 000
South Africa	66 299	76 000	79 100	75 400	81 400
Zaire	60 622	51 049	43 508	43 693	43 800
Zambia	37 052	40 114	42 493	38 163	33 970
Canada	472 316	494 888	495 420	580 449	591 565
Mexico	175 792	175 166	173 793	161 723	145 400
USA	452 554	408 365	406 698	472 481	340 356
Argentina	35 200	29 000	23 500	36 700	25 400
Brazil	43 154	47 032	56 097	63 494	78 303
Peru	64 680	66 949	62 900	68 400	63 800
China	* 150 000	* 155 000	* 160 000	* 160 000	* 155 000
India	26 785	35 997	59 388	63 323	43 627
Japan	742 069	778 406	767 949	789 352	735 200
Korea, Dem. P.R. of	* 135 000	* 135 000	* 130 000	* 120 000	* 105 000
Korea, Republic of	27 548	32 756	58 970	83 014	79 150
Australia	242 635	249 741	290 066	305 150	300 994
World total	5 716 000	5 925 000	5 980 000	6 372 000	6 109 000

(a) Refined

## Exports of Zinc

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates	7 495	9 795	9 443	—	7 695
Unwrought	7 296	17 160	15 032	12 178	27 018
Unwrought alloys	5 884	6 746	6 576	6 942	7 450
Scrap	4 004	3 856	6 018	4 818	5 400
Belgium-Luxembourg					
Ore	28 200	27 585	11 676	60 645	25 108
Unwrought (a)	188 043	188 824	187 101	193 626	168 178
Scrap	7 075	3 948	4 147	5 369	6 202
Denmark					
Unwrought	65	760	110	201	103
Unwrought alloys	97	39	22	72	823
Scrap	3 675	3 684	4 440	3 210	3 387
France					
Ore	19 990	24 174	54 588	46 530	43 980
Unwrought	32 136	38 692	51 974	44 533	32 913
Unwrought alloys	2 103	4 190	4 258	2 953	2 591
Scrap	2 895	2 385	1 786	4 280	3 210
Germany, Federal Republic of					
Ore	79 179	76 823	72 494	70 592	88 132
Unwrought	95 211	118 230	76 031	84 089	101 214
Unwrought alloys	9 358	13 205	11 507	12 942	9 991
Scrap	5 245	11 236	7 254	8 824	10 395
Irish Republic					
Ores & concentrates	128 208	210 506	344 426	413 872	462 096
Italy					
Ore	17 039	2 286	32	2 365	2 908
Unwrought	35 971	26 633	27 879	14 050	17 588
Unwrought alloys	3 848	1 102	1 507	2 503	2 752
Scrap	2 098	2 732	1 445	1 418	2 138
Netherlands					
Ore	24 162	15 142	3 200	11 501	7 306
Unwrought	) 129 078	101 720	115 465	129 044	156 103
Unwrought alloys	) 5 158	7 499	7 740	7 763	7 098
Scrap		6 053	6 352	4 419	6 576
Austria					
Ore	6 456	6 600	—	—	—
Unwrought	934	320	656	904	1 354
Scrap	149	88	75	217	70
Finland					
Unwrought	108 057	124 165	109 752	124 030	116 622
Unwrought alloys	242	—	3 853	5 535	3 991
Scrap	956	474	6	501	1 185
Greece					
Ores & concentrates	50 462	23 364	45 005	47 490	44 741
Greenland					
Ores & concentrates	135 007	135 772	138 737	128 911	* 130 000
Norway					
Ore	18 898	17 717	12 242	13 241	6 395
Unwrought	46 254	53 741	48 228	56 778	60 302
Unwrought alloys	12 072	6 876	8 801	5 155	5 436
Scrap	347	395	871	1 089	1 353
Poland					
Unwrought	58 586	59 231	43 161	33 162	44 061
Soviet Union					
Unwrought	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Spain					
Ore	6 545	4 657	7 515	13 891	54 796
Unwrought (a)	34 491	38 030	81 838	84 078	93 835
Sweden					
Ore	253 367	280 901	293 044	347 574	351 941
Unwrought (a)	575	313	167	249	342
Scrap	3 527	4 113	5 241	3 347	3 325

## Zinc

## Exports of Zinc

tonnes

Country	1976	1977	1978	1979	1980
Switzerland					
Unwrought	30	48	207	151	84
Scrap	1 038	671	757	1 242	892
Turkey					
Ores & concentrates	25 952	17 716	...	...	...
Yugoslavia					
Concentrates	594	...	2 271	6 600	8 831
Unwrought (a)	47 962	41 968	45 241	31 579	19 565
Algeria					
Ore	—	17 000	—	...	...
Unwrought	6 032	14 412	17 749	...	...
Scrap	293	84	30	...	...
Morocco					
Ore	19 091	21 115	15 409	16 317	12 948
South Africa					
Ores & concentrates	86 048	59 569	41 600	37 367	26 160
Unwrought (b)	* 3 300	* 5 500	* 8 100	...	* 1 000
Tunisia					
Ore	15 586	5 440	3 525	6 421	20 309
Zaire					
Unwrought	35 288	47 343	28 020	21 359	16 100
Zambia					
Unwrought	51 100	34 800	39 500	42 700	32 200
Canada					
Ore (c)	653 737	598 451	686 232	598 531	432 603
Unwrought	352 071	295 376	443 554	433 016	475 326
Scrap	16 312	19 137	19 173	15 443	22 197
Guatemala					
Ore	160	1 856	...	...	...
Honduras					
Ores & concentrates	46 570	52 716	51 481	...	...
Mexico					
Ores & concentrates	153 476	140 914	126 190	63 179	...
Unwrought	122 944	106 143	105 509	73 803	...
Nicaragua					
Ores & concentrates	21 571	19 836	11 040	—	...
USA					
Ore	...	...	10 973	20 095	51 432
Unwrought (a)	5 756	2 452	1 107	765	759
Scrap (c)	7 456	7 445	14 985	28 149	29 542
Argentina					
Unwrought	1 212	271	6 495	...	...
Bolivia					
Ores (c)	49 207	61 356	51 621	53 923	46 236
Brazil					
Ore	7 067	6 128	5 688	9 108	...
Peru					
Concentrates	665 883	610 728	703 199	...	...
Unwrought (a)	73 656	77 582	64 935	...	...
Burma					
Concentrates	2 292	4 560	...	...	...
Hong Kong					
Unwrought (Re-exports)	615	2 289	3 152	2 962	6 821
Iran (d)					
Ore	32 765	7 500	* 17 000	* 41 500	...
Japan					
Unwrought	76 127	70 105	57 857	37 294	41 700
Unwrought alloys	2 693	2 173	1 372	928	1 236
Scrap	1 304	3 063	4 245	2 640	664
Korea, Dem. P.R. of					
Ores & concentrates	* 47 000	* 25 500	* 21 500	* 64 700	...

**Exports of Zinc**

Country	1976	1977	1978	1979	1980
Korea, Republic of					
Ore	48 786	48 573	8 118	—	—
Philippines					
Concentrates	17 490	24 234	16 126	22 295	14 859
Scrap	36	—	—	305	184
Singapore					
Unwrought	2 687	4 257	8 137	2 945	4 776
Scrap	559	226	698	1 018	1 281
Australia					
Ores & concentrates (c)	235 310	175 009	243 374	183 801	* 276 000
Unwrought (a)	152 699	151 772	221 688	160 988	219 100

Note: In this table the term 'unwrought' zinc corresponds to item 686.1 of the Standard International Trade Classification (Revision 2) and comprises blocks, pigs, slabs, etc

(a) Including alloys

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

(c) Zn content

(d) Years ended 20 March following that stated

## Imports of Zinc

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Ores & concentrates	119 081	182 749	160 201	182 067	211 599
Unwrought	193 523	197 888	181 527	176 173	130 336
Unwrought alloys	8 991	5 400	7 117	1 973	3 937
Scrap	3 319	1 755	1 036	1 431	1 136
Belgium-Luxembourg					
Ore	594 982	544 917	532 471	554 133	429 909
Unwrought (a)	29 051	28 854	24 927	51 484	45 577
Scrap	8 316	9 448	5 551	6 648	6 618
Denmark					
Unwrought	10 152	13 793	13 614	16 003	14 972
Unwrought alloys	1 719	2 140	1 773	1 832	2 039
Scrap	123	245	270	233	101
France					
Ore	459 300	466 580	454 582	494 334	470 222
Unwrought	61 903	64 829	76 451	79 860	105 239
Unwrought alloys	21 247	21 306	17 281	21 393	18 930
Scrap	12 191	7 997	8 028	4 600	4 982
Germany, Federal Republic of					
Ore	601 349	562 456	498 930	502 951	618 984
Unwrought	124 441	123 008	139 880	151 729	148 021
Unwrought alloys	9 336	14 934	12 415	12 821	13 760
Scrap	6 339	4 859	9 637	12 369	10 969
Irish Republic					
Unwrought (a)	2 820	2 020	2 184	2 810	2 349
Italy					
Ore	242 140	193 432	206 600	232 587	357 062
Unwrought	44 540	51 045	43 097	44 845	46 605
Unwrought alloys	9 305	15 336	10 945	11 651	8 644
Scrap	2 107	1 596	1 710	4 022	3 358
Netherlands					
Ore	309 138	262 532	307 817	340 492	346 655
Unwrought	27 964	27 248	21 803	22 375	24 937
Unwrought alloys	813	992	423	324	584
Scrap	4 476	6 118	7 191	9 447	9 805
Austria					
Ore	7	2 200	1	5 621	8 594
Unwrought	5 237	7 896	4 080	4 469	4 074
Scrap	191	54	322	579	339
Czechoslovakia					
Unwrought	63 000	58 000	68 000	67 000	67 000
Finland					
Ore	110 391	127 162	169 199	146 816	189 488
Unwrought (a)	2 148	1 534	197	1 310	1 085
Greece					
Unwrought	12 936	13 350	15 886	20 942	18 812
Hungary					
Unwrought (g)	28 735	21 709	22 820	22 471	24 319
Iceland					
Unwrought (a)	63	130	143	72	87
Norway					
Ore	72 146	57 581	74 386	73 102	81 839
Unwrought (a)	3 099	2 458	733	884	1 051
Scrap	3 155	1 604	1 713	2 629	2 414
Poland					
Concentrates	125 431	68 451	28 640	27 979	27 053
Unwrought	3 797	2 624	2 520	2 627	2 398
Portugal					
Unwrought	12 547	15 218	17 139	14 524	16 722
Scrap	138	105	98	781	1 138

## Imports of Zinc

tonnes

Country	1976	1977	1978	1979	1980
Soviet Union					
Ore	41 102	81 655	78 241	* 18 700	* 20 000
Unwrought	* 45 000	* 45 000	* 60 000	* 45 000	* 65 000
Unwrought alloys	* 4 000	* 4 000	* 4 000	* 4 000	* 5 000
Spain					
Ore	117 814	117 343	78 451	111 703	40 192
Unwrought (a)(b)	423	571	997	830	1 744
Sweden					
Unwrought	39 130	31 093	35 519	36 241	30 428
Unwrought alloys	4 462	3 323	3 920	5 377	7 336
Scrap	193	109	16	71	31
Switzerland					
Unwrought	20 169	26 696	25 855	21 605	25 342
Turkey					
Unwrought	23 450	18 150	1 515	475	...
Yugoslavia					
Concentrates	67 891	33 482	33 465	55 760	65 227
Unwrought	12 973	14 127	4 794	4 779	7 209
Algeria					
Unwrought	201	—	49	...	...
Egypt					
Unwrought	1 464	1 222	2 597	2 865	...
Ghana					
Unwrought (a)	313	2	...	...	...
Ivory Coast					
Unwrought (b)	2 050	2 995	3 800	5 188	...
Kenya					
Unwrought (a)	2 056	4 279	8 000	4 735	7 231
Libya					
Unwrought	1	0	151	55	...
Morocco					
Unwrought	1 948	2 299	2 785	2 948	2 958
Mozambique					
Unwrought	425	145	...	...	...
Nigeria					
Unwrought (a)	9 961	11 577	9 654	...	...
South Africa					
Ores & concentrates	22 095	1	4 196	2	2 997
Unwrought	410	463	11	0	2 172
Scrap	320	61	167	218	132
Sudan					
Unwrought	250	—	600	200	...
Tanzania					
Unwrought (a)	4 095	3 532	30 266	...	...
Tunisia					
Unwrought (b)	848	1 042	1 018	887	1 531
Canada					
Ores & concentrates (b)(c)	3 449	6 048	6 145	9 868	59 544
Unwrought	12 518	3 330	2 677	2 876	958
Costa Rica					
Unwrought (a)	3 205	4 364	...	...	...
Honduras					
Unwrought	692	661	1 631	...	...
Jamaica					
Unwrought	749	1 270	1 269	1 210	...
Nicaragua					
Unwrought (a)	130	433	555	236	...
Panama					
Unwrought (a)	378	418	426	521	...
Trinidad & Tobago					
Unwrought	484	462	1 096	171	330

## Zinc

**Imports of Zinc**

tonnes

Country	1976	1977	1978	1979	1980
USA					
Ore (c)	88 101	111 410	188 003	224 952	129 922
Unwrought (a)	648 198	523 489	617 863	527 213	410 642
Scrap	1 635	9 188	3 310	3 259	3 470
Argentina					
Unwrought	3 258	2 359	499	...	...
Brazil					
Unwrought	50 429	58 455	67 122	60 010	59 520
Unwrought alloys	3 663	24	189	48	50
Chile					
Unwrought	...	3 316	5 390	...	...
Colombia					
Unwrought	(a) 11 630	(a) 11 075	* 11 000	11 827	10 538
Uruguay					
Unwrought	1 367	1 620	1 965	2 952	...
Venezuela					
Unwrought	11 702	18 036	16 273	13 800	23 600
Unwrought alloys	2 162	2 272	1 696	...	...
Burma					
Unwrought (a)	352	...	...	...	...
Cyprus					
Unwrought (a)	12	41	52	217	...
Hong Kong					
Unwrought	17 165	16 884	(a) 25 838	(a) 27 319	(a) 29 361
Scrap	93	5	87	150	—
India					
Ores & concentrates	38 493	19 001	83 212	39 580	...
Unwrought (d)	38 155	41 445	39 789	37 119	...
Unwrought alloys (d)	13 320	30 724	19 228	29 285	...
Scrap	590	—	1 015	846	...
Indonesia					
Unwrought (a)	28 206	36 645	44 617	46 149	51 430
Scrap	340	166	—	0	662
Iran (e)					
Unwrought	5 505	2 605	* 11 000	* 2 000	...
Israel (h)					
Unwrought	1 200	9 889	8 103	2 230	6 549
Japan					
Ore	986 053	962 984	936 586	959 229	804 851
Unwrought	28 123	28 918	32 088	36 702	41 896
Unwrought alloys	237	204	1 395	3 792	3 233
Scrap	316	43	149	243	508
Korea, Republic of					
Unwrought	5 961	15 080	11 900	2 830	36 279
Scrap	4 134	5 595	...	11 060	9 191
Malaysia					
Ore	29	26	...	...	...
Unwrought	8 223	8 841	...	...	...
Unwrought alloys	1 095	759	...	...	...
Philippines					
Unwrought (a)	13 985	18 521	27 095	26 549	16 175
Singapore					
Unwrought	11 813	13 653	17 877	17 388	18 693
Scrap	396	483	403	445	351
Syria					
Unwrought (b)	489	479	326	343	...
Taiwan					
Unwrought	26 068	27 891	50 868	37 350	38 382
Scrap	2 156	6 341	7 826	15 756	28 823
Thailand					
Unwrought	19 470	28 153	32 472	32 967	37 300
Unwrought alloys	1 136	1 148	1 108	955	...



Zinc

tonnes

**Imports of Zinc**

Country	1976	1977	1978	1979	1980
New Zealand (f)					
Unwrought (a)	15 498	23 344	17 311	20 255	22 594

Note: In this table the term 'unwrought' zinc corresponds to item 686.1 of the Standard International Trade Classification (Revision 2) and comprises blocks, pigs, slabs, etc

(a) Including alloys

(b) Including scrap

(c) Zn content

(d) Years ended 31 March following that stated

(e) Years ended 20 March following that stated

(f) Years ended 30 June of that stated

(g) Including semi-manufactures

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

## Zirconium

**Production of Zirconium Minerals**

tonnes

Country	1976	1977	1978	1979	1980
South Africa (a)	11 252	16 825	* 36 000	* 82 000	* 79 800
USA	* 90 000	* 90 000	* 60 000	* 60 000	* 50 000
Brazil (b)	3 058	4 649	4 301	3 605	3 933
India	* 10 300	* 10 700	* 10 300	* 10 000	...
Malaysia (c)	3 131	1 823	927	1 271	* 400
Sri Lanka	10	374	3 194	1 510	3 031
Thailand	55	303	25	116	61
Australia	420 185	398 229	391 606	444 975	459 039
World total	538 000	523 000	506 000	603 000	606 000

(a) Baddeleyite concentrates

(b) Zircon and Baddeleyite

(c) Exports

**Exports of Zirconium**

Country	1976	1977	1978	1979	1980
United Kingdom					
Concentrates	859	1 144	602	1 569	1 813
France					
Concentrates	999	1 086	742	326	260
Metal	319	398	584	940	892
Germany, Federal Republic of					
Concentrates	3 791	7 100	6 885	8 205	11 487
Metal	85	113	97	128	50
Italy					
Concentrates	155	1 288	2 750	3 873	487
Netherlands					
Concentrates (a)	9 459	17 311	859	270	24 840
South Africa					
Concentrates (b)	3 319	* 3 000	* 16 700	* 55 800	* 80 400
USA					
Concentrates	10 353	13 608	7 505	9 039	7 258
Metal	1 022	910	1 010	1 043	776
of which: Re-exports	16	39	76	205	145
Malaysia					
Concentrates	3 131	1 823	927	1 271	* 400
Australia					
Concentrates	344 536	327 883	390 043	479 440	501 812

(a) Figure for 1976 excludes exports to Belgium-Luxembourg, if any

(b) From 1977, IGS estimates, based on known imports into certain countries

## Zirconium

**Imports of Zirconium**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom					
Concentrates	21 809	33 655	43 015	33 667	32 426
Metal	95	108	150	227	206
Belgium-Luxembourg					
Concentrates	766	1 927	1 729	2 228	2 431
Metal	156	117	182	108	125
France					
Concentrates	27 822	31 549	38 787	41 904	39 646
Metal	155	149	496	985	686
Germany, Federal Republic of					
Concentrates	(b) 41 674	29 456	36 817	50 185	56 086
Metal	349	362	348	218	279
Italy					
Concentrates	44 448	42 558	42 209	67 273	65 697
Netherlands					
Concentrates (a)	16 906	22 885	230	214	27 011
Spain					
Concentrates	10 393	9 720	20 991	26 526	...
Sweden					
Concentrates	943	665	981	1 129	1 592
Metal	202	159	148	196	174
Turkey					
Concentrates	121	93	60	...	...
South Africa					
Concentrates	232	129	91	33	...
Canada					
Metal	181	223	326	327	229
USA					
Concentrates	58 643	59 152	82 562	100 555	103 223
Metal	453	579	899	831	655
Argentina					
Concentrates	748	1 295	1 500	...	...
Brazil					
Concentrates	10 864	7 694	11 193	1 249	2 792
Japan					
Concentrates	112 925	68 040	89 729	161 505	190 109
Korea, Republic of					
Concentrates	536	627	972	1 274	1 208
Malaysia					
Concentrates	49	48	...	...	...
Singapore					
Concentrates	35	107	155	377	1 102

(a) Figure for 1976 excludes imports from Belgium-Luxembourg, if any

(b) Including molybdenum ore

**Production of Beryl**

tonnes

Country	1976	1977	1978	1979	1980
Portugal	—	—	5	12	19
Soviet Union	* 1 650	* 1 700	* 1 750	* 1 800	* 1 800
Madagascar	17	* 15	11	5	6
Rwanda	46	68	80	86	108
South Africa	3	3	4	1	0
Uganda	* 55	10	40	—	—
Zimbabwe	94	103	35	28	9
Argentina	112	165	22	12	* 100
Brazil (a)	369	450	739	453	500

**Production of Borates (b)**

tonnes

Country	1976	1977	1978	1979	1980
Soviet Union	* 181 000	* 181 000	* 200 000	* 200 000	* 200 000
Turkey	911 756	1 100 472	1 319 575	1 171 679	1 189 176
USA (c)	1 130 000	1 333 000	1 410 000	1 442 000	1 402 000
Argentina	80 851	83 051	127 187	132 655	* 140 000
Chile	3 432	4 248	26 544	3 049	...
Peru	9 100	18 100	20 000	27 200	* 27 000
China	* 23 000	* 27 000	* 27 000	* 27 000	* 27 000

**Production of Germanium (j)**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
France	...	...	...	* 30	* 30
Austria	5	4	4	4	...
Soviet Union	* 14	* 14	* 14	* 14	* 14
USA (f)	* 16	* 16	* 19	* 23	* 27
Japan	16	13	11	10	13

**Production of Primary Magnesium Metal**

tonnes

Country	1976	1977	1978	1979	1980
France	8 035	8 683	8 500	9 043	9 328
Italy	7 033	7 286	7 729	6 476	7 886
Norway	38 808	38 165	39 160	44 177	44 400
Soviet Union	* 63 000	* 65 000	* 70 000	* 72 000	* 74 000
Yugoslavia	—	—	500	* 2 000	* 5 000
Canada	6 092	7 633	8 309	9 015	8 899
USA	108 823	114 267	135 591	147 385	154 101
China	* 5 000	* 5 000	* 6 000	* 6 000	* 7 000
India	30	107	23	28	13
Japan	11 200	9 400	11 200	11 400	9 300

**Production of Nepheline Syenite**

tonnes

Country	1976	1977	1978	1979	1980
Norway	216 607	210 012	231 273	241 131	232 132
Soviet Union	* 2 400 000	* 2 500 000	* 2 500 000	* 2 500 000	* 2 500 000
Canada	540 121	574 558	599 121	605 699	592 000

**Production of Perlite (k)**

tonnes

Country	1976	1977	1978	1979	1980
Italy	* 95 000	* 90 000	* 90 000	* 90 000	* 90 000
Czechoslovakia (e)	...	...	40 037	38 853	40 302
Greece	166 875	216 149	354 115	460 593	426 566
Hungary	96 180	103 270	92 630	97 895	99 270
Soviet Union	* 330 000	* 350 000	* 360 000	* 360 000	* 350 000
Turkey	24 546	14 640	36 612	44 084	19 380
Mexico	14 555	22 429	24 517	19 859	* 20 000
USA	660 000	790 000	852 000	768 000	748 000
Japan	* 65 000	* 70 000	* 72 500	* 75 000	* 80 000
Philippines	1 649	1 864	3 168	3 806	* 3 600
Australia	3 448	2 115	1 417	2 063	* 2 000
New Zealand	1 500	1 000	558	2 209	999

**Production of Selenium Metal (i)**

tonnes

Country	1976	1977	1978	1979	1980
Belgium	* 60	* 60	* 60	* 60	* 60
Finland	14	20	24	18	17
Sweden	70	80	56	57	* 60
Yugoslavia	45	50	53	46	* 50
Zambia	34	16	28	20	23
Canada (f)	226	410	393	512	377
Mexico	58	50	80	75	* 80
USA	182	227	231	266	141
Chile	15	8	8	* 8	* 8
Peru	9	16	13	18	* 19
Japan	460	456	* 500	* 510	* 480

## Other Mineral Commodities

**Production of Strontium Minerals (n)**

tonnes

Country	1976	1977	1978	1979	1980
United Kingdom	5 365	5 142	4 324	6 078	6 700
Italy	196	412	365	1 693	1 053
Spain	6 600	9 680	12 320	* 18 000	* 18 100
Turkey	* 6 350	19 810	14 550	20 529	...
Algeria	6 483	5 100	5 822	* 5 450	* 5 450
Canada	3 884	—	—	—	—
Mexico	22 157	45 633	34 224	39 519	* 35 000
Argentina (g)	2 054	839	1 195	122	190
Iran (m)	* 5 400	* 10 000	* 15 000	* 8 000	* 5 000
Pakistan	686	365	402	620	270

**Production of Tellurium Metal (l)**

tonnes

Country	1976	1977	1978	1979	1980
Canada (f)	53	37	45	47	* 45
USA	* 60	* 70	* 70	* 70	* 50
Peru	12	18	15	21	* 22
Japan	33	65	74	77	* 80
Fiji	2	* 12	* 23	* 23	* 11

**Mine Production of Uranium (h)**

tonnes (metal content)

Country	1976	1977	1978	1979	1980
France	1 871	2 048	2 174	2 390	2 633
Germany, Federal Republic of	38	15	41	...	...
Portugal	86	94	86	102	81
Spain	192	163	153	* 160	* 170
Gabon	965	907	1 022	1 100	1 033
Namibia	593	2 340	2 693	3 831	4 036
Niger	1 460	1 441	2 062	3 616	4 128
South Africa	2 788	3 368	3 975	4 780	6 186
Canada	5 438	5 787	8 211	6 530	6 368
USA	9 750	11 360	14 250	14 400	* 16 800
Argentina	174	185	143	745	...
Australia	359	356	516	706	1 561
World total	23 700	28 100	35 300	38 400	43 700
World total (U <sub>3</sub> O <sub>8</sub> equivalent)	28 000	33 200	41 700	45 300	51 600



**Production of Vermiculite**

tonnes

Country	1976	1977	1978	1979	1980
Egypt	...	...	593	700	* 725
Kenya	3 587	4 320	1 893	2 261	2 558
South Africa	222 077	165 419	209 093	191 573	185 699
USA (c)	276 000	326 000	306 000	314 000	306 000
Argentina	4 098	4 825	4 426	5 877	6 361
Brazil	946	6 833	19 611	10 469	35 266
India	3 435	2 878	1 886	3 109	3 428
Australia	716	—	244	...	...

**Production of Wollastonite (d)**

tonnes

Country	1976	1977	1978	1979	1980
Finland	6 165	8 904	7 688	10 576	* 8 800
Kenya	120	300	102	200	—
Mexico	1 143	692	10 956	11 892	...
USA	* 68 000	* 63 000	* 72 000	* 68 000	* 82 000
India	4 541	3 330	1 928	3 794	5 788

(a) Exports

(b) Borates are also believed to be produced in Federal Republic of Germany and Iran

(c) Sold or used by producers

(d) Wollastonite is also believed to be produced in Japan, Namibia and Turkey

(e) Expanded

(f) Includes production of secondary metal

(g) May contain unbeneficiated material

(h) Uranium is also believed to be produced in other countries including Brazil, China, Czechoslovakia, India, Japan and Soviet Union

(i) Other countries known to produce selenium metal include Australia, Federal Republic of Germany and Soviet Union

(j) Significant quantities of germanium are also believed to be recovered from imported or domestic material in Belgium, China, Federal Republic of Germany and Italy

(k) Perlite is also believed to be produced in Algeria, Bulgaria, China, Iceland, Mozambique, South Africa and Yugoslavia

(l) Other countries believed to produce tellurium metal include Australia, Belgium, Federal Republic of Germany and Soviet Union

(m) Years ended 20 March following that stated

(n) Strontium minerals are also believed to be produced in China, Federal Republic of Germany, Poland and Soviet Union





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