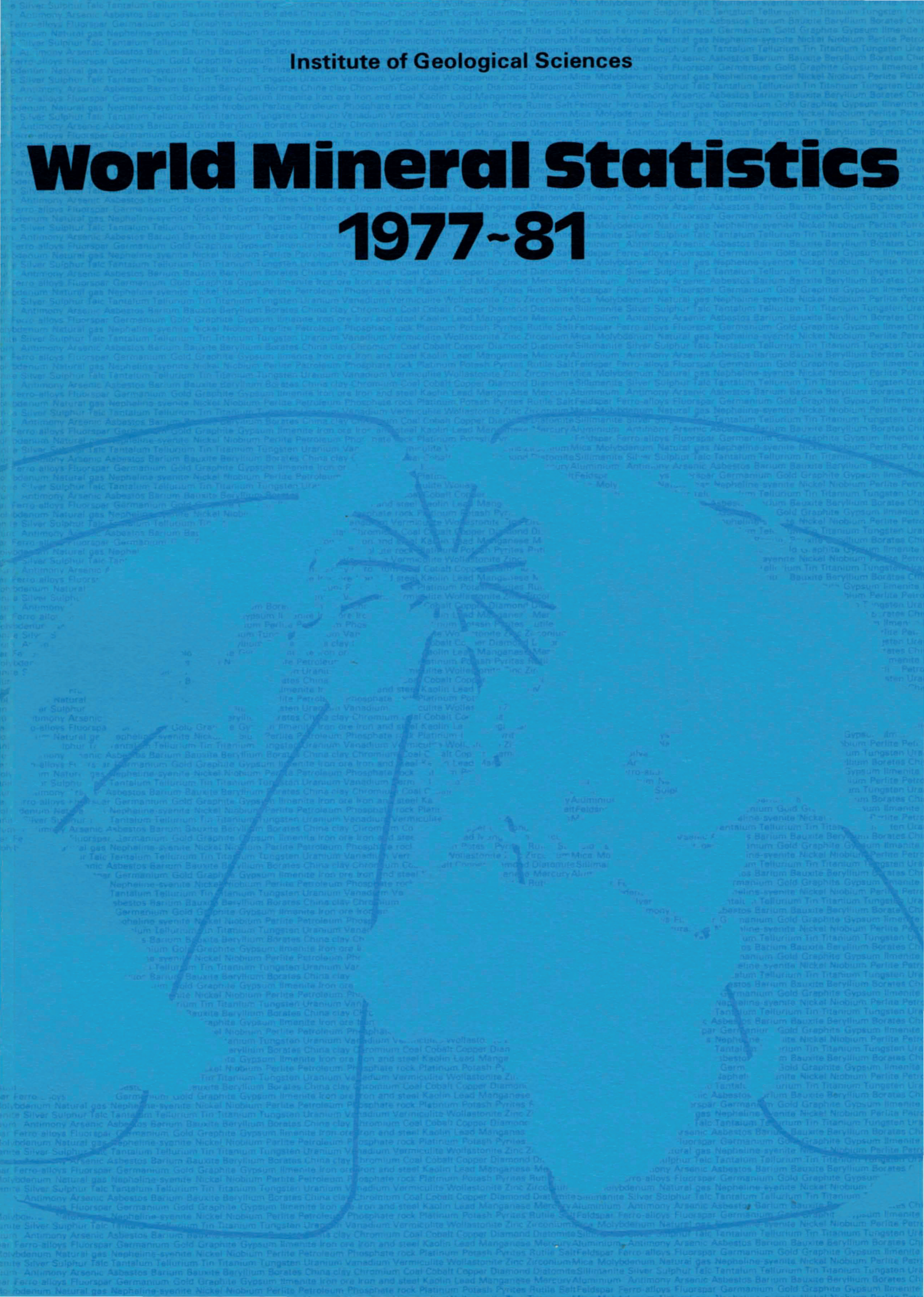


World Mineral Statistics

1977-81



INSTITUTE OF GEOLOGICAL SCIENCES

Natural Environment Research Council

WORLD MINERAL STATISTICS 1977-81

Production: Exports: Imports

Compiled by G. J. Lofty, N. E. Sharp, J. A. Hillier, D. C. T. Singh,
M. K. Lehall, W. J. E. Jones and M. M. Davis

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Compilers

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, covering the period 1967-71, published in 1973. 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 1970-78 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 1975-79, re-established the principle of a one-year roll forward for successive editions and this volume presents data for the period 1977-81. 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 are as up to date as is practicable. The objective remains to present 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. Such sources 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.

The scope of the series has been increased with each volume, and data for a wide spectrum of metallic and industrial minerals are now given; new tables are added whenever the need arises. In this volume, coverage has been extended by including new tables for refined metal production of copper and nickel. In addition, some minor changes have been made to existing tables; in particular, the refined lead production table now includes both primary and secondary lead and the alumina production table relates, where possible, to the calcined equivalent weight (ie Al_2O_3) of alumina hydrate. It should be noted that the gold and platinum production tables now refer specifically to the metal content of mine output.

With respect to trade information, our staff have continued their efforts to fill gaps in the reported data by analyses of world trade statistics, and for this volume estimates have been made of the imports and exports of Albania, Bulgaria and China. It is regretted that, at the time of going to press, 1981 export data for the United Kingdom were available only for six months (January and February and September to December).

Regarding the arrangement of countries in the tables, Greece is now grouped with the EEC countries, following its entry into the Community in 1981.

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 P A Sabine
Acting Director

Institute of Geological Sciences
Exhibition Road
London SW7 2DE

February 1983

INDEX

Aluminium	1
Antimony	12
Arsenic	16
Asbestos	20
Barytes	24
Bauxite	1
Bentonite	27
Beryl	269
Bismuth	33
Borates	269
Bromine	36
Cadmium	39
Chromium	42
Coal	46
Cobalt	54
Copper	59
Diamond	71
Diatomite	77
Feldspar	81
Ferro-alloys	113
Fluorspar	84
Fuller's earth	27
Germanium	269
Gold	87
Graphite	93
Gypsum	96
Iodine	103
Iron ore	106
Iron and steel	111
Kaolin	135
Lead	139
Lithium	148
Magnesite	151
Magnesium	270
Manganese	155
Mercury	160
Mica	163
Molybdenum	167
Natural gas	179
Nepheline syenite	270
Nickel	171
Niobium	233
Perlite	271
Petroleum	177
Phosphates	183
Platinum	186
Potash	191
Pyrites	220
Rare earths	200
Salt	204
Selenium	271
Sillimanite	211
Silver	214
Strontium	272
Sulphur	220
Talc	229
Tantalum	233
Tellurium	272
Tin	236
Titanium	243
Tungsten	249
Uranium	272
Vanadium	254
Vermiculite	273
Wollastonite	273
Zinc	257
Zirconium	266

EXPLANATORY NOTES

Coverage

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

Arrangement of countries

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

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

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

Production

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

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. Where separate data are available for any of these countries they have also been shown even though this may result in some double counting.

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 and so involve some double counting on tables where these are listed separately.

USA US trade statistics show trade between the US customs territory and foreign countries, but exclude trade between the US and Puerto Rico, and between the US and the Virgin Islands (up to and including 1980), 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 agencies which have provided valuable information, particular acknowledgement is made to the United States Bureau of Mines; the Department of Energy, Mines and Resources of Canada; the Bureau of Mineral Resources, Geology and Geophysics of Australia; the Department of 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, include the British Sulphur Corporation, the International Lead and Zinc Study Group, the International Tin Council, the UK Iron and Steel Statistics Bureau, ISMA Ltd, Samuel Montagu & Company Ltd, the UN Food and Agriculture Organization, and the UNCTAD Committee on Tungsten. In a few instances, information on specific commodities has been obtained directly from company sources.

Supplementary information is also obtained from publications dealing with a wider range of commodities such as American Bureau of Metal Statistics, *Non-ferrous Metal Data*; Bureau de Documentation Minière, *Annales des Mines*; Engineering and Mining Journal, *Annual Review and Outlook*; Groupe IMETAL, *Annuaire Statistique Minemet*; Metallgesellschaft AG, *Metal Statistics*; Mining Journal, *Mining Annual Review*; Samim, *Metalli Non Ferrosi*; World Bureau of Metal Statistics, *World Metal Statistics*; World Mining, *Catalog, Survey & Directory*; and publications of the United Nations and its agencies.

Units

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

Tonnes × 0.9842 = long tons

Tonnes × 1.1023 = short tons

Kilograms × 2.2046 = pounds

Kilograms × 32.1507 = troy ounces

Cubic metres × 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	1977	1978	1979	1980	1981
France	2 059	2 042	2 044	1 953	1 828
Greece	2 882	2 614	2 723	3 286	3 216
Italy	35	24	26	23	19
Hungary	2 949	2 899	2 976	2 950	2 914
Romania	702	708	710	710	680
Soviet Union (a)	* 6 700	* 6 700	* 6 500	* 6 400	* 6 400
Spain	10	9	17	10	10
Turkey	567	449	155	547	518
Yugoslavia	2 044	2 566	3 012	3 138	3 249
Ghana	283	330	214	225	180
Guinea	10 871	11 648	14 653	13 427	12 833
Sierra Leone	790	805	583	674	610
Zimbabwe	3	5	5	4	5
Dominican Republic (b)	575	568	524	510	405
Haiti (c)	739	624	436	294	410
Jamaica	11 434	11 736	11 505	12 053	11 673
USA (b)	2 013	1 669	1 821	1 559	1 510
Brazil	1 352	1 401	2 884	6 688	* 7 000
Guyana	3 344	3 479	3 354	3 052	1 907
Suriname	4 856	5 029	4 771	4 893	4 006
China	* 1 200	* 1 400	* 1 500	* 1 700	* 1 750
India	1 519	1 663	1 952	1 775	1 912
Indonesia	1 301	1 008	1 052	1 249	1 203
Malaysia	616	615	387	920	701
Australia	26 086	24 293	27 583	27 178	25 541
World total	84 900	84 300	91 400	95 200	90 500

Note: In addition to the countries listed, Pakistan produces small amounts of bauxite

(a) Includes nepheline concentrates and alunite

(b) Dried bauxite equivalent

(c) Years ended 30 September of that stated

Production of Alumina

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	98 500	94 000	88 100	101 700	90 361
France	1 241 600	1 220 940	1 238 450	1 339 411	1 235 921
Germany, Federal Republic of	1 618 450	1 555 502	1 538 925	1 607 902	1 650 636
Greece	474 200	478 000	496 000	505 000	502 000
Italy	788 300	818 538	854 115	900 370	786 357
Czechoslovakia	* 95 000	64 363	64 200	147 525	149 283
German Democratic Republic	38 953	37 585	40 965	43 025	45 164
Hungary	802 518	797 971	802 025	816 648	799 000
Romania	442 000	449 000	502 000	534 000	520 000
Soviet Union	* 3 250 000	* 3 300 000	* 3 200 000	* 3 250 000	* 3 800 000
Spain	—	—	—	58	* 695 230
Turkey	170 364	74 244	75 143	137 519	131 400
Yugoslavia	499 341	496 479	836 428	1 058 000	1 037 000
Guinea	562 000	622 000	660 000	708 000	680 000
Canada	1 060 800	1 053 600	953 000	1 202 000	1 208 000
Jamaica	2 048 000	2 113 571	2 096 058	2 457 775	2 556 000
USA	6 030 000	5 960 000	6 450 000	6 810 000	5 960 000
Brazil	367 600	434 300	449 100	492 700	530 000
Guyana	277 300	249 500	280 000	296 300	200 000
Suriname	1 215 000	1 316 000	1 313 000	1 444 000	1 249 000
China	* 750 000	* 750 000	* 750 000	* 750 000	* 750 000
India	414 491	483 139	500 106	* 500 000	* 500 000
Japan	2 045 000	1 767 000	1 822 000	2 218 000	1 619 000
Taiwan	51 000	51 000	59 000	80 000	19 000
Australia	6 659 234	6 775 675	7 414 606	7 246 499	7 079 009
World total	31 000 000	31 000 000	32 500 000	34 600 000	33 800 000

Note: Where possible figures relate to the calcined equivalent weight (i.e. Al_2O_3 of alumina hydrate. In countries where all hydrate is destined for calcination, figures relate directly to calcined alumina

Production of Primary Aluminium

Country	1977	1978	1979	1980	1981
United Kingdom	350	346	360	374	339
France	399	391	395	432	436
Germany, Federal Republic of	742	740	742	731	729
Greece	145	144	145	147	146
Italy	260	271	270	291	269
Netherlands	241	261	258	259	262
Austria	92	91	93	94	94
Czechoslovakia	37	37	37	38	33
German Democratic Republic	* 65	* 65	* 60	* 62	* 60
Hungary	71	71	72	73	74
Iceland	71	74	71	73	74
Norway	623	639	664	653	633
Poland	104	100	97	95	66
Romania	209	213	217	241	230
Soviet Union	* 2 200	* 2 300	* 2 350	* 2 420	* 2 400
Spain	211	212	260	387	397
Sweden	83	82	82	82	83
Switzerland	80	79	83	86	82
Turkey	30	33	32	34	40
Yugoslavia	197	196	190	185	197
Cameroon	57	55	48	43	37
Egypt	90	100	101	120	142
Ghana	154	114	169	188	190
South Africa	78	81	86	87	85
Canada	974	1 048	860	1 074	1 123
Mexico	43	43	43	43	43
USA	4 117	4 358	4 557	4 654	4 489
Argentina	50	49	125	138	132
Brazil	167	186	238	261	256
Suriname	50	59	53	55	41
Venezuela	43	80	193	328	314
Bahrain	121	123	126	126	141
China	* 350	* 360	* 360	* 360	* 360
India	184	205	212	185	213
Iran	21	26	11	16	16
Japan	1 188	1 058	1 010	1 091	771
Korea, Republic of	17	18	18	18	17
Taiwan	30	50	56	64	31
Australia	248	263	270	303	379
New Zealand	145	151	154	156	154
World total	14 300	14 800	15 200	16 100	15 600

Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Bauxite	1 238	659	2 813	2 953	(b) 1 771
Alumina	10 863	10 823	11 204	9 892	(b) 3 056
Alumina hydrate	32 277	25 200	22 358	32 786	(b) 18 835
Unwrought	60 245	74 117	88 914	74 195	(b) 37 028
Unwrought alloys	105 504	86 479	118 071	117 335	(b) 53 428
Scrap	9 757	12 706	28 187	35 693	(b) 20 431
Belgium-Luxembourg					
Bauxite	59	689	4 531	1 787	654
Alumina	194	185	1 152	744	660
Unwrought	5 403	1 048	820	4 167	17 166
Unwrought alloys	7 673	9 137	10 022	15 415	12 500
Scrap	38 978	28 726	33 532	36 800	38 469
Denmark					
Bauxite	13 720	41 561	51 989	46 483	20 601
Unwrought	1 145	3 364	4 032	105	133
Unwrought alloys	5 819	6 498	5 936	6 880	7 511
Scrap	6 598	7 345	11 581	11 883	12 389
France					
Bauxite	19 976	17 437	12 471	10 768	6 620
Alumina	251 089	226 873	257 371	267 408	159 532
Alumina hydrate	81 162	76 158	69 530	79 306	79 376
Unwrought	83 453	84 660	75 592	84 059	89 456
Unwrought alloys	82 339	81 758	82 006	93 319	100 882
Scrap	32 094	33 969	39 790	47 219	48 988
Germany, Federal Republic of					
Bauxite	9 327	12 260	21 621	21 713	21 134
Alumina	321 518	344 606	223 954	259 485	330 094
Alumina hydrate	118 543	120 544	155 077	142 353	178 083
Unwrought	69 404	107 670	67 653	61 141	78 731
Unwrought alloys	129 732	163 941	180 213	162 539	174 240
Scrap	50 819	52 982	51 975	68 913	69 550
Greece					
Bauxite	1 548 527	1 688 716	1 831 275	2 340 173	1 587 714
Alumina	203 127	174 355	266 882	203 175	159 000
Unwrought	77 513	85 275	73 805	60 245	69 225
Scrap	1 120	908	286	1 013	426
Irish Republic					
Alumina	—	1 752	1 580	1 543	1 925
Unwrought (a)	1 993	2 325	2 523	2 206	2 173
Scrap	—	840	2 151	3 526	2 365
Italy					
Bauxite	6 744	12 240	27 565	24 129	18 229
Alumina	322 147	311 007	392 949	398 630	222 112
Alumina hydrate	10 130	16 592	24 947	25 379	9 087
Unwrought	11 644	49 195	13 045	3 510	20 758
Unwrought alloys	12 244	20 069	9 350	8 256	29 047
Scrap	1 001	1 693	1 644	2 406	3 168
Netherlands					
Bauxite	3 467	3 295	26 323	13 441	12 502
Alumina	30 282	39 098	59 128	51 339	40 318
Alumina hydrate	35	421	358	517	12
Unwrought	202 108	170 048	219 367	233 644	220 103
Unwrought alloys	114 139	124 395	140 032	131 692	131 893
Scrap	53 358	61 994	67 297	74 331	74 778
Austria					
Unwrought	8 699	11 685	10 306	9 797	24 968
Scrap	48 737	42 570	38 864	32 736	56 371
Bulgaria					
Unwrought (a)(f)	* 3 800	* 4 000	* 4 150	* 4 800	* 3 200
Finland					
Unwrought (a)	3 248	2 652	1 338	3 887	4 643
Hungary					
Bauxite	584 319	601 203	595 687	541 943	498 322
Alumina	706 539	688 002	691 989	686 171	626 404
Alumina hydrate	6 309	8 605	9 455	7 667	6 930
Unwrought	67 903	77 777	80 556	84 216	85 741
Scrap	17 688	12 128	10 970	9 372	8 709

Exports of Bauxite, Alumina and Aluminium

Country	1977	1978	1979	1980	1981
Iceland					
Unwrought (a)	74 200	77 349	76 226	67 318	63 817
Norway					
Unwrought	354 048	416 859	339 149	295 283	338 668
Unwrought alloys	210 214	213 382	226 155	225 897	184 993
Scrap	14 704	21 520	23 841	18 591	20 677
Portugal					
Scrap	2 502	2 720	4 000	3 322	4 426
Romania					
Unwrought	60 200	70 300	65 000	93 800	...
Soviet Union					
Unwrought	* 540 000	* 560 000	* 560 000	* 560 000	* 560 000
Spain					
Unwrought	6 202	2 134	35 772	72 318	) 162 682
Unwrought alloys	2 658	3 704	7 098	34 464)
Sweden					
Bauxite	4 133	5 717	730	27	—
Alumina	33	88	132	569	621
Unwrought	19 373	28 656	9 775	2 451	2 958
Unwrought alloys	13 085	9 873	9 786	15 276	34 796
Scrap	3 820	2 256	1 628	2 364	2 257
Switzerland					
Alumina	184	163	1 189	1 311	301
Unwrought & scrap	29 027	32 876	47 376	44 953	44 982
Turkey					
Bauxite	—	28 725	2 600	9 400	109 417
Alumina	60 310	20 870	1 500	74 600	63 018
Yugoslavia					
Bauxite	908 894	676 163	524 928	246 821	266 000
Alumina	—	52	46 365	428 066	) 616 411
Alumina hydrate	125 866	102 066	417 387	225 358)
Unwrought	63 224	55 641	41 639	50 546	) 58 472
Unwrought alloys	831	3 089	4 540	3 325)
Scrap	6 148	3 127	352	276	177
Cameroon					
Unwrought	20 244	7 244	30 518	11 700	35 900
Egypt					
Unwrought & scrap	—	69 235	41 240	33 310	...
Ghana					
Bauxite	162 149	293 156	...	...	...
Unwrought (a)	74 160	109 056	152 600	166 200	134 300
Guinea					
Bauxite (f)	* 6 800 000	* 6 700 000	* 6 900 000	* 7 500 000	* 8 200 000
Alumina (f)	* 350 000	* 400 000	* 400 000	* 325 000	* 150 000
Sierra Leone					
Bauxite	809 726	550 280	770 294	730 905	...
South Africa					
Unwrought (a)	* 28 300	* 37 400	* 29 400	* 12 600	* 3 300
Canada					
Alumina (g)	24 211	32 699	26 543	39 541	44 098
Unwrought	655 352	863 532	552 150	784 819	726 061
Scrap	50 833	57 774	70 464	78 615	78 782
Dominican Republic					
Bauxite	781 103	756 667	634 729	605 803	457 159
Haiti (e)					
Bauxite	700 707	629 524	609 015	579 440	...
Jamaica					
Bauxite	6 355 182	6 447 769	6 469 155	6 145 848	5 370 000
Alumina	2 034 482	2 139 703	2 061 202	2 361 139	2 544 000
USA					
Bauxite	33 183	34 040	32 905	38 539	85 964
of which: Re-exports	7 515	10 828	9 361	10 172	45 043
Alumina	492 777	501 552	547 915	828 770	732 202
Alumina hydrate	33 973	44 105	36 791	38 107	19 288
Unwrought	) 88 855	69 389	117 774	504 935	233 796
Unwrought alloys	)	45 677	64 917	144 114	48 739
Scrap	92 369	176 590	279 373	403 779	219 042

Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
Argentina					
Unwrought	25	7 585	29 422	55 600	88 200
Brazil					
Bauxite	3 654	4 005	516 149	2 679 429	4 126 308
Guyana					
Bauxite, dried	895 653	1 014 484	...	1 010 211	...
Bauxite, calcined	704 593	587 619	...	602 974	...
Alumina	251 860	237 981	...	220 013	...
Alumina hydrate	15 553	13 189	...	9 771	...
Suriname					
Bauxite	2 172 000	2 240 508	1 736 954	1 775 031	...
Alumina	1 104 000	1 124 543	1 184 584	1 328 875	...
Unwrought	59 000	54 984	63 512	43 831	31 600
Venezuela					
Unwrought	6 261	16 967	102 707	209 068	239 100
Bahrain					
Unwrought (a)	112 970	140 100	130 234	77 546	74 793
China					
Bauxite (f)	* 109 000	* 107 000	* 258 000	* 527 000	* 462 000
Alumina (f)	* 8 000	* 10 000	* 22 000	* 33 000	* 25 000
Hong Kong					
Bauxite (Re-exports)	8 223	4 500	8 760	17 440	11 538
Alumina (Re-exports)	7	3 620	7	636	90
Alumina hydrate (Re-exports)	628	1 851	1 389	1 940	2 152
Unwrought (Re-exports)	4 777	5 605	5 980	10 365	16 401
Scrap	5 977	6 302	8 210	10 206	14 533
India					
Bauxite	47 665	3 360	43 708	...	...
Alumina	—	193 219	97 029	...	...
Unwrought (a)(c)	1 796	21	343	* 100	—
Indonesia					
Bauxite	1 138 361	911 105	1 091 032	1 112 622	956 369
Japan					
Bauxite	660	1 821	1 000	0	40
Alumina	151 869	124 105	205 841	393 882	361 947
Alumina hydrate	51 447	50 961	53 742	46 662	50 152
Unwrought	86 924	45 438	1 764	4 067	8 319
Unwrought alloys	12 725	9 156	6 182	3 577	3 841
Scrap	1 422	1 097	292	858	453
Malaysia					
Bauxite	663 758	506 292	470 151	...	...
Singapore					
Alumina	2 795	1 425	882	1 789	2 421
Unwrought	893	3 665	3 226	4 053	3 052
Scrap	3 921	4 228	22 517	6 438	6 196
Taiwan					
Alumina	3 964	2 380	104	3 740	1 366
Australia					
Bauxite	* 6 200 000	* 5 400 000	* 5 700 000	* 5 800 000	...
Alumina	6 071 542	6 310 213	6 534 193	6 994 275	6 509 000
Unwrought (a)	77 818	80 019	76 000	46 456	79 174
Scrap	6 925	8 363	10 965	13 485	13 910
New Zealand (d)					
Unwrought (a)	124 887	112 659	143 257	119 557	135 283
Scrap	1 953	1 540	1 583	2 571	2 264

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) Six months data only

(c) Years ended 31 March following that stated

(d) Years ended 30 June of that stated

(e) Years ended 30 September of 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

Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Bauxite, uncalcined	320 816	288 426	257 172	241 585	231 919
Bauxite, calcined	196 720	135 630	155 585	167 571	94 150
Alumina	698 168	695 887	596 323	806 343	630 422
Alumina hydrate	4 661	3 466	13 510	3 733	5 734
Unwrought	110 115	78 228	75 131	74 063	56 347
Unwrought alloys	92 450	113 380	110 349	97 360	67 000
Scrap	6 167	4 976	6 282	5 792	4 038
Belgium-Luxembourg					
Bauxite	17 406	32 867	40 903	35 936	33 050
Alumina	6 984	6 201	7 303	7 059	7 595
Alumina hydrate	15 300	15 633	16 566	14 460	16 040
Unwrought	139 555	175 926	175 774	183 376	184 525
Unwrought alloys	98 855	90 908	76 997	69 124	60 430
Scrap	14 161	15 351	26 556	33 316	39 095
Denmark					
Bauxite	4 543	10 143	89 385	90 555	68 507
Alumina	1 318	511	772	1 379	1 810
Alumina hydrate	2 344	3 783	2 392	2 689	3 247
Unwrought	1 837	5 981	11 323	5 101	1 384
Unwrought alloys	11 137	11 141	9 787	16 819	17 183
Scrap	2 776	1 638	1 377	2 270	2 623
France					
Bauxite	1 919 636	1 954 504	1 720 059	1 358 030	1 989 144
Alumina	16 485	37 231	16 154	21 924	15 635
Alumina hydrate	14 634	18 550	22 033	22 720	18 330
Unwrought	151 534	160 732	168 745	187 996	175 779
Unwrought alloys	123 732	130 095	146 357	144 638	124 596
Scrap	37 081	42 286	52 228	56 675	60 592
Germany, Federal Republic of					
Bauxite	4 090 450	3 613 821	3 694 216	4 177 043	3 910 619
Alumina	494 918	486 069	458 120	440 704	468 675
Alumina hydrate	2 099	2 080	1 712	1 437	1 854
Unwrought	258 285	245 788	293 717	361 204	291 286
Unwrought alloys	162 226	165 070	193 525	227 872	184 740
Scrap	128 757	137 345	157 123	171 813	157 814
Greece					
Bauxite	3 726	1 057	5 877	6 502	...
Alumina	261	215	285	146	133
Alumina hydrate	100	352	347	73	202
Unwrought	4 527	374	367	154	2 840
Irish Republic					
Alumina	3 163	3 239	3 536	3 998	4 289
Unwrought (a)	5 625	6 333	7 888	5 486	2 522
Italy					
Bauxite	1 938 527	1 644 740	2 287 342	2 298 753	1 709 124
Alumina	114 483	139 505	164 816	161 711	152 665
Alumina hydrate	31 502	27 336	14 974	18 476	17 146
Unwrought	123 201	119 944	126 721	172 029	108 835
Unwrought alloys	75 004	70 541	109 925	122 787	99 996
Scrap	90 054	82 849	97 408	123 463	93 651
Netherlands					
Bauxite	141 242	151 521	193 695	196 261	145 039
Alumina	505 774	542 576	562 993	585 774	598 990
Alumina hydrate	24 760	21 861	24 577	18 126	23 570
Unwrought	130 953	106 553	127 852	185 830	132 576
Unwrought alloys	31 351	38 955	39 479	30 001	28 773
Scrap	29 850	30 515	33 468	44 713	39 589
Austria					
Bauxite	34 233	40 226	40 231	41 706	36 655
Alumina	192 835	198 667	192 829	225 671	266 526
Alumina hydrate	7 770	7 890	7 628	6 756	7 888
Unwrought	19 246	14 891	30 663	35 182	33 160
Scrap	55 838	47 061	44 137	52 632	68 023
Bulgaria					
Unwrought (a)(f)	* 1 600	* 1 000	* 3 500	* 9 600	* 15 700

Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
Czechoslovakia					
Bauxite	481 000	456 000	436 274	465 716	...
Unwrought (a)	88 000	95 000	88 000	93 000	...
Finland					
Bauxite	76	265	4 044	4 131	3 925
Alumina	147	287	429	708	876
Alumina hydrate	17 672	24 045	27 409	28 551	30 522
Unwrought	23 287	18 191	21 073	23 048	26 080
Unwrought alloys	5 248	3 520	3 818	3 689	2 670
Scrap	15	13	3 849	2 475	6 100
German Democratic Republic					
Bauxite	197 900	251 500	133 800	120 600	67 200
Alumina	95 101	105 345	* 94 640	...	...
Unwrought (a)	52 677	43 117	* 38 400	...	...
Hungary					
Unwrought	162 406	165 859	180 187	187 865	154 499
Iceland					
Alumina	113 168	141 907	142 469	145 906	134 167
Norway					
Bauxite	10 542	3 706	20 641	6 894	0
Alumina	1 267 885	1 197 810	1 165 392	1 441 859	1 208 258
Alumina hydrate	33 579	31 682	41 105	37 608	34 630
Unwrought	4 246	3 615	3 155	7 330	8 202
Unwrought allo	4 255	4 334	5 746	9 068	6 614
Poland					
Bauxite	115 298	100 558	95 074	83 146	39 436
Alumina	289 553	313 209	283 038	287 206	240 400
Portugal					
Alumina	5 160	8 193	6 285	4 665	8 366
Unwrought	12 050	20 223	21 803	27 494	42 348
Romania					
Bauxite	* 550 800	* 877 200	* 668 560	...	...
Alumina	* 36 000	* 25 600	* 13 730	...	...
Soviet Union					
Bauxite	* 3 500 000	* 3 500 000	* 3 500 000	* 3 500 000	* 3 700 000
Alumina	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
Spain					
Bauxite	110 294	117 544	142 818	349 384	825 546
Alumina	413 487	432 221	559 221	706 573	228 728
Unwrought	32 954	31 127	6 496	1 279	) 13 642
Unwrought alloys	3 890	6 845	656	1 884)
Scrap	3 466	3 108	4 080	5 630	5 776
Sweden					
Bauxite	37 470	58 167	67 573	65 335	40 967
Alumina	193 364	145 338	150 290	191 803	167 874
Alumina hydrate	39 675	39 898	49 299	43 259	47 624
Unwrought	23 921	24 065	23 319	22 267	22 005
Unwrought alloys	19 404	10 103	13 437	14 601	16 681
Scrap	430	2 936	5 840	3 507	2 960
Switzerland					
Bauxite	8 560	7 693	6 995	5 533	772
Alumina	158 096	152 844	151 287	174 110	171 709
Unwrought & scrap	39 219	35 314	41 184	54 162	37 574
Turkey					
Alumina	188	171	138	79	207
Unwrought	40 906	11 245	13 022	11 163	34 237
Yugoslavia					
Bauxite	51 403	43 643	63 883	217 595	394 180
Alumina	1 347	30 162	1 367	1 284	60 623
Unwrought	43 066	40 704	40 655	58 342	) 51 834
Unwrought alloys	633	885	564	297)

Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
Cameroon					
Alumina	78 425	81 600	67 183	...	...
Egypt					
Unwrought & scrap	772	839	1 857	1 590	...
Ghana					
Alumina	306 583	193 224	...	...	...
Unwrought (a)	5 132	2 095	...	...	...
Madagascar					
Unwrought & scrap	444	1 112	589	154	...
Morocco					
Bauxite	—	780	810	519	...
Alumina	2 431	1 725	1 853	2 399	...
Nigeria					
Unwrought (a)	3 963	1 617	...	...	...
South Africa					
Bauxite	24 034	18 119	23 699	24 742	15 308
Alumina	159 739	184 956	174 109	164 725	194 103
Unwrought	449	614	620	282	2 417
Scrap	662	518	405	1 809	9 160
Tanzania					
Unwrought (a)	—	4 734	2 110	2 958	...
Canada					
Bauxite	2 764 286	2 434 436	2 149 636	3 504 369	2 702 283
Alumina	821 597	1 056 190	952 584	983 972	1 020 550
Unwrought	20 795	11 481	23 985	9 909	14 316
Scrap	16 126	27 162	30 681	30 723	33 413
Mexico					
Bauxite, calcined	28 032	50 733	61 593	90 098	...
Alumina	95 914	93 932	96 767	87 790	...
Alumina hydrate	12 836	14 751	18 501	16 063	...
Unwrought & scrap (a)	9 243	43 113	65 285	70 146	...
USA					
Bauxite, crude dried	13 342 462	14 036 476	14 239 807	13 896 210	13 856 785
Bauxite, calcined	241 808	251 786	266 736	377 812	353 417
Alumina	3 701 373	3 961 962	3 837 475	4 357 535	3 977 845
Unwrought	276 854	339 601	238 359	245 177	359 246
Unwrought alloys	337 776	345 995	279 016	281 467	285 264
Scrap	81 722	83 599	61 975	54 251	74 374
Argentina					
Bauxite	20 458	18 560	21 630	...	...
Alumina	136 752	82 515	) 229 685	...	...
Alumina hydrate	13 679	4 344	)	...	...
Brazil					
Bauxite	12 364	10 091	15 574	13 175	14 970
Alumina	705	23 981	70 080	63 825	26 785
Alumina hydrate	1 234	354	535	282	82
Unwrought	62 048	53 070	45 008	38 797	18 034
Unwrought alloys	18 771	7 257	6 809	7 905	10 207
Scrap	8 432	22 234	22 764	11 145	5 340
Chile					
Unwrought	3 237	4 270	...	...	...
Colombia					
Bauxite	1 106	1 200	4 738	3 841	5 922
Unwrought (a)	13 857	17 346	16 364	13 444	15 734
Uruguay					
Bauxite	1 830	951	1 590	4 432	4 068
Alumina	803	1 033	1 288	799	638
Unwrought	849	3 350	3 680	3 329	1 979
Venezuela					
Bauxite	9 309	6 022	66 747	34 290	...
Alumina	87 044	150 113	360 194	) 503 846	...
Alumina hydrate	2 934	1 015	23 655)	...
Unwrought	31 994	39 913	8 023	97	300

Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
China					
Unwrought (a)(f)	* 109 500	* 155 000	* 66 700	* 67 300	* 35 300
Hong Kong					
Bauxite	6 345	7 070	9 400	15 092	11 602
Alumina	281	1 081	243	979	86
Alumina hydrate	800	1 937	1 422	2 100	2 141
Unwrought	25 876	28 481	30 515	40 469	38 020
Scrap	303	473	468	1 074	580
India (c)					
Alumina	1 003	782	494	...	...
Unwrought	5 508	17 996	40 654	) 49 100	36 800
Unwrought alloys	29	33	19)	
Indonesia					
Alumina	17 664	21 866	14 358	19 316	39 859
Unwrought	11 623	12 288	15 150	14 131	21 161
Iran (e)					
Alumina	16 555	* 1 350	* 100	* 750	...
Unwrought	3 187	* 21 000	...	* 3 000	...
Israel (b)					
Alumina	608	489	983	1 554	1 769
Unwrought	18 305	24 790	19 073	19 738	13 464
Japan					
Bauxite	5 318 199	4 742 993	4 597 104	5 707 708	4 352 440
Alumina	939 860	757 322	758 631	731 245	639 355
Alumina hydrate	620	1 596	2 162	3 857	1 139
Unwrought	411 624	598 120	748 438	750 080	943 623
Unwrought alloys	122 183	142 084	135 459	160 005	185 699
Scrap	70 470	139 612	181 531	275 696	204 863
Korea, Republic of					
Alumina	49 415	60 752	63 329	59 327	65 850
Unwrought (a)	63 380	86 500	82 803	73 818	98 583
Scrap	3 321	...	5 308	3 862	5 699
Malaysia					
Alumina	5 480	8 104	10 241	...	...
Unwrought (a)	11 740	8 566	14 488	...	...
Pakistan (d)					
Scrap	10 171	52 385	10 044	11 905	13 483
Philippines					
Bauxite	7 750	4 112	9 909	8 219	12 592
Alumina	2 577	1 549	2 743	1 201	1 395
Unwrought	10 443	8 668	19 352	9 461	6 178
Unwrought alloys	6 549	8 122	9 060	8 190	4 229
Singapore					
Bauxite	3 681	7 242	11 000	400	19
Alumina	3 919	4 460	7 583	8 186	6 625
Unwrought	3 842	7 862	6 038	9 092	8 432
Scrap	542	399	384	433	394
Syria					
Unwrought & scrap	2 081	1 508	1 289	592	3 457
Taiwan					
Bauxite	162 569	171 182	209 618	260 438	106 754
Alumina	6 849	39 760	63 652	57 915	37 612
Alumina hydrate	2 117	2 819	3 876	1 111	1 711
Unwrought	52 479	48 672	52 860	58 320	47 752
Scrap	8 700	10 095	13 768	19 255	16 847
Thailand					
Bauxite	12 316	5 911	10 191	205	...
Alumina	1 340	525	1 469	1 456	...
Alumina hydrate	4 297	3 456	7 399	11 560	...
Unwrought	29 144	29 684	38 467	40 209	...
Unwrought alloys	4 095	4 335	4 739	4 699	...
Scrap	1 386	456	1 142	81	...

Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1977	1978	1979	1980	1981
Australia					
Alumina	2 197	3 524	4 210	3 967	3 619
Unwrought (a)	183	359	4 330	8 580	9 261
Scrap	1 374	1 337	1 463	3 627	3 008
New Zealand (d)					
Alumina	255 829	331 403	320 599	265 290	325 738
Unwrought	274	180	263	390	622

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) Figures may be incomplete as value only given in Israeli trade return for imports from some countries
 - (c) Years ended 31 March following that stated
 - (d) Years ended 30 June of that stated
 - (e) Years ended 20 March following that stated
 - (f) IGS estimates, based on known exports from certain countries

Mine Production of Antimony

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Italy	808	931	950	713	696
Austria	561	550	655	691	601
Czechoslovakia	300	300	408	820	739
Soviet Union	* 7 700	* 7 000	* 7 500	* 7 000	* 6 500
Spain	331	442	501	625	663
Turkey	1 715	1 984	495	977	835
Yugoslavia	2 248	2 676	2 037	1 682	1 455
Algeria	* 60	* 60	* 60	—	—
Morocco	1 443	1 483	850	575	504
South Africa	11 831	9 095	11 651	13 067	9 810
Zimbabwe	551	121	158	150	263
Canada	3 200	3 000	2 954	2 361	1 670
Guatemala	916	230	639	700	500
Honduras	70	78	46	23	20
Mexico	2 698	2 457	2 872	2 176	2 902
USA	553	724	655	311	586
Bolivia	15 156	12 672	13 019	15 465	15 296
Brazil	367	274	73	46	414
Peru (a)	819	745	546	344	683
Burma	530	590	680	440	—
China	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
India	186	—	—	—	—
Korea, Republic of	—	20	—	—	—
Malaysia	264	291	307	133	191
Pakistan	94	104	31	40	30
Thailand	3 031	3 548	3 625	3 603	1 480
Australia (b)	2 089	1 580	1 539	1 389	1 130
World total	67 500	61 000	62 300	63 300	57 000

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	1977	1978	1979	1980	1981
United Kingdom					
Ore	31	—	396	824	(d) 0
Metal	704	497	173	54	(d) 30
Oxide	4 200	(a)* 4 200	(a)* 3 000	(a)* 2 300	(a)* 2 700
France					
Ore	1	7	770	104	271
Metal	219	392	126	124	77
Oxide	3 189	4 654	4 677	4 947	6 309
Germany, Federal Republic of					
Ore	132	—	0	—	—
Metal	216	19	17	47	101
Oxide	366	319	344	261	481
Italy					
Metal	1 145	61	20	3	51
Oxide	206	487	301	204	240
Netherlands					
Metal	91	39	136	79	21
Oxide	188	407	474	341	213
Austria					
Ore	336	414	493	291	26
Sulphide (b)	22	0	20	28	91
Spain					
Metal	262	464	593	370	...
Sweden					
Metal	3	12	13	—	—
Turkey					
Ore	1 819	1 400	400	1 447	...
Metal	20	565	290	319	...
Yugoslavia					
Metal	580	1 485	975	1 055	...
Morocco					
Ore	3 495	2 267	1 966	1 159	...
South Africa					
Ore	8 452	3 173	11 379	3 029	* 5 900
Oxide (a)	* 4 300	* 2 800	* 6 600	* 6 400	* 4 200
Guatemala					
Ores & concentrates	1 579	...	...	...	...
Mexico					
Ores & concentrates	3 387	4 508	1 311	1 051	...
Metal	143	384	533	194	...
USA					
Metal	763	639	488	452	317
Oxide	236	216	630	838	420
Bolivia					
Ore (c)	12 391	8 136	13 266	7 386	11 173
Metal	) 1 431	1 266	1 571	3 576	4 165
Oxide	) 1 431	1 125	1 798	1 661	2 422
Peru					
Ores & concentrates	865	796	738	378	...
Metal	429	386	102	...	...
Burma					
Ores & concentrates	354	...	...	...	...
China (a)					
Ores & concentrates	* 2 100	* 500	* 3 200	* 3 900	* 3 000
Metal	* 3 000	* 5 000	* 5 700	* 2 600	* 2 800
Oxide	* 400	* 1 200	* 1 700	* 2 300	* 2 400
Japan					
Metal	77	102	59	41	29
Thailand					
Ore	3 989	5 594	5 690	5 704	5 216
Metal	45	73	60	5	19
Australia					
Ores & concentrates	1 216	3 040	1 356	1 376	1 159

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

(b) Believed to be crude liquated sulphide

(c) Sb content

(d) Six months data only

Antimony

Imports of Antimony

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	828	317	413	347	365
Oxide	349	253	272	510	717
Belgium-Luxembourg					
Ore	6 823	5 179	6 662	5 177	5 147
Metal	550	230	335	32	8
Oxide	104	110	240	193	338
Denmark					
Metal	21	9	24	10	10
Oxide	10	27	26	32	36
France					
Ore	7 679	9 984	10 794	8 823	10 998
Metal	451	818	886	348	552
Oxide	318	454	434	425	373
Germany, Federal Republic of					
Ore	2 578	3 040	3 126	3 002	1 954
Metal	761	747	567	538	595
Oxide	3 243	3 406	3 896	3 351	3 567
Greece					
Metal	40	63	13	6	2
Italy					
Ore	720	—	—	3	5
Metal	121	152	122	112	294
Oxide	437	406	626	528	422
Netherlands					
Metal	128	90	132	112	48
Oxide	897	1 059	1 141	985	907
Austria					
Metal	92	52	56	63	52
Bulgaria					
Metal (b)	* 300	* 800	* 400	* 250	* 300
Finland					
Metal	5	39	35	15	20
Norway					
Metal	17	22	28	43	20
Spain					
Ore	1 054	564	664	659	480
Metal	321	126	199	32	...
Oxide	202	307	242	210	...
Sweden					
Metal	25	21	19	14	25
Switzerland					
Metal	137	126	28	91	55
Yugoslavia					
Ores & concentrates	2 209	2 576	3 261	4 201	...
Metal	170	145	...	0	...
Algeria					
Metal	115	35	262	...	...
Morocco					
Metal	9	2	9	30	...
Canada					
Oxide	626	907	794	944	936
Mexico					
Oxide	37	63	...	...	...
USA					
Ore	7 060	7 867	14 283	10 019	9 835
Liquated	231	47	25	8	...
Metal	2 417	4 015	3 376	2 367	2 672
Oxide	8 714	9 702	12 384	11 108	11 040

Imports of Antimony

Country	1977	1978	1979	1980	1981
Argentina					
Ore	368	220	...	...	...
Brazil					
Ore	494	655	1 641	623	443
Metal	81	284	177	132	107
Oxide	386	392	597	786	300
Sulphide	3	5	9	11	3
Venezuela					
Metal	142	179	122	...	...
Sulphide	10	21	1	...	...
India					
Ore	1 453	106	1	...	...
Metal	526	811	450	...	...
Oxide (a)	107	114	67	...	...
Japan					
Ores & concentrates	7 501	6 553	6 702	6 996	6 531
Metal	1 239	1 611	3 202	1 563	2 366
Oxide	...	...	...	...	1 048
Sulphide	41	43	16	—	—
Malaysia					
Metal	52	75	67	...	...
Australia					
Metal	58	87	51	36	50

(a) Years ended 31 March following that stated

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

Arsenic

Production of White Arsenic

tonnes

Country	1977	1978	1979	1980	1981
France	6 042	5 280	* 5 500	10 000	9 000
Germany, Federal Republic of	* 360	* 360	—	* 360	* 360
Portugal	222	253	155	* 200	* 200
Soviet Union	* 7 500	* 7 600	* 7 700	* 7 700	* 7 750
Sweden	6 000	6 100	* 5 100	* 4 100	* 4 000
Namibia (a)	2 615	2 401	2 221	1 288	* 1 400
Zimbabwe	201	129	—	79	21
Mexico (b)	5 742	6 244	6 535	6 930	* 7 000
Peru	1 367	1 257	2 440	2 427	* 2 500
Japan	119	91	182	284	* 300
Korea, Republic of	491	548	* 590	...	...

Notes:

- 1 This table includes calculated trioxide equivalents of arsenic metal produced except where this would involve double counting
 - 2 In addition to the countries listed, Argentina, Austria, Belgium, China, Czechoslovakia, German Democratic Republic, Finland, Hungary, Spain, United Kingdom and Yugoslavia are also believed to produce arsenic
- (a) Output of Tsumeb Corp. only, trioxide equivalent of reported black arsenic
(b) Including trioxide equivalent of black arsenic

Exports of Arsenic

Country	1977	1978	1979	1980	1981
United Kingdom					
White arsenic	18	81	853	165	(a) 115
Metallic arsenic (b)	28	12	13	29	(a) 10
France					
White arsenic	7 210	12 937	10 264	7 886	7 877
Metallic arsenic	378	146	41	104	87
Germany, Federal Republic of					
White arsenic	44	56	122	928	884
Italy					
White arsenic	233	25	20	73	75
Netherlands					
White arsenic	29	2	81	27	7
Portugal					
White arsenic	10	(c) 106	...	...	...
Mexico					
White arsenic	3 244	2 802	3 305	3 817	...
Bolivia					
White arsenic	—	—	80	81	127
Peru					
White arsenic	25	29	1 519	351	...
Hong Kong					
White arsenic (Re-exports)	38	8	7	38	76
Japan					
White arsenic	12	6	...	—	—
Korea, Republic of					
White arsenic	—	—	60	116	337

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

(a) Six months data only

(b) May include some tellurium

(c) Includes arsenic acid

Imports of Arsenic

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
White arsenic	* 5 600	...	...	5 481	8 053
Metallic arsenic (a)	117	119	137	105	105
Belgium-Luxembourg					
White arsenic	29	40	9	37	32
Metallic arsenic (a)	62	73	115	100	90
Denmark					
White arsenic	0	3	0	10	10
Metallic arsenic (a)	20	16	17	17	18
France					
White arsenic	—	69	15	107	181
Metallic arsenic	89	60	113	211	143
Germany, Federal Republic of					
White arsenic	576	508	675	545	688
Metallic arsenic (a)	40	56	54	49	75
Greece					
White arsenic	83	68	29	—	—
Italy					
White arsenic	868	785	817	837	734
Metallic arsenic (a)	47	78	63	57	65
Netherlands					
White arsenic	194	291	147	4	31
Finland					
White arsenic (e)	773	916	1 097	1 220	1 644
Spain					
White arsenic	483	308	299	131	...
Metallic arsenic	12	14	19	18	...
Switzerland					
White arsenic (e)	65	26	58	6	80
Turkey					
White arsenic	55	51	43	35	...
Yugoslavia					
White arsenic	50	...	66	102	101
Metallic arsenic	21	36	138	85	...
Morocco					
White arsenic	10	—	0	10	...
South Africa					
White arsenic (e)	165	52	34	—	141
Metallic arsenic	13	17	10	12	12
USA					
White arsenic	5 617	9 350	11 181	11 366	18 710
Metallic arsenic	324	335	367	241	293
Argentina					
White arsenic	207	132	...	...	...
Brazil					
White arsenic	600	562	830	—	116
Metallic arsenic	34	39	59	54	6
Chile					
White arsenic	31	297	...	...	...
Colombia					
White arsenic	31	78	18	...	...
Uruguay					
White arsenic	21	50	69	28	7
Venezuela					
White arsenic	54	20	44	17	...
Hong Kong					
White arsenic	55	10	18	46	75
India (b)					
White arsenic	500	580	1 017	...	...
Metallic arsenic	18	...	31	...	...
Indonesia					
White arsenic	91	142	107	99	64
Iran (d)					
White arsenic	31	...	...	...	...
Japan					
White arsenic	1 076	751	999	716	450

Imports of Arsenic

Country	1977	1978	1979	1980	1981
Korea, Republic of					
White arsenic	11	22	17	—	0
Malaysia					
White arsenic	43	100	1 850	...	...
Philippines					
White arsenic	135	152	246	75	162
Taiwan					
White arsenic	244	213	681	190	220
Thailand					
White arsenic	75	58	152	93	...
Australia					
White arsenic	685	456	936	904	...
New Zealand (c)					
White arsenic (e)	2 009	1 872	2 070	1 888	2 574

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

Asbestos

Production of Asbestos

tonnes

Country	1977	1978	1979	1980	1981
Italy	149 327	135 401	143 931	157 794	137 086
Bulgaria	500	700	600	650	400
Czechoslovakia	....	575	564	617	388
Soviet Union	* 1 900 000	* 1 945 000	* 2 020 000	* 2 150 000	* 2 220 000
Turkey	3 975	13 380	38 967	8 882	2 833
Yugoslavia	9 036	10 304	9 959	10 468	12 206
Egypt	478	349	238	316	325
Mozambique	—	—	789	* 800	* 800
South Africa					
Amosite	66 983	40 526	39 058	51 646	56 834
Anthophyllite	550	—	—	—	—
Crocidolite	200 966	137 171	118 301	119 148	102 337
Chrysotile	111 575	79 511	91 828	106 940	76 772
Swaziland					
Chrysotile	38 046	36 951	34 294	32 833	35 264
Zimbabwe					
Chrysotile	273 194	248 861	259 891	250 949	247 503
Canada					
Chrysotile	1 517 360	1 421 808	1 492 719	1 323 053	1 120 523
USA (a)	92 256	93 097	93 354	80 079	75 618
Argentina	686	1 069	1 371	1 261	* 1 400
Brazil	92 773	122 815	138 457	170 403	* 180 000
Afghanistan	13 000	13 000	* 4 000	....	....
China	200 000	250 000	250 000	* 250 000	* 250 000
Cyprus					
Chrysotile	36 684	34 359	35 472	35 535	24 703
India					
Amphibole	22 177	24 623	32 094	32 468	24 515
Japan					
Chrysotile	6 307	5 746	3 362	3 897	* 3 500
Korea, Republic of	6 180	13 616	14 804	9 854	14 084
Taiwan	673	2 031	2 957	683	2 317
Australia					
Chrysotile	50 601	62 744	79 721	92 418	44 647
World total	4 800 000	4 700 000	4 900 000	4 900 000	4 600 000

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	1977	1978	1979	1980	1981
United Kingdom	705	522	616	1 114	(b) 140
Belgium-Luxembourg	225	221	131	57	222
Denmark	97	268	80	48	12
France	1 647	532	1 348	1 574	1 331
Germany, Federal Republic of	45 551	44 215	65 365	27 333	43 029
Italy	67 106	68 958	74 478	63 815	51 245
Netherlands	255	393	56	36	269
Austria	102	81	2	5	18
Hungary	* 3 300	* 2 600	* 5 100	...	...
Soviet Union	* 600 000	* 600 000	* 450 000	* 600 000	* 625 000
Sweden	225	1	112	—	—
Switzerland	74	37	142	43	164
Yugoslavia	2 159	1 902	1 983	2 506	2 935
South Africa (a)	* 407 000	* 368 000	* 411 000	* 379 000	* 258 000
Swaziland	34 853	38 083	37 065	31 435	23 309
Zimbabwe	249 961	212 437	285 021	274 258	...
Canada					
Crude	1	1	20	—	10
Fibre	705 852	690 679	719 074	652 857	508 861
Shorts	709 650	708 391	741 947	564 073	542 435
USA	34 144	41 782	42 137	48 666	64 418
China (a)	* 8 000	* 5 100	* 8 800	* 7 600	* 8 600
Cyprus	35 341	29 338	39 106	30 446	29 081
Hong Kong (Re-exports)	215	225	1 844	8 492	3 127
Japan	1 226	756	147	428	680
Singapore	5 203	5 901	9 623	10 461	11 603
Australia	20 510	37 094	54 041	51 172	38 576

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

(b) Six months data only

Imports of Unmanufactured Asbestos

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	127 217	117 617	116 665	94 640	67 186
Belgium-Luxembourg	54 219	53 737	50 754	47 880	31 374
Denmark	26 926	21 470	26 865	13 713	5 136
France	114 790	110 612	126 476	127 123	102 318
Germany, Federal Republic of	399 278	345 817	386 383	392 978	171 708
Greece	19 650	14 756	15 214	14 181	14 666
Irish Republic	6 654	8 014	7 564	8 413	6 173
Italy	65 469	47 189	77 152	86 550	65 942
Netherlands	39 909	41 357	28 235	19 042	9 927
Albania (d)	* 1 200	* 1 400	* 1 700	* 2 400	* 2 600
Austria	39 074	30 807	23 912	20 241	26 643
Bulgaria (d)	* 2 300	* 2 100	* 3 330	* 500	* 450
Czechoslovakia	1 685	44 028	41 804	46 197	49 195
Finland	5 624	5 415	3 019	5 040	3 573
German Democratic Republic	71 400	62 600	62 000	74 400	50 200
Hungary	41 632	39 100	37 540	48 402	33 999
Iceland	12	11	7	5	7
Norway	2 269	517	490	103	149
Poland	87 723	102 376	103 372	83 272	79 837
Portugal	18 774	17 111	11 213	19 953	18 870
Romania	* 12 500	* 11 100	* 10 800	...	...
Spain	105 763	79 338	74 000	66 944	59 937
Sweden	2 555	1 334	861	1 195	1 101
Switzerland	22 682	22 794	20 689	21 029	16 886
Turkey	16 519	17 105	10 247	16 671	21 521
Yugoslavia	57 032	47 796	47 475	60 023	57 762
Algeria	15 872	9 415	10 234	21 305	...
Canary Islands	1 145	236	161	131	...
Egypt	15 380	11 334	476	4 387	...
Ghana	6 905	14 969	...	...	...
Kenya	1 572	797	1 348	1 403	...
Libya	2 641	5 033	2 050	307	...
Morocco	7 812	5 649	4 756	6 770	...
Mozambique	285	...	...	...	...
Nigeria	55 689	142 242	...	...	...
Senegal	1 679	910	...	...	...
South Africa	24 523	15 151	18 203	19 518	29 232
Tunisia	2 567	1 749	3 658	5 838	...
Uganda	...	...	...	132	...
Zaire	1 013	617	427	...	...
Zambia	1 234	2 946	...	...	...
Canada	4 112	766	1 969	1 156	934
Costa Rica	1 389	1 243	1 167	1 318	...
El Salvador	4 242	3 243	3 312	...	...
Guatemala	3 297	4 127	1 008	...	...
Jamaica	55	352	370	4	...
Mexico	44 961	60 359	71 648	79 014	...
Nicaragua	1 561	1 362	2	848	...
Panama	532	349	445	...	...
USA					
Amosite	529	1 170	462	364	680
Crocidolite	11 347	16 865	13 828	7 597	7 376
Chrysotile	519 899	531 416	487 191	305 358	314 212
Other unmanufactured	19 173	20 975	11 606	13 976	15 345
Argentina	20 334	13 368	21 800	...	...
Brazil	39 197	37 650	35 763	24 799	13 019
Chile	8 245	9 324	...	...	...
Colombia	19 341	18 049	20 920	27 057	21 492
Ecuador	4 417	6 184	5 986	...	...
Uruguay	2 652	1 463	2 681	2 427	1 203
Venezuela	14 356	19 385	14 523	9 111	...

Imports of Unmanufactured Asbestos

Country	1977	1978	1979	1980	1981
Dubai	7 278	8 337	4 205	4 631	...
Hong Kong	318	2 406	1 844	8 776	3 297
India	65 968	51 895	48 458	...	...
Indonesia	11 363	14 781	14 616	23 047	27 062
Iran (a)	24 445	...	* 2 000	(d)* 600	(d)* 2 600
Israel (c)	5 426	4 879	28 317	3 050	6 707
Japan	300 636	234 901	291 531	305 408	237 963
Korea, Republic of	70 255	48 898	58 616	36 787	53 787
Kuwait	8 248	6 285	10 044	20 840	...
Malaysia	21 141	23 961	37 861	...	...
Pakistan (b)	14 428	8 738	6 638	10 679	5 690
Philippines	4 286	4 822	6 570	4 467	5 499
Saudi Arabia	15 572	6 993	24 169	52 225	10 102
Singapore	13 376	9 168	12 318	16 661	16 824
Sri Lanka	2 296	1 940	11 780	6 188	4 222
Syria	5 589	3 352	1 050	4 076	4 245
Taiwan	25 343	24 892	29 103	31 247	30 121
Thailand	52 455	50 690	72 528	58 756	...
Australia	74 267	42 115	22 942	25 239	20 960
New Zealand (b)	5 095	8 525	9 818	4 952	6 173

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

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

Barytes

Production of Barytes

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	57 000	54 409	45 000	54 000	63 308
France	211 090	210 000	222 000	225 000	* 209 000
Germany, Federal Republic of	265 593	168 586	161 661	175 380	165 189
Greece	95 794	110 841	109 344	98 529	* 100 000
Irish Republic	373 000	343 753	319 000	260 000	274 000
Italy	152 646	236 832	214 630	203 038	174 057
Austria	192	242	305	249	...
Czechoslovakia	...	65 000	67 803	61 052	* 61 000
German Democratic Republic	* 31 000	* 35 000	* 36 000	* 36 000	* 36 000
Poland	88 700	90 300	96 000	96 300	* 85 300
Portugal	590	503	704	1 200	1 450
Romania	* 85 000	* 87 300	* 88 000	* 88 000	* 89 000
Soviet Union	* 450 000	* 475 000	* 500 000	* 500 000	* 500 000
Spain	84 280	71 457	74 700	59 827	* 63 500
Turkey	143 510	100 904	100 005	128 352	185 544
Yugoslavia	52 245	42 800	46 073	* 43 000	* 46 300
Algeria	42 303	* 73 000	* 90 000	* 91 000	* 91 000
Egypt	658	989	2 272	4 532	* 4 500
Kenya	429	303	363	6 647	* 6 400
Morocco	149 920	176 813	286 467	320 585	* 326 500
South Africa	2 500	2 355	2 494	2 635	2 247
Tunisia	16 049	16 358	14 929	26 949	24 671
Zimbabwe	2 798	878	449	195	—
Canada	116 950	99 339	67 035	86 000	* 82 000
Mexico	270 674	231 485	151 162	269 322	* 320 000
USA (b)	1 355 216	1 969 000	1 916 000	2 037 000	2 585 000
Argentina	30 571	45 685	54 928	50 000	* 50 000
Brazil	49 528	107 492	108 042	104 752	* 110 000
Chile	65 038	182 422	226 767	225 529	* 220 000
Colombia	3 450	3 500	3 500	3 500	3 500
Peru	434 984	396 000	445 000	415 000	409 000
Afghanistan (c)	14 100	12 700	2 700	—	...
Burma (a)	23 805	42 202	26 053	4 819	* 10 200
China	* 350 000	* 400 000	* 500 000	* 680 000	* 770 000
India	330 989	388 582	490 699	434 015	353 362
Iran (c)	* 185 000	* 200 000	* 180 000	* 150 000	* 75 000
Japan	72 916	77 036	53 736	57 150	* 56 000
Korea, Dem. P.R. of	* 120 000	* 110 000	* 110 000	* 110 000	* 110 000
Korea, Republic of	2 645	1 005	728	410	—
Malaysia	12 074	5 079	1 401	—	19 365
Pakistan	17 718	16 303	32 433	14 054	23 929
Philippines	5 393	5 548	6 667	5 355	* 5 400
Thailand	118 466	274 564	378 654	305 057	307 046
Australia	11 675	13 790	94 066	38 633	41 140
World total	5 900 000	6 900 000	7 300 000	7 500 000	8 100 000

Notes:

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

- (a) Years ended 31 March following that stated
 (b) Sold or used by producers
 (c) Years ended 20 March following that stated

Exports of Barytes

Country	1977	1978	1979	1980	1981
United Kingdom	3 904	3 424	4 622	4 051	(b) 2 595
Belgium-Luxembourg	315	408	430	13 656	19 278
France	99 353	116 535	121 722	98 255	102 439
Germany, Federal Republic of	32 761	38 178	38 720	44 406	53 336
Greece	36 003	48 256	38 587	55 259	822
Irish Republic	...	322 853	302 317	272 643	260 691
Italy	20 264	73 863	89 352	105 978	67 135
Netherlands	103 708	94 774	77 548	122 537	86 412
Czechoslovakia	* 1 200	* 8 500	7 000	8 000	...
Norway	13 228	4 627	1 627	272	3 612
Portugal	1 000	3	283	1 000	—
Romania	* 500	* 600	* 2 480	...	...
Spain	58 070	90 793	74 677	52 017	65 827
Turkey	154 911	124 123	95 844	81 666	187 931
Yugoslavia	25 309	16 495	13 965	19 077	16 200
Morocco	181 244	224 842	277 346	333 820	...
Tunisia	157	1 109	200	2 840	...
Canada	69 421	62 593	2 038	651	405
Mexico	122 204	98 950	126 666	115 599	...
Trinidad & Tobago	1 021	1 469	527	1 037	...
USA	44 952	33 179	96 117	87 833	56 913
Bolivia	2 157	2 889	2 228	8 694	2 130
Brazil	—	34 000	43 520	18 125	24 255
Chile	54 316	122 535	...	...	...
China (d)	* 79 900	* 152 700	* 358 100	* 618 100	* 803 200
India	177 188	201 042	338 312	...	...
Indonesia	3 402	12 546	7 159	6 451	10 644
Israel (c)	761	708	82	72	...
Japan	1 250	2 894	1 002	1 902	4 768
Malaysia	895	1 262	2 281	...	...
Pakistan (a)	500	—	3 750	1 700	—
Singapore	40 021	35 615	52 521	37 667	22 203
Thailand	202 725	195 122	288 852	361 334	230 043
Australia	1 304	969	1 232	48 108	1 903

Note: Trade in barytes is reported under item 278.92 of the Standard International Trade Classification (Revision 2) and is described as "barytes and witherite". However, only small quantities of witherite are traded

(a) Years ended 30 June of that stated

(b) Six months data only

(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

Imports of Barytes

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	50 616	80 315	90 355	142 384	113 007
Belgium-Luxembourg	8 318	8 293	8 082	8 407	8 003
Denmark	4 471	5 863	3 951	12 461	16 951
France	11 814	8 983	14 427	14 610	12 936
Germany, Federal Republic of	175 356	196 465	197 659	201 630	163 652
Irish Republic	402	425	558	717	319
Italy	18 538	13 871	13 634	7 531	9 665
Netherlands	130 261	124 608	201 894	81 728	98 928
Austria	3 785	6 976	3 227	5 752	8 273
Finland	1 154	952	1 224	1 168	2 632
Hungary	* 17 700	* 18 500	* 8 200	19 000	16 215
Norway	61 121	63 204	102 981	111 392	100 991
Poland	14 280	21 653	* 1 130	* 4 100	...
Portugal	413	458	645	2 000	2 233
Romania	* 4 000	* 8 900	* 17 300	...	...
Soviet Union	* 400 000	* 450 000	* 450 000	* 500 000	* 500 000
Spain	809	3 321	2 518	849	567
Sweden	5 390	4 660	5 493	3 992	4 567
Switzerland	3 324	2 880	2 291	3 181	2 092
Yugoslavia	1 110	1 206	1 204	1 147	490
Algeria	67 388	98 895	68 092	37 258	...
Cameroon	7 432	15 750	25 903	...	...
Gabon	3 577	576	1 926	207	1 410
Ivory Coast	3 243	3 505	345	...	19 273
Senegal	76	39	...	...	...
South Africa	3 444	2 437	19 168	5 672	3 586
Tunisia	3 458	1 568	2 480	233	...
Canada	5 979	18 230	20 765	48 749	16 278
Mexico	10 729	525	92 832	127 491	...
Trinidad & Tobago	54 024	61 870	35 662	31 864	...
USA	900 895	1 191 819	1 374 724	1 684 250	1 765 286
Argentina	2 953	1 480	4 293	...	...
Brazil	163	240	156	175	74
Colombia	43	12 555	8 793	8 010	6 164
Venezuela	60 915	87 152	126 410	141 349	...
Abu Dhabi	—	—	1 472	16 189	...
Hong Kong	291	258	335	1 169	915
Indonesia	760	22 295	19 881	21 031	25 863
Iran (b)	242	...	...	...	...
Japan	32 771	21 278	24 565	40 173	45 251
Malaysia	3 946	265	224	...	...
Philippines	632	1 169	1 054	1 893	50
Saudi Arabia	12 552	3 812	553	41 268	26 597
Singapore	28 532	14 858	50 774	66 343	29 698
Syria	123	2 326	—	510	—
Taiwan	2 880	10 340	2 870	7 605	3 035
Australia	1 527	541	1 189	1 273	1 112
New Zealand (a)	1 747	1 169	1 582	1 332	4 545

Note: Trade in barytes is reported under item 278.92 of the Standard International Trade Classification (Revision 2) and is described as "barytes and witherite". However, only small quantities of witherite are traded

(a) Years ended 30 June of that stated

(b) Years ended 20 March following that stated

Production of Bentonite and Fuller's Earth

Country	1977	1978	1979	1980	1981
United Kingdom					
Fuller's earth (a)	159 000	167 000	171 000	163 000	185 000
France					
Bentonite	8 063	10 144	16 069	* 18 000	* 16 000
Greece					
Bentonite	441 252	385 067	478 335	509 095	* 502 000
Italy					
Bentonite	292 428	224 208	282 446	322 888	277 349
Fuller's earth	6 344	10 143	1 080	4 300	5 495
Hungary					
Bentonite	80 000	82 000	72 488	77 685	80 531
Poland					
Bentonite	76 730	89 820	161 587	157 090	77 491
Romania					
Bentonite	* 63 000	* 65 000	* 65 000	* 65 000	* 65 000
Spain					
Bentonite	114 600	108 318	120 678	97 705	* 110 000
Fuller's earth	* 36 300	39 230	62 423	48 020	...
Turkey					
Bentonite	4 358	8 280	7 937	* 13 000	30 687
Yugoslavia					
Bentonite	116 000	154 000	...	...	...
Algeria					
Bentonite	24 337	35 664	* 36 000	* 36 000	* 38 000
Fuller's earth (b)	4 263	4 847	* 5 000	* 5 000	* 5 100
Egypt					
Bentonite	3 811	3 448	5 085	5 200	3 700
Morocco					
Bentonite	4 807	4 800	1 015	3 284	* 3 400
Fuller's earth	21 025	29 880	13 586	17 430	18 000
Mozambique					
Bentonite	2 744	3 000	1 656	* 1 500	* 1 500
Senegal					
Fuller's earth (b)	4 620	6 930	13 000	27 651	32 973
South Africa					
Bentonite	37 221	34 519	46 394	51 815	44 372
Fuller's earth	—	258	919	720	434
Mexico					
Bentonite	59 169	140 325	169 848	176 028	* 180 000
Fuller's earth	61 369	40 615	48 820	51 360	* 52 000
USA					
Bentonite (c)	3 398 757	4 052 944	4 011 639	3 796 223	* 4 488 000
Fuller's earth (c)(f)	1 295 756	1 387 647	1 422 690	1 391 443	1 502 166
Argentina					
Bentonite	114 836	106 957	157 382	131 384	158 100
Fuller's earth	4 129	3 482	5 445	4 722	* 5 200
Brazil					
Bentonite	108 395	167 614	212 503	247 954	* 250 000
Peru					
Bentonite	31 200	18 805	—	—	30 500
Burma (d)					
Bentonite	1 349	890	2 188	2 182	* 2 300
Cyprus					
Bentonite	13 209	8 500	5 300	8 852	42 290
India					
Bentonite	150 568	153 026	146 922	158 675	...
Fuller's earth	13 517	16 297	17 343	30 985	...
Iran					
Bentonite	* 23 400	* 40 000	* 20 000	* 20 000	* 10 000
Israel					
Bentonite (e)	6 952	6 900	6 287	18 321	* 15 000
Japan					
Bentonite	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000

Production of Bentonite and Fuller's Earth

tonnes

Country	1977	1978	1979	1980	1981
Pakistan					
Bentonite	1 089	1 113	1 265	1 347	1 130
Fuller's earth	* 18 000	* 16 000	42 822	24 463	20 558
Philippines					
Bentonite	2 279	1 569	3 123	5 053	* 5 000
Australia					
Bentonite	5 603	4 656	6 626	10 988	* 11 000
Fuller's earth	50	68	* 50	* 50	* 50
New Zealand					
Bentonite	2 633	9 824	4 954	3 000	1 885
World total Bentonite	5 589 000	6 321 000	6 593 000	6 488 000	7 154 000
World total Fuller's earth	1 624 000	1 722 000	1 804 000	1 769 000	1 906 000

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	1977	1978	1979	1980	1981
United Kingdom					
Bentonite	13 680	13 954	11 975	19 017	(a) 11 235
Fuller's earth	3 361	3 772	3 866	6 045	(a) 4 278
Belgium-Luxembourg					
Bentonite	7 845	8 273	11 574	10 831	6 247
Fuller's earth	988	441	1 326	508	58
France					
Bentonite	10 073	10 371	5 887	6 880	12 630
Fuller's earth	4 384	1 016	929	1 999	1 808
Germany, Federal Republic of					
Bentonite	30 494	25 014	26 250	29 755	23 956
Fuller's earth	582	1 086	3 157	4 945	4 221
Greece					
Bentonite	381 284	332 008	450 173	468 911	757 534
Italy					
Bentonite	18 605	20 217	31 273	18 936	36 297
Netherlands					
Bentonite	17 107	23 839	26 462	35 210	31 619
Fuller's earth	1 098	1 060	822	845	15 017
Hungary					
Bentonite	19 400	14 156	14 797	15 604	18 218
Spain					
Bentonite	40 090	37 881	39 876	32 581	...
Turkey					
Bentonite	520	3 394	4 995	5 360	...
Yugoslavia					
Bentonite	38	136	297	1 401	...
Algeria					
Bentonite (b)	150	100	—	...	...
Morocco					
Bentonite	50	812	0	—	...
Fuller's earth	11 194	10 965	12 634	17 384	...
Mozambique					
Bentonite (c)	2 474	...	...	...	...
Senegal					
Fuller's earth (d)	4 400	3 645	...	...	...
South Africa					
Bentonite	1 216	874	1 064	1 630	1 798
Mexico					
Bentonite	9	16	74	199	...
USA					
Bentonite	715 394	656 248	773 674	814 421	781 987
Fuller's earth	40 946	53 654	67 081	104 073	100 976
Argentina					
Bentonite	9 984	10 181	...	...	...
Venezuela					
Bentonite	528	337	—	...	...

Exports of Bentonite and Fuller's Earth

tonnes

Country	1977	1978	1979	1980	1981
India					
Bentonite	18 538	19 811	19 775	...	...
Fuller's earth	1 332	1 242	2 613	...	...
Indonesia					
Bentonite	0	2 736	1 268	2 946	4 932
Kuwait					
Bentonite	11 581	21 012	3 217	13 913	...
Singapore					
Bentonite	893	1 539	21 600	25 596	29 853
Fuller's earth	—	—	5 066	9 335	9 266
Taiwan					
Bentonite	8	27	80	49	65

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) Six months data only
- (b) Including crude kaolin
- (c) May include other clays
- (d) Attapulgit

Imports of Bentonite and Fuller's Earth

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Bentonite	76 645	46 083	74 861	76 462	55 153
Fuller's earth	2 270	103	522	2 803	1 809
Belgium-Luxembourg					
Bentonite	26 556	28 628	24 553	38 519	25 798
Fuller's earth	357	4 261	12 445	18 604	5 281
Denmark					
Bentonite	2 867	3 612	3 652	4 996	3 918
Fuller's earth	189	403	571	672	920
France					
Bentonite	96 482	87 235	92 464	76 063	89 112
Fuller's earth	863	1 283	2 028	1 899	1 425
Germany, Federal Republic of					
Bentonite	77 527	45 879	66 841	78 043	77 231
Fuller's earth	16 360	6 785	5 282	5 676	5 706
Greece					
Bentonite	95	243	153	693	350
Italy					
Bentonite	65 595	54 673	29 912	55 438	25 440
Fuller's earth	2 314	2 435	1 991	1 316	1 123
Netherlands					
Bentonite	35 186	54 913	62 633	64 756	60 382
Fuller's earth	3 156	3 784	2 265	4 118	2 794
Austria					
Bentonite	651	514	594	888	954
German Democratic Republic					
Bentonite	* 14 130	* 9 990	* 10 540	...	...
Norway					
Bentonite	...	31 442	39 185	46 914	48 315
Fuller's earth	221	910	112	244	416
Poland					
Bentonite	* 4 500	* 3 960	* 4 050	* 4 600	...
Portugal					
Bentonite	21 274	22 991	22 477	23 447	...
Spain					
Bentonite	49 390	28 285	35 277	31 664	...
Sweden					
Bentonite	3 185	3 189	7 292	4 462	3 339
Yugoslavia					
Bentonite	759	16	19	21	...
Algeria					
Bentonite (b)	6 768	7 193	2 429	...	...
Ivory Coast					
Bentonite	403	508	461	...	2 412
Senegal					
Bentonite	1 957	1 198	...	...	...
Tunisia					
Bentonite	(b) 17 234	(b) 15 034	(b) 21 450	3 025	...
Zimbabwe					
Fuller's earth	63	109	988	419	...
Canada					
Bentonite	358 724	353 790	638 307	471 684	311 459
Fuller's earth	2 356	823	1 710	1 385	784
Mexico					
Bentonite	1 488	4 679	9 736	6 675	...
USA					
Bentonite	123	43	74	140	72
Fuller's earth	62	76	168	270	196
Brazil					
Bentonite	16 193	14 354	21 594	13 174	13 691
Chile					
Bentonite	3 703	2 430	...	...	...
Colombia					
Bentonite	1 884	3 545	2 322	4 666	6 608
Peru					
Bentonite	876	...	...	...	...

Imports of Bentonite and Fuller's Earth

tonnes

Country	1977	1978	1979	1980	1981
Uruguay					
Bentonite	80	162	323	132	209
Venezuela					
Bentonite	26 817	27 357	22 433	...	...
India					
Bentonite	6	14	45	...	...
Fuller's earth	25	471	381	...	...
Indonesia					
Bentonite	8 461	25 313	9 164	6 137	19 529
Korea, Republic of					
Bentonite	592	...	3 075	2 017	1 651
Kuwait					
Bentonite	13 716	35 607	1 731	58 681	...
Malaysia					
Bentonite	1 524	834	1 487	...	...
Fuller's earth	7 601	8 103	19 106	...	...
Pakistan (a)					
Fuller's earth	175	561	306	60	199
Philippines	1 082	9 663	10 257	7 147	15 211
Singapore					
Bentonite	4 925	4 802	46 377	46 778	68 208
Fuller's earth	—	—	3 187	4 856	6 280
Taiwan					
Bentonite	5 375	5 077	6 895	6 435	7 237
Thailand					
Bentonite	1 622	2 163	2 141	848	...
Australia					
Bentonite	13 191	30 355	57 241	55 917	43 034

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) Years ended 30 June of that stated

(b) Including crude kaolin

Mine Production of Bismuth

tonnes (metal content)

Country	1977	1978	1979	1980	1981
France	73	79	95	67	...
Germany, Federal Republic of	* 10	* 10	* 10	* 10	* 10
Italy	8	9	19	43	15
Romania	* 80	* 80	* 80	* 80	* 80
Soviet Union	* 65	* 70	* 73	* 72	* 75
Sweden	* 15	* 15	* 14	* 14	* 14
Yugoslavia	74	13	23	83	102
Canada (a)	165	145	137	149	123
Mexico	729	978	754	770	630
USA	* 400	* 400	* 400	* 400	* 400
Bolivia	680	482	10	11	11
Peru (a)	516	610	526	491	638
China	* 225	* 240	* 260	* 260	* 260
Japan	698	623	458	338	* 450
Korea, Republic of	134	122	87	123	100
Australia	932	1 054	* 1 000	* 900	* 850
World total	4 800	4 900	3 900	3 800	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	1977	1978	1979	1980	1981
United Kingdom					
Compounds	28	58	16	16	(a) 6
Metal	310	399	255	308	(a) 149
France					
Compounds	289	292	102	91	80
Metal	72	7	49	11	8
Germany, Federal Republic of					
Compounds	98	105	63	122	67
Metal	462	517	407	316	328
Italy					
Compounds	73	227	696	1	1
Metal	31	30	6	5	12
Netherlands					
Compounds	33	25	37	13	14
Metal	46	66	27	31	33
Yugoslavia					
Compounds	21	11	16	...	...
Mexico					
Metal	331	641	240	165	...
USA					
Metal	51	163	198	60	38
Bolivia					
Ores (b)	52	14	—	—	2
Metal	483	117	46	547	—
Peru					
Metal	512	105	373	554	...
Japan					
Metal	302	287	181	242	252
Korea, Republic of					
Metal	186	38	134	119	91

(a) Six months data only

(b) Bi content

Imports of Bismuth

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	394	325	335	389	292
Belgium-Luxembourg					
Compounds	56	37	18	18	22
France					
Compounds	58	4	44	45	2
Metal	644	346	322	362	288
Germany, Federal Republic of					
Compounds	16	21	22	15	11
Metal	160	113	211	268	185
Italy					
Compounds	48	24	21	39	24
Metal	97	62	55	63	35
Netherlands					
Compounds	86	171	152	365	112
Metal	55	52	54	62	36
Spain					
Metal	253	96	102	72	...
Turkey					
Compounds	17	8	5	12	...
Yugoslavia					
Compounds	17	5	6	7	...
Metal	31	18	5	4	...
Morocco					
Compounds	16	19	5	6	...
USA					
Metal	932	1 208	1 077	1 008	1 105
Argentina					
Metal	13	8	...	...	...
Brazil					
Compounds	9	10	0	4	8
Metal	23	34	46	132	47
India					
Metal	30	97	66	...	...
Australia					
Metal	14	22	13	13	14

Bromine

Production of Bromine

kilograms

Country	1977	1978	1979	1980	1981
United Kingdom	24 700 000	25 100 000	29 162 000	26 388 000	27 605 000
France	15 570 000	16 200 000	18 997 000	16 480 000	17 261 000
Germany, Federal Republic of	3 736 000	3 893 000	4 020 000	* 4 000 000	* 4 000 000
Italy	* 600 000	* 600 000	* 600 000	* 600 000	* 580 000
Soviet Union	* 64 410 000	* 65 320 000	* 66 220 000	* 67 130 000	* 68 000 000
Spain	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
USA (a)	196 814 000	202 484 000	225 572 000	171 503 000	171 549 000
India	522 000	451 000	313 000	261 000	1 011 000
Israel	33 000 000	34 550 000	45 813 000	44 059 000	44 020 000
Japan	* 12 000 000	* 12 000 000	* 11 800 000	* 12 000 000	* 12 000 000
World total	351 750 000	361 000 000	402 900 000	342 800 000	346 400 000

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

Exports of Bromine

Country	1977	1978	1979	1980	1981
United Kingdom	2 535 619	1 834 619	1 705 486	1 784 207	(a) 786 881
Belgium-Luxembourg	—	138 000	411 900	1 923 300	76 200
Germany, Federal Republic of	193 900	112 100	13 200	10 600	10 300
Italy	18 372	14 900	—	—	100
Netherlands	304 000	1 193 000	871 000	845 000	804 000
USA	2 440 000	2 900 000	4 600 000	3 700 000	* 4 000 000

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) Six months data only

Imports of Bromine

kilograms

Country	1977	1978	1979	1980	1981
United Kingdom	3 495 166	4 006 331	4 168 041	4 642 218	5 025 781
Belgium-Luxembourg	43 800	249 000	828 100	1 972 200	665 900
Denmark	84 000	121 900	90 200	97 400	86 100
France	1 970 000	2 762 000	2 542 000	2 817 000	2 348 000
Germany, Federal Republic of	2 204 600	1 871 000	2 922 100	2 874 300	2 780 100
Greece	1 389	683	—	—	—
Italy	2 062 024	1 974 600	3 008 434	2 701 120	1 275 300
Netherlands	1 983 000	3 286 000	4 401 000	3 766 000	3 192 000
Hungary	574 500	587 000	1 036 000	618 000	713 000
Portugal	500	500	1 400	600	...
Spain	40 072	46 908	205 000	256 000	...
Turkey	928	84	—	473	...
Yugoslavia	15 276	11 812	10 001	9 397	...
Algeria	264	—	166	...	...
Morocco	70	40	6	57	...
South Africa	3 600	50 900	54 700	75 900	79 800
Zambia	158	...	...	...	...
Mexico	219 166	1 240 899	...	...	...
USA	234 520	303 673	15 267	564	...
Argentina	49 314	61 800	...	...	...
Brazil	64 744	33 587	31 611	24 518	39 676
Venezuela	47 476	4 027	14 716	...	...
India (a)	505 598	192 770	411 430	...	...
Korea, Republic of	104 736	...	154 530	121 610	100 398
Saudi Arabia	12 981	...	13 235	16 812	...
Syria	97	9 500	10 131	58	—
Taiwan	794	5 708	18	153	127
Thailand	—	39	33	13	...

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) Years ended 31 March following that stated

Production of Cadmium

Country	1977	1978	1979	1980	1981
United Kingdom	295	291	424	375	278
Belgium	1 434	1 164	1 440	1 527	1 176
France	790	694	689	792	664
Germany, Federal Republic of	1 336	1 182	1 266	1 194	1 074
Italy	449	378	526	568	482
Netherlands	* 302	* 402	* 416	* 455	* 518
Austria	26	33	34	36	55
Bulgaria	* 200	* 210	* 210	* 200	* 200
Finland	527	611	590	580	621
German Democratic Republic	* 18	* 18	* 15	* 16	* 16
Norway	97	120	115	130	117
Poland	* 754	* 761	* 773	* 698	* 580
Romania	90	90	90	85	80
Soviet Union	* 2 900	* 3 000	* 3 000	* 2 900	* 2 800
Spain	303	253	222	309	303
Turkey	20	15	12	10	—
Yugoslavia	189	186	289	201	208
Algeria	133	175	185	150	180
Namibia (a)	88	79	81	70	—
Zaire	246	186	212	168	230
Canada (b)	1 369	1 265	1 455	1 303	1 293
Mexico	908	897	830	778	860
USA (b)	1 999	1 653	1 823	1 578	1 603
Argentina	40	22	36	18	—
Brazil	10	10	21	41	40
Peru	182	169	190	163	312
China	* 200	* 220	* 225	* 225	* 225
India	44	113	166	89	113
Japan	2 844	2 531	2 598	2 173	1 977
Korea, Dem. P.R. of	* 150	* 150	* 150	* 140	* 130
Korea, Republic of	20	40	50	365	300
Australia	671	747	804	1 012	1 031
World total	18 600	17 700	18 900	18 300	17 500

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

(b) Includes cadmium sponge and/or secondary metal

Cadmium

Exports of Cadmium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	109	155	73	128	(c) 35
Sulphide	17	11	1	21	(c) 8
Belgium-Luxembourg					
Metal	945	736	810	870	576
Sulphide	46	43	29	22	26
France					
Metal	132	219	478	265	251
Germany, Federal Republic of					
Metal (a)	274	313	494	300	604
Oxide	30	18	22	28	38
Sulphide	45	24	28	...	...
Italy	140	124	259	322	258
Netherlands	380	373	528	404	505
Austria	8	20	25	31	32
Bulgaria (b)	* 65	* 75	* 65	* 50	* 30
Finland	472	507	707	565	554
Norway	81	97	156	114	94
Soviet Union	* 500	* 500	* 500	* 500	* 500
Spain	208	149	194	298	...
Yugoslavia	101	176	133	105	...
Zaire	186	—	74	* 100	...
Canada	870	1 259	1 293	1 096	1 453
Mexico	962	763	632	559	...
USA	107	328	212	244	240
Bolivia	150	93	8	—	—
Peru	171	198	210	179	...
Japan	784	111	151	229	938
Korea, Dem. P.R. of	* 50	...	* 80	* 60	* 50
Korea, Republic of	155	...	566	314	360
Australia	557	744	625	794	993

(a) Including rhenium

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

(c) Six months data only

Imports of Cadmium

Country	1977	1978	1979	1980	1981
United Kingdom	1 299	1 174	1 432	793	982
Belgium-Luxembourg	1 146	1 032	1 166	1 029	1 131
Denmark	11	10	9	4	5
France					
Metal	625	649	735	659	598
Sulphide	55	54	68	48	44
Germany, Federal Republic of					
Metal	988	994	1 165	1 145	673
Oxide	410	428	539	550	417
Italy					
Metal	148	179	88	68	85
Sulphide	19	35	15	28	10
Netherlands					
Metal	59	55	85	68	118
Sulphide	19	17	25	15	12
Austria	6	4	3	5	3
Czechoslovakia	279	369	251	206	...
Sweden	270	132	168	268	186
Soviet Union	* 260	* 260	* 265	* 150	* 150
Turkey	19	9	—	3	...
USA					
Metal	2 332	2 881	2 572	2 617	3 089
Brazil	154	55	248	210	156
India	6	66	61	...	...

Production of Chromium Ores and Concentrates

tonnes

Country	1977	1978	1979	1980	1981
Greece (b)	33 450	32 878	44 767	34 568	30 000
Albania	* 880 000	* 1 000 000	* 1 020 000	* 1 100 000	* 1 140 000
Finland (a)(b)	168 871	178 500	177 300	186 400	202 400
Soviet Union	* 2 180 000	* 2 300 000	* 2 400 000	* 2 450 000	* 2 400 000
Turkey (b)	636 523	466 711	418 978	383 141	545 400
Yugoslavia	1 546	1 907	168	170	...
Madagascar (b)	164 789	119 283	128 347	146 529	99 689
South Africa	3 058 863	3 144 741	3 296 962	3 414 410	2 869 502
Sudan	22 300	23 680	28 176	25 609	25 515
Zimbabwe	677 322	477 765	541 742	552 475	536 052
Cuba	20 354	28 776	28 200	28 457	* 29 000
Brazil	309 995	269 870	340 385	313 067	* 400 000
Cyprus	14 230	15 339	15 743	16 612	10 548
India	352 535	266 293	309 841	320 622	334 681
Iran	* 233 000	* 198 000	* 136 000	* 80 000	* 30 000
Japan	18 144	9 000	9 051	13 608	* 10 900
Pakistan	* 9 000	* 12 000	2 467	3 115	1 427
Philippines	538 549	539 898	556 110	496 060	342 767
Vietnam	* 12 700	* 12 700	* 13 500	* 15 500	* 15 500
New Caledonia	8 310	8 229	12 407	2 188	* 2 700
World total	9 300 000	9 100 000	9 500 000	9 600 000	9 000 000

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	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	26	38	222	891	(c) 412
Metal	2 088	2 249	2 121	2 569	(c) 1 301
Belgium-Luxembourg					
Ores & concentrates	1 071	447	19	27	—
Metal	59	421	504	464	398
France					
Ores & concentrates	982	983	1 379	1 616	2 033
Metal	455	611	720	699	774
Germany, Federal Republic of					
Ores & concentrates	3 931	3 212	8 807	5 412	3 459
Metal	63	126	225	275	164
Greece					
Ores & concentrates	74 939	20 381	29 140	32 319	15 885
Italy					
Ores & concentrates	2 137	3 606	2 673	2 034	3 046
Metal	10	90	19	9	5
Netherlands					
Ores & concentrates	19 548	15 150	14 417	18 726	16 577
Metal	21	56	2	3	31
Albania					
Ores & concentrates (d)	* 265 000	* 294 000	* 872 000	* 519 000	* 463 000
Austria					
Ores & concentrates	829	923	1 028	291	109
Finland					
Ores & concentrates	508 305	364 461	308 847	206 547	250 898
Soviet Union					
Ores & concentrates	673 000	738 000	775 000	567 000	567 000
Turkey					
Ores & concentrates	464 640	284 558	322 046	334 555	308 590
Yugoslavia					
Ores & concentrates	3 523	5 854	10 475	11 537	12 463
Madagascar					
Ores & concentrates	116 232	144 662	109 147	85 910	...
South Africa					
Ores & concentrates	1 482 491	1 422 588	1 269 487	1 237 203	1 171 608
Sudan					
Ores & concentrates	3 680	...	...	...	...
Zimbabwe					
Ores & concentrates	87 582	20 042	11 463	14 828	...
Cuba					
Ores & concentrates	51 669	30 611	40 753	34 768	...
USA					
Ores & concentrates	225 101	47 414	41 290	45 003	124 502
of which: Re-exports	55 437	26 564	25 802	39 640	60 389
Metal	531	529	164	324	365
Brazil					
Ores & concentrates	71 111	81 859	45 215	—	—
Cyprus					
Ores & concentrates	14 234	11 148	10 698	7 500	10 688
India					
Ores & concentrates	167 057	67 102	236 017	...	...
Iran (a)					
Ores & concentrates	...	* 89 000	* 27 000	(d)* 29 000	(d)* 5 000
Japan					
Ores & concentrates	2 805	1 636	1 786	5 678	607
Pakistan (b)					
Ores & concentrates	23 991	4 086	—	—	—
Philippines					
Ores & concentrates	432 937	455 681	496 770	484 109	397 381
New Caledonia					
Ores & concentrates	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) Six months data only

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

Imports of Chromium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	197 591	138 152	92 041	92 573	76 495
Metal	143	222	...	...	...
Belgium-Luxembourg					
Ores & concentrates	3 891	2 309	1 903	1 671	1 832
Metal	226	910	543	275	219
France					
Ores & concentrates	281 006	242 480	261 701	278 773	146 435
Metal	56	64	246	394	300
Germany, Federal Republic of					
Ores & concentrates	415 593	371 738	546 786	328 847	268 237
Metal	400	698	883	862	569
Greece					
Ores & concentrates	1 000	1 619	2 449	6 932	3 951
Irish Republic					
Ores & concentrates	6 445	5 579	6 222	1	5 623
Italy					
Ores & concentrates	187 389	140 186	232 445	171 045	91 806
Metal	88	206	206	186	175
Netherlands					
Ores & concentrates	26 440	6 398	6 866	27 176	18 189
Metal	75	81	59	126	46
Austria					
Ores & concentrates	85 492	61 947	57 077	77 407	42 334
Czechoslovakia					
Ores & concentrates	156 000	180 000	168 000	182 000	...
German Democratic Republic					
Ores & concentrates (b)	43 000	51 700	44 600	40 100	49 100
Hungary					
Ores & concentrates (c)	17 000	17 000	17 000	15 000	15 000
Norway					
Ores & concentrates	28 146	5 372	36 357	293	27 203
Poland					
Ores & concentrates	215 604	198 540	211 248	197 975	181 902
Portugal					
Ores & concentrates	317	692	733	457	352
Spain					
Ores & concentrates	112 657	95 165	117 977	84 558	70 330
Sweden					
Ores & concentrates	385 113	557 522	673 537	332 328	406 996
Metal	139	215	215	144	200
Yugoslavia					
Ores & concentrates	225 471	219 069	297 919	278 799	325 185
South Africa					
Ores & concentrates	66 586	1 348	845	7 430	8 147
Canada					
Ores & concentrates (b)	60 285	46 898	40 007	41 468	69 606
Mexico					
Ores & concentrates	49 167	50 919	55 086	36 906	...
USA					
Ores & concentrates	1 205 508	919 000	906 834	892 318	814 652
Metal	2 166	3 171	3 247	3 719	3 221
Argentina					
Ores & concentrates	4 562	1 985	5 165	...	...
Brazil					
Ores & concentrates	18 197	18 651	24 575	31 435	21 966
Chile					
Ores & concentrates	4 112	5 959	...	...	...
Venezuela					
Ores & concentrates	0	5 600	5 255	4 951	...

Imports of Chromium

Country	1977	1978	1979	1980	1981
China					
Ores & concentrates (a)	...	* 15 000	* 64 700	* 34 400	* 58 600
Japan					
Ores & concentrates	899 934	669 987	962 251	950 039	743 937
Korea, Dem P.R. of					
Ores & concentrates	* 10 000	* 10 000	* 7 000	...	...
Korea, Republic of					
Ores & concentrates	3 178	3 758	9 344	5 264	3 501
Taiwan					
Ores & concentrates	7 706	3 327	6 653	6 363	1 270
Australia					
Ores & concentrates	10 749	12 088	11 884	15 476	...

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

(b) Cr₂O₃ content

(c) Exports from Soviet Union

Coal

Production of Coal

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Mined –					
Anthracite	1 209 000	1 453 000	1 693 000	1 607 000	1 566 000
Bituminous	105 915 000	106 075 000	106 082 000	110 823 000	108 907 000
Opencast –					
Anthracite	1 320 000	1 499 000	1 337 000	1 295 000	557 000
Bituminous	12 230 000	12 668 000	11 525 000	14 484 000	14 271 000
Belgium					
Anthracite	795 741	627 500	510 530	375 460	321 000
Bituminous	6 272 300	5 962 768	5 613 973	5 948 574	5 815 446
France					
Anthracite & bituminous	21 294 000	19 690 000	18 611 000	18 135 000	12 588 000
Lignite	3 080 000	2 732 000	2 450 000	2 585 000	2 945 000
Germany, Federal Republic of					
Anthracite & bituminous	84 840 000	83 936 000	86 318 439	87 145 911	88 459 000
Brown coal	122 920 000	123 559 000	130 579 000	129 833 000	130 620 000
Greece					
Lignite	23 535 282	21 698 151	23 647 398	23 207 000	27 315 000
Irish Republic					
Anthracite & semi-bituminous	53 810	30 400	62 000	63 000	70 000
Italy					
Lignite	1 843 931	1 868 078	2 122 926	1 932 571	1 957 958
Albania					
Brown coal & lignite	* 1 000 000	* 1 200 000	* 1 430 000	* 1 540 000	...
Austria					
Brown coal & lignite	3 127 473	3 075 680	2 740 742	2 864 967	3 061 262
Bulgaria					
Anthracite & bituminous	287 000	273 000	274 000	267 000	245 661
Brown coal & lignite	24 887 000	25 531 000	27 955 000	29 946 000	28 995 000
Czechoslovakia					
Bituminous	27 788 000	27 971 000	28 114 000	28 201 000	27 513 000
Brown coal	90 696 000	92 450 000	93 731 000	92 529 000	93 096 000
Lignite	3 354 000	3 269 000	3 201 000	3 197 000	3 269 000
German Democratic Republic					
Bituminous	349 000	85 000	–	–	–
Brown coal	253 705 000	235 264 000	256 063 000	258 097 000	266 734 000
Hungary					
Bituminous	2 925 212	2 953 902	3 002 567	3 065 389	3 065 763
Brown coal	14 433 014	14 301 627	14 181 758	14 156 496	14 463 295
Lignite	8 096 270	8 413 988	8 474 713	8 478 981	8 413 123
Norway					
Spitzbergen –					
Bituminous	436 784	402 084	280 280	288 412	312 754
Poland					
Bituminous	186 112 000	192 622 000	201 000 084	193 121 000	163 022 000
Brown coal	40 760 000	41 005 000	38 083 000	36 866 000	35 616 000
Portugal					
Anthracite	195 265	180 102	179 118	177 453	183 796
Romania					
Anthracite & bituminous	8 637 000	8 794 000	9 299 000	9 686 000	8 286 000
Lignite	19 872 000	22 019 000	24 956 000	27 448 000	) 28 641 000
Brown coal	635 000	641 000	633 000	680 000)
Soviet Union					
Anthracite & bituminous	555 100 000	557 140 000	533 960 000	552 954 000	544 213 000
Lignite	167 025 000	166 484 000	164 704 000	163 417 000	159 831 000
Spain					
Anthracite	3 760 522	3 830 589	3 795 709	4 074 042	4 675 713
Bituminous	8 114 575	7 667 695	8 048 732	9 069 931	9 590 962
Lignite	5 812 868	8 271 535	10 696 392	15 390 196	20 674 221

Production of Coal

Country	1977	1978	1979	1980	1981
Turkey					
Bituminous	7 676 743	7 741 311	7 199 786	6 598 755	7 387 884
Lignite	14 828 264	18 030 048	15 602 578	16 997 916	18 957 588
Yugoslavia					
Bituminous	512 000	471 000	434 000	388 000	384 000
Lignite	29 611 000	30 360 000	32 329 000	36 949 000	40 958 000
Brown coal	8 960 000	8 853 000	9 351 000	9 665 000	10 581 000
Botswana	294 039	314 486	355 115	371 395	380 698
Morocco					
Anthracite	707 000	720 000	710 000	680 000	703 000
Mozambique					
Bituminous	310 000	118 000	320 000	408 000	* 500 000
Nigeria					
Sub-bituminous	237 510	400 212	172 147	193 225	115 893
South Africa					
Anthracite	2 558 960	2 150 038	3 308 727	3 895 455	4 017 426
Bituminous	82 851 583	88 207 790	100 459 139	111 224 519	126 361 427
Swaziland					
Bituminous	128 990	165 874	168 409	175 984	163 780
Tanzania					
Bituminous	2 096	6 541	5 572	4 250	3 000
Zaire					
Bituminous	127 955	96 771	99 220	136 506	* 130 000
Zambia					
Bituminous	708 077	615 145	598 507	568 799	527 340
Zimbabwe					
Bituminous	3 029 477	3 065 804	3 186 433	3 133 036	2 866 323
Canada					
Bituminous	15 301 000	17 141 000	18 432 000	20 042 000	21 736 000
Sub-bituminous	7 902 000	8 278 000	9 569 000	10 542 000	11 549 000
Lignite	5 478 000	5 058 000	5 012 000	5 971 000	6 796 000
Mexico					
Bituminous	6 610 223	6 755 556	7 356 696	7 009 716	* 7 300 000
USA					
Anthracite	5 317 088	4 569 000	4 400 000	5 500 000	4 900 000
Bituminous & lignite	627 177 000	603 393 000	704 200 000	747 200 000	742 400 000
Argentina					
Lignite	533 312	434 141	726 939	389 395	497 600
Brazil					
Bituminous & lignite	3 223 872	4 105 899	4 996 566	4 839 428	* 5 000 000
Chile					
Bituminous	1 270 867	1 089 842	915 002	995 561	1 147 122
Colombia					
Bituminous	4 204 100	4 754 000	4 885 000	5 260 000	5 000 000
Peru					
Anthracite	23 410	28 000	30 000	35 000	...
Venezuela					
Bituminous	120 824	80 643	55 304	43 979	45 736
Afghanistan (c)					
Bituminous	172 700	217 500	132 000	145 000	...
Burma (b)	28 800	12 184	13 818	11 213	* 38 100
China	* 550 000 000	* 618 000 000	* 635 000 000	* 620 000 000	* 598 600 000
India					
Bituminous	110 247 000	101 973 000	103 845 000	109 102 000	121 300 000
Lignite	3 632 000	3 613 000	3 264 000	4 549 000	5 910 000
Indonesia					
Bituminous	230 627	264 180	278 589	303 990	402 680
Iran (c)					
Bituminous	* 900 000	* 900 000	* 900 000	* 700 000	* 600 000
Japan					
Anthracite & bituminous	18 246 245	18 991 274	17 640 804	18 027 000	17 688 000
Lignite	54 711	36 839	30 492	* 24 000	...

Coal

Production of Coal

tonnes

Country	1977	1978	1979	1980	1981
Korea, Dem P.R. of					
Anthracite	* 34 500 000	* 35 000 000	* 35 000 000	* 36 000 000	...
Bituminous	* 8 300 000	* 8 800 000	* 8 800 000	* 8 800 000	...
Lignite	* 200 000	* 200 000	* 200 000	* 200 000	...
Korea, Republic of					
Anthracite	17 233 000	18 054 000	18 208 000	18 542 000	19 994 000
Mongolia (a)	* 3 324 000	* 3 798 000	* 4 114 000	* 4 350 000	...
Pakistan					
Lignite	1 050 000	* 1 120 000	1 346 000	1 694 447	1 524 000
Philippines					
Bituminous	284 554	255 054	263 132	325 008	373 000
Taiwan					
Bituminous	2 955 915	2 883 904	2 719 751	2 573 530	2 445 782
Thailand					
Lignite	438 570	638 942	1 356 467	1 426 566	1 686 044
Vietnam					
Anthracite	* 6 200 000	* 6 000 000	* 5 300 000	5 800 000	...
Australia					
Bituminous	72 679 000	74 094 000	76 794 000	77 428 000	93 674 000
Sub-bituminous	5 529 000	5 733 000	6 365 000	7 196 000	7 195 000
Brown coal	29 250 000	32 860 000	32 597 000	32 894 000	32 964 000
New Zealand					
Bituminous	388 800	363 800	382 500	486 500	474 600
Sub-bituminous	1 816 000	1 667 800	1 354 800	1 466 700	1 509 700
Lignite	164 100	150 900	209 000	208 000	211 900
World total	3 510 000 000	3 558 000 000	3 716 000 000	3 695 000 000	3 809 000 000

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

(a) Including lignite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

Exports of Coal

Country	1977	1978	1979	1980	1981
United Kingdom					
Anthracite	738 967	532 683	846 216	1 014 614	(d) 406 637
Other	1 201 678	1 730 615	1 493 160	3 026 143	(d) 4 569 066
Briquettes	156 994	145 725	174 391	118 906	(d) 44 793
Belgium-Luxembourg					
Anthracite	28 564	49 448	65 208	48 012	72 493
Other	328 516	196 087	380 041	490 031	820 440
Briquettes	9 682	25 630	59 036	25 399	16 254
France					
Anthracite	201 045	177 588	133 318	100 603	67 402
Lignite	12 775	6 370	6 852	6 617	6 492
Other	385 802	354 161	436 236	358 726	687 584
Briquettes	45 034	27 786	41 368	50 249	26 716
Germany, Federal Republic of					
Brown coal	26 092	66 075	163 615	275 152	259 859
Other (b)	14 286 954	18 656 165	15 224 923	12 304 190	11 244 926
Briquettes	706 493	825 302	945 011	959 407	953 583
Irish Republic (b)	49 130	57 945	65 760	38 446	9 235
Italy (b)	14 489	5 544	13 019	18 718	19 776
Netherlands					
Anthracite	187 519	141 169	272 568	213 439	250 490
Other	274 896	343 844	759 518	1 333 147	659 795
Briquettes	14 372	4 828	11 089	3 309	2 893
Austria					
Brown coal	8 341	5 433	11 575	24 052	19 518
Czechoslovakia					
Brown coal	1 654 000	1 515 000	1 647 000	2 160 000	2 527 000
Other	3 308 000	3 745 000	3 366 000	3 728 000	2 605 000
German Democratic Republic					
Briquettes	2 243 000	2 211 000	1 806 000	2 212 000	2 789 000
Hungary					
Brown coal	56 138	37 460	20 983	44 547	42 422
Norway	164 422	77 042	63 577	91 120	84 140
Poland					
Brown coal	3 387 000	3 332 000	2 974 000	1 569 000	1 383 000
Other	39 317 000	40 099 000	41 437 000	31 048 000	15 159 000
Soviet Union					
Anthracite	* 4 700 000	* 4 700 000	* 4 700 000	* 4 000 000	* 4 000 000
Other	* 22 500 000	* 22 500 000	* 23 000 000	* 23 000 000	* 23 000 000
Spain					
Anthracite	21 927	16 232	14 455	17 167	...
Sweden (b)	32 034	31 555	24 499	3 994	1 152
Switzerland	104	6	4 876	403	2
Turkey					
Lignite	—	244 617	130 885	197 055	...
Other	700	520	1 485	2 000	...
Yugoslavia					
Brown coal	174 429	374 013	296 267	318 833	) * 520 000
Lignite	42 946	23 762	77 211	78 660)
Morocco					
Anthracite	10 380	54 928	77 622	81 012	...
Mozambique	156 138	38 700	152 200	98 500	...
Nigeria	4 000	3 600	2 000	...	...
South Africa					
Anthracite	2 223 833	2 528 160	3 363 925	3 409 202	4 289 068
Bituminous	10 478 234	12 860 508	19 977 383	25 741 032	25 591 922
Swaziland	76 913	105 342	165 170	139 558	104 959
Zimbabwe	236 418	216 614	195 952	229 498	...
Canada	12 069 202	13 657 516	13 852 850	14 310 784	16 285 104
USA					
Anthracite	566 907	785 875	1 118 332	1 628 371	2 040 027
Bituminous	32 096 879	36 129 749	58 770 047	81 539 975	100 011 646
Lignite	37 331	20 703	23 940	59 025	44 201

Coal

Exports of Coal

tonnes

Country	1977	1978	1979	1980	1981
Argentina	638	656	...	...	...
Colombia					
Anthracite	17 223	547	—	—	—
Bituminous	101 489	148 955	128 895	87 462	88 759
Other	1 330	540	6 800	7 967	564
China (c)	* 493 800	* 797 100	* 1 760 600	* 2 865 500	* 3 012 800
India (a)	639 908	264 895	93 660	...	...
Indonesia	15 350	31 673	59 595	112 487	156 695
Japan	31 651	47 740	59 563	70 726	55 004
Korea, Dem. P.R. of	* 40 000	* 27 000	* 57 000	* 100 000	* 125 000
Korea, Republic of					
Anthracite	9 000	4 000	—	—	—
Australia	36 383 000	38 052 000	41 006 000	42 242 500	50 813 000

Note: This table excludes bunker shipments

(a) Years ended 31 March following that stated

(b) Including anthracite

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

(d) Six months data only

Imports of Coal

Country	1977	1978	1979	1980	1981
United Kingdom					
Anthracite	269 027	217 423	251 281	320 145	329 641
Bituminous	1 198 222	1 380 833	2 339 793	2 405 025	2 604 762
Other	971 294	751 077	1 762 036	4 601 512	1 355 760
Briquettes	85 244	77 257	91 988	170 173	132 428
Belgium-Luxembourg					
Anthracite	1 918 684	2 189 474	2 218 140	1 807 545	1 705 916
Bituminous	—	3 287 223	4 620 384	4 014 611	4 524 142
Other	5 015 974	2 173 300	3 196 676	4 767 352	4 183 732
Briquettes	197 961	180 799	204 955	174 321	193 899
Denmark					
Coal	5 565 900	6 110 405	7 555 732	10 063 182	10 885 554
Briquettes	15 777	13 007	22 557	40 349	60 535
France					
Anthracite	2 077 998	2 164 335	2 313 018	2 534 097	1 488 523
Bituminous	—	6 377 855	8 309 293	8 743 025	8 579 265
Lignite	11 929	11 024	11 774	11 527	9 725
Other	19 444 092	15 240 876	16 085 533	18 535 618	17 302 886
Briquettes	230 903	431 919	432 546	305 761	262 769
Germany, Federal Republic of					
Anthracite	270 372	155 694	210 745	154 025	164 423
Brown coal	1 602 103	1 460 151	1 590 319	2 124 539	2 712 375
Other	6 082 780	6 408 807	7 562 192	8 969 458	10 155 991
Briquettes	12 703	13 942	15 421	17 821	16 065
Greece					
Anthracite	6 303	52 142	6 447	6 625	2 000
Other	380 015	323 747	447 991	474 058	167 000
Irish Republic					
Anthracite	37 727	56 479	48 705	36 825	36 894
Bituminous	829 943	783 550	1 167 219	1 168 360	1 251 847
Italy					
Anthracite	324 751	497 051	373 231	293 977	200 282
Bituminous	—	771 795	8 639 982	10 795 323	10 742 885
Lignite	44 245	26 572	41 828	47 506	18 248
Other	11 955 667	10 466 837	4 851 711	5 427 393	7 521 854
Briquettes	66 610	39 462	47 308	64 011	130 516
Netherlands					
Anthracite	329 125	337 572	286 047	417 808	419 242
Bituminous	—	2 852 649	3 643 113	3 398 559	3 207 889
Brown coal	15 723	54 930	153 764	156 168	149 208
Other	5 565 102	1 840 434	2 281 628	3 339 048	4 321 688
Briquettes	17 961	22 152	36 294	43 515	21 499
Albania (e)	* 136 000	* 168 000	* 261 000	* 159 000	* 164 000
Austria					
Anthracite	...	34 823	43 424	52 840	50 561
Brown coal	226 807	247 893	228 527	283 372	523 867
Other	2 331 643	2 257 001	2 750 492	2 805 265	2 663 210
Briquettes	322 041	285 943	299 286	325 686	369 119
Bulgaria	6 251 000	6 201 000	6 360 000	6 711 000	7 051 000
Czechoslovakia					
Brown coal	318 000	466 000	475 000	438 000	...
Other	5 619 000	5 591 000	5 492 000	5 058 000	4 423 000
Finland					
Anthracite	94 660	86 169	124 205	127 242	111 832
Other	4 192 568	4 703 069	4 647 005	4 542 386	5 537 729
German Democratic Republic (c)	6 058 000	5 936 000	8 657 000	6 828 000	5 361 000
Greenland	—	2 652	2 790	1 926	...
Hungary					
Coal (c)	1 524 288	1 420 029	1 514 663	1 622 633	1 678 129
Briquettes	572 567	500 134	462 037	503 747	523 792
Norway (a)					
Anthracite	85 329	79 535	92 940	103 425	79 128
Other	335 547	367 954	579 420	635 014	613 569
Poland					
Anthracite	41 000	30 000	26 000	30 000	31 000
Other	1 080 000	1 044 000	945 000	1 012 000	1 072 000

Coal

Imports of Coal

tonnes

Country	1977	1978	1979	1980	1981
Portugal					
Anthracite	7 913	7 961	4 578	11 182	13 000
Other	357 326	425 322	371 366	299 109	335 203
Romania	3 439 900	4 668 500	3 844 800	* 4 000 000	...
Soviet Union	* 9 500 000	* 10 000 000	* 10 000 000	* 9 000 000	* 8 000 000
Spain					
Anthracite	10 429	7 479	5 310	8 205	...
Brown coal	12 327	6 391	7 086	6 705	...
Other	3 935 112	3 369 128	4 186 399	5 669 941	...
Sweden					
Anthracite	115 400	31 757	43 638	44 949	10 064
Other	1 284 208	1 512 949	2 075 556	2 136 655	2 017 561
Switzerland					
Anthracite	143 047	141 499	317 049	573 437	862 858
Briquettes	53 313	49 180	61 618	65 803	60 355
Turkey	484 271	636 454	549 694	508 318	336 000
Yugoslavia					
Anthracite	185 493	209 565	200 496	137 465	310 000
Lignite	29 537	399	—	—	—
Other	2 418 747	1 463 914	3 335 365	3 420 285	3 513 000
Briquettes	194 990	139 447	51 550	111 948	159 000
Algeria	41 164	30 530	91 455	510 132	...
Egypt	1 042 455	857 267	356 990	802 050	...
Ghana	1 524	* 2 000	* 2 000	* 2 000	...
Kenya	62 010	47 738	15 875	15 562	...
Madagascar	16 798	13 206	28 863	27 114	...
Malawi	56 529	55 307	33 799	* 40 000	...
Morocco	8 782	7 860	10 474	9 951	...
Mozambique	161 381	137 400	182 300	71 800	...
South Africa	295 663	198 593	175 887	199 471	51 518
Tunisia	20 098	27 085	32 739	21 006	26 436
Zaire	29 474	42 999	12 058	* 10 000	...
Zimbabwe	40	16 840	22 951	75 418	...
Canada					
Anthracite	293 171	225 639	159 082	331 176	289 803
Bituminous	14 900 274	12 900 488	17 280 466	15 516 657	14 516 893
Other	126 086	99 834	101 330	202 370	170 388
Cuba	41 910	59 929	* 60 000	* 65 000	...
Mexico	624 991	567 037	701 558	816 259	...
USA					
Bituminous	1 071 756	1 688 486	1 107 581	811 797	815 179
Other	564 867	1 472 684	784 084	301 181	148 563
Argentina	1 246 216	952 240	947 644	870 300	705 800
Brazil					
Anthracite	12 998	24 670	35 372	240 677	32 291
Bituminous	3 550 309	3 615 592	4 443 141	4 279 895	4 320 492
Chile	179 245	172 558	497 000	1 192 000	...
Peru					
Bituminous	50 515	* 51 000	* 50 000	* 50 000	...
Uruguay	1 590	403	4 136	3 545	1 403
Venezuela	23 736	31 734	33 787	44 089	...
Burma	* 200 000	* 210 000	* 200 000	* 210 000	...
Hong Kong	11 114	7 711	5 814	2 851	57 004
India	2 805	1 583	639 705	310 000	...
Indonesia	32	2 515	4 082	4 876	5 336
Iran (b)	3 074	* 83 000	* 51 000	* 28 000	...
Israel (d)	195	305	244	116	307 738
Japan					
Anthracite	1 489 110	1 052 253	1 028 255	1 191 229	872 732
Lignite	42 899	38 168	42 322	33 970	28 204
Other	59 351 856	51 124 931	57 525 808	67 036 601	77 397 668
Korea, Dem. P.R. of	* 370 000	* 442 000	* 450 000	* 450 000	...
Korea, Republic of					
Anthracite	55	)	2 120 071	2 365 057	5 138 150
Bituminous	23 124	) 2 402 921	26 874	481 858	1 420 771
Other	1 983 634	)	4 191 046	4 449 438	5 890 120

Imports of Coal

tonnes

Country	1977	1978	1979	1980	1981
Malaysia					
Anthracite	20 141	14 080	22 298	25 000	...
Philippines	25 589	51 540	1 510	2 422	6 646
Syria	1 130	1 059	808	652	1 354
Taiwan	757 812	1 359 740	2 720 141	4 068 985	5 187 010
Thailand	2 163	12 990	20 178	25 230	...
Australia	2 666	22 696	16 016	2 159	1 781
New Caledonia	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

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

Cobalt

Mine Production of Cobalt

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Finland	1 227	1 623	1 332	950	940
Soviet Union	* 1 900	* 1 950	* 2 000	* 2 150	* 2 250
Botswana	165	261	294	226	254
Morocco	990	1 133	1 041	838	784
Zaire	10 208	13 146	13 599	14 482	11 124
Zambia	1 704	2 063	3 176	3 310	2 570
Zimbabwe	—	17	204	115	93
Canada	1 485	1 233	1 640	2 118	1 816
Cuba	* 1 500	* 1 400	* 1 300	* 1 500	* 1 600
Philippines	1 084	1 192	1 370	1 331	999
Australia	3 324	3 265	3 046	3 704	3 266
New Caledonia	3 504	2 015	2 491	2 683	2 417
World total	27 100	29 300	31 500	33 400	28 100

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	1977	1978	1979	1980	1981
Belgium (a)	...	...	...	...	...
France	742	871	659	1 033	* 1 000
Germany, Federal Republic of	400	350	385	* 400	* 400
Czechoslovakia (b)	...	...	...	...	...
Finland	1 109	1 052	1 156	1 152	1 230
Norway	705	522	953	1 275	1 444
Soviet Union	* 3 400	* 3 500	* 3 600	* 3 650	* 3 750
Zaire	10 208	13 146	13 599	14 482	11 124
Zambia	1 704	2 063	3 176	3 310	2 570
Canada	459	519	605	692	914
USA	221	292	421	454	406
Japan	1 093	1 864	2 653	2 867	2 421
World total	20 700	24 900	27 600	30 200	26 000

Note: In addition to the production listed above, several countries, including the United Kingdom, France, Federal Republic of Germany and USA, are known to produce substantial amounts of cobalt compounds

- (a) Production not reported. Much of the metal recorded under Zaire is believed to be further processed in Belgium
- (b) Czechoslovakia is thought to recover cobalt from materials imported from Cuba. However no data are available to enable a reliable estimate to be made

Cobalt

Exports of Cobalt

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	624	885	962	1 061	(b) 405
Oxides	316	411	244	279	(b) 376
Belgium-Luxembourg (a)					
Metal	* 4 500	* 4 000	* 3 300	* 2 300	* 1 400
Oxides	* 1 600	* 2 200	* 1 700	* 1 000	* 500
France					
Metal	1 066	1 100	797	831	805
Oxides	209	192	118	179	209
Germany, Federal Republic of					
Metal	340	796	847	821	619
Oxides	41	86	45	88	54
Italy	29	72	107	30	27
Netherlands					
Metal	95	100	254	196	60
Oxides	26	62	78	48	48
Finland					
Metal	999	853	1 069	1 201	1 564
Norway	677	559	885	1 139	1 638
Sweden					
Metal	40	63	221	103	342
Oxides	2	0	85	0	2
Switzerland					
Oxides	7	11	2	1	1
Morocco					
Ore	9 076	8 922	7 530	7 489	...
Zaire	8 845	9 567	8 139	...	...
Zambia	1 682	* 2 000	* 3 000	* 2 000	...
Canada					
Metal	687	827	302	327	678
of which: Re-exports	3	111	114	2	2
Oxides	605	748	559	1 091	601
USA					
Metal	1 228	1 436	1 170	1 075	1 345
Oxides	639	816	1 357	780	220
Japan					
Oxides	10	87	41	85	13

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

(b) Six months data only

Imports of Cobalt

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	2 124	2 266	3 032	2 189	1 438
Oxides	1 096	1 141	683	1 333	890
Belgium-Luxembourg					
Oxides	59	66	54	43	74
Denmark	21	33	30	19	14
France					
Ore	8 678	9 727	7 684	5 696	6 460
Metal	660	964	897	1 141	1 133
Oxides	169	293	267	209	183
Germany, Federal Republic of					
Metal	2 091	2 059	1 848	1 703	1 212
Oxides	320	603	483	319	239
Italy					
Metal	312	369	338	258	209
Oxide	254	215	189	193	190
Netherlands					
Metal	17	78	194	180	52
Oxides	274	387	286	197	194
Austria					
Oxides	5	6	2	4	3
Finland					
Metal	126	306	418	7	252
Oxides	52	309	622	246	0
Norway					
Metal	5	3	18	69	502
Oxides	10	9	9	6	3
Portugal					
Oxide	23	6	9	4	6
Spain					
Oxides	138	143	75	72	95
Sweden					
Metal	237	484	509	487	555
Oxides	5	3	4	2	2
Switzerland					
Oxides	7	16	2	1	2
Turkey					
Oxides	15	200	21	25	41
Yugoslavia					
Metal	71	...	...	...	...
Oxides	35	32	22	17	53
South Africa					
Metal	90	139	64	100	83
Oxides	2	6	8	12	15
Mexico					
Metal	54	55	70	76	...
Oxides	137	122	118	187	...
USA					
Metal	7 411	7 479	8 567	6 783	6 308
Oxide	230	488	230	188	201
Argentina	78	48	...	...	...
Brazil					
Metal	237	312	237	303	237
Oxide	78	86	53	52	16
Venezuela					
Oxides	7	13	13	10	...
Hong Kong					
Oxide	49	41	18	18	42
India					
Metal	137	151	136	...	...
Oxide (a)	3	8	5	...	...
Indonesia					
Oxides	15	9	6	5	17
Japan					
Metal	2 085	1 359	1 677	1 693	1 129
Oxide	597	615	651	292	227

Cobalt

Imports of Cobalt

tonnes

Country	1977	1978	1979	1980	1981
Korea, Republic of					
Metal	30	34	70	56	54
Oxides	25	26	16	9	8
Taiwan					
Oxides	32	31	17	23	24
Australia					
Metal	20	29	30	13	16
Oxide	7	13	16	11	39

(a) Years ended 31 March following that stated

Mine Production of Copper

tonnes (metal content)

Country	1977	1978	1979	1980	1981
United Kingdom (a)	453	135	...	200	607
France	128	200	400	100	98
Germany, Federal Republic of	1 210	821	851	1 274	1 400
Greece	3 500	1 500	—	100	100
Irish Republic	4 829	4 700	5 000	4 000	3 400
Italy	700	531	489	600	800
Albania	* 10 000	* 11 500	* 9 700	* 11 500	* 12 000
Bulgaria	* 57 000	* 57 000	* 60 000	* 62 000	* 62 000
Czechoslovakia	7 800	8 200	9 000	11 500	11 000
Finland	52 113	52 089	44 349	36 800	38 200
German Democratic Republic	* 17 000	* 15 000	* 14 000	* 11 800	* 12 000
Hungary	304	203	116	—	—
Norway	29 053	29 073	28 659	28 891	28 238
Poland	282 000	312 000	340 000	343 000	294 600
Portugal	3 208	2 962	3 652	3 889	2 849
Romania	* 27 000	* 27 000	* 29 000	* 28 000	* 30 000
Soviet Union	* 1 100 000	* 1 140 000	* 1 130 000	* 1 130 000	* 1 140 000
Spain	43 462	40 448	42 982	48 483	47 969
Sweden	44 764	47 412	45 800	42 800	50 700
Turkey	34 979	27 188	30 521	21 300	25 400
Yugoslavia	116 218	123 319	111 421	116 800	111 000
Algeria	400	200	200	200	200
Botswana	11 788	14 615	14 563	15 553	17 819
Congo	1 015	595	1 000	—	—
Mauritania	7 640	1 773	—	—	—
Morocco	3 370	4 300	8 233	8 423	7 600
Mozambique	3 000	300	200	—	—
Namibia	49 200	37 700	41 900	39 200	44 300
South Africa	205 414	205 745	190 591	200 683	199 424
Uganda	* 4 000	* 1 300	—	—	—
Zaire	452 716	472 533	451 548	459 700	504 800
Zambia	658 788	654 012	586 046	609 935	587 400
Zimbabwe	34 767	33 848	29 724	26 901	24 583
Canada (b)	759 423	659 380	636 383	716 363	693 188
Cuba	2 583	2 821	2 840	3 350	1 443
Guatemala	2 500	2 023	1 768	842	—
Honduras	535	600	1 390	297	* 300
Mexico	89 662	87 186	107 109	175 399	230 200
Nicaragua	300	100	—	—	—
USA	1 364 375	1 357 587	1 443 556	1 180 789	1 538 160
Argentina	169	319	89	200	200
Bolivia	3 670	3 267	1 797	1 882	2 637
Brazil	—	—	—	400	7 600
Chile	1 056 200	1 035 500	1 061 000	1 067 700	1 080 300
Colombia	78	100	84	111	* 100
Ecuador	765	507	639	851	349
Peru	338 110	376 400	397 200	366 700	327 614
Burma	* 100	* 100	* 100	* 100	* 100
China	* 155 000	* 160 000	* 160 000	* 165 000	* 170 000
Cyprus	6 800	4 678	1 200	81	—
India	29 011	26 640	27 717	26 819	25 200
Indonesia	57 100	58 000	60 200	59 000	62 600
Iran	6 000	6 000	3 000	1 000	2 000
Israel	—	—	—	400	4 400
Japan	81 395	71 951	59 960	52 553	51 459
Korea, Dem. P.R. of	* 15 000	* 15 000	* 15 000	* 12 000	* 12 000
Korea, Republic of	1 688	669	433	895	1 142

Copper

Mine Production of Copper

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Malaysia	24 000	26 000	24 514	26 990	28 642
Philippines	272 792	263 589	298 300	304 504	305 262
Taiwan	2 000	800	600	500	500
Australia	221 579	222 111	237 610	243 540	225 874
Papua New Guinea	182 291	198 603	170 788	146 813	165 420
World total	7 940 000	7 900 000	7 900 000	7 800 000	8 200 000

(a) In a mixed copper-zinc concentrate

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

Smelter Production of Copper

Country	1977	1978	1979	1980	1981
Belgium	* 13 000	* 9 000	* 1 500	* 700	* 3 100
Germany, Federal Republic of	189 593	165 800	158 200	153 900	163 100
Albania	9 700	9 500	10 000	11 500	12 000
Bulgaria	* 57 000	* 57 000	* 58 000	* 59 000	* 62 000
Czechoslovakia	* 10 000	* 10 000	* 10 000	30 966	30 180
Finland	58 641	52 564	53 943	47 200	54 747
German Democratic Republic	* 18 000	* 16 000	* 18 000	* 16 000	* 16 000
Hungary	3 777	1 005	2 288	2 069	2 351
Norway	26 575	20 061	27 339	33 690	31 952
Poland	290 000	320 000	320 000	320 000	288 000
Portugal	3 400	3 000	5 500	6 600	5 200
Romania	41 429	38 880	41 120	40 675	* 38 000
Soviet Union	* 1 100 000	* 1 170 000	* 1 170 000	* 1 150 000	* 1 160 000
Spain	145 444	112 500	108 300	103 058	107 900
Sweden	46 666	53 177	51 655	45 749	60 576
Turkey	31 524	26 220	22 212	16 320	27 264
Yugoslavia	97 397	107 507	108 732	93 700	102 400
Namibia	53 400	45 900	42 700	40 000	39 700
South Africa	188 400	189 400	182 300	185 800	185 400
Uganda	2 201	980	—	—	—
Zaire (a)	452 716	392 825	371 932	425 716	468 200
Zambia (a)	658 500	653 900	595 104	601 348	560 616
Zimbabwe	28 000	34 200	31 400	26 300	29 900
Canada	500 300	425 300	384 500	492 700	465 100
Mexico	87 457	86 978	83 857	85 610	61 300
USA	1 301 970	1 288 378	1 335 607	1 008 397	1 316 756
Chile	888 400	927 400	949 600	953 100	953 800
Peru	321 100	319 000	371 400	348 600	315 000
China	* 150 000	* 150 000	* 150 000	* 150 000	* 155 000
India	23 489	19 480	21 455	28 489	25 743
Japan	915 200	905 900	921 400	929 800	980 100
Korea, Dem. P.R. of	* 20 000	* 20 000	* 18 000	* 17 000	* 17 000
Korea, Republic of	36 800	45 900	48 200	64 100	101 200
Taiwan	11 500	13 000	14 300	17 000	53 100
Australia	167 664	164 395	163 192	174 920	173 494
World total	7 950 000	7 900 000	7 900 000	7 700 000	8 100 000

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) Including leach cathodes

Copper

Production of Refined Copper

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	122 200	125 600	121 700	161 300	136 200
Belgium (a)	563 281	504 867	519 944	526 252	436 579
France	45 045	41 345	45 258	46 460	46 350
Germany, Federal Republic of	440 200	404 500	382 500	373 800	387 400
Italy	20 000	17 500	15 600	12 200	23 700
Albania	* 7 000	* 7 000	* 7 000	* 9 000	* 9 500
Austria	31 707	31 485	32 812	31 286	39 117
Bulgaria	58 000	62 000	62 000	63 000	62 000
Czechoslovakia	23 067	23 810	24 587	25 559	25 513
Finland	42 755	42 719	43 027	40 542	33 796
German Democratic Republic	51 000	49 000	51 000	51 000	55 000
Hungary	14 670	16 752	27 674	27 756	28 840
Norway	21 237	15 674	21 980	26 715	26 077
Poland	306 600	332 000	335 800	357 300	327 100
Portugal	3 392	2 839	3 373	4 480	4 855
Romania	48 200	66 700	66 300	65 000	60 000
Soviet Union	* 1 440 000	* 1 460 000	* 1 480 000	* 1 450 000	* 1 460 000
Spain	159 000	147 000	140 600	153 700	152 100
Sweden	61 720	64 438	61 676	55 713	61 892
Turkey	17 863	12 585	22 251	15 934	22 400
Yugoslavia	143 516	150 828	137 504	131 288	132 603
Egypt	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
South Africa	145 900	152 500	152 300	147 900	144 800
Zaire	98 700	102 900	103 100	144 000	151 300
Zambia	649 000	629 000	558 400	607 592	560 446
Zimbabwe	12 000	11 200	8 400	7 100	16 500
Canada	508 767	446 278	397 263	505 238	476 655
Mexico	73 062	74 990	81 781	85 610	68 000
USA	1 706 900	1 869 200	2 013 800	1 726 000	2 025 600
Brazil	45 847	45 000	53 110	63 000	45 000
Chile	676 000	749 100	781 800	810 700	775 500
Peru	188 100	185 400	230 300	230 600	209 100
China	* 260 000	* 270 000	* 270 000	* 270 000	* 275 000
India	22 400	16 200	19 300	23 200	23 100
Iran	* 7 000	* 6 000	* 3 000	* 800	* 800
Japan	933 703	959 070	983 700	1 014 292	1 050 120
Korea, Dem. P.R. of	* 25 000	* 25 000	* 22 000	* 19 000	* 19 000
Korea, Republic of	42 880	52 442	63 082	72 931	107 984
Taiwan	11 669	14 353	15 305	19 495	53 230
Australia	183 068	178 942	171 959	182 400	192 078
World total	9 200 000	9 400 000	9 500 000	9 600 000	9 700 000

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

(a) Including alloys

Exports of Copper

Country	1977	1978	1979	1980	1981
United Kingdom					
Ore & matte	2 099	973	6	4	(h) 4
Unwrought-					
Unrefined	—	4	75	80	(h) 26
Refined	6 880	11 110	22 569	32 938	(h) 11 603
Alloys	38 238	28 780	25 418	27 544	(h) 11 722
Scrap	29 483	40 431	59 593	82 399	(h) 37 224
Belgium-Luxembourg					
Ore	1 539	3 443	733	716	727
Burnt cupreous pyrites	162 205	142 309	144 883	138 574	149 092
Unwrought-					
Matte, cement & unrefined	884	2 128	2 945	6 662	12 118
Refined	320 965	304 783	297 601	299 149	282 495
Alloys	6 885	6 466	7 971	8 222	8 551
Scrap	16 573	19 912	26 846	26 356	24 066
Denmark					
Unwrought	151	15	127	70	8
Unwrought alloys	862	867	1 110	1 040	1 447
Scrap	11 120	12 499	12 735	15 153	13 104
France					
Ore	2 309	0	564	1 618	801
Matte & cement	1 390	504	1 181	2 344	1 861
Unwrought-					
Unrefined	5 076	3 665	5 790	3 335	3 935
Refined	7 388	17 248	17 322	12 008	15 115
Alloys	5 248	4 343	4 691	3 711	4 510
Scrap	96 091	98 204	104 933	108 369	108 153
Germany, Federal Republic of					
Burnt cupreous pyrites	2 973	172	10 732	954	—
Matte & cement	338	300	96	617	282
Unwrought-					
Unrefined	32 364	29 589	22 384	24 976	18 870
Refined	66 954	112 695	86 686	73 646	56 402
Alloys	8 395	9 347	12 220	13 505	13 130
Scrap	46 340	53 956	54 820	66 832	67 774
Irish Republic					
Ores & concentrates	18 985	25 002	17 703	18 888	17 525
Unwrought	652	359	253	454	759
Scrap	—	5 869	5 910	6 698	7 119
Italy					
Ore	1 604	2 631	1 232	4 100	2 356
Matte & cement	378	45	328	1 073	1 232
Unwrought-					
Unrefined	2 131	877	72	113	221
Refined	790	751	424	2 613	2 687
Alloys	1 817	1 591	4 977	1 584	4 288
Scrap	11 028	9 088	15 712	11 149	24 531
Netherlands					
Unwrought	2 342	2 241	2 193	1 479	5 190
Unwrought alloys	2 916	2 312	3 079	4 466	5 997
Scrap	35 371	41 509	56 006	58 390	57 388
Albania					
Unwrought (f)	* 2 000	* 3 400	* 800	* 1 100	* 300
Austria					
Ore	550	91	116	5	19
Unwrought	12 192	17 238	18 774	17 955	20 181
Unwrought alloys	1 280	1 425	1 363	1 385	3 392
Scrap	1 304	2 474	3 242	3 713	5 410
Bulgaria					
Unwrought (f)	* 2 600	* 2 300	* 1 200	* 2 000	* 1 100
Finland					
Unwrought-					
Unrefined	—	2	10 113	5 945	20 392
Refined	34 558	16 048	5 551	2 473	1 247
Alloys	2 749	1 492	1 228	894	1 110
Scrap	338	217	521	234	241

Copper

Exports of Copper

tonnes

Country	1977	1978	1979	1980	1981
Norway					
Ore	98 728	98 239	98 797	89 498	97 387
Unwrought-					
Unrefined	6 841	5 586	6 192	7 376	5 268
Refined	19 558	14 614	20 051	25 484	24 371
Alloys	1 126	1 587	1 601	1 966	1 693
Scrap	2 673	4 221	4 569	4 166	5 851
Poland					
Unwrought	117 919	146 688	133 720	144 754	142 514
Portugal					
Ore	—	100	1 004	550	1 100
Unwrought	—	815	3 144	1 258	2 884
Soviet Union					
Unwrought	* 227 000	* 247 000	* 247 000	* 247 000	* 247 000
Spain					
Ore	2 637	36	98	—	—
Matte	575	689	325	215	799
Unwrought	43 438	46 504	29 970	59 963	74 334
Unwrought alloys	3 944	5 890	5 868	6 319	...
Scrap	1 592	705	704	881	978
Sweden					
Ore	36 231	15 794	27 177	6 895	21 902
Unwrought-					
Unrefined	—	25	3 045	723	12 038
Refined	36 978	27 097	24 495	17 841	18 080
Alloys	3 787	2 748	3 683	2 479	4 813
Scrap	718	350	687	1 838	1 011
Switzerland					
Unwrought-					
Refined	826	557	4 024	2 201	725
Alloys	5 362	4 809	5 813	4 429	4 060
Scrap	6 633	4 972	12 119	12 075	11 458
Yugoslavia					
Unwrought	18 740	16 070	8 357	14 334	13 801
Scrap	14	3 682	7 948	6 129	4 035
Algeria					
Ore	1 000	800	985	...	...
Scrap	4 489	1 501	1 144	1 124	...
Botswana					
Ores & concentrates (b)	12 500	15 600	10 800	20 000	17 300
Congo					
Ores & concentrates	261	...	...	...	...
Ivory Coast					
Matte & scrap	708	1 046	1 023	...	1 295
Mauritania					
Ore (b)	7 000	2 800	—	—	...
Morocco					
Ore	18 095	10 419	21 272	22 274	* 21 000
Matte	—	—	1 219	1 743	...
Scrap	905	1 462	1 902	1 591	...
Namibia					
Unwrought	50 300	45 700	44 800	41 300	38 600
Senegal					
Unwrought & scrap	667	746	...	...	...
South Africa (f)					
Ores & concentrates	* 70 000	* 50 000	* 72 000	* 85 000	* 79 000
Unwrought	* 209 100	* 224 100	* 180 000	* 166 000	* 152 000
Tunisia					
Unwrought & scrap (g)	853	359	867	832	1 525
Uganda					
Unwrought	2 201	...	8 296	...	...
Zaire					
Ores & concentrates	142 854	61 133	86 394	...	...
Unwrought-					
Unrefined (e)	357 090	301 290	266 164	272 733	277 433
Refined	90 643	103 645	70 041	154 158	150 834
Scrap	447	...	...	191	...

Exports of Copper

Country	1977	1978	1979	1980	1981
Zambia					
Unwrought-					
Unrefined	8 128	25 604	20 911	3 173	220
Refined	647 086	549 887	625 781	614 208	555 760
Zimbabwe					
Unwrought	32 908	35 802	26 772	24 732	17 900
Canada					
Ores, concentrates & matte (b)	279 583	282 159	315 211	286 076	276 810
Unwrought	294 535	247 750	191 226	335 196	262 848
Scrap	37 156	41 217	40 561	43 115	41 294
Mexico					
Concentrates (b)	995	559	18 742	89 787	...
Unwrought-					
Unrefined	8 780	903	500	1 141	10 200
Refined	4 105	1 322	...	...	...
Trinidad & Tobago					
Scrap	1 135	3 085	364	434	...
USA					
Ores & concentrates (b)	21 934	17 486	44 565	106 825	150 782
Matte (b)	3 001	...	...	...	...
Unwrought-					
Unrefined	14 877	10 384	7 466	3 819	9 233
Refined	56 053	95 296	74 888	18 926	56 219
Alloys	1 447	7 899	7 571	3 460	4 399
Scrap	109 054	156 065	171 736	191 622	146 703
Bolivia					
Ore (b)	3 174	2 990	1 740	1 676	2 545
Chile					
Ores & concentrates (b)	151 900	99 100	90 700	122 600	111 500
Matte (b)	19 800	12 700	6 200	1 200	1 200
Unwrought-					
Unrefined	216 700	162 200	165 000	151 300	172 800
Refined	619 100	703 000	746 200	769 100	752 100
Peru					
Ore	63 821	195 738	113 441	69 811	...
Unwrought-					
Unrefined	136 318	134 592	139 578	126 985	104 500
Refined	157 591	163 932	207 439	206 696	...
Cyprus					
Ores & concentrates	31 215	26 225	12 322	825	—
Hong Kong					
Scrap	9 167	11 219	14 482	17 354	18 288
Indonesia					
Ores & concentrates	182 292	186 601	168 634	193 509	197 146
Iran					
Ore (c)	...	* 17 000	* 9 000	* 4 000	...
Israel (i)					
Matte	428	148	85	(a) 2 522	...
Cement copper	266	—	36	79	...
Scrap	2 648	2 223	3 130	4 419	2 134
Japan					
Unwrought	48 044	55 383	52 469	216 406	43 192
Scrap	669	558	299	527	133
Malaysia					
Ore	98 859	122 050	102 054	* 112 500	* 120 000
Scrap	1 782	2 562	5 413	...	...
Philippines					
Ores & concentrates	1 007 365	895 299	1 049 124	1 141 855	1 138 628
Scrap	930	1 679	916	1 729	1 202
Singapore					
Scrap	7 531	9 896	15 543	13 865	13 849
Taiwan					
Unwrought	537	408	236	272	232
Scrap	3 150	5 387	7 552	5 279	2 861

Exports of Copper

tonnes

Country	1977	1978	1979	1980	1981
Australia					
Ores & concentrates	108 605	110 204	150 499	164 313	113 625
Matte & cement	5 987	4 504	6 886	5 797	3 526
Unwrought-					
Unrefined	9 075	4 144	28 756	18 100	18 773
Refined	74 689	60 065	46 978	50 784	61 612
Alloys	43	158	435	319	565
Scrap	475	348	348	601	405
New Zealand (d)					
Unwrought	132	212	59	—	18
Scrap	493	800	1 797	1 106	1 471
Papua New Guinea					
Ores & concentrates (b)	182 048	193 299	171 258	142 241	168 065

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

Imports of Copper

Country	1977	1978	1979	1980	1981
United Kingdom					
Ore & matte	1 112	1 935	563	644	561
Unwrought-					
Unrefined	58 583	50 847	60 472	76 773	66 880
Electrolytic	369 830	336 264	299 992	257 066	208 917
Other refined	14 604	16 999	16 644	11 986	7 413
Alloys	1 698	1 204	670	596	588
Scrap	12 362	9 667	10 546	9 314	8 141
Belgium-Luxembourg					
Ore (i)	21 283	5 485	1 774	2 628	17 417
Burnt cupreous pyrites	23 847	13 240	7 964	3 104	1 375
Unwrought-					
Matte, cement & unrefined	223 311	196 244	172 410	189 986	203 637
Refined	358 305	361 165	343 106	317 255	278 264
Alloys	3 465	2 741	2 993	2 515	1 913
Scrap	69 660	64 993	100 383	124 528	104 715
Denmark					
Unwrought	6 670	5 164	3 518	3 105	1 354
Unwrought alloys	1 032	840	716	582	829
Scrap	817	1 460	2 909	3 123	5 281
France					
Ore	1 008	1	4	0	4
Burnt cupreous pyrites	—	—	—	3 883	5 732
Matte & cement	544	522	45	1 054	13
Unwrought-					
Unrefined	33 733	22 734	21 258	17 896	17 693
Refined	305 311	279 251	343 897	411 988	388 166
Alloys	4 305	4 229	4 139	4 583	4 661
Scrap	15 450	19 086	24 870	36 741	29 616
Germany, Federal Republic of					
Ore	576 307	531 355	483 740	537 883	481 142
Burnt cupreous pyrites	818 467	510 709	611 115	546 261	511 169
Matte & cement	6 837	7 561	12 249	11 026	4 675
Unwrought-					
Unrefined	118 921	109 225	62 785	51 680	65 706
Refined	440 276	428 794	449 995	444 672	374 541
Alloys	49 303	47 951	55 111	51 016	43 384
Scrap	109 941	137 563	168 822	178 490	149 882
Greece					
Unwrought	22 232	21 544	24 014	24 692	19 610
Unwrought alloys	304	341	717	265	420
Scrap	200	193	87	355	1 909
Irish Republic					
Unwrought	333	161	148	197	215
Italy					
Unwrought-					
Unrefined	5 778	4 654	6 802	2 241	1 143
Refined	299 584	351 646	338 464	372 834	316 983
Alloys	16 787	14 074	18 621	21 255	10 720
Scrap	72 639	69 579	76 309	99 524	59 338
Netherlands					
Unwrought	50 248	26 322	28 688	20 028	22 822
Unwrought alloys	2 060	1 699	2 382	1 520	3 340
Scrap	14 588	16 485	21 139	29 459	37 746
Austria					
Unwrought-					
Unrefined	12 949	15 948	7 887	5 479	3 637
Refined	8 066	4 406	3 664	9 261	8 659
Alloys	1 445	1 036	1 340	908	679
Scrap	12 116	15 602	23 280	20 113	18 074
Bulgaria					
Ore (a)	...	* 650	* 2 800	* 4 300	* 3 500
Czechoslovakia					
Unwrought	58 000	56 000	58 000	63 000	...

Copper

Imports of Copper

tonnes

Country	1977	1978	1979	1980	1981
Finland					
Ore	11 813	4 192	24 705	9 934	53 626
Unwrought-					
Refined	9 996	13 913	11 806	23 436	20 060
Alloys	512	420	587	497	356
Scrap	171	366	1 002	1 768	2 004
German Democratic Republic					
Ores & concentrates	28 050	16 950	* 10 300	...	...
Unwrought	52 490	64 660	* 24 900	...	...
Scrap	1 470	2 160	* 17 600	...	...
Hungary					
Unwrought (c)	37 639	32 888	25 995	28 962	35 799
Scrap	* 1 110	* 4 820	* 3 740	6 544	4 786
Norway					
Unwrought	1 161	1 216	1 098	721	659
Unwrought alloys	588	1 863	1 551	1 538	1 600
Scrap	1 410	414	228	331	232
Poland					
Unwrought	1 023	589	100	15	...
Portugal					
Ore	805	6 249	62	10	140
Unwrought	17 603	14 893	11 850	11 190	12 757
Scrap	2 666	2 981	1 340	1 853	220
Romania					
Unwrought	* 33 700	* 27 100	* 20 900	...	...
Soviet Union					
Ore (a)	* 82 400	* 110 600	* 91 800	* 111 300	* 57 100
Unwrought	* 8 000	* 8 000	* 8 000	* 8 000	* 8 000
Spain					
Ore	188 928	222 248	191 109	204 097	152 754
Matte & cement	28 481	11 785	11 304	3 758	8 660
Unwrought-					
Unrefined	4 121	2 704	1 193	24 979	31 560
Refined	53 852	37 527	51 656	24 039	20 348
Alloys	101	126	243	548	...
Scrap	6 746	11 466	18 951	35 812	32 236
Sweden					
Ore	44 738	34 323	33 153	46 870	89 062
Matte & cement	2 564	11 616	10 371	8 009	10 830
Unwrought	49 151	70 923	71 476	72 224	62 145
Unwrought alloys	2 641	3 797	3 689	4 581	3 637
Scrap	2 817	4 074	6 184	4 988	3 339
Switzerland					
Unwrought-					
Refined	24 899	21 852	11 037	9 396	10 046
Alloys	1 799	1 359	1 063	1 170	1 051
Scrap	4 255	4 952	3 395	3 566	3 762
Turkey					
Ore	25 364	—	—	14 012	29 979
Unwrought	3 893	1 894	2 282	11 345	9 358
Scrap	1 890	269	622	1 200	...
Yugoslavia					
Concentrates	20 137	23 994	7 739	47 817	11 561
Unwrought	27 185	40 061	36 095	50 412	67 037
Algeria					
Unwrought	3 830	4 325	2 604	...	...
Egypt					
Unwrought & scrap (j)	2 002	2 790	1 163	1 482	...

Imports of Copper

Country	1977	1978	1979	1980	1981
South Africa					
Ores & concentrates	199	—	—	2 972	2 041
Unwrought	3 535	967	2 025	8 852	5 109
Unwrought alloys	104	111	101	161	71
Scrap	197	210	55	286	376
Canada					
Ores & concentrates (d)	4 615	18 427	2 653	12 896	19 551
Unwrought	18 821	21 441	32 541	13 466	24 777
Unwrought alloys	7 913	9 941	9 814	10 297	9 835
Scrap	15 577	27 539	35 442	35 051	37 973
Mexico					
Unwrought & scrap	129	22 203	22 565	43 117	...
USA					
Ores & concentrates (d)	37 632	20 916	22 021	13 756	30 200
Matte (d)	16 175	10 724	414	763	2 712
Unwrought-					
Unrefined (d)	41 604	78 683	68 137	43 423	75 000
Refined	364 419	414 697	215 161	458 112	354 899
Alloys	4 115	7 251	3 959	2 340	5 664
Scrap	31 821	34 454	36 276	35 216	35 178
Argentina					
Unwrought, refined	36 695	31 189	47 525	...	...
Brazil					
Unwrought, refined	182 299	156 989	190 175	208 159	152 910
Colombia					
Unwrought	1 969	3 209	3 613	2 768	2 316
Uruguay					
Unwrought	71	67	235	217	135
Venezuela					
Unwrought-					
Refined	5 768	6 068	5 407	) 4 046	...
Alloys	688	660	258)	...
China					
Refined (b)	37 300	52 700	53 200	43 400	7 400
Hong Kong					
Unwrought	156	106	145	201	1 077
Scrap	2 988	1 644	2 198	4 927	1 202
India					
Unwrought (e)	32 609	69 695	43 257	...	...
Scrap	16 305	15 904	34 275	...	...
Indonesia					
Unwrought	348	292	5 062	12 248	14 994
Iran (f)					
Unwrought	...	* 300	* 600	* 300	...
Israel (h)					
Unwrought	...	206	387	135	396
Japan					
Ores & concentrates	2 823 007	2 817 967	2 969 026	3 103 557	3 338 326
Matte & cement	—	141	1 580	2 574	—
Unwrought	273 395	333 073	395 054	290 803	331 425
Unwrought alloys	45	50	102	105	31
Scrap	40 991	55 049	49 356	49 929	51 866
Korea, Republic of					
Ore	90 804	55 766	128 809	233 999	382 919
Unwrought	21 520	...	26 277	15 471	28 675
Scrap	33 132	...	51 259	19 632	25 736
Malaysia					
Unwrought	71	143	110	...	...
Pakistan (g)					
Scrap	1 416	3 292	835	803	...
Philippines					
Unwrought	6 442	6 462	5 335	4 961	5 732

Copper

Imports of Copper

tonnes

Country	1977	1978	1979	1980	1981
Singapore					
Unwrought	319	165	241	554	271
Scrap	1 341	1 561	3 060	5 026	4 551
Syria					
Unwrought & scrap (j)	849	661	549	417	464
Taiwan					
Ores & concentrates	55 118	20 654	61 106	131 315	215 963
Matte & cement	921	4 968	962	14	26
Unwrought	36 940	33 928	56 021	66 186	40 152
Scrap	10 426	13 951	16 329	35 072	32 984
Thailand					
Unwrought	4 363	5 483	6 388	4 468	...
Scrap	1 447	672	512	337	...
Australia					
Unwrought	33	11	228	224	2 059
Unwrought alloys	458	120	283	18	37
Scrap	796	869	1 109	2 070	7 748
New Zealand (g)					
Unwrought	2 245	1 038	2 452	3 068	1 551

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) Figures up to 1980 are partial figures. Imports from certain countries are confidential
- (j) Including matte

Production of Diamond

Country	1977	1978	1979	1980	1981
Soviet Union	* 10 300 000	* 10 550 000	* 10 700 000	* 10 850 000	* 10 600 000
Angola	353 000	650 000	840 000	1 500 000	* 1 400 000
Botswana	2 691 000	2 799 000	4 394 000	5 101 000	4 960 252
Central African Republic	296 908	284 246	314 067	* 350 000	311 903
Ghana	1 947 000	1 423 000	1 225 600	1 149 200	836 482
Guinea	* 80 000	* 80 000	* 85 000	* 38 000	* 38 000
Ivory Coast	39 000	45 000	48 000	—	—
Lesotho	22 688	48 977	52 421	53 714	52 921
Liberia (a)	326 214	307 377	301 808	298 446	336 023
Namibia	2 001 217	1 898 211	1 652 536	1 559 885	1 247 960
Sierra Leone	746 290	797 043	855 164	592 018	305 356
South Africa	7 643 291	7 726 605	8 384 332	8 520 328	9 525 876
Tanzania	507 294	295 117	341 912	269 876	236 500
Zaire	11 215 000	11 245 000	8 734 000	10 334 000	* 7 500 000
Brazil	320 000	500 000	500 000	666 832	* 600 000
Guyana	16 679	17 226	15 824	10 236	9 533
Venezuela	687 115	755 869	802 646	665 721	490 426
India	18 297	15 942	15 229	14 432	15 717
Indonesia	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
World total	39 200 000	39 500 000	39 300 000	42 000 000	38 500 000

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

carats

Country	1977	1978	1979	1980	1981
United Kingdom					
Industrial	20 588 095	12 840 110	11 229 202	9 178 933	(d) 2 764 078
Other	66 731 636	70 306 670	61 199 105	62 404 599	(d) 10 061 922
Belgium-Luxembourg					
Rough	22 333 014	24 577 800	22 807 126	24 868 056	31 225 342
Cut	3 143 400	3 076 942	2 875 324	2 602 506	2 864 711
Industrial	9 106 907	8 650 019	9 150 601	8 070 087	10 700 324
France					
Rough	40 628	29 758	2 406	2 176	2 071
Cut	92 190	35 874	34 760	52 773	41 020
Industrial	43 978	148 426	191 048	177 713	155 999
Dust	187 265	255 560	129 130	199 770	89 155
Germany, Federal Republic of					
Industrial	220 132	355 445	295 777	222 053	286 641
Other	142 898	149 643	113 376	118 523	124 313
Italy					
Industrial	2 169	297 988	75 059	95 854	232 358
Other	437	23 657	1 186	75 586	214 915
Netherlands					
Rough	2 458 333	1 334 296	316 662	147 508	259 946
Cut	443 663	599 552	122 300	107 228	98 310
Industrial	4 185 224	1 071 953	845 467	833 512	677 168
Malta	£782 400	£1 186 100	£1 604 000	£900 100	£1 141 000
Portugal					
Industrial	29 819	—	—	—	—
Other	227 993	57 568	35 683	44 630	35 000
Soviet Union					
Gem	* £362 671 000	* £198 201 000	* £148 350 000	...	...
Industrial	* £781 000	* £392 000	* £137 000	...	...
Sweden					
Gem	£651 820	£1 088 300	£1 585 950	£4 390 000	£5 800 000
Industrial	£21 730	£94 500	£17 900	£21 700	£36 100
Central African Republic	282 252	...	...	...	...
Congo	£2 894 000	£4 597 000	...	...	...
Ghana					
Industrial	1 946 587	1 475 521	...	...	...
Ivory Coast	50 000	—	2 007	...	70 000
Kenya	...	...	177 000	212 440	...
Lesotho	14 977	67 222	64 886	105 245	55 718
Liberia	326 214	307 377	301 808	298 446	336 023
Sierra Leone					
Industrial	...	...	343 581	202 425	...
Other	521 402	280 795	670 146	379 637	...
South Africa (c)					
Rough	£434 501 000	£414 337 000	£492 385 000	£516 724 000	£357 567 000
Cut	£102 099 000	£156 020 000	£175 344 000	£168 687 000	£102 583 000
Industrial	£29 185 000	£14 309 000	£14 572 000	£11 780 000	£11 106 000
Tanzania	407 533	293 310	234 830	273 705	289 020
Zaire	2 672 575	2 621 978	3 039 930	...	...
Canada					
Cut	41 843	36 805	34 571	28 929	60 140
of which: Re-exports	41 843	36 740	32 555	28 433	60 021
Industrial	203 183	140 541	174 752	240 817	265 459
of which: Re-exports	198 481	137 229	168 344	210 786	252 280
Dust	46 892	36 459	20 513	19 795	72 679
of which: Re-exports	43 091	36 459	19 156	19 650	72 479
USA					
Rough	1 119 829	1 291 864	922 298	983 546	2 782 060
of which: Re-exports	1 113 988	1 179 038	913 981	983 546	2 782 037
Cut	436 800	307 333	273 210	341 207	432 927
of which: Re-exports	126 481	87 960	68 046	130 564	235 840
Industrial	3 508 044	2 955 584	2 737 433	3 569 318	2 296 978
of which: Re-exports	3 131 930	2 666 434	2 054 707	3 268 170	1 847 016
Bort	325 239	...	...	...	...
of which: Re-exports	319 525	...	...	...	...
Dust (b)	17 736 072	19 480 573	27 769 094	28 534 606	28 471 690
of which: Re-exports	464 083	624 028	472 309	372 150	584 451

Exports of Diamond

carats

Country	1977	1978	1979	1980	1981
Brazil	4 970	34 810	7 840	8 580	12 120
of which: Re-exports	3 895	6 825	7 085	3 180	260
Guyana	9 625	10 999	...	...	...
Venezuela					
Rough	785 000	640 000	4 555 000	...	...
Industrial	75 000	205 000	165 000	...	...
Hong Kong	354 560	366 654	383 359	324 669	444 210
of which: Re-exports	348 852	359 595	372 714	311 603	438 425
India					
Gem	£246 080 000	£395 752 000	£266 499 000	...	...
Israel (a)					
Cut	3 637 000	2 884 000	2 451 000	2 649 000	2 662 000
Japan					
Industrial	1 283	1 185	1 286	11 562	2 098
Other	798	232	1 031	450 471	324
Malaysia					
Rough	£80 500	£9 000	£3 000	...	...
Cut	£10 700	£1 400 000	£2 200 000	...	...
Singapore					
Rough	£1 400	£1 300	£80 500	£152 000	£93 000
Cut	£1 196 200	£2 003 700	£2 899 500	£2 014 000	£3 142 000
Industrial	£19 700	£6 300	£162 700	£222 900	£413 400
Thailand	367	8 199	5 637	9 447	...
Australia					
Gem (Re-exports)	12 483	17 032	13 185	11 163	...
Industrial	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 area
- (d) Six months data only

Diamond

Imports of Diamond

carats

Country	1977	1978	1979	1980	1981
United Kingdom	£1 814 585 000	£2 403 269 635	£2 705 513 536	£3 035 607 473	£954 452 214
Belgium-Luxembourg					
Rough	29 198 889	26 294 445	24 910 619	26 513 377	29 542 009
Cut	2 388 354	2 524 643	2 225 218	2 097 733	1 990 760
Industrial	9 493 268	10 183 231	11 309 001	9 388 064	13 402 937
France					
Rough	30 145	24 256	22 884	21 867	18 060
Cut	1 797 506	541 062	433 302	705 079	627 869
Industrial	1 030 531	675 580	496 826	689 793	1 170 808
Dust	3 658 165	3 470 425	3 976 970	4 469 740	4 453 265
Germany, Federal Republic of					
Rough	70 553	47 395	21 253	34 540	18 529
Cut	710 619	678 180	498 460	525 976	477 949
Industrial	933 158	1 175 419	1 056 672	1 105 324	961 711
Italy					
Industrial	140 923	180 324	184 340	221 140	183 934
Other	116 163	98 086	155 619	173 711	215 246
Netherlands					
Rough	9 673 714	2 574 353	621 446	216 867	209 968
Cut	812 020	1 264 874	141 479	150 071	138 497
Industrial	4 141 476	1 245 078	877 485	589 247	493 030
Czechoslovakia					
Gem	* £669 000	* £489 000	* £42 000	...	...
Industrial	* £1 129 000	* £2 088 000	* £1 550 000	...	...
Finland					
Industrial	10 750	11 650	10 000	10 000	10 000
Other	8 250	21 050	70 000	20 000	50 000
Malta					
Rough	£965 700	£1 545 500	£3 166 000	£1 865 000	£3 066 000
Cut	£12 700	£22 100	£4 000	£1 000	£50
Industrial	—	—	£46 000	£230 100	£903 400
Norway					
Industrial	10 000	10 000	25 000	25 000	...
Other	110 000	45 000	65 000	40 000	100 000
Portugal	370 383	90 452	137 797	111 210	...
Spain					
Rough	£742 000	£1 159 400	£618 500	£45 400	£522 200
Industrial	£1 028 500	£959 600	£1 181 400	£513 400	£347 700
Other	£30 175 800	£22 853 600	£17 784 500	£9 588 500	£8 806 000
Dust	£1 445 800	£1 514 300	£1 785 600	£1 619 000	...
Sweden					
Gem	£9 591 630	£10 310 500	£6 758 500	£11 173 300	£9 536 400
Industrial	£607 980	£606 800	£643 500	£471 700	£455 000
Yugoslavia					
Industrial	736 645	35 000	150 000	295 000	...
Other	80 000	100 000	120 000	...	...
Dust	408 330	130 000	150 000	* 200 000	...
Algeria					
Industrial	525 000	675 000	175 000	...	...
Kenya					
Rough & cut	5 000	7 645	42 010	5 050	...
South Africa					
Rough	75 000	28 000	69 000	121 500	145 500
Cut	67 000	45 000	38 000	37 500	209 500
Industrial	2 851 000	763 000	1 691 000	2 343 500	2 146 000
Tanzania					
Cut	91 050	...	...	...	...
Zambia					
Industrial	20 960 000	...	...	...	...
Canada					
Cut	208 971	165 170	137 732	133 308	190 833
Industrial	829 589	1 023 583	1 332 418	1 343 395	1 503 758
Dust	693 236	750 417	1 134 411	1 287 451	1 799 297
Honduras					
Industrial	61 620	48 550	...	...	...

Imports of Diamond

Country	1977	1978	1979	1980	1981
Mexico					
Rough	1 340	785	10 000	10 000	...
Cut	20 440	319 350	...	...	...
Industrial	3 245 000	605 000	...	...	...
Dust	965 000	775 000	...	...	...
Nicaragua					
Industrial	65 000	300 000	—	...	...
Panama					
Industrial	245 000	240 000	40 000	...	...
USA					
Rough	2 903 471	2 478 830	2 119 523	1 577 059	933 285
Cut	3 503 825	3 209 183	2 352 646	2 574 168	3 469 567
Industrial	7 181 832	6 922 093	6 049 361	6 190 096	5 950 703
Bort	260 456	177 082	58 255	59 772	12 072
Dust	8 373 919	7 437 498	5 265 420	3 604 697	3 569 716
Argentina					
Industrial	650 000	2 805 000	...	...	...
Dust	368 205	337 370	...	...	...
Brazil					
Rough	2 590	3 695	1 465	5 990	2 000
Cut	3 300	7 400	10 575	8 335	2 085
Industrial	412 440	418 640	248 395	416 345	160 010
Dust	1 647 960	2 134 450	2 317 695	2 872 070	2 438 638
Venezuela					
Rough	...	2 175 000	...	...	...
Industrial	4 470 000	2 895 000	3 200 000	...	...
Abu Dhabi	1 220 000	10 000	5 000	40 000	...
China					
Industrial (a)	—	* 99 100	* 111 600	* 191 400	* 130 700
Other (a)	—	* 12 300	* 17 700	* 467 700	* 5 700
Dubai	13 915 000	39 495 000	7 400 000	8 740 000	...
Hong Kong					
Rough	—	116 986	52 212	121 377	108 528
Cut	1 291 573	1 296 252	1 002 710	1 169 288	1 094 272
Industrial	...	69 932	57 083	145 309	9 260
India					
Gem	£188 540 000	£262 995 000	£195 363 000	...	...
Industrial & bort	775 000	970 000	480 000	...	...
Indonesia					
Industrial	—	55 000	1 790 000	1 620 000	200 000
Israel					
Rough (c)	12 256 000	8 490 000	55 625 000	5 884 000	4 256 000
Cut (c)	142 000	148 000	87 000	102 000	68 000
Industrial (c)	2 885 000	3 044 000	2 068 000	2 451 000	2 453 000
Japan					
Rough	41 863	27 423	38 598	29 763	13 363
Cut	690 704	742 070	683 836	683 055	766 890
Industrial	735 799	697 283	622 873	681 354	634 540
Dust	1 535 190	2 204 800	912 040	828 240	726 815
Korea, Republic of					
Industrial	£371 700	£512 800	£616 100	£356 700	£407 500
Malaysia					
Rough	£874 100	£540 000	£1 100 000	...	...
Cut	£187 000	£637 000	£822 000	...	...
Industrial	£14 200	£212 000	£63 000	...	...
Philippines					
Industrial	73 300	76 733	84 110	57 088	73 950
Saudi Arabia					
Industrial	5 940 000	...	7 795 000	1 805 000	930 000
Other	3 760 000	...	4 135 000	1 210 000	1 635 000

Diamond

Imports of Diamond

carats

Country	1977	1978	1979	1980	1981
Singapore					
Rough	£1 400	—	£310 100	£364 000	£177 400
Cut	£5 279 300	£11 422 100	£16 678 500	£29 404 000	£18 307 000
Industrial	£105 300	£146 900	£949 600	£1 915 000	£1 452 000
Taiwan					
Industrial	1 315 000	1 555 000	...	7 270 000	1 460 000
Other	50 000	1 135 000	165 000	—	5 645 000
Dust	2 005 000	1 290 000	32 620 000	4 245 000	1 865 000
Thailand					
Industrial	29 040	69 767	133 774	72 076	...
Other	744 985	18 232	5 845	25 762	...
Australia					
Gem	79 415	75 093	60 356	81 196	109 774
Industrial	971 689	892 006	1 139 174	1 136 216	1 267 582
New Zealand (b)					
Industrial	£77 100	£46 300	£70 900	£24 800	£80 100
Other	£825 600	£1 884 800	£1 436 200	£1 004 800	£1 037 700

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) IGS estimates, based on known exports from certain countries
- (b) Years ended 30 June of that stated
- (c) Figures may be incomplete as value only given in Israeli trade return for imports from some countries

Production of Diatomite

Country	1977	1978	1979	1980	1981
United Kingdom	* 2 000	* 2 000	* 1 000	* 1 000	* 1 000
Denmark (a)					
Diatomite	6 858	5 980	6 158	4 443	3 192
Moler (d)	96 000	102 000	* 110 300	* 102 400	* 97 300
France (b)	205 534	217 407	332 916	* 218 000	* 220 000
Germany, Federal Republic of	49 457	47 600	49 401	52 824	* 52 000
Italy	* 19 000	* 19 000	* 19 000	18 000	* 20 000
Austria	242	536	—	—	—
Iceland	20 170	20 955	22 247	19 353	20 644
Portugal	3 390	2 700	3 200	2 310	2 890
Romania	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Soviet Union	* 215 000	* 220 000	* 225 000	* 230 000	* 230 000
Spain (b)	28 281	21 370	27 196	25 140	* 24 000
Turkey	9 000	* 9 000	* 9 000	* 9 000	* 10 000
Yugoslavia	5 741	4 483	...	...	...
Algeria	4 075	3 629	4 536	* 4 500	* 4 500
Egypt	373	99	* 500	—	—
Kenya	2 441	1 960	1 266	1 677	* 1 800
South Africa	666	930	1 059	623	615
Canada	1 000	2 000	2 000	* 2 000	* 2 000
Costa Rica	680	610	590	600	1 000
Mexico	23 574	40 862	43 606	43 544	* 40 000
USA (c)	587 895	591 000	650 000	625 000	623 000
Argentina	12 337	7 227	7 327	6 000	* 6 000
Brazil	9 559	12 030	16 547	14 828	* 15 000
Chile	480	5 008	763	1 147	* 1 000
Colombia	630	630	630	630	* 600
Peru	8 000	5 000	—	—	—
Korea, Republic of	22 980	18 845	23 915	25 101	42 176
Thailand	190	1 105	3 418	1 982	128
Australia	1 288	3 136	3 592	3 010	1 305
New Zealand	1 113	—	—	—	—
World total	1 400 000	1 400 000	1 600 000	1 500 000	1 500 000

Note: In addition to the countries listed, Czechoslovakia, Hungary and Japan are also believed to produce diatomite

(a) Sales

(b) Including tripoli

(c) Sold or used by producers

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

Diatomite

Exports of Diatomite

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	1 069	853	1 098	985	(a) 347
Belgium-Luxembourg	4 103	3 567	1 350	7 806	924
Denmark					
Diatomite	7 957	6 546	6 323	4 679	3 515
Moler	54 900	46 569	52 052	52 385	56 526
Moler bricks	28 872	27 255	30 252	28 045	24 696
France	19 363	24 982	28 876	25 852	26 781
Germany, Federal Republic of	3 909	3 999	4 153	2 513	2 504
Italy	1 038	1 193	1 866	885	1 627
Netherlands	294	520	559	657	492
Austria	1 058	1 027	1 031	1 135	492
Czechoslovakia	* 530	* 710	* 1 030	...	...
Finland	8	8	9	42	31
Hungary	* 4 400	* 3 000	* 2 660	...	...
Iceland	20 985	20 020	21 288	18 149	19 836
Norway	75	45	34	11	45
Portugal	1 189	1 213	16	44	38
Spain	2 286	1 658	1 453	1 673	2 505
Sweden	107	160	142	67	698
Algeria	795	2 445	1 850	400	...
Kenya	879	361	227	581	...
Costa Rica	1 028	...	...	...	...
Mexico	3 007	2 762	3 797	3 056	...
USA	138 269	138 865	153 927	156 970	146 681
Japan	1 024	1 298	1 277	1 891	2 321
Korea, Republic of	50	60	60	120	—
Taiwan	100	123	50	184	112

(a) Six months data only

Imports of Diatomite

Country	1977	1978	1979	1980	1981
United Kingdom	9 918	9 090	11 902	13 602	12 296
Belgium-Luxembourg	7 747	9 607	11 349	9 039	8 368
Denmark	4 607	4 238	5 447	7 205	6 597
France	5 254	8 878	11 327	9 164	9 410
Germany, Federal Republic of	46 813	39 100	40 190	37 506	36 421
Greece	404	589	677	517	1 063
Irish Republic	722	946	1 217	712	472
Italy	3 748	5 391	5 912	5 597	5 019
Netherlands	15 769	16 241	17 460	16 489	16 796
Austria	9 570	7 206	7 856	8 691	8 007
Czechoslovakia	* 2 000	* 1 100	* 250	...	...
Finland	1 281	1 295	1 901	2 053	2 184
Iceland	3	34	44	3	30
Norway	2 368	1 960	1 968	1 939	1 807
Poland	* 400	* 200	* 700	* 3 500	...
Portugal	3 786	3 534	4 058	4 319	3 823
Romania	* 1 500	* 1 300	* 800	...	...
Spain	2 689	3 061	2 875	2 941	2 938
Sweden	3 883	4 097	5 544	3 805	3 363
Switzerland	6 207	8 098	9 102	9 381	11 169
Turkey	362	204	84	154	325
Yugoslavia	87	152	285	421	544
Cameroon	388	605	685	...	...
Canary Islands	93	66	123	150	...
Ivory Coast	310	384	238	...	258
Kenya	250	602	401	343	...
Morocco	297	405	176	255	...
South Africa	4 735	7 728	5 900	6 465	7 547
Tunisia	385	137	169	150	...
Zaire	905	570	321	* 230	...
Zambia	1 022	123	...	...	...
Canada	27 180	25 373	28 362	26 577	25 545
Costa Rica	204	...	...	...	...
Dominican Republic	511	1 100	760	...	...
El Salvador	1 500	...	359	...	...
Guatemala	416	832	718	...	...
Honduras	409	262	...	...	...
Mexico	292	271	228	801	...
Nicaragua	1 634	543	344	...	...
Panama	523	597	399	...	...
USA	590	182	479	267	349
Argentina	3 772	2 636	3 390	...	...
Brazil	2 127	1 365	1 633	1 535	2 126
Colombia	718	1 404	796	488	1 153
Ecuador	459	527	658	...	...
Peru	1 350	...	...	...	...
Uruguay	154	108	125	147	109
Venezuela	5 112	4 857	7 489	7 007	...
Cyprus	46	137	117	174	...
Hong Kong	286	264	242	364	481
India (d)	826	247	387	...	...
Indonesia	525	508	2 388	723	435
Iran (c)	1 040	* 900	* 300	* 10	* 150
Israel (b)	176	89	191	304	292
Japan	5 046	5 871	5 962	7 464	9 429
Malaysia	385	804	910	...	...

Diatomite

Imports of Diatomite

tonnes

Country	1977	1978	1979	1980	1981
Philippines	2 255	1 715	1 451	1 609	1 113
Saudi Arabia	2 490	2 461	5 327	15 760	37 297
Singapore	339	320	657	619	555
Sri Lanka	10	3 834	3 271	3 037	15
Taiwan	1 428	2 284	3 076	2 909	3 733
Thailand	18	37	220	35	...
Australia	9 587	11 983	10 657	12 278	12 312
Fiji	136	49	91	81	...
New Zealand (a)	793	555	700	1 224	920

(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

Country	1977	1978	1979	1980	1981
France (c)	192 000	211 000	195 000	210 000	191 000
Germany, Federal Republic of	393 793	385 590	372 754	380 880	* 381 000
Italy	213 593	251 083	294 648	344 301	428 485
Austria	3 645	2 886	6 594	10 946	10 357
Finland	63 896	61 893	71 297	68 000	69 000
Norway (d)	70 799	59 522	87 888	67 559	* 73 000
Poland	114 530	106 977	88 367	85 955	82 027
Portugal	15 246	21 582	38 315	40 802	42 435
Romania	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Soviet Union	* 290 000	* 300 000	* 310 000	* 310 000	* 320 000
Spain (c)	93 222	116 283	115 685	103 365	* 109 000
Sweden (e)	52 167	53 845	58 655	57 999	* 54 500
Turkey	—	2 691	6 669	5 708	5 060
Yugoslavia	56 146	48 013	56 160	58 000	* 53 000
Egypt	2 526	3 337	3 271	3 309	* 3 600
Kenya	1 869	949	868	387	* 300
Mozambique	* 900	* 900	—	—	—
Nigeria	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
South Africa	51 230	52 545	47 416	52 247	56 006
Zambia	832	789	91	475	* 400
Zimbabwe	896	726	1 085	1 263	2 393
Mexico	114 319	109 808	110 869	133 106	* 130 000
USA (e)	665 900	666 800	671 000	644 000	603 000
Argentina	42 921	41 824	33 550	33 000	* 36 000
Brazil (b)	96 187	103 597	141 940	123 263	* 127 000
Chile	2 452	903	133	2 150	* 2 000
Colombia	26 508	26 455	29 200	27 150	* 30 000
Peru	2 184	2 461	2 176	15 600	* 18 000
Uruguay	1 625	2 572	3 000	* 3 000	* 3 000
Venezuela	52 000	6 000	37 000	6 065	21 684
Burma (a)	2 091	1 438	3 007	2 026	* 4 300
Hong Kong	3 378	3 157	742	2 974	194
India	54 710	51 675	54 264	60 611	59 395
Japan	365 445	415 950	441 285	443 972	* 408 000
Korea, Republic of	49 374	69 200	36 238	71 972	103 263
Pakistan	3 951	4 833	14 703	10 898	10 494
Philippines	16 073	18 073	19 064	15 925	* 20 000
Sri Lanka	3 679	3 160	3 790	3 955	* 4 000
Taiwan	16 219	15 757	24 403	25 149	17 215
Thailand	17 619	32 583	26 428	24 158	24 243
Australia	1 877	3 185	3 869	3 648	4 008
World total	3 200 000	3 300 000	3 500 000	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

Feldspar

Exports of Feldspar

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	2 413	1 956	2 118	1 067	(b) 200
Belgium-Luxembourg	6 975	8 544	7 462	6 494	2
France	43 640	52 453	51 726	56 949	58 571
Germany, Federal Republic of	20 080	17 696	16 810	18 124	15 309
Italy	28 793	28 482	35 578	37 033	34 501
Netherlands	2 714	2 524	3 929	3 501	2 791
Finland (a)	52 466	54 082	50 810	46 998	46 725
Norway	74 208	78 736	94 502	84 729	77 634
Portugal (a)	3 931	2 148	9 099	11 278	11 300
Spain (a)	5 720	6 989	1 901	1 582	...
Sweden (a)	40 253	37 832	34 713	29 976	28 995
Switzerland (a)	509	397	255	282	183
Yugoslavia	8 932	7 904	9 695	11 498	3 098
South Africa	2 543	2 712	3 266	2 407	2 018
USA (a)	5 627	9 372	11 227	11 792	12 723
China (a)(c)(d)	* 14 400	* 16 900	* 23 900	* 27 700	* 23 600
Hong Kong (c)	3 928	6 385	13 249	18 106	11 318
of which: Re-exports	2 556	4 175	11 799	300	11 318
India	13 533	14 697	16 006	...	...
Japan	11 224	15 157	23 630	22 889	18 766
Korea, Republic of	14 091	22 080	13 380	19 672	18 409
Singapore	1 049	585	4 469	5 704	3 553
Thailand	4 610	413	2 304	2 874	2 646

(a) May include some leucite and nepheline

(b) Six months data only

(c) Including some fluorspar

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

Imports of Feldspar

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	132 041	125 735	118 993	91 087	71 212
Belgium-Luxembourg	70 659	64 403	67 186	35 564	28 294
Denmark	9 557	8 847	11 773	15 535	11 448
France	17 323	17 024	17 839	17 947	16 808
Germany, Federal Republic of	48 666	54 364	52 808	63 213	60 031
Greece (a)	12 325	11 850	10 341	13 909	13 299
Italy	9 510	7 983	8 192	17 655	13 866
Netherlands	11 701	25 630	19 115	21 632	14 860
Austria (a)	6 713	5 948	4 564	6 111	5 893
Finland (a)	162	1 917	61	701	49
Poland	16 714	15 599	16 725	13 786	10 151
Portugal (a)	2 142	2 691	2 209	2 022	2 423
Spain (a)	13 639	15 203	16 256	21 408	21 058
Sweden (a)	11 674	7 166	7 657	12 845	6 709
Switzerland (a)	14 785	10 065	8 605	12 097	9 754
Yugoslavia	1 189	1 001	1 150	1 154	...
Algeria (a)	2 585	3 091	4 405	...	...
Morocco (a)	58	20	84	441	...
South Africa (a)(c)	26	40	89	80	118
Tunisia (c)	1 070	1 686	3 149	1 871	...
Mexico	600	725	3 434	3 184	...
Trinidad & Tobago (c)	1 041	66	262	27	...
USA	219	36	256	367	187
Venezuela	852	621	683	(c) 3 141	...
Hong Kong (c)	3 975	6 327	13 838	16 373	14 777
Indonesia (a)	6 014	6 766	10 768	13 611	13 133
Iran (a)(c)(e)	221	* 600	* 100	* 100	* 150
Israel (a)(b)	2 264	227	365	688	459
Japan (a)	12 335	9 064	5 269	5 568	4 981
Jordan (a)	—	289	415	...	...
Malaysia	7 037	5 691	6 403	...	...
Philippines (a)(c)	2 968	2 940	3 354	3 022	5 176
Singapore	5 057	4 448	4 618	6 420	3 840
Taiwan (a)(c)	28 471	48 285	44 221	54 262	49 606
Thailand (a)	301	1 195	569	1 872	...
Australia (a)	10 250	13 713	15 394	22 999	...
New Zealand (a)(c)(d)	1 925	1 747	997	1 020	800

(a) May include some leucite and nepheline

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

(c) Including fluorspar

(d) Years ended 30 June of that stated

(e) Years ended 20 March following that stated

Production of Fluorspar

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom (a)	206 000	189 269	154 000	186 300	* 185 000
France	* 285 000	273 862	259 203	258 500	256 200
Germany, Federal Republic of	83 750	75 722	63 172	78 152	* 78 000
Greece	500	610	360	440	—
Italy	185 749	171 216	182 791	151 965	164 235
Czechoslovakia	* 96 000	* 96 000	* 96 000	* 96 000	* 96 000
German Democratic Republic	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Romania	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Soviet Union	* 500 000	* 510 000	* 520 000	* 520 000	* 530 000
Spain	310 461	301 295	192 898	244 749	264 890
Sweden	2 414	—	—	—	—
Turkey	1 711	1 337	2 024	1 945	1 986
Egypt	1 406	2 235	662	1 752	* 1 800
Kenya	124 000	106 564	77 104	93 378	* 90 700
Morocco	40 000	59 200	63 200	64 400	66 700
South Africa	350 679	393 276	451 112	522 718	496 521
Tunisia	28 887	33 100	36 800	39 451	35 055
Zimbabwe	522	312	—	—	—
Canada	59 500	—	—	—	—
Mexico	660 087	959 784	875 216	916 455	924 854
USA	153 758	117 415	99 154	84 037	104 693
Argentina	43 792	26 746	38 076	15 468	19 477
Brazil (b)	66 645	61 800	74 897	95 894	...
China	* 400 000	* 400 000	* 450 000	* 470 000	* 480 000
India	18 791	17 546	21 495	21 207	20 955
Korea, Dem. P.R. of	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Korea, Republic of	12 981	11 368	8 450	6 912	6 464
Mongolia	* 335 000	* 455 000	* 570 000	* 600 000	* 600 000
Pakistan	—	335	418	1 184	* 3 900
Thailand	248 141	230 531	234 304	232 892	212 492
World total	4 400 000	4 700 000	4 600 000	4 900 000	5 000 000

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) Includes beneficiated and direct shipping ore

Exports of Fluorspar

Country	1977	1978	1979	1980	1981
United Kingdom	23 468	7 935	26 337	57 230	(c) 10 828
Belgium-Luxembourg	1 439	4 541	4 984	4 926	4 697
France	93 343	95 284	98 742	107 392	84 181
Germany, Federal Republic of	10 979	14 789	16 610	14 099	16 210
Italy	55 749	60 952	55 080	83 755	84 634
Netherlands	311	3 917	755	765	1 176
Spain	200 722	193 485	101 546	107 518	...
Sweden	336	538	824	361	1 155
Kenya (a)	100 208	102 900	59 352	56 870	...
Morocco	78 201	69 823	62 997	64 070	...
South Africa	288 626	384 387	471 498	469 071	405 958
Tunisia	(a) 14 000	—	—	6 025	...
Mexico	604 951	712 270	708 739	722 905	...
USA	6 026	7 518	13 132	16 207	10 216
Argentina	240	239	(a) 264	...	...
China (a)(b)(d)	* 213 000	* 262 000	* 328 000	* 420 000	* 424 000
Korea, Dem. P.R. of (b)	(a)* 9 000	* 6 800	* 3 600	* 7 900	...
Korea, Republic of	3 864	1 152	470	500	—
Thailand	241 459	205 697	219 390	226 305	200 680

(a) Including some feldspar

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

(c) Six months data only

(d) May include some leucite and nepheline

Imports of Fluorspar

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	5 795	3 782	27 119	9 573	4 229
Belgium-Luxembourg	14 855	9 953	14 550	16 876	12 128
Denmark	2 179	4 462	3 970	1 069	557
France	14 845	1 796	1 228	27 766	12 308
Germany, Federal Republic of	206 708	240 385	248 690	270 068	186 375
Greece	1 877	1 553	10 302	2 135	4 599
Italy	33 905	46 973	78 717	105 531	84 322
Netherlands	15 063	13 863	10 988	14 251	20 361
Albania (b)	—	* 2 300	* 2 300	* 1 800	...
Austria	13 172	16 077	18 369	17 298	13 001
Bulgaria (b)	* 750	* 150	* 300	* 250	* 200
Finland	6 383	2 204	5 486	4 429	4 104
Norway	42 270	44 972	46 941	48 843	43 319
Poland	72 315	86 640	62 553	55 328	24 005
Soviet Union	* 550 000	* 550 000	* 550 000	* 550 000	* 550 000
Sweden	10 502	13 651	15 858	13 008	12 822
Turkey	609	149	20	56	...
Yugoslavia	6 861	3 140	5 121	5 716	...
Algeria	535	37	486	...	...
South Africa (a)(c)	26	40	89	80	118
Tunisia (c)	1 070	1 686	3 149	1 871	...
Canada	124 494	170 236	167 904	223 940	173 599
USA	861 826	821 496	894 929	822 283	767 231
Chile	4 672	3 861	...	...	...
Venezuela	182	3 345	243	(c) 3 141	...
Hong Kong (c)	3 975	6 327	13 838	16 373	14 777
India	4 752	5 000	5 034	...	...
Iran (a)(c)(e)	221	* 600	* 100	* 100	* 150
Japan	373 228	371 387	467 135	487 455	428 314
Korea, Republic of	11	1 431	11 338	21 718	23 110
Malaysia (a)	7 698	6 686	9 399	...	...
Philippines (a)(c)	2 968	2 940	3 354	3 022	5 176
Taiwan (a)(c)	28 471	48 285	44 221	54 262	49 606
Australia	27 029	32 711	27 012	38 369	26 275
New Zealand (a)(c)(d)	1 925	1 747	997	1 020	800

(a) May include some leucite and nepheline

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

(c) Including feldspar

(d) Years ended 30 June of that stated

(e) Years ended 20 March following that stated

Mine Production of Gold

kilograms (metal content)

Country	1977	1978	1979	1980	1981
France	1 569	1 855	1 263	1 163	1 131
Germany, Federal Republic of	74	66	73	92	* 90
Finland	852	905	881	1 301	992
Portugal	275	284	320	244	244
Romania	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Soviet Union	* 250 000	* 250 000	* 255 000	* 260 000	* 265 000
Spain	293	344	352	535	...
Sweden	2 113	2 373	2 200	2 200	* 2 200
Yugoslavia (d)	5 108	4 434	4 323	4 300	* 4 300
Burundi	17	10	4	1	* 3
Cameroon	6	6	5	2	* 2
Central African Republic	* 3	* 30	68	62	* 50
Congo	18	6	3	2	* 2
Ethiopia (b)	290	240	* 247	* 280	* 370
Gabon	73	30	30	* 20	* 20
Ghana	14 957	12 505	10 147	10 937	10 595
Kenya	4	6	8	4	* 3
Liberia (a)	2	0	34	225	* 200
Madagascar	2	4	1	4	* 3
Mali	* 29	* 30	* 31	* 45	* 45
Mauritania	870	250	—	—	—
Rwanda	56	35	15	29	37
South Africa	699 887	704 449	703 473	672 875	655 755
Tanzania	0	4	9	3	9
Zaire	2 715	2 286	2 270	1 243	1 672
Zambia (c)	207	259	247	257	328
Zimbabwe	12 506	12 414	12 063	11 443	11 691
Canada	53 921	53 967	51 142	50 620	47 045
Costa Rica	* 400	* 500	* 520	* 500	* 500
Dominican Republic	10 661	10 663	10 979	11 496	12 685
El Salvador	67	113	85	78	* 30
Honduras	77	* 80	47	63	* 95
Mexico	6 616	6 283	5 511	6 096	* 5 750
Nicaragua	2 046	2 300	1 900	* 1 870	* 1 560
USA	34 225	31 068	29 997	30 164	42 860
Argentina	171	174	315	341	* 340
Bolivia	431	770	948	1 620	2 064
Brazil (e)	5 355	9 359	4 460	13 752	* 15 000
Chile	3 620	3 182	3 465	6 836	* 9 240
Colombia	7 996	7 666	8 379	15 877	16 069
Ecuador	244	85	92	67	36
French Guiana	150	90	62	92	167
Guyana	370	479	329	342	599
Peru	3 247	3 504	4 155	3 870	4 821
Suriname	12	9	6	5	* 5
Venezuela	541	416	466	510	877
China	* 28 000	* 34 000	* 40 000	* 45 000	* 50 000
India	3 014	2 774	2 637	2 452	2 485
Indonesia	256	254	170	248	182
Japan	4 635	4 516	4 033	3 183	3 089
Kampuchea, Democratic	* 30	—	—	—	—
Korea, Dem. P.R. of	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Korea, Republic of	665	852	749	1 282	1 342
Malaysia	153	210	197	156	180
Philippines	17 373	18 243	16 646	20 025	23 521
Taiwan	466	417	443	413	1 763

Gold

Mine Production of Gold

kilograms (metal content)

Country	1977	1978	1979	1980	1981
Australia	19 417	20 142	18 566	17 035	17 767
Fiji	1 519	872	907	774	956
New Zealand	223	219	218	200	189
Papua New Guinea	22 839	23 885	20 172	14 730	16 800
Solomon Islands	14	18	22	34	* 40
World total	1 230 000	1 240 000	1 230 000	1 220 000	1 240 000

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

(d) Metal production

(e) Excludes some production from small mines

Exports of Gold

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal-					
Refined	659 948	640 466	492 165	335 322	(d) 345 731
Other	2 659	13 946	5 219	3 095	(d) 6 615
Waste & scrap	924	15 766	31 170	7 198	(d) 30 296
Belgium-Luxembourg					
Metal	12 415	13 902	18 143	27 234	30 158
Denmark					
Waste & scrap	771	9 028	6 537	17 874	12 565
France					
Metal	40 790	23 350	33 806	23 625	23 070
Waste & scrap	221	10 566	28 311	13 028	58 624
Germany, Federal Republic of					
Metal	23 710	50 335	27 218	27 426	32 117
Waste & scrap	1 870	651	84	13 497	2 392
Italy					
Metal	437	1 986	1 643	5 333	2 291
Netherlands					
Metal	22 605	26 450	29 491	28 690	30 506
Waste & scrap	7 000	5 000	17 000	74 000	53 000
Austria					
Metal	473	367	640	662	349
Finland					
Metal	110	130	116	603	569
Norway					
Metal	255	159	137	257	461
Spain					
Metal	20 192	15 002	6 010	531	...
Sweden					
Metal	2 000	2 000	2 000	5 000	4 000
Waste & scrap	55 000	50 000	40 000	44 000	38 000
Switzerland					
Metal	82 104	(c) 5 809	(c) 7 039	556 687	772 691
Ghana					
Metal	10 625	9 747	...	...	...
South Africa					
Metal (e)	£7 600 000	£3 800 000	£9 400 000	£11 500 000	£6 700 000
Canada					
Ores & concentrates (b)	5 098	7 948	6 219	6 288	5 512
Metal	48 854	50 988	55 701	59 862	83 305
Dominican Republic					
Metal	51 786	69 787	83 794	* 64 000	* 78 000
Nicaragua					
Metal	1 904	2 095	1 056	...	...
USA					
Ore (b)	(a) 12 310	715	529	719	121
Metal-					
Unrefined	...	1 279	2 174	2 283	7 297
Refined	205 750	156 890	491 884	150 450	164 112
Other	...	2 052	2 789	3 688	2 555
Waste & scrap	...	13 104	25 818	41 229	31 880
Chile					
Ore	1 208 800	776 210	...	...	...
Metal	2 500	898	...	...	...
Colombia					
Ore	375 550	208 781	437 555	96 000	499 184
Peru					
Metal	4 010	...	...	...	...
Hong Kong					
Metal (Re-exports)	445	2 611	9 319	29 849	2 288
Japan					
Metal	4 817	6 378	7 151	12 996	7 445
Philippines					
Ores & concentrates (b)	13 045	12 789	11 422	13 051	14 800
Metal	2 921	38	—	—	—

Gold

Exports of Gold

kilograms

Country	1977	1978	1979	1980	1981
Australia					
Ores, concentrates & unrefined metal (b)	4 857	2 415	3 149	1 194	2 630
Refined metal	8 865	5 154	7 273	5 516	3 912
Fiji					
Metal	1 519	805	923	781	...
Papua New Guinea					
Metal	22 839	23 885	20 172	14 730	16 806

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) Six months data only

(e) Values shown are for the common customs area

Imports of Gold

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	...	2 781	15 348	2 139	14 013
Metal-					
Unrefined	5 559	3 561	13 495	60 822	5 407
Refined	641 680	511 150	785 599	550 862	624 753
Other	7 152	4 672	10 370	5 489	11 918
Waste & scrap	12 284	10 390	85 697	19 564	27 123
Belgium-Luxembourg					
Metal	31 468	25 768	24 287	57 725	237 233
Denmark					
Metal	2 901	2 487	1 647	622	582
France					
Metal	77 439	71 401	77 565	58 246	60 254
Waste & scrap	6 958	9 074	11 041	8 629	9 652
Germany, Federal Republic of					
Metal	111 427	113 863	107 152	126 569	82 714
Waste & scrap	82 665	80 699	115 022	156 827	125 474
Italy					
Metal	187 770	214 314	189 519	69 785	140 190
Netherlands					
Metal	23 464	35 720	33 765	23 690	29 775
Waste & scrap	1 000	2 000	3 000	...	1 000
Austria					
Metal	10 709	8 292	3 575	1 559	2 949
Finland					
Metal	952	1 312	1 493	953	895
Malta					
Metal	607	876	643	123	221
Norway					
Metal	1 983	1 194	1 215	1 096	741
Waste & scrap	3 303	1 983	244	805	539
Portugal					
Metal	366	194	279	256	...
Sweden					
Metal	1 000	1 000	1 000	...	...
Waste & scrap	5 000	2 000	...	6 000	2 000
Switzerland					
Metal	4 245	(b) 1 294	(b) 2 431	632 534	820 894
Ivory Coast					
Metal	228	301	143	...	1
Kenya					
Metal	9	8	74	1 014	...
Madagascar					
Metal	470	—	...	...	...
Morocco					
Metal	5 150	2 762	184	36	...
South Africa					
Metal	74	64	199	191	250
Waste & scrap	1	10	882	33 799	774
Tunisia					
Metal	767	1 173	677	768	...
Canada					
Ores & concentrates (c)	1 772	347	826	1 901	2 308
Metal	11 911	39 470	89 621	69 949	69 074
USA					
Ore	(a) 7 448	7 931	5 230	4 524	5 907
Metal-					
Unrefined (f)	...	6 135	5 708	12 015	11 965
Refined	131 093	138 320	136 044	127 232	129 533
Brazil					
Metal	2 590	3 156	3 264	849	313
Chile					
Ore	6 600	20 900	...	...	...
Ecuador					
Metal	4 910	1 147	1 140	...	...

Gold

Imports of Gold

kilograms

Country	1977	1978	1979	1980	1981
Suriname					
Metal	300	...	...	...	...
Venezuela					
Metal	1 900	8 051	794	...	...
Brunei					
Metal	162	140	282	...	...
Cyprus					
Metal	621	782	813	382	563
Hong Kong					
Metal	28 814	54 372	105 587	35 872	101 325
Indonesia					
Metal	10 250	5 720	2 200	—	22 278
Iran (d)					
Metal	* 35 000	...	...	* 30 000	...
Japan					
Metal	51 649	98 514	62 896	31 837	167 325
Waste & scrap	2	4	25	712	1 451
Korea, Republic of					
Metal	3 080	3 459	4 835	3 994	797
Malaysia					
Metal	536	1 216	1 347	...	...
Saudi Arabia					
Metal	93 907	...	16 431	14 873	13 274
Syria					
Metal	22	388	360	332	—
Taiwan					
Metal	14 300	8 143	8 240	10 579	22 456
Thailand					
Metal	686	7 171	3 307	395	...
Australia					
Metal	1 736	628	585	1 815	397
New Zealand (e)					
Metal	304	241	168	190	223

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

Production of Graphite

Country	1977	1978	1979	1980	1981
Germany, Federal Republic of	13 456	11 927	10 282	11 255	12 000
Italy	3 819	4 108	4 102	3 957	3 535
Austria (a)	35 288	40 501	40 519	36 699	23 807
Czechoslovakia	...	13 630	14 600	15 700	* 16 000
Norway	9 097	11 151	11 892	10 406	8 665
Romania	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Soviet Union	* 95 000	* 95 000	* 100 000	* 100 000	* 105 000
Turkey	...	1 295	1 673	1 820	3 298
Madagascar	14 677	16 624	13 378	9 906	10 073
South Africa	911	583	394	—	—
Zimbabwe	8 017	5 655	5 737	7 385	11 218
Mexico	58 432	52 264	50 880	44 506	* 41 200
Argentina	85	8	10	5	7
Brazil	9 187	10 357	10 867	21 294	* 25 000
Burma (c)	205	150	137	44	* 1 400
China	* 60 000	* 80 000	* 180 000	* 160 000	* 160 000
India	48 455	63 784	52 821	54 786	56 249
Korea, Dem. P.R. of	* 20 000	* 20 000	* 25 000	* 25 000	* 25 000
Korea, Republic of	65 955	56 319	56 693	60 586	34 891
Sri Lanka	8 893	10 708	9 432	7 794	7 543
Thailand	23	23	—	2 074	1 800
World total	472 000	500 000	594 000	579 000	553 000

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

Graphite

Exports of Graphite

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	2 544	2 649	3 158	2 081	(b) 1 295
Belgium-Luxembourg	68	67	50	24	298
France	662	1 051	1 518	889	759
Germany, Federal Republic of	7 483	7 927	6 860	7 195	7 217
Italy	1 971	2 823	3 854	3 472	1 649
Netherlands	191	594	644	515	663
Austria	16 859	17 787	17 870	16 576	14 640
Czechoslovakia	* 300	* 500	3 000	3 000	...
Norway	9 147	10 870	11 178	10 675	8 274
Soviet Union (a)	* 10 900	* 12 200	* 11 700	* 11 500	* 2 600
Sweden	40	28	47	47	2 223
Madagascar	17 003	16 861	14 588	9 481	...
South Africa	374	311	—	—	—
Mexico	45 648	47 136	45 810	36 773	...
USA	12 808	8 776	8 683	8 083	10 562
Brazil	1 133	1 026	3 437	7 740	7 439
China (a)	* 13 800	* 12 600	* 26 100	* 37 600	* 43 600
Hong Kong (Re-exports)	840	622	817	161	278
India	44	352	1 416	...	...
Japan	1 311	1 406	1 554	1 745	1 620
Korea, Dem. P.R. of	* 13 900	* 13 200	* 24 500	...	...
Korea, Republic of	64 644	50 807	46 520	45 416	34 348
Sri Lanka	8 059	11 416	11 154	6 604	4 350
Taiwan	614	675	615	505	502

Note: This table excludes synthetic graphite

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

(b) Six months data only

Imports of Graphite

Country	1977	1978	1979	1980	1981
United Kingdom	17 827	17 166	14 584	18 115	15 529
Belgium-Luxembourg	891	3 959	1 842	5 832	6 494
Denmark	741	753	653	990	853
France	5 727	6 781	7 744	9 058	4 672
Germany, Federal Republic of	29 369	28 583	26 063	25 124	29 763
Greece	339	233	154	194	378
Italy	4 802	5 535	4 691	5 410	4 046
Netherlands	456	892	1 169	782	900
Austria	779	1 614	1 710	2 301	1 056
Finland	181	104	173	172	2 268
German Democratic Republic	5 725	6 214	6 884	5 632	6 759
Hungary	...	1 974	2 054	1 673	1 410
Norway	615	664	784	757	861
Poland	10 025	11 906	13 828	11 386	7 972
Portugal	270	294	184	388	174
Spain	1 095	1 484	1 778	2 218	1 404
Sweden	855	549	855	911	504
Switzerland	175	190	202	232	149
Turkey	450	415	169	527	273
Yugoslavia	1 806	1 812	1 824	1 843	1 601
Algeria	473	178	248	312	...
Egypt	—	689	529	101	...
South Africa	461	520	938	1 132	1 264
Mexico	239	114	310	380	...
USA	76 191	87 711	75 085	52 284	59 565
Argentina	574	387	505	...	...
Brazil	48	96	112	69	57
Venezuela	631	425	931	776	...
Hong Kong	1 344	1 201	1 325	214	640
India	698	607	787	...	...
Indonesia	206	107	90	135	191
Iran (a)	1 663	* 800	* 100	* 100	* 900
Japan	64 991	48 895	70 955	69 605	52 697
Malaysia	375	171	465	...	...
Pakistan (b)	2 047	957	607	1 060	3 944
Philippines	182	160	291	184	177
Singapore	162	151	519	572	554
Taiwan	5 943	9 402	13 722	15 696	10 440
Thailand	1 324	1 494	1 519	913	...
Australia	1 720	2 274	1 858	1 812	...
New Zealand (b)	108	84	68	133	190

Note: This table excludes synthetic graphite

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

Gypsum

Production of Gypsum

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Gypsum	3 236 000	3 230 000	* 3 500 000	3 371 000	2 896 647
Anhydrite	25 000	92 000	...	76 000	48 861
Belgium (a)(d)	167 439	183 487	192 938	174 088	154 425
France	(a) 6 699 773	(a) 6 071 000	(a) 6 127 000	6 491 000	6 203 900
Germany, Federal Republic of					
Gypsum	1 796 706	1 749 136	1 718 921	1 625 366	) * 2 250 000
Anhydrite	421 172	489 219	531 693	624 398)
Greece	518 680	507 062	312 291	* 454 000	* 499 000
Irish Republic	342 000	385 790	411 000	382 000	359 000
Italy	4 180 474	* 4 170 000	* 4 200 000	* 4 400 000	* 4 000 000
Luxembourg	5 319	4 476	1 682	—	702
Austria					
Gypsum	655 413	626 475	670 930	698 652	664 112
Anhydrite	153 688	139 490	127 178	134 765	136 403
Bulgaria	* 295 000	* 340 000	* 309 000	311 164	* 308 500
Czechoslovakia (a)	682 000	697 000	734 000	757 000	766 782
German Democratic Republic (d)	303 886	309 348	319 254	313 181	303 138
Poland (d)	341 000	329 000	319 000	312 000	290 000
Portugal	175 961	208 701	240 777	236 378	* 200 000
Soviet Union	* 5 200 000	* 5 300 000	* 5 400 000	* 5 400 000	* 5 500 000
Spain	5 481 522	5 368 600	5 275 236	5 222 718	* 5 200 000
Switzerland	* 70 000	* 70 000	* 70 000	* 80 000	* 86 000
Turkey	65 327	58 766	78 255	72 234	90 470
Yugoslavia	579 092	602 626	686 587	* 690 000	* 615 000
Algeria	* 175 000	* 175 000	* 190 000	* 200 000	* 200 000
Angola	* 25 000	* 25 000	* 25 000	* 25 000	* 20 000
Egypt	508 930	798 000	795 600	939 800	* 950 000
Kenya	25 999	4 080	15 752	—	...
Libya	...	2 803	1 389	...	...
Mauritania	10 163	13 600	16 330	17 000	* 16 500
South Africa	439 688	388 734	377 467	452 490	544 827
Sudan	11 361	26 000	30 000	10 000	2 583
Tanzania	1 159	23 300	9 952	8 119	11 500
Tunisia	104 564	116 806	145 325	46 000	43 800
Zambia	4 634	1 734	1 180	—	—
Canada (a)	7 233 931	8 074 441	8 098 166	7 336 218	7 309 311
Cuba	* 90 000	* 95 000	* 90 000	* 122 000	* 132 000
Dominican Republic	161 168	168 178	175 000	187 000	* 180 000
Guatemala	19 623	37 771	25 000	33 566	* 27 000
Honduras	18 144	* 23 000	* 23 000	* 23 000	* 18 000
Jamaica	208 802	134 528	66 078	94 533	* 100 000
Mexico	1 495 730	1 757 870	2 021 006	1 708 924	1 883 000
Nicaragua	* 36 000	* 36 000	* 36 000	* 40 000	* 32 000
USA	12 147 000	13 509 000	13 272 000	11 227 000	10 430 000
Argentina	546 968	611 158	587 482	933 000	679 000
Brazil	543 046	474 732	464 730	605 824	* 630 000
Chile	147 104	174 143	162 482	198 115	266 000
Colombia	210 000	255 000	257 300	247 000	* 260 000
Ecuador	41 491	34 209	36 000	* 35 000	* 36 000
Paraguay	* 14 000	* 9 000	* 11 000	* 12 000	* 14 000
Peru	142 000	169 000	217 000	280 000	* 350 000
Venezuela	169 970	187 023	260 142	117 477	218 234

Production of Gypsum

Country	1977	1978	1979	1980	1981
Burma (b)	22 608	22 047	31 700	16 949	* 31 095
China	* 1 000 000	* 1 500 000	* 3 600 000	* 3 400 000	* 3 500 000
Cyprus	86 364	60 700	46 100	43 550	* 26 300
India	778 000	884 000	877 000	868 000	943 316
Iran (c)	* 6 900 000	* 8 000 000	* 7 000 000	* 7 000 000	* 6 000 000
Iraq	* 160 000	* 160 000	* 160 000	* 170 000	* 170 000
Israel	* 200 000	* 200 000	* 70 000	* 80 000	* 100 000
Jordan	21 800	36 300	36 000	65 997	53 054
Lebanon	15 400	11 800	* 10 000	* 10 000	* 9 500
Mongolia	* 27 000	* 27 000	* 27 000	* 30 000	* 32 000
Pakistan (a)	283 000	290 000	337 000	568 000	393 000
Philippines	1 710	—	—	—	—
Saudi Arabia	43 052	53 212	76 311	81 429	* 90 000
Syria	88 800	86 182	63 500	71 670	162 694
Taiwan	7 412	3 385	2 535	8 070	6 039
Thailand	380 090	280 904	352 398	411 977	540 383
Vietnam	* 12 000	* 14 000	* 14 000	* 15 000	* 15 000
Australia	915 991	939 884	1 230 204	1 309 321	1 721 001
World total	66 900 000	70 800 000	72 600 000	70 900 000	68 700 000

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

Gypsum

Exports of Gypsum

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Crude	3 886	4 069	2 751	3 647	(b) 1 487
Calcined	10 881	12 401	14 838	14 241	(b) 6 320
Belgium-Luxembourg					
Crude	3 874	10 136	56 832	45 929	79 490
Calcined	34 134	43 980	39 755	54 678	60 532
Denmark					
Crude & calcined	270	130	123	172	974
France					
Crude	898 203	798 698	949 162	901 505	901 883
Calcined	213 559	209 855	189 839	240 915	231 380
Germany, Federal Republic of					
Crude	176 751	199 063	184 016	210 579	191 088
Calcined	157 500	156 920	172 902	179 824	183 605
Greece	7 305	5 622	5	19	160
Irish Republic					
Crude	31 995	33 726	29 607	32 608	19 140
Calcined	30 785	32 397	27 577	25 208	20 882
Italy					
Crude	353	247	20	21	118
Calcined	11 145	10 914	11 919	12 984	13 682
Netherlands					
Crude	427	928	1 532	133	72
Calcined	1 475	1 438	1 943	2 037	1 429
Austria					
Crude	94 814	99 276	121 598	134 911	92 545
Calcined	70 987	90 468	128 117	119 217	98 341
German Democratic Republic					
Calcined	77 208	68 681	80 353	78 604	103 009
Norway					
Crude	11 454	—	—	4 362	—
Poland	62 711	26 470	* 200	* 100	...
Romania					
Calcined	* 21 500	* 28 200	* 28 000	...	...
Soviet Union (a)	* 177 500	* 112 600	* 59 900	* 35 200	* 44 500
Spain					
Crude & calcined	635 032	775 745	1 110 653	1 119 664	1 076 376
Switzerland					
Ground & calcined	923	620	667	4 100	5 647
Turkey					
Crude & calcined	1 950	5 000	—	...	...
Egypt	25 019	18 693	9 100	1 500	...
Kenya	2 247	1 559	270	640	...
Morocco					
Crude	173 520	218 073	228 871	203 140	...
Calcined	2 037	4 160	8 010	2 882	...
South Africa	14 229	3 654	3 237	1 092	2 604
Tanzania	4 000	...	...	...	...
Canada					
Crude	4 994 324	5 178 632	5 474 765	4 960 241	5 094 874
Dominican Republic	113 705	195 998	190 794	...	...
Guatemala	16 716	20 522	21 004	...	...
Jamaica	248 400	152 816	21 062	78 525	...
Mexico	1 309 490	1 535 304	1 838 278	1 607 674	...
Nicaragua	14 966	17 490	13 341	...	...
USA					
Crude	16 632	17 867	4 019	6 378	7 082
Calcined	114 740	696 720	78 657	73 770	135 665
Argentina	21 752	9 749	10 021	...	...
Bolivia	—	1 000	—	1 200	748
Colombia	1 710	6 529	500	11 226	660
Venezuela	16 250	11 050	6 175	7 650	...
Cyprus					
Crude	34 922	5 007	5 634	2 540	506
Calcined	4 186	2 688	4 465	5 608	5 185
Hong Kong (Re-exports)	840	528	31 433	1 430	1 172

Exports of Gypsum

tonnes

Country	1977	1978	1979	1980	1981
Japan					
Crude	767	1 394	895	647	394
Calcined	5 707	4 778	5 262	5 723	7 234
Korea, Republic of					
Crude	71 897	) 109 095	10 085	26 336	9 068
Calcined	19	)	59 319	55 484	151 817
Saudi Arabia					
Crude & calcined	2 708	2 912	7 566	6 127	20 806
Singapore					
Crude & calcined	682	881	1 405	1 251	1 076
Syria	65 682	42 003	116 132	44 790	31 509
Taiwan	535	1 564	2 045	1 582	1 049
Thailand					
Crude	59 980	82 212	88 513	145 415	) 204 698
Calcined	457	1 321	1 447	1 754)
Australia					
Crude & calcined	190 512	181 040	424 678	391 267	620 802

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

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

(b) Six months data only

Gypsum

Imports of Gypsum

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Crude	37 854	55 725	72 474	34 768	13 769
Calcined	49 055	40 240	38 940	39 138	34 814
Belgium-Luxembourg					
Crude	320 512	341 702	250 882	236 820	215 297
Calcined	119 275	104 978	123 296	184 806	161 157
Denmark					
Crude	366 031	293 907	311 551	303 737	220 102
Calcined	3 948	4 129	4 812	4 257	4 912
France					
Crude	10 274	12 544	8 657	15 639	16 026
Calcined	3 737	4 356	4 640	5 747	7 258
Germany, Federal Republic of					
Crude	243 438	271 877	438 687	523 977	615 325
Calcined	101 849	102 386	133 406	134 082	125 779
Greece					
Crude	18	34	50	51	106
Calcined	886	1 165	1 289	1 123	1 138
Irish Republic					
Crude	1 029	735	780	722	9 017
Calcined	3 239	3 246	4 405	3 989	5 147
Italy					
Crude	101	65	62	147	258
Calcined	16 260	17 895	16 115	20 814	21 606
Netherlands					
Crude	280 322	268 012	246 404	290 445	255 123
Calcined	126 173	122 327	124 161	134 778	206 281
Austria					
Crude	2 121	3 238	4 558	4 715	5 426
Calcined	5 366	8 187	9 623	6 668	6 542
Czechoslovakia	26 000	24 000	25 000	25 000	...
Finland					
Crude	123 075	81 492	157 468	148 039	135 283
Calcined	2 295	2 066	3 204	3 162	4 379
Hungary					
Calcined	67 465	74 382	85 931	86 584	85 653
Iceland	8 453	7 481	3 522	9 501	8 311
Norway					
Crude	168 039	141 858	175 631	136 210	104 702
Calcined	2 775	2 504	2 331	32 255	20 012
Portugal					
Crude	25 922	31 633	35 354	34 943	46 733
Calcined	420	139	148	210	225
Spain					
Crude & calcined	4 193	4 902	5 863	4 662	2 922
Sweden					
Crude	302 736	256 304	368 434	344 877	267 111
Calcined	6 342	5 970	5 899	5 568	5 231
Switzerland					
Crude	34 593	27 182	32 739	41 238	37 781
Ground & calcined	21 574	25 272	30 399	34 106	35 121
Algeria					
Crude & calcined	4 480	3 642	5 038	...	...
Cameroon					
Crude & calcined	7 748	20 867	12 284	...	...
Egypt	—	509	668	727	...
Ghana					
Crude & calcined	15 831	11 369	...	...	...
Ivory Coast					
Crude	45 167	68 066	46 820	...	39 357
Calcined	4 284	5 098	6 727	...	5 881
Kenya	23 281	182	14 198	38 479	...
Liberia					
Crude & calcined	1 596	344	2 524	1 073	...
Libya					
Crude & calcined	3 253	658	303	332	...
Madagascar	2 240	3 121	4 679	2 359	...

Imports of Gypsum

Country	1977	1978	1979	1980	1981
Melilla	653	1 845	543	785	...
Mozambique					
Crude	3 994	...	...	...	...
Calcined	19	...	...	...	...
Senegal					
Crude	12 115	3 308	...	...	...
Calcined	757	983	...	...	...
South Africa					
Crude & calcined	5 605	5 216	5 939	7 283	8 052
Tunisia					
Crude & calcined	199	169	215	474	...
Zaire					
Crude & calcined	395	144	5	...	...
Zambia	30	129	...	...	...
Zimbabwe	5 220	2 695	3 364	2 872	...
Canada					
Crude	24 042	70 995	152 463	154 717	143 500
Calcined	21 289	21 377	18 230	18 902	18 850
Costa Rica					
Crude	15 062	...	...	...	...
Calcined	582	...	...	...	...
El Salvador					
Crude	16 224	...	) 20 428	...	...
Calcined	284	...	)	...	...
Mexico					
Crude	9 845	18 071	17 223	18 833	...
Calcined	8 276	6 969	9 102	9 036	...
Nicaragua	304	213	171	...	...
Panama	16 338	16 179	16 204	...	...
Trinidad & Tobago					
Crude & calcined	44 676	10 462	7 717	6 132	...
USA					
Crude	6 443 892	7 216 068	7 051 386	6 681 812	6 888 255
Ground & calcined	3 268	2 716	1 407	2 003	1 814
Brazil	12	960	628	1 706	1 001
Colombia	7 333	6 722	28 772	68 731	66 830
Ecuador	491	1 814	10 191	...	...
Peru					
Calcined	251	...	...	...	...
Uruguay					
Crude & ground	24 269	2 514	30 736	5 582	11 146
Venezuela	19 989	8 996	34 112	28 094	...
Hong Kong	52 823	62 120	132 726	86 119	71 441
Indonesia	109 653	157 757	287 554	318 607	316 158
Iran (a)	1 002	* 1 800	* 1 450	* 600	* 1 300
Israel (c)	96	186	331	507	110
Japan					
Crude	30 181	15 148	29 733	32 793	202 829
Calcined	230	187	381	442	309
Jordan	1 185	1 992	1 337	2 456	...
Korea, Republic of	5 429	4 395	5 077	8 424	741
Kuwait	30 331	81 603	60 453	25 380	...
Malaysia					
Crude & calcined	55 162	75 041	94 931	...	...
Philippines					
Crude	81 462	82 935	57 255	60 376	68 525
Calcined	4 659	5 279	6 019	5 295	7 071
Saudi Arabia					
Crude	4 398	) 20 704	2 988	6 148	2 952
Calcined	151 018	)	20 788	19 938	27 882
Singapore					
Crude & calcined	53 708	71 003	75 268	76 910	83 527
Sri Lanka	10 453	988	4 909	198 965	16 043
Taiwan					
Crude	24 169	24 522	39 673	23 421	69 222
Calcined	243 581	210 376	363 158	203 856	291 744

Gypsum

Imports of Gypsum

tonnes

Country	1977	1978	1979	1980	1981
Thailand					
Crude & calcined	416	294	555	562	...
Australia	1 174	2 043	957	1 713	...
Fiji	211	909	537	122	...
New Zealand (b)					
Crude	110 421	140 037	98 485	92 672	106 477
Calcined	690	573	484	484	234

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

Production of Iodine

Country	1977	1978	1979	1980	1981
Soviet Union	* 2 000 000	* 2 000 000	* 2 000 000	* 2 000 000	* 2 000 000
USA	* 600 000	* 1 000 000	* 1 000 000	* 700 000	* 800 000
Chile	1 856 300	1 922 000	2 409 600	2 601 000	2 688 000
China	* 360 000	* 450 000	* 450 000	* 450 000	* 450 000
Indonesia	12 000	7 000	25 000	25 000	23 811
Japan	6 100 000	6 000 000	6 300 000	6 500 000	* 7 000 000
World total	10 900 000	11 400 000	12 200 000	12 300 000	13 000 000

Iodine

Exports of Iodine

kilograms

Country	1977	1978	1979	1980	1981
United Kingdom	124 111	123 089	118 729	224 309	(a) 83 354
Belgium-Luxembourg	15 500	7 700	4 100	47 100	112 100
Denmark	0	0	200	2 700	3 500
France	31 000	97 000	131 000	138 000	140 000
Germany, Federal Republic of	13 500	31 300	45 300	75 000	72 900
Italy	—	28 235	23 825	9 160	23 700
Netherlands	11 000	4 000	18 000	11 000	35 000
Poland	* 6 250	* 3 450	* 11 000	* 2 000	...
Portugal	200	100	0	500	...
Spain	1 100	1 601	1 000	1 000	...
Chile	2 279 200	1 268 700	(c)* 2 000 000	(c)* 2 300 000	(c)* 1 900 000
Indonesia	16 500	—	14 700	28 850	9 500
Japan (b)	5 484 493	6 020 166	5 524 215	5 707 255	5 442 205

(a) Six months data only

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

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

Imports of Iodine

Country	1977	1978	1979	1980	1981
United Kingdom	1 095 320	1 310 066	1 359 074	1 593 742	1 358 447
Belgium-Luxembourg	139 500	132 400	102 200	96 600	95 700
Denmark	500	700	1 300	2 400	2 700
France	745 000	998 000	1 156 000	1 100 000	899 000
Germany, Federal Republic of	703 900	791 400	870 700	1 139 900	1 290 300
Greece	1 819	2 625	2 000	1 000	1 000
Italy	236 472	241 924	252 087	301 156	172 700
Netherlands	105 000	113 000	126 000	216 000	258 000
Hungary	55 349	79 500	40 400	33 900	...
Portugal	16 900	46 100	10 900	10 800	...
Spain	96 078	105 111	146 034	152 000	...
Turkey	5 225	51 510	1 031 655	3 200	...
Yugoslavia	41 026	27 923	70 773	60 121	...
Algeria	46	1 442	1 318	...	...
Ethiopia	7 292	50 500	...	...	...
Morocco	357	974	372	419	...
Sudan	—	38 964	10 350	...	...
Canada	160 889	174 588	259 999	270 660	180 892
Mexico	174 035	198 367	...	...	...
USA	3 222 965	3 138 988	2 822 400	2 848 630	2 766 460
Argentina	9 441	19 197	...	...	...
Brazil	82 466	165 571	130 409	176 261	129 620
Colombia	5 408	5 430	4 272	4 188	8 102
Ecuador	1 044	676	655	...	...
Peru	2 687	...	...	...	...
Uruguay	900	700	1 400	—	—
Venezuela	8 565	11 469	10 502	...	...
India (a)	170 160	288 986	140 429	...	...
Indonesia	7 492	9 282	7 617	34 420	25 552
Korea, Republic of	7 855	...	5 207	3 120	3 884
Saudi Arabia	170 105	...	39 100	30 117	...
Taiwan	5 064	6 191	7 169	7 663	5 621
Thailand	2 478	1 488	1 324	1 917	...

(a) Years ended 31 March following that stated

Production of Iron Ore

thousand tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	3 745	4 239	4 269	916	731
Belgium	47	43	—	—	—
France	36 630	33 454	31 627	28 981	21 578
Germany, Federal Republic of (f)	2 875	1 612	1 668	1 945	1 594
Italy	478	353	219	185	123
Luxembourg	1 548	835	630	560	429
Albania (b)	* 510	* 510	* 530	* 550	* 600
Austria	3 449	2 788	3 200	3 200	3 050
Bulgaria	2 270	2 453	2 103	1 886	1 754
Czechoslovakia	1 994	2 023	2 012	1 927	1 935
Finland	1 002	1 093	925	1 173	1 230
German Democratic Republic	63	70	56	51	41
Hungary	525	534	532	426	422
Norway	3 635	3 773	4 066	3 884	4 064
Poland	659	529	249	104	105
Portugal (f)	53	55	60	57	37
Romania	2 467	2 511	2 523	2 333	2 304
Soviet Union	242 047	246 398	241 738	244 713	242 417
Spain	7 375	8 580	8 827	9 227	8 410
Sweden	24 839	21 063	26 189	26 922	23 225
Turkey	3 470	4 198	1 955	2 579	2 876
Yugoslavia	4 451	4 564	4 617	4 530	4 794
Algeria	3 183	2 750	2 864	* 3 500	* 3 700
Angola	* 5 500	...	...	...	...
Egypt	1 409	1 456	1 435	1 870	1 944
Liberia	17 384	20 805	19 900	17 380	19 704
Mauritania	9 794	6 934	9 373	8 600	8 704
Morocco	407	63	62	78	50
South Africa (c)	26 481	24 206	31 565	26 312	28 319
Swaziland	1 441	(a) 1 266	(a) 494	—	—
Tunisia	344	339	343	389	396
Zimbabwe	1 176	1 123	1 201	1 622	1 098
Canada (g)	53 621	42 931	59 617	49 068	49 697
Mexico	5 381	5 334	6 061	7 631	8 020
USA	56 645	82 892	87 091	70 730	74 348
Argentina	1 030	909	611	437	495
Brazil	82 001	84 985	104 083	114 732	* 100 000
Chile	8 021	7 813	8 225	8 835	8 514
Colombia	505	497	397	506	419
Peru	6 284	4 923	5 444	5 704	6 069
Venezuela	13 683	13 515	16 349	16 102	15 531
China	* 60 000	* 70 000	* 75 000	* 75 000	* 70 000
India	42 598	38 838	38 859	40 925	41 120
Indonesia (d)	312	191	80	75	86
Iran (e)	* 1 100	* 1 500	* 600	* 600	* 600
Japan (d)	686	594	456	* 500	* 450
Korea, Dem. P.R. of	* 6 900	* 7 100	* 7 400	* 8 000	* 8 000
Korea, Republic of	791	693	639	619	332
Malaysia	330	320	351	371	532
Philippines	—	2	6	0	6
Thailand	63	88	103	85	62

Production of Iron Ore

Country	1977	1978	1979	1980	1981
Australia	95 923	83 134	91 717	95 534	84 718
New Zealand	2 968	3 946	3 527	3 638	3 253
World total	850 000	856 000	917 000	900 000	863 000

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

Iron Ore

Exports of Iron Ore

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	767	384	898	1 156	(e) 20
Belgium-Luxembourg					
Iron ore	148 185	83 852	3 367	60 237	18 692
Burnt pyrites	7 774	11 128	9 270	10 291	10 173
Denmark					
Iron ore	4 764	10 323	6 751	8 638	8 867
Burnt pyrites	—	608	—	—	—
France					
Iron ore	12 122 375	11 370 828	10 219 867	8 647 431	6 378 303
Burnt pyrites	4 700	26	—	—	0
Germany, Federal Republic of					
Iron ore	3 292	7 176	3 438	3 812	5 698
Burnt pyrites	241 815	184 046	226 063	155 875	76 826
Greece					
Burnt pyrites	11 555	24 754	50	22 603	14 500
Irish Republic					
Iron ore	31 092	37 352	31 160	27 092	17 292
Italy					
Iron ore	3 225	10 703	288	1 424	22
Burnt pyrites	126 390	65 916	65 648	46 559	45 234
Netherlands (b)	147 676	11 825	119 566	273 706	239 761
Austria	334	85	2	118	0
Finland	1 165	13 302	10	14 628	22 965
Norway					
Iron ore	2 695 573	3 074 126	3 408 646	2 721 777	3 482 274
Burnt pyrites	43 601	48 047	27 684	53 609	177 740
Portugal					
Burnt pyrites	64 555	10 500	27 514	20 531	14 000
Soviet Union	40 946 000	40 605 000	39 012 000	38 108 000	34 238 000
Spain					
Iron ore	1 466 371	2 024 815	1 994 544	2 087 589	1 147 000
Burnt pyrites	461 199	261 987	272 339	313 193	389 000
Sweden					
Iron ore	18 913 000	22 204 000	26 246 000	20 998 000	17 709 000
Burnt pyrites	330 000	355 000	316 000	250 000	317 000
Switzerland (b)	224	41	54	88	222
Yugoslavia					
Burnt pyrites	27 674	33 833	48 302	74 168	110 000
Algeria					
Iron ore	1 433 577	1 527 968	2 352 099	1 432 000	1 507 000
Burnt pyrites	—	20 000	—	...	...
Canary Islands					
Burnt pyrites	69 895	57 970	57 180	58 460	...
Liberia	17 663 184	20 804 586	19 865 581	17 199 000	20 343 000
Mauritania	8 423 415	6 500 000	9 000 000	...	...
Morocco					
Burnt pyrites	429 342	39 935	99 686	143 503	69 743
South Africa (d)	* 10 560 000	* 13 680 000	* 16 171 000	* 13 943 000	* 13 021 000
Swaziland	1 384 315	1 046 383	956 726	553 494	—
Tunisia	55 023	24 981	—	—	—
Canada	45 060 397	31 929 098	48 849 277	39 020 995	41 452 050
Mexico	802	893	413	982	...
USA (b)	2 177 714	4 281 635	5 347 856	5 780 534	5 635 191
Bolivia (c)	4 328	35 313	2 629	—	4
Brazil	58 540 946	66 371 318	75 587 907	78 958 000	85 797 967
Chile	6 704 884	3 129 193	6 980 000	7 600 000	6 600 000
Peru	6 103 347	4 694 000	5 618 673	5 588 592	5 399 000
Venezuela	11 936 000	12 822 000	13 988 000	11 723 000	12 427 000

Exports of Iron Ore

Country	1977	1978	1979	1980	1981
India	23 191 000	19 836 000	24 387 000	...	...
Korea, Republic of	1 360	2 000	30	—	7
Malaysia	141 488	17 205	17 825	...	...
Philippines					
Iron ore	1 982 596	3 279 988	4 133 234	4 263 809	3 550 826
Burnt pyrites	56 429	54 992	33 079	59 535	35 408
Australia	78 908 000	75 264 000	78 447 000	79 754 000	71 148 000
New Zealand (a)	2 222 860	3 079 107	3 001 620	3 499 168	2 819 828

(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

(e) Six months data only

Imports of Iron Ore

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Iron ore	15 542 322	15 451 080	17 841 304	8 557 148	14 642 287
Burnt pyrites	211 658	226 543	221 166	218 230	265 906
Belgium-Luxembourg					
Iron ore	21 522 153	24 242 568	26 144 207	22 181 965	21 148 340
Burnt pyrites	226 678	201 813	175 705	103 415	94 312
Denmark (a)	36 670	41 168	26 961	19 734	146 154
France					
Iron ore	15 431 925	14 603 972	17 345 338	18 642 578	16 510 764
Burnt pyrites	78 187	92 272	87 452	70 041	57 248
Germany, Federal Republic of					
Iron ore	39 748 814	42 133 179	51 703 352	49 833 550	44 288 124
Burnt pyrites	3 313	21 924	14 668	14 930	29 293
Greece	645 893	235 127	390 590	288 443	...
Italy (a)	15 504 116	16 296 692	17 320 601	16 912 643	15 210 697
Netherlands (a)	6 921 394	5 577 835	7 431 455	7 585 635	6 659 598
Austria					
Iron ore	2 610 912	2 618 559	3 963 480	3 336 303	3 423 021
Burnt pyrites	113 074	54 424	44 854	48 448	45 515
Bulgaria	1 672 000	1 642 000	2 107 000	2 235 000	2 280 000
Czechoslovakia	15 970 000	15 600 000	12 459 000	12 819 000	12 166 000
Finland	1 161 788	1 530 234	1 790 979	1 736 929	1 495 401
German Democratic Republic (b)	2 267 000	2 046 000	2 033 000	2 088 000	2 335 000
Hungary	4 280 590	4 200 053	4 044 624	3 285 591	3 765 125
Norway	119 993	121 106	312 434	87 101	11 196
Poland	16 943 000	17 198 000	18 872 000	20 150 000	15 870 000
Portugal	447 360	389 350	619 651	494 937	524 112
Romania	12 402 200	13 843 000	15 065 000	15 984 000	15 016 000
Spain	4 898 661	4 627 766	5 194 919	4 757 201	4 687 000
Sweden	120 000	121 000	33 000	...	1 000
Switzerland (a)	31 406	59 552	58 723	49 431	49 487
Turkey	666 719	172 816	732 756	810 541	1 050 000
Yugoslavia	515 443	547 006	1 059 699	1 639 947	1 360 000
Kenya	7 644	35 602	—	22 603	...
Libya	2 844	—	—	3 412	...
Nigeria	—	1 329	...	...	...
Tanzania	2 336	817	414	1 061	...
Canada	2 505 204	4 685 868	5 912 582	5 875 293	5 794 635
Mexico	7	148 773	571 916	381 418	...
USA (a)	38 083 660	34 155 921	34 318 178	25 460 384	28 788 679
Argentina	2 377 249	2 395 419	2 919 000	...	...
Venezuela (a)	73 612	110 593	5 891	...	...
Abu Dhabi	—	88 959	122 552	173 897	...
China (d)	* 1 182 000	* 3 431 000	* 8 259 000	* 4 789 000	...
Dubai	3 217	11 000	12 661	12 400	...
India	1 049	464	179	...	...
Indonesia	209	55 020	53 159	285 047	701 574
Japan					
Iron ore (c)	132 596 591	114 688 039	130 274 295	133 721 259	123 379 351
Burnt pyrites	17 556	2 891	1 495	—	—
Korea, Republic of	2 360 179	3 623 000	7 514 298	9 129 893	10 687 712
Philippines	2 406 905	3 405 249	3 363 322	4 650 570	40 677
Qatar	...	160 300	496 154	220 281	...
Singapore	143 934	16 459	6 781	9 605	30 576
Taiwan					
Iron ore	1 176 079	2 488 737	2 648 963	2 843 526	2 413 058
Burnt pyrites	77 560	74 209	50 980	49 142	55 079
Australia	27 210	30 731	26 400	47 175	46 912

(a) Including burnt pyrites

(b) Fe content of concentrates

(c) Including manganiferous iron ore

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

thousand tonnes

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

Country	1977	1978	1979	1980	1981
United Kingdom	12 232	11 434	12 898	6 316	9 554
Belgium (a)	8 916	10 128	10 776	9 846	9 786
France	18 257	18 497	19 415	19 159	17 274
Germany, Federal Republic of	28 959	30 218	35 166	33 873	31 876
Italy	11 495	11 434	11 397	12 273	12 342
Luxembourg (a)	3 568	3 721	3 801	3 568	2 889
Netherlands (a)	3 922	4 613	4 814	4 328	4 600
Austria (a)	2 969	3 077	3 702	3 485	3 477
Bulgaria (a)	1 614	1 493	1 452	1 529	1 514
Czechoslovakia (a)	9 715	9 944	9 529	9 819	9 903
Finland (a)	1 764	1 858	2 038	2 019	1 965
German Democratic Republic	2 628	2 560	2 386	2 458	2 452
Hungary (a)	2 286	2 330	2 369	2 214	2 193
Norway (a)	512	554	650	612	570
Poland	10 079	11 668	11 527	11 953	9 351
Portugal (a)	357	353	380	308	314
Romania (a)	7 784	8 155	8 879	9 012	8 857
Soviet Union	107 368	110 702	108 998	107 283	107 766
Spain (a)	6 705	6 249	6 464	6 364	6 251
Sweden (a)	2 330	2 363	2 942	2 441	1 770
Switzerland (a)	27	35	30	29	30
Turkey	1 360	1 569	2 228	2 040	1 954
Yugoslavia (a)	1 938	2 081	2 360	2 425	2 817
Algeria (a)	429	480	396	* 400	* 430
Egypt (a)	550	600	600	* 650	* 650
South Africa (a)	6 114	5 910	7 031	7 515	7 337
Tunisia (a)	132	134	150	152	158
Zimbabwe (a)	21	16	24	93	45
Canada (a)	9 661	10 338	10 906	10 893	9 743
Mexico (a)	4 329	5 136	5 027	5 275	5 483
USA (a)	73 930	79 551	78 902	62 323	66 909
Argentina (a)	1 101	1 434	1 115	991	920
Brazil (a)	9 380	9 968	11 594	12 685	10 796
Chile (a)	427	539	611	648	582
Colombia (a)	223	297	240	279	263
Peru (a)	244	238	257	261	177
Venezuela (a)	351	418	509	498	417
China (a)	25 050	34 790	36 730	38 020	34 020
India (a)	9 796	9 432	8 748	8 492	9 360
Japan (a)	85 886	78 588	83 825	87 041	80 048
Korea, Dem. P.R. of (a)	* 2 700	* 2 800	* 2 900	* 3 000	* 3 000
Korea, Republic of (a)	2 425	2 741	5 063	5 577	7 928
Taiwan (a)	275	316	325	272	185
Thailand (a)	13	17	30	18	10
Australia (a)	6 753	7 337	7 811	6 959	6 830
World total	487 000	506 000	527 000	505 000	495 000

(a) Pig-iron only

Production of Steel Ingots and Castings

thousand tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	20 411	20 311	21 464	11 277	15 573
Belgium	11 266	12 604	13 553	12 324	12 286
Denmark	686	863	804	734	610
France	22 094	22 841	23 360	23 176	21 258
Germany, Federal Republic of	38 985	41 253	46 040	43 838	* 41 600
Greece	760	936	1 000	* 1 000	* 1 000
Irish Republic	58	66	80	* 40	* 40
Italy	23 334	24 283	24 250	26 501	24 777
Luxembourg	4 329	4 790	4 950	4 519	3 791
Netherlands	4 927	5 590	5 806	5 272	5 472
Austria	4 093	4 335	4 917	4 624	4 656
Bulgaria	2 589	2 469	2 482	2 565	2 484
Czechoslovakia	15 064	15 294	14 817	15 225	15 270
Finland	2 196	2 333	2 463	2 509	2 427
German Democratic Republic	6 850	6 976	7 023	7 308	7 467
Hungary	3 782	3 877	3 908	3 764	3 643
Norway	711	813	921	866	847
Poland	17 841	19 251	19 218	19 485	15 719
Portugal	534	611	656	583	555
Romania	11 457	11 779	12 909	13 175	13 025
Soviet Union	146 655	151 436	149 099	147 941	148 445
Spain	11 102	11 269	12 304	12 586	13 168
Sweden	3 979	4 325	4 733	4 237	3 770
Switzerland	656	784	886	898	889
Turkey	1 397	1 628	1 789	1 700	1 531
Yugoslavia	3 184	3 452	3 536	3 634	3 976
Algeria	410	417	416	534	* 550
Egypt	263	* 600	* 635	* 800	* 800
South Africa	7 378	7 902	8 868	9 068	8 943
Tunisia	156	168	176	178	173
Zimbabwe	734	778	740	800	691
Canada	13 631	14 898	16 078	15 901	14 811
Cuba	330	324	328	304	330
Mexico	5 601	6 775	7 117	7 156	7 602
USA	113 700	124 312	123 686	101 455	108 782
Argentina	2 537	2 564	2 967	2 407	2 200
Brazil	11 164	12 106	13 893	15 337	13 218
Chile	509	574	642	695	626
Colombia	209	265	234	263	217
Peru	379	374	436	471	340
Uruguay	17	9	17	14	10
Venezuela	678	680	1 292	1 784	1 819
Bangladesh (b)	108	117	126	138	139
China	23 740	31 780	34 430	37 120	* 36 290
India	9 852	9 917	9 936	9 358	10 269
Indonesia	145	150	500	530	* 600
Iran	544	* 780	* 700	* 700	* 500
Israel	* 70	* 90	* 100	* 110	* 120
Japan	102 405	102 103	111 748	111 395	101 675
Jordan	* 50	* 60	* 100	306	123
Korea, Dem. P.R. of	* 3 000	* 3 200	* 3 300	* 3 500	* 3 500
Korea, Republic of	2 737	3 138	5 200	5 790	5 891
Malaysia	190	240	244	236	233
Philippines	364	276	397	419	* 400
Singapore	206	280	297	* 300	* 300
Syria	* 115	* 120	* 90	* 100	103
Taiwan	910	1 269	1 570	1 765	1 600
Thailand	300	331	290	428	* 400
Australia (a)	7 313	7 589	8 125	7 594	7 635
New Zealand	222	215	221	217	231
World total	669 000	709 000	738 000	707 000	695 000

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

Country	1977	1978	1979	1980	1981
United Kingdom					
Ferro-manganese	97 000	69 000	137 000	52 000	84 000
Belgium					
Ferro-manganese	55 000	87 000	90 000	85 000	* 90 000
France					
Blast furnace ferro-alloys-					
Spiegeleisen & ferro-					
manganese	372 712	397 072	449 321	480 126	312 537
Electric furnace & alumin-					
thermic ferro-alloys-					
Ferro-chrome & ferro-silico-					
chrome	105 716	96 980	97 319	88 703	32 038
Ferro-silicon (50% Si)	241 048	192 829	285 487	245 957	189 062
Silico-spiegeleisen & ferro-					
silico-manganese	42 205	18 863	12 890	20 683	10 180
Ferro-titanium, ferro-					
tungsten, ferro-					
molybdenum, ferro-					
vanadium (a)	6 358	4 216	7 786	4 246	2 860
Other ferro-alloys	92 883	123 781	138 245	119 996	111 858
Silicon metal	43 000	42 000	54 089	59 930	59 550
Germany, Federal Republic of					
Blast furnace ferro-alloys-					
Spiegeleisen & ferro-					
manganese	175 000	209 000	233 000	200 000	214 000
Ferro-silicon	87 000	78 000	79 000	64 000	50 000
Electric furnace ferro-alloys-					
Ferro-chrome	* 55 000	* 50 000	* 60 000	* 60 000	* 50 000
Ferro-manganese & ferro-					
silico-manganese	* 50 000	* 15 000	* 30 000	* 25 000	* 19 000
Ferro-silicon	* 50 000	* 30 000	* 50 000	* 50 000	* 42 000
Other ferro-alloys	* 55 000	* 45 000	* 51 000	* 50 000	* 43 000
Greece					
Electric furnace ferro-alloys-					
Ferro-nickel	35 593	55 137	62 937	* 50 000	* 50 000
Italy					
Blast furnace ferro-alloys-					
Spiegeleisen	5 930	2 592	3 019	4 990	10 000
Ferro-manganese	75 160	89 929	89 270	83 588	72 000
Silicon pig-iron (10 - 12% Si)	2 861	1 026	796	...	...
Electric furnace ferro-alloys-					
Ferro-chrome	39 753	36 877	42 531	41 150	55 000
Ferro-silico-chrome	—	230	1 408	—	800
Ferro-silico-magnesium	4 320	2 381	—	400	100
Ferro-manganese	17 000	27 000	21 800	* 21 800	* 21 800
Ferro-silico-manganese	40 050	42 615	54 513	45 300	55 000
Ferro-molybdenum	2 043	1 756	2 017	2 100	2 150
Ferro-phosphorus	651	631	466	53	60
Ferro-silicon	76 511	67 700	80 521	71 857	55 300
Ferro-titanium & ferro-					
silico-titanium	1 517	2 188	1 808	1 020	1 456
Ferro-vanadium	237	526	559	354	148
Calcium-silicide	5 723	3 177	7 392	...	...
Silicon metal	* 16 000	18 141	* 15 400	18 852	19 595
Austria					
Electric furnace ferro-					
alloys	7 000	6 000	6 000	6 000	12 000
Bulgaria					
Electric furnace ferro-alloys-					
Ferro-manganese & ferro-					
silico-manganese	* 30 000	* 28 000	* 28 000	* 28 000	* 28 000
Ferro-silicon	* 19 000	* 17 000	* 16 000	* 16 000	* 16 000
Other ferro-alloys	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000

Production of Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Czechoslovakia					
Electric furnace ferro-alloys-					
Ferro-chrome	* 30 000	* 30 000	* 28 000	28 155	28 025
Ferro-manganese & ferro-silico-manganese	* 100 000	* 100 000	* 100 000	* 100 000	* 98 000
Ferro-silicon	* 35 000	* 35 000	* 33 000	28 582	31 012
Other ferro-alloys	* 10 000	* 12 000	* 9 000	* 9 000	* 8 000
Silicon metal	* 4 500	* 5 400	* 5 400	* 5 400	* 5 400
Finland					
Electric furnace ferro-alloys-					
Ferro-chrome	33 616	44 801	49 116	52 670	51 623
Other ferro-alloys	43 443	45 269	29 429	53 000	52 000
German Democratic Republic					
Electric furnace ferro-alloys-					
Ferro-chrome	* 23 500	* 25 000	* 21 000	* 20 000	* 20 000
Ferro-manganese & ferro-silico-manganese	* 89 000	* 80 000	* 80 000	* 78 000	* 78 000
Ferro-silicon	* 20 000	* 31 000	* 30 000	* 29 000	* 29 000
Other ferro-alloys	* 19 000	* 21 000	* 20 000	* 19 000	19 000
Silicon metal	* 3 000	* 4 000	* 4 000	* 4 000	* 4 000
Hungary					
Electric furnace ferro-alloys-					
Ferro-manganese & ferro-silico-manganese	* 2 400	* 2 500	* 4 500	* 2 700	* 2 700
Ferro-silicon	6 846	7 636	7 726	10 390	11 077
Silicon metal	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Iceland					
Electric furnace ferro-alloys-					
Ferro-silicon	—	—	* 15 000	28 299	33 411
Norway					
Electric furnace ferro-alloys-					
Ferro-chrome & ferro-silico-chrome	22 630	15 763	12 229	11 729	12 700
Ferro-manganese	283 800	310 293	379 818	295 706	224 100
Ferro-silico-manganese	126 694	133 647	184 415	167 490	197 800
Ferro-silicon	223 422	266 190	337 008	319 983	273 606
Other ferro-alloys	30 899	30 264	29 674	19 795	11 800
Silicon metal	60 340	57 869	59 202	63 287	58 822
Poland					
Blast furnace ferro-alloys-					
Spiegeleisen	11 000	7 300	9 100	8 200	6 000
Ferro-manganese	123 000	118 800	120 700	119 700	104 000
Electric furnace ferro-alloys-					
Ferro-chrome	* 50 000	* 50 000	* 52 000	* 52 000	* 51 000
Ferro-manganese & ferro-silico-manganese	* 50 000	* 50 000	* 52 000	* 52 000	* 51 000
Ferro-silicon	* 55 000	* 53 000	* 57 000	* 55 000	* 55 000
Other ferro-alloys	* 19 000	* 16 000	* 15 000	* 13 000	* 13 000
Silicon metal	* 11 000	* 11 000	* 11 000	* 10 000	* 10 000
Portugal					
Electric furnace ferro-alloys-					
alloys	12 191	57 129	137 125	170 390	60 865
Silicon metal	* 13 600	* 20 000	* 32 000	* 33 000	* 32 000
Soviet Union					
Blast furnace ferro-alloys-					
Spiegeleisen	* 75 000	* 75 000	* 50 000	* 45 000	* 40 000
Ferro-manganese	* 726 000	* 726 000	* 549 000	* 549 000	* 540 000
Other ferro-alloys	* 100 000	* 100 000	* 100 000	* 73 000	* 73 000
Electric furnace ferro-alloys-					
Ferro-chrome	* 535 000	* 553 000	* 553 000	* 635 000	* 644 000
Ferro-silico-chrome	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Ferro-manganese	* 550 000	* 735 000	* 907 000	* 1 200 000	* 1 200 000
Ferro-silico-manganese	* 30 000	* 30 000	* 30 000	* 32 000	* 32 000
Ferro-silicon	* 600 000	* 620 000	* 630 000	* 630 000	* 635 000
Other ferro-alloys	* 180 000	* 185 000	* 194 000	* 200 000	* 209 000
Silicon metal	* 47 000	* 47 000	* 57 000	* 59 000	* 59 000

Production of Ferro-alloys

Country	1977	1978	1979	1980	1981
Spain					
Electric furnace ferro-alloys-					
Ferro-chrome	16 507	13 795	20 340	16 510	17 607
Ferro-manganese	141 477	134 475	148 350	120 160	95 738
Ferro-silico-manganese	63 070	108 685	119 570	92 470	70 010
Ferro-silicon	68 316	97 647	124 870	123 430	85 563
Silicon metal	* 16 000	* 20 000	* 20 000	* 20 000	* 18 000
Sweden					
Electric furnace ferro-alloys-					
Ferro-chrome	134 452	166 238	189 299	144 089	* 145 000
Ferro-silico-chrome	37 386	25 255	28 825	26 329	* 25 000
Ferro-molybdenum	1 003	1 131	1 365	805	...
Ferro-silicon	22 383	652	—	7 741	...
Ferro-tungsten	487	440	500	423	...
Ferro-vanadium	423	616	500	348	...
Silicon metal	* 13 000	8 753	12 929	18 457	* 16 000
Turkey					
Electric furnace ferro-alloys-					
Ferro-chrome	7 858	9 688	9 545	8 650	7 586
Yugoslavia					
Electric furnace ferro-alloys-					
Ferro-chrome	36 150	51 213	65 622	* 64 000	* 75 000
Ferro-silico-chrome	5 257	7 998	6 785	* 6 400	* 8 000
Ferro-manganese	54 639	37 470	45 591	* 44 500	* 48 000
Ferro-silico-manganese	8 737	27 857	28 786	* 29 000	* 32 000
Ferro-silicon	55 513	60 189	67 884	* 66 000	* 74 000
Other ferro-alloys	1 719	3 132	3 521	* 2 700	* 3 600
Silicon metal	27 476	30 670	31 598	* 31 000	* 34 000
Egypt					
Electric furnace ferro-alloys-					
Ferro-silicon	4 557	* 4 600	* 6 000	...	...
South Africa					
Ferro-chrome	* 350 000	* 660 000	* 780 000	* 790 000	* 750 000
Ferro-silico-chrome	* 22 700	* 22 700	* 23 600	* 28 000	* 20 000
Ferro-manganese	* 310 000	* 330 000	* 560 000	* 500 000	* 450 000
Ferro-silico-manganese	* 22 000	* 22 000	* 45 000	* 60 000	* 50 000
Ferro-silicon	* 74 000	* 75 000	* 149 000	* 142 000	* 110 000
Other ferro-alloys	* 300	* 300	* 300	* 300	...
Silicon metal	* 28 000	* 33 000	* 35 000	* 30 000	* 30 000
Zimbabwe					
Ferro-chrome	149 786	139 046	175 306	194 630	192 110
Ferro-silico-chrome	17 044	—	25 116	25 116	32 692
Ferro-manganese	2 211	2 211	2 164	2 164	2 200
Canada					
Electric furnace ferro-alloys-					
Ferro-manganese	* 60 000	* 70 000	* 41 000	* 86 000	* 109 000
Ferro-silicon	114 000	130 000	95 000	139 000	110 000
Other ferro-alloys	* 12 000	* 23 000	* 12 000	* 25 000	* 34 000
Silicon metal	23 000	28 000	26 000	39 000	28 000
Dominican Republic					
Electric furnace ferro-alloys-					
Ferro-nickel	66 516	37 629	66 072	43 019	49 971
Mexico					
Electric furnace ferro-alloys-					
Ferro-chrome	2 739	3 995	4 790	—	—
Ferro-silico-magnesium	—	598	400	1 436	(d)
Ferro-manganese	99 304	107 276	123 640	125 751	* 125 000
Ferro-silico-manganese	26 911	33 735	31 037	30 544	* 30 000
Ferro-silicon	22 888	24 606	24 286	27 634	* 25 000
Other ferro-alloys	156	173	125	102	* 2 000

Production of Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
USA					
Ferro-chrome	182 052	159 393	224 047	167 292	149 625
Ferro-silico-chrome (e)	62 695	38 965	43 221	49 176	56 535
Ferro-manganese	303 121	247 235	287 670	171 886	174 805
Ferro-silico-manganese	108 638	128 756	149 730	170 838	157 182
Ferro-niobium	1 015	1 093	679	1 413	805
Ferro-phosphorus	80 417	81 714	79 217	105 671	73 071
Ferro-silicon	704 000	638 000	646 000	507 000	499 000
Other ferro-alloys (b)	41 758	110 612	138 912	114 509	124 873
Silicon metal	107 000	105 000	132 000	115 000	118 000
Argentina					
Electric furnace ferro-alloys-					
Ferro-manganese	34 644	26 291	33 951	20 479	* 20 000
Ferro-silicon	15 575	12 038	16 731	11 953	* 12 000
Other ferro-alloys	6 381	10 406	17 545	13 959	* 13 000
Brazil					
Electric furnace ferro-alloys-					
Ferro-chrome	65 969	62 180	84 514	93 000	117 000
Ferro-silico-chrome	4 121	4 698	7 239	8 000	10 000
Ferro-manganese	128 922	117 843	133 563	140 600	128 000
Ferro-silico-manganese	75 108	106 249	127 503	134 300	122 000
Ferro-molybdenum	1 117	1 690	1 469	(d)	(d)
Ferro-nickel	10 860	10 976	11 355	11 280	10 744
Ferro-niobium	6 809	10 251	13 113	17 530	14 632
Ferro-silicon	60 290	72 842	76 000	108 900	120 000
Ferro-silico-calcium-magnesium	11 916	15 698	21 063))
Other ferro-alloys	1 194	1 239	2 166	25 000	23 000
Silicon metal	5 751	6 781	6 594	13 302	18 957
Chile					
Electric furnace ferro-alloys-					
Ferro-manganese	4 267	5 853	5 221	5 200	* 5 000
Ferro-silico-manganese	283	132	256	300	* 250
Ferro-silicon	3 168	2 173	5 063	5 000	* 4 500
Other ferro-alloys	886	66	892	1 000	* 800
China					
Ferro-chrome	* 70 000	* 90 000	* 90 000	* 90 000	* 90 000
Ferro-manganese	* 230 000	* 310 000	* 340 000	* 340 000	* 336 000
Ferro-silicon	* 110 000	* 150 000	* 160 000	* 168 000	* 160 000
Other ferro-alloys	* 36 000	* 40 000	* 50 000	* 50 000	* 50 000
Silicon metal	* 4 000	* 8 000	* 9 000	* 13 500	* 13 500
India					
Electric furnace ferro-alloys-					
Ferro-chrome	18 068	21 545	22 249	16 494	31 066
Ferro-silico-chrome	4 155	3 892	3 851	4 050	4 408
Ferro-manganese	193 908	219 993	186 803	158 308	208 836
Ferro-silico-manganese	10 240	2 891	5 282	12 531	8 621
Ferro-silicon	44 675	52 274	53 087	54 319	60 253
Other ferro-alloys	592	743	752	613	453
Silicon metal	919	2 824	2 342	2 498	* 2 500
Japan					
Electric furnace ferro-alloys-					
Ferro-calcium-silicon	5 634	1 896	3 349	3 859	2 590
Ferro-chrome	398 782	274 421	365 490	402 997	306 104
Ferro-silico-chrome	11 411	9 208	12 623	20 531	10 469
Ferro-manganese	527 418	455 729	603 019	569 147	567 746
Ferro-silico-manganese	333 692	303 249	299 680	310 714	282 852
Ferro-molybdenum	3 705	3 904	3 406	4 367	3 056
Ferro-nickel	224 339	198 482	303 716	276 829	244 135
Ferro-niobium	1 281	1 193	1 207	1 159	825
Ferro-silicon	291 446	270 052	319 553	303 754	234 524
Ferro-tungsten	371	243	251	242	362
Ferro-vanadium	2 546	3 193	4 628	3 526	4 063
Other ferro-alloys	7 352	9 637	9 298	10 360	3 167
Silicon metal	37 195	14 515	15 422	15 400	11 800

Production of Ferro-alloys

Country	1977	1978	1979	1980	1981
Korea, Dem. P.R. of					
Ferro-manganese	* 56 000	* 65 000	* 65 000	* 70 000	* 70 000
Ferro-silicon	* 23 000	* 30 000	* 30 000	* 30 000	* 30 000
Other ferro-alloys	* 12 000	* 14 000	* 14 000	* 20 000	* 20 000
Korea, Republic of					
Electric furnace ferro-alloys-					
Ferro-manganese	* 36 300	* 47 200	* 70 800	* 54 000	* 68 300
Ferro-silicon	26 826	30 800	39 900	30 000	32 000
Taiwan					
Electric furnace ferro-alloys-					
Ferro-silicon	24 672	29 785	37 500	35 326	39 585
Thailand					
Electric furnace ferro-alloys-					
Ferro-manganese	706	747	2 187	112	369
Ferro-silicon	—	1 635	3 041	60	280
Australia (c)					
Electric furnace ferro-alloys-					
Ferro-manganese	71 012	95 393	86 875	94 146	* 85 000
Ferro-silico-manganese (60% Mn)	23 430	—	19 596	18 376	* 19 000
Ferro-silicon	18 667	18 943	18 990	18 435	* 18 000
New Caledonia					
Electric furnace ferro-alloys-					
Ferro-nickel	116 245	77 908	123 306	132 500	113 800

(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'

(e) Includes other chromium alloys

Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Pig-iron	47 204	33 753	22 535	30 266	(f) 7 068
Sponge & powder	1 480	515	896	534	(f) 138
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	5 194	4 357	4 805	3 587	(f) 1 698
Ferro-chrome	1 919	1 593	1 305	626	(f) 879
Ferro-silico-chrome	75	52	705	—	(f) —
Ferro-manganese	684	1 959	6 964	971	(f) 5 172
Ferro-silico-manganese	—	169	763	615	(f) —
Ferro-molybdenum	1 701	1 507	1 958	2 179	(f) 624
Ferro-nickel	—	—	—	—	(f) 315
Ferro-niobium & ferro- niobium-tantalum	352	395	416	416	(f) 30
Ferro-silicon	1 480	1 948	1 782	1 352	(f) 541
Ferro-titanium	2 592	3 844	3 661	3 790	(f) 1 923
Ferro-tungsten	3 172	3 732	3 306	78	(f) —
Ferro-vanadium	99	137	190	75	(f) 53
Other ferro-alloys	1 959	1 497	1 548	4 228	(f) 1 514
Ingots, blooms, billets	415 131	332 569	321 509	186 558	(f) 92 804
Scrap (a)	937 985	1 557 902	1 334 852	2 784 953	(f) 1 770 931
Belgium-Luxembourg					
Pig-iron	56 473	35 675	22 555	7 593	8 574
Spiegeleisen	405	235	61	85	482
Sponge & powder	258	258	585	410	632
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	146	72	130	91	335
Ferro-chrome	14 665	9 559	1 572	1 544	3 858
Ferro-manganese	49 539	30 450	44 152	37 282	12 128
Ferro-silicon	5 094	4 223	4 187	3 283	4 633
Ferro-titanium & ferro- silico-titanium	1 212	1 894	1 637	925	1 861
Ferro-tungsten & ferro- silico-tungsten	90	176	18	0	16
Ferro-silico-manganese, ferro- molybdenum & ferro-vanadium	15 215	24 451	35 494	29 659	31 093
Other ferro-alloys	1 022	1 286	2 569	1 169	1 251
Ingots, blooms, billets	644 272	642 768	850 298	708 304	595 099
Scrap	501 333	537 558	550 135	536 641	572 788
Denmark					
Ingots, blooms, billets	6 734	2 736	26 675	4 057	159
Scrap	57 006	81 429	90 641	100 358	184 867
France					
Pig-iron	192 285	127 570	360 260	284 909	195 674
Spiegeleisen	2 683	689	1 311	850	633
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	1 021	1 600	2 323	1 761	1 126
Ferro-chrome	8 256	9 834	7 812	1 300	4 742
Ferro-silico-chrome	4 369	2 564	2 594	2 217	2 095
Ferro-manganese	269 411	321 088	347 504	321 477	383 596
Ferro-silico-manganese	9 299	10 778	11 523	9 361	11 507
Ferro-molybdenum	837	372	498	486	1 115
Ferro-nickel	50 574	34 569	98 023	61 560	48 611
Ferro-silicon	78 631	78 704	92 671	80 342	70 137
Ferro-silico-magnesium	8 636	7 744	7 331	6 916	4 914
Ferro-silico-zirconium	3 194	3 592	4 137	3 144	2 914
Ferro-titanium & ferro- silico-titanium	1 258	1 608	2 019	1 412	1 400
Ferro-tungsten & ferro- silico-tungsten	662	1 046	330	339	167
Ferro-vanadium	112	513	497	184	254
Other ferro-alloys	23 922	26 991	25 120	23 299	25 664
Ingots, blooms, billets	339 266	265 339	292 670	365 400	265 725
Scrap	3 357 071	3 662 495	3 526 074	3 312 235	3 183 184

Exports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
Germany, Federal Republic of					
Pig-iron	704 029	736 119	948 489	1 002 225	781 992
Spiegeleisen	520	2 716	1 752	4 763	1 834
Sponge & powder	15 987	51 941	31 638	30 388	80 160
Ferro-chrome	36 426	31 419	27 655	33 482	55 675
Ferro-silico-chrome	1 629	1 623	3 583	1 417	1 179
Ferro-manganese	74 037	49 391	95 273	36 397	48 386
Ferro-silico-manganese	2 215	742	3 590	5 598	7 832
Ferro-molybdenum	1 328	375	481	1 227	912
Ferro-nickel	54	9	422	86	555
Ferro-niobium	(c)	880	970	1 146	980
Ferro-silicon	23 244	25 818	31 553	55 714	60 911
Ferro-titanium & ferro-silico-titanium	232	277	702	541	881
Ferro-tungsten & ferro-silico-tungsten	133	216	201	140	187
Ferro-vanadium	1 373	1 511	1 462	887	2 470
Other ferro-alloys	12 905	10 177	12 509	10 372	11 302
Ingots, blooms, billets	981 046	1 174 858	1 334 228	1 487 341	1 289 143
Scrap	2 481 079	2 765 240	2 998 078	3 076 793	3 406 990
Greece					
Ferro-nickel	44 697	67 458	65 526	49 468	49 349
Irish Republic					
Scrap	7 910	54 100	40 991	84 458	73 308
Italy					
Pig-iron	672	5 457	6 947	1 915	244
Sponge & powder	819	2 035	4 460	3 453	1 607
Ferro-chrome & ferro-silico-chrome	11 682	8 455	27 038	10 331	8 805
Ferro-manganese	2 152	10 450	7 982	1 897	672
Ferro-silico-manganese	247	1 001	905	862	8 380
Ferro-molybdenum	954	760	732	1 273	430
Ferro-silicon	4 336	7 345	11 001	5 579	6 626
Ferro-silico-magnesium	2 075	1 162	1 633	1 093	1 055
Ferro-titanium	1 069	1 751	1 556	931	1 241
Ferro-vanadium	264	265	435	190	65
Other ferro-alloys	144	572	756	1 098	2 067
Ingots, blooms, billets	65 779	154 897	152 109	188 443	243 707
Scrap	11 022	6 683	13 514	8 584	22 633
Netherlands					
Pig-iron	139	1 876	22 962	9 694	4 828
Sponge & powder	20	41	107	55	26
Ferro-chrome	9 523	10 402	1 916	6 641	18 243
Ferro-manganese	2 606	1 326	449	351	1 059
Ferro-silico-manganese	—	102	—	2 022	377
Ferro-molybdenum	131	60	172	143	103
Ferro-nickel	23	4	129	0	139
Ferro-silicon	3 236	1 000	4 400	2 616	2 391
Ferro-vanadium	620	700	804	49	19
Other ferro-alloys	293	340	537	172	256
Ingots, blooms, billets	500 088	589 780	727 913	880 096	986 573
Scrap	925 075	1 190 000	1 241 281	1 194 467	1 251 711
Austria					
Pig-iron	143	—	—	236	—
Ferro-alloys	9 383	9 280	10 088	8 904	10 904
Ingots & blooms	4 283	5 181	7 009	8 272	11 200
Scrap	7 530	7 344	13 904	12 721	12 315
Bulgaria					
Pig-iron	37 100	48 000	12 000	34 000	33 000
Ferro-alloys	27 000	24 000	22 000	23 000	31 000
Ingots, blooms, billets (g)	* 363 500	* 307 500	* 412 700	* 174 500	* 109 100
Scrap	61 000	167 000	130 000	155 000	85 000

Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Finland					
Pig-iron	68 633	...	32 513	14 845	275
Ferro-chrome & ferro-silico-chrome	26 199	39 332	31 409	16 637	25 459
Other ferro-alloys	811	3 469	326	345	1
Blooms & billets	214 306	190 809	163 265	129 462	206 019
Scrap	3 235	973	3 661	194	206
German Democratic Republic					
Pig-iron	7 600	58 100	* 47 600	...	...
Ingots, blooms, billets	505 000	374 000	296 000	344 000	688 000
Scrap	26 200	13 700	* 1 540	...	...
Hungary					
Pig-iron	116 093	47 262	15 477	2 149	—
Scrap	71 000	42 414	36 766	30 955	32 283
Iceland					
Scrap	2 224	8 842	3 343	2 906	3 125
Malta					
Scrap	4 338	9 351	3 441	5 828	3 727
Norway					
Pig-iron	88 185	106 518	140 198	140 260	70 568
Ferro-chrome	14 887	17 952	12 950	8 009	10 540
Ferro-silico-chrome	140	433	7 441	13 332	948
Ferro-manganese	244 041	266 733	293 874	245 525	209 631
Ferro-silico-manganese	117 499	162 498	171 920	164 019	183 737
Ferro-silicon	228 180	314 673	304 519	268 894	271 438
Ferro-vanadium	903	821	1 107	788	420
Other ferro-alloys	14 946	16 909	16 601	8 554	8 324
Ingots, blooms, billets	149 801	217 526	239 469	211 615	227 655
Scrap	14 124	36 146	38 025	38 691	32 536
Portugal					
Pig-iron	238	0	116	9	41
Ferro-manganese	45 094	63 778	66 581	56 456	26 615
Ferro-silico-manganese	4 533	26 804	14 723	21 038	(c)
Ferro-silicon	14 216	12 994	11 131	7 455	5 577
Ferro-tungsten	169	140	193	222)
Other ferro-alloys	—	—	30	—	) 13 805
Scrap	4 166	9 716	4 796	4 477	4 680
Romania					
Pig-iron & ferro-alloys	* 61 000	* 117 600	* 71 000	...	...
Ingots, blooms, billets	* 545 000	* 641 000	* 541 000	* 34 000	* 66 000
Scrap	* 2 200	* 3 400	* 1 140	...	...
Soviet Union					
Pig-iron	* 4 500 000	* 4 500 000	* 4 000 000	* 4 225 000	* 4 225 000
Ferro-alloys	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Scrap	2 189 347	1 678 578	1 987 827	2 505 260	2 681 421
Spain					
Pig-iron	56	64 411	81 973	31 290	18 950
Ferro-silico-aluminium, ferro-silico-mangano-aluminium & ferro-silico-alumino-calcium	361	—	—	—	(c)
Ferro-chrome	3 465	3 882	9 230	8 035	(c)
Ferro-manganese	29 444	47 242	53 481	31 333	32 030
Ferro-silico-manganese	5 427	28 770	40 613	24 666	(c)
Ferro-molybdenum	26	588	461	520	(c)
Ferro-silicon	17 126	39 760	67 632	54 703	42 834
Ferro-titanium & ferro-silico-titanium	0	16	14	—)
Other ferro-alloys	1 019	1 387	2 396	2 142	) 17 626
Ingots, blooms, billets	22 562	36 155	221 472	488 915	475 402

Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Sweden					
Pig-iron	156 208	510 538	150 319	179 571	45 103
Sponge & powder	96 244	95 035	116 524	97 664	97 493
Ferro-chrome	86 080	152 742	137 982	92 305	105 641
Ferro-silico-chrome	4 677	10 503	3 603	1 125	182
Ferro-manganese	293	463	1 000	1 025	770
Ferro-silico-manganese	325	209	385	—	80
Ferro-molybdenum	1 581	872	1 239	760	794
Ferro-nickel	501	1 006	5	17	—
Ferro-silicon	15 350	663	258	3 683	15 160
Ferro-titanium	80	892	686	552	911
Ferro-tungsten	309	176	163	184	247
Ferro-vanadium	418	446	405	226	156
Other ferro-alloys	60	100	107	628	841
Ingots, blooms, billets	274 900	520 743	520 329	408 426	258 842
Scrap	74 652	78 832	17 366	16 231	13 829
Switzerland					
Pig-iron	191	338	229	670	789
Sponge & powder	118	300	478	551	463
Ferro-silicon	428	128	114	126	112
Other ferro-alloys	708	1 582	340	596	896
Ingots, blooms, billets	15 778	22 394	18 808	8 465	2 106
Scrap	61 938	88 080	100 690	63 738	128 334
Turkey					
Pig-iron	10 725	19 963	17 744	8 000	6 254
Ferro-chrome	7 965	25 921	32 075	27 500	27 850
Yugoslavia					
Pig-iron	73 971	22 330	62 155	47 362	22 674
Ferro-chrome	35 939	59 980	57 170	50 130	63 000
Ferro-manganese	20 460	29 585	20 767	8 049	21 304
Ferro-silico-manganese	10 305	19 970	20 685	23 240	(c)
Ferro-silicon	40 502	46 878	46 210	37 705	62 000
Other ferro-alloys	55	231	3 625	2 435	18 674
Ingots, blooms, billets	9 901	16 551	22 494	21 405	23 750
Scrap	42 399	76 407	48 302	44 833	59 229
Algeria					
Pig-iron	99 147	102 300	84 070	128 699	...
Scrap	74 246	82 474	60 333	65 513	...
Cameroon					
Scrap	8 272	800	2 552	...	...
Egypt					
Pig-iron & spiegeleisen	14 671	1 439	—	—	...
Ivory Coast					
Scrap	19 806	19 031	21 714	...	18 434
Kenya					
Scrap	3 211	3 949	68	294	...
Morocco					
Scrap	18 648	44 774	88 559	34 667	...
Senegal					
Scrap	12 613	11 562	...	...	...
South Africa					
Pig-iron (g)	...	* 15 500	* 88 000	* 90 000	* 104 200
Ferro-chrome	356 200	519 400	706 700	596 800	(g)* 475 000
Ferro-manganese (g)	* 236 400	* 368 100	* 469 600	* 362 000	* 404 600
Ferro-silicon (g)	* 28 100	* 26 500	* 34 200	* 33 500	* 18 400
Other ferro-alloys (g)	* 5 600	* 13 400	* 14 500	* 15 100	* 22 100
Ingots, blooms, billets (g)	* 155 400	* 85 200	* 70 900	* 76 900	* 32 200
Scrap (g)	* 10 400	* 23 300	* 4 300	* 5 700	* 3 300
Sudan					
Scrap	4 500	—	4 547	3 929	...

Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Tunisia					
Ingots, blooms, billets	—	20 400	5 797	—	...
Scrap	11	1 280	14	791	...
Zimbabwe					
Pig-iron	—	—	7 594	36 041	...
Ferro-chrome	102 094	100 172	143 861	231 143	...
Ferro-silico-chrome	4 830	1 376	27 088	26 163	...
Blooms & billets	403 478	324 466	237 891	305 545	...
Scrap	26 066	15 927	4 685	2 190	...
Canada					
Pig-iron	505 277	544 716	255 523	562 351	466 424
Sponge	51 929	57 400	138 334	178 352	123 282
Ferro-manganese	23 150	20 194	12 043	11 298	57 182
Ferro-silicon	45 512	60 197	40 732	52 377	52 455
Other ferro-alloys	2 034	13 029	9 964	8 418	6 333
of which: Re-exports	236	3 133	2 887	2 184	1 017
Ingots, blooms, billets	239 964	280 963	120 787	327 140	894 638
Scrap	678 418	874 329	1 032 714	784 787	573 213
Dominican Republic					
Ferro-nickel	59 946	50 007	64 500	46 614	49 073
Mexico					
Ferro-alloys	27 441	34 509	39 240	39 464	...
Trinidad & Tobago					
Scrap	865	1 822	1 001	18	...
USA					
Pig-iron	58 622	69 610	149 751	79 807	19 186
Spiegeleisen	36))		
Sponge & powder	14 728	14 593	18 824	23 780	16 581
Ferro-chrome & ferro-silico-chrome	13 786	18 717	14 516	29 807	13 906
Ferro-manganese	5 821	8 966	23 480	11 419	14 026
Ferro-silico-manganese	...	4 360	4 756	6 094	1 726
Ferro-molybdenum	724	665	762	799	257
Ferro-phosphorus	2 160	3 781	33 831	40 544	6 771
Ferro-silicon	48 252	11 549	20 430	25 039	14 379
Ferro-vanadium	624	1 187	818	728	394
Other ferro-alloys	7 299	12 912	6 019	4 297	5 890
Ingots, blooms, billets	225 171	219 757	328 566	829 493	505 588
Scrap (a)	5 606 707	8 452 531	10 133 680	10 174 603	5 927 684
Argentina					
Ingots, blooms, billets	1	180 769	233 272	...	...
Brazil					
Pig-iron	850 604	1 026 479	989 343	841 330	714 446
Ferro-chrome	46 661	42 393	48 205	45 921	67 330
Ferro-manganese	33 876	40 115	40 256	37 832	36 490
Ferro-nickel	415	—	—	—	1 800
Ferro-niobium	7 052	10 852	12 787	14 566	14 542
Ferro-silicon	2 347	12 308	17 615	29 664	68 800
Ferro-silico-spiegeleisen & silico-manganese	5 453	33 573	42 915	35 580	62 976
Ferro-silico-mangano-aluminium	17 600	6 700	300	400	—
Other ferro-alloys	276	1 573	5 204	5 839	8 130
Ingots, blooms, billets	113 392	332 920	479 585	114 070	130 955
Chile					
Ferro-molybdenum	877	357	...	...	...
Ferro-silicon	647	358	...	...	...
Venezuela					
Sponge	—	23 764	64 778	...	...
Ferro-silicon	4 492	11 999	21 346	...	...
Brunei					
Scrap	19	4 021	6 533	177	...
Cyprus					
Scrap (Re-exports)	1 558	6 215	9 312	5 877	...

Exports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
Hong Kong					
Ingots, blooms, billets (Re-exports)	814	5 352	9 692	13 975	9 800
Scrap	227 285	286 379	304 230	329 649	364 360
of which: Re-exports	5 571	19 978	39 955	55 173	27 487
India					
Pig-iron	853 998	298 743	104 470	...	...
Ferro-chrome	9 992	9 093	9 001	...	...
Ferro-manganese	19 300	76 200	52 681	...	...
Ferro-silicon	4 249	7 379	14 014	...	...
Ingots, blooms, billets (d)	306 277	121 443	27 130	...	...
Scrap	152 330	75 828	11 772	...	...
Israel (b)					
Scrap	2 473	3 969	11 054	13 942	...
Japan					
Pig-iron	563 911	32 678	50 225	5 852	1 510
Powder	2 076	2 582	2 951	2 578	3 847
Ferro-chrome	16 307	6 365	19 852	8 896	3 470
Ferro-manganese	48 634	37 147	92 886	40 271	34 866
Ferro-silico-manganese	3 112	342	2 377	420	1 158
Ferro-nickel	2 268	21 773	13 193	17 125	20 742
Ferro-silicon	2 972	2 336	2 003	2 695	2 199
Ferro-vanadium	13	71	13	97	84
Other ferro-alloys	2 502	2 266	2 121	1 035	1 318
Ingots, blooms, billets	427 861	107 256	118 295	188 933	117 990
Scrap	210 740	164 395	150 562	159 366	186 783
Korea, Dem. P.R. of					
Pig-iron	* 51 200	* 67 200	* 51 500	* 82 200	* 66 000
Korea, Republic of					
Pig-iron	15 070	)	32 461	150 674	1 169 188
Ferro-manganese	110	)	—	35	—
Ferro-silico-manganese	4 302	) 30 000	1 100	220	—
Ferro-silicon	14 336	)	6 855	348	165
Other ferro-alloys	516	)	3 294	1 897	3
Ingots, blooms, billets	18 077	166 000	717 655	942 779	339 834
Scrap	1 313	8 000	12 565	9 675	25 109
Kuwait					
Scrap	14 334	6 019	21 460	62 200	...
Malaysia					
Scrap	11 309	13 393	13 758	...	...
Philippines					
Ferro-silicon	4 778	11 399	10 117	14 691	25 582
Other ferro-alloys	—	756	1 021	3 310	5 686
Saudi Arabia					
Scrap	49	110	730	15 931	52 193
Singapore					
Pig-iron	3 715	3 784	11 095	9 164	7 502
Ingots & blooms	1 476	7 872	6 521	6 641	10 463
Scrap	6 858	3 745	1 710	5 475	1 602
Syria					
Scrap	5 002	5 217	2 190	897	—
Taiwan					
Pig-iron	1 170	527	331	761	713
Ferro-chrome	432	582	1 925	691	—
Ferro-manganese	6 612	3 516	7 343	9 107	2 028
Ferro-silicon	9 642	12 481	10 415	7 910	764
Other ferro-alloys	659	2 827	1 245	5 574	5 790
Ingots, blooms, billets	15 147	183 208	408 464	120 237	204 568
Scrap	35 473	156 390	73 465	12 863	128 251
Australia					
Pig-iron	646 560	710 514	642 510	514 898	158 262
Ferro-alloys	20 630	33 743	49 804	30 225	39 320
Ingots, blooms, billets	1 280 410	1 007 746	610 803	306 074	378 418
Scrap	576 644	515 804	610 351	749 203	665 067

Exports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Fiji					
Scrap	1 232	1 389	1 192	1 772	...
of which: Re-exports	1 232	1 303	415	858	...
New Caledonia					
Ferro-nickel	124 325	98 984	180 793	128 796	109 300
New Zealand (e)					
Scrap	2 161	1 391	1 519	2 159	2 152

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) Six months data only
- (g) IGS estimates, based on known imports into certain countries

Imports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
United Kingdom					
Pig-iron	150 138	131 270	132 248	168 631	110 683
Sponge & powder	26 834	34 635	37 688	21 694	16 137
Ferro-chrome	73 337	48 460	75 400	42 927	62 882
Ferro-silico-chrome	3 866	2 529	2 004	435	104
Ferro-manganese	86 116	83 695	80 766	52 003	56 412
Ferro-silico-manganese	21 985	22 023	25 730	24 651	22 307
Ferro-molybdenum	880	779	766	597	882
Ferro-nickel	16 857	15 406	18 854	2 449	6 128
Ferro-niobium	504	724	830	744	740
Ferro-silicon	93 088	95 458	115 257	68 997	74 715
Ferro-titanium	192	349	355	174	58
Ferro-tungsten	335	249	282	124	96
Ferro-vanadium	446	445	544	483	835
Other ferro-alloys	14 770	13 866	14 772	10 630	9 811
Ingots, blooms, billets	244 251	254 811	337 206	350 357	335 735
Scrap (a)	100 388	43 104	35 247	26 452	20 760
Belgium-Luxembourg					
Pig-iron	166 925	119 227	104 925	97 605	91 522
Spiegeleisen	366	407	173	892	166
Sponge & powder	1 623	1 329	2 967	14 035	1 595
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	2 052	1 546	2 508	1 555	1 239
Ferro-chrome	35 927	24 205	31 031	27 588	25 474
Ferro-silico-chrome	992	965	3 927	1 340	1 527
Ferro-manganese	71 741	77 262	84 315	71 291	91 262
Ferro-silico-manganese	10 642	18 854	22 336	23 454	19 956
Ferro-molybdenum	163	269	359	260	446
Ferro-nickel	1 441	2 566	7 602	2 660	3 226
Ferro-silicon	30 496	35 587	38 237	32 584	38 202
Ferro-titanium & ferro- silico-titanium	307	314	264	219	225
Ferro-tungsten & ferro- silico-tungsten	46	149	33	15	21
Ferro-vanadium	91	100	190	121	125
Other ferro-alloys	1 486	1 877	1 895	1 655	1 679
Ingots, blooms, billets	647 800	683 683	685 017	665 631	443 721
Scrap	493 209	979 683	970 474	859 319	955 710
Denmark					
Pig-iron	24 984	19 184	21 647	36 649	48 549
Sponge & powder	897	940	537	1 677	484
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	2 042	2 828	2 908	2 844	1 470
Ferro-chrome & ferro- silico-chrome	1 411	1 152	1 431	1 198	380
Ferro-manganese	6 000	9 995	7 254	6 258	3 698
Ferro-silico-manganese	1 670	2 952	3 984	2 534	1 901
Ferro-molybdenum	11	18	16	16	20
Ferro-silicon	5 677	5 142	5 334	4 673	3 114
Other ferro-alloys	129	1 109	143	63	112
Ingots, blooms, billets	19 449	10 397	9 702	82 652	65 272
Scrap	12 815	262 825	284 249	216 791	180 078

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
France					
Pig-iron	459 512	407 362	446 367	450 491	405 921
Spiegeleisen	233	76	90	1 137	56
Sponge & powder	23 238	12 781	23 656	47 475	21 208
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	102	44	127	134	62
Ferro-chrome	38 711	47 484	64 959	113 914	113 284
Ferro-silico-chrome	40	5	193	334	157
Ferro-manganese	34 916	30 114	48 592	48 575	33 820
Ferro-silico-manganese	4 270	12 779	29 489	33 778	34 275
Ferro-molybdenum	666	1 145	1 272	1 471	1 630
Ferro-nickel	96 728	72 364	159 817	115 864	83 279
Ferro-silicon	12 788	12 308	11 132	20 647	28 720
Ferro-silico-magnesium	35	63	298	332	191
Ferro-titanium & ferro- silico-titanium	449	425	356	265	436
Ferro-tungsten & ferro- silico-tungsten	119	95	116	116	90
Ferro-vanadium	315	340	316	449	683
Other ferro-alloys	999	1 451	1 450	1 397	1 710
Ingots, blooms, billets	847 923	1 013 801	1 252 259	999 268	628 525
Scrap	287 030	393 803	422 289	455 082	346 541
Germany, Federal Republic of					
Pig-iron	311 445	293 221	246 036	249 972	200 268
Spiegeleisen	41	37	17	99	—
Sponge & powder	14 669	15 696	38 170	38 543	17 020
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	107	141	323	266	210
Ferro-chrome	129 125	194 540	230 291	300 020	146 305
Ferro-silico-chrome	18 922	5 491	11 472	12 844	12 870
Ferro-manganese	158 512	160 026	152 106	136 633	103 013
Ferro-silico-manganese	68 585	101 215	115 644	129 854	121 177
Ferro-molybdenum	3 392	3 140	3 393	4 863	5 097
Ferro-nickel	38 997	60 668	71 060	71 714	64 805
Ferro-niobium	1 660	2 082	3 346	2 363	3 172
Ferro-silicon	141 033	159 410	186 795	216 857	141 494
Ferro-titanium & ferro- silico-titanium	2 142	3 952	3 573	2 947	3 199
Ferro-tungsten & ferro- silico-tungsten	209	499	253	553	393
Ferro-vanadium	1 554	1 961	2 206	1 199	1 691
Other ferro-alloys	9 169	4 932	4 942	3 862	6 267
Ingots, blooms, billets	1 166 408	1 305 977	1 151 522	755 350	862 386
Scrap	1 419 455	1 546 633	1 605 401	1 504 194	1 336 021
Greece					
Pig-iron	17 387	15 275	15 014	9 512	16 163
Ferro-manganese	3 284	2 054	2 843	2 663	2 628
Ferro-silico-manganese	2 878	5 634	7 850	8 694	...
Ferro-silicon	3 930	2 534	4 263	2 489	3 892
Other ferro-alloys	547	361	190	84	109
Ingots, blooms, billets	54 895	298 630	128 962	260 042	32 939
Scrap	93 359	198 132	231 285	239 004	288 145
Irish Republic					
Pig-iron & sponge	785	2 309	3 012	2 325	1 906
Ferro-alloys	1 013	1 594	1 051	651	1 038
Ingots, blooms, billets	2 139	1 389	4 730	10 352	1 521
Scrap	2 328	9 051	5 428	7 926	3 845

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Italy					
Pig-iron	679 103	386 800	513 962	665 678	282 477
Spiegeleisen	1 038	413	3 237	4 190	2 101
Sponge & powder	28 453	57 947	97 080	53 169	51 988
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	1 113	1 297	2 140	2 389	1 284
Ferro-chrome	58 102	84 085	94 329	86 905	73 434
Ferro-silico-chrome	3 559	4 243	5 242	4 491	1 960
Ferro-silico-magnesium	1 110	2 008	1 796	1 630	1 591
Ferro-manganese	127 571	106 151	121 808	120 184	99 713
Ferro-silico-manganese	25 597	28 553	30 807	35 837	28 784
Ferro-molybdenum	2 732	1 175	1 045	694	798
Ferro-nickel	16 652	14 562	21 905	18 259	11 671
Ferro-niobium	1 708	1 125	1 882	2 783	2 101
Ferro-silicon	42 134	47 099	57 019	52 901	55 103
Ferro-titanium & ferro- silico-titanium	723	1 254	1 290	776	591
Ferro-tungsten & ferro- silico-tungsten	75	53	117	233	106
Ferro-vanadium	270	661	930	822	623
Other ferro-alloys	981	989	1 601	2 093	762
Ingots, blooms, billets	552 243	499 713	871 468	1 063 357	590 777
Scrap	5 867 835	6 566 082	6 891 233	7 413 441	5 539 595
Netherlands					
Pig-iron	38 146	41 252	64 769	54 797	32 322
Sponge & powder	3 206	2 803	3 755	3 273	3 066
Ferro-aluminium, ferro-silico- aluminium & ferro-silico- mangano-aluminium	127	27	12	19	22
Ferro-chrome	12 264	10 709	2 983	9 028	19 889
Ferro-silico-chrome	40	76	450	433	99
Ferro-manganese	25 221	25 576	26 526	19 031	16 902
Ferro-silico-manganese	2 303	4 163	4 094	6 536	3 606
Ferro-molybdenum	156	91	122	127	126
Ferro-silicon	7 827	7 731	8 898	9 877	7 884
Ferro-titanium & ferro- silico-titanium	44	83	62	137	159
Ferro-tungsten & ferro- silico-tungsten	42	0	25	3	12
Ferro-vanadium	23	9	96	30	43
Other ferro-alloys	596	316	406	853	523
Ingots, blooms, billets	208 916	229 725	254 712	169 594	117 001
Scrap	112 868	166 358	125 018	153 115	236 806
Albania					
Ferro-alloys (g)	* 900	* 500	* 4 500	* 4 600	* 4 600
Austria					
Pig-iron	89 718	136 317	87 402	91 133	77 097
Spiegeleisen	75	85	108	92	—
Sponge & powder	4 170	6 153	5 566	10 373	3 447
Ferro-chrome	24 879	26 085	28 520	24 578	16 827
Ferro-manganese	18 461	20 525	26 275	23 070	21 804
Ferro-molybdenum	729	145	255	109	31
Ferro-niobium & ferro- niobio-tantalum	96	245	396	202	336
Ferro-silicon	12 643	15 411	16 046	14 020	13 368
Ferro-titanium	332	385	523	414	506
Ferro-tungsten	278	424	88	64	98
Ferro-vanadium	152	284	245	207	170
Other ferro-alloys	11 289	12 817	15 715	11 810	10 220
Ingots & blooms	183 041	305 990	141 548	141 810	108 583
Scrap	79 099	115 474	134 169	143 216	169 751
Bulgaria					
Pig-iron	366 459	409 762	356 444	413 478	434 601
Ingots, blooms, billets	* 238 000	* 401 000	* 386 000	* 595 000	* 708 000
Czechoslovakia					
Pig-iron	833 000	919 000	732 000	809 000	843 000
Ingots, blooms, billets	* 86 000	* 98 000	* 152 000	* 36 000	* 20 000
Scrap	* 44 000	* 49 000	1 689 000	...	...

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Finland					
Pig-iron	548	2 212	14 364	36 881	19 727
Sponge & powder	1 121	1 878	1 877	4 285	1 737
Ferro-chrome & ferro-silico-chrome	1 171	2 556	1 889	4 698	2 592
Ferro-manganese	2 336	2 955	4 272	3 881	3 606
Ferro-silico-manganese	10 902	12 924	16 049	17 148	13 873
Ferro-molybdenum	168	170	294	375	287
Ferro-silicon	10 918	8 728	10 492	10 125	9 195
Ferro-titanium	126	201	201	239	272
Ferro-vanadium	36	83	104	78	104
Other ferro-alloys	1 015	5 416	14 134	1 171	7 210
Blooms & billets	5 773	13 639	1 814	5 914	5 241
Scrap	63 215	22 832	88 213	104 581	62 095
German Democratic Republic					
Pig-iron	618 600	773 900	654 000	675 900	646 500
Ferro-alloys	29 000	22 000	44 000	66 000	74 000
Ingots, blooms, billets	1 761 000	1 911 000	2 057 000	2 142 000	2 312 000
Scrap	496 000	546 000	708 000	908 000	693 000
Hungary					
Pig-iron	227 435	251 068	223 978	255 823	289 546
Ferro-chrome	6 066	6 602	8 861	7 662	6 547
Ferro-manganese	29 331	40 136	46 084	62 023	44 431
Ferro-molybdenum	251	198	322	397	548
Ferro-silicon	4 109	6 530	6 525	6 556	6 863
Other ferro-alloys	19 053	17 732	13 682	10 818	15 237
Ingots, blooms, billets	42 858	13 351	7 101	7 083	2 956
Malta					
Ingots, blooms, billets	3 925	4 194	4 531	5 552	3 734
Norway					
Pig-iron	10 913	6 362	8 916	10 835	11 712
Ferro-alloys	490	1 265	2 639	1 925	3 106
Ingots, blooms, billets	2 869	2 135	18 079	36 975	3 392
Scrap	18 346	10 064	6 418	52 925	23 571
Poland					
Pig-iron & ferro-alloys	1 820 950	1 817 877	1 483 909	1 584 372	1 545 215
Scrap	30 064	9 000	32 000	20 000	51 339
Portugal					
Pig-iron	3 234	1 941	8 289	10 116	11 260
Ferro-manganese	20	2 210	122	154	111
Ferro-silico-manganese	106	1	88	35	(d)
Ferro-silicon	443	435	276	518	677
Other ferro-alloys	488	404	413	699	582
Ingots, blooms, billets	1 825	755	348	17 510	58 048
Scrap	95 329	663 603	145 809	150 265	84 536
Romania					
Pig-iron	646 300	526 600	573 300	634 000	286 000
Ferro-alloys	160 000	169 300	190 400	145 100	145 000
Ingots, blooms, billets	* 28 000	* 556 000	* 596 000	* 201 000	* 169 000
Soviet Union					
Pig-iron	* 200 000	* 200 000	* 200 000	* 200 000	* 200 000
Ferro-alloys	* 35 000	* 35 000	* 35 000	* 40 000	* 40 000

Imports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
Spain					
Pig-iron	37 092	33 783	44 312	53 163	41 502
Sponge & powder	6 418	4 026	133 854	116 714	115 997
Ferro-aluminium & ferro-silico-aluminium	109	0	22	—)
Ferro-chrome	15 286	26 836	33 694	31 364	) (d)
Ferro-silico-chrome	491	590	1 548	1 125)
Ferro-manganese	965	188	192	4 326	509
Ferro-silico-manganese	2	44	55	267)
Ferro-molybdenum	749	156	110	178	) (d)
Ferro-nickel	1 216	2 392	6 114	3 085)
Ferro-silicon	2 619	2 115	2 109	2 156	3 260
Ferro-titanium & ferro-silico-titanium	289	497	676	319)
Ferro-tungsten & ferro-silico-tungsten	30	2	33	35	) (d)
Ferro-vanadium	473	449	298	250)
Other ferro-alloys	1 134	1 311	1 702	1 944	28 835
Ingots, blooms, billets	141 853	51 175	215 168	93 513	158 973
Scrap	1 993 353	1 949 810	2 927 406	3 907 449	3 896 041
Sweden					
Pig-iron	82 038	40 489	51 817	45 921	36 902
Sponge & powder	688	827	1 632	2 152	1 441
Ferro-chrome	15 872	29 482	39 070	27 798	23 246
Ferro-silico-chrome	992	2 937	4 224	3 638	634
Ferro-manganese	24 900	37 427	42 053	32 686	33 071
Ferro-silico-manganese	5 468	7 894	9 189	10 296	9 956
Ferro-molybdenum	2 093	1 953	1 810	1 681	1 199
Ferro-nickel	20 037	21 425	36 320	17 530	12 210
Ferro-niobium	219	226	286	184	214
Ferro-silicon	22 477	32 805	37 585	32 538	25 234
Ferro-titanium	824	2 044	1 880	1 909	1 130
Ferro-tungsten	376	217	504	453	398
Ferro-vanadium	602	940	808	921	781
Other ferro-alloys	1 325	554	1 388	1 123	529
Ingots, blooms, billets	103 489	87 501	83 718	108 519	105 402
Scrap	32 592	117 642	129 833	75 605	246 431
Switzerland					
Pig-iron	74 883	69 493	89 331	85 383	64 686
Sponge & powder	6 168	11 276	5 716	10 276	15 447
Ferro-aluminium	103	227	167	213	204
Ferro-silicon	4 550	3 962	6 717	6 715	5 538
Other ferro-alloys	13 776	14 583	17 411	14 825	11 271
Ingots, blooms, billets	25 269	21 906	24 920	73 897	42 034
Scrap	57 751	87 236	179 051	136 853	113 138
Turkey					
Pig-iron	14 870	5 416	16 316	8 315	22 663
Ferro-manganese	22 997	21 197	9 360	22 851	18 846
Ferro-silicon	7 767	7 124	6 267	6 422	) 10 365
Other ferro-alloys	549	272	177	384)
Ingots, blooms, billets	672 263	616 372	349 717	112 607	199 563
Scrap	299 989	323 024	362 300	346 455	525 054
Yugoslavia					
Pig-iron	17 757	71 612	99 495	46 554	70 917
Ferro-chrome	137	167	125	130	(d)
Ferro-manganese	799	815	902	903	539
Ferro-molybdenum	596	503	506	740)
Ferro-phosphorus	2 728	1 478	1 816	376)
Ferro-silicon	1 122	1 219	790	1 519	) 5 437
Ferro-tungsten	126	90	126	57)
Ferro-vanadium	194	329	184	224)
Other ferro-alloys	2 886	2 798	3 537	2 934)
Ingots, blooms, billets	627 102	607 575	551 816	456 789	439 897
Scrap	409 022	402 594	264 800	395 759	479 325

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Algeria					
Pig-iron	8 379	15 511	6 986	...	...
Ferro-manganese	1 026	501	1 960	...	...
Ferro-silico-manganese	72	87	343	...	...
Ferro-silicon	959	1 694	1 779	...	...
Other ferro-alloys	263	100	239	...	...
Ingots, blooms, billets	57 895	142 964	240 150	...	...
Cameroon					
Ingots & blooms	13 963	14 001	18 836	...	...
Egypt					
Pig-iron & spiegeleisen	32 649	28 518	11 406	5 660	...
Ferro-alloys	7 835	3 681	1 665	310	...
Ingots & billets	2 488	47 139	33 545	58 233	...
Scrap	115 402	41 679	15 829	37 095	...
Ethiopia					
Ingots, blooms, billets	2 347	7 164	...	...	...
Scrap	2 367	429	353	...	...
Ghana					
Pig-iron	502	123	...	...	...
Ferro-manganese	1 737	960	...	...	...
Other ferro-alloys	417	22	...	...	...
Scrap	15 920	2 528	...	...	...
Ivory Coast					
Ingots, blooms, billets	13 070	11 231	9 482	...	4 503
Kenya					
Pig-iron & ferro-alloys	1 015	1 063	289	569	...
Ingots & blooms	18 995	30 690	17 808	31 868	...
Libya					
Pig-iron & ferro-alloys (c)	43	139	33	8 672	...
Ingots, blooms, billets	3 643	7 954	5 872	16 778	...
Mauritius					
Pig-iron & ingots	9 405	18 884	...	...	...
Morocco					
Pig-iron	3 269	1 964	625	1 423	...
Ferro-chrome	37	26	20	66	...
Ferro-manganese	224	178	155	180	...
Ferro-silico-manganese	60	50	—	—	...
Ferro-silicon	125	73	124	142	...
Ingots, blooms, billets	21 025	17 432	19 462	13 046	...
Scrap	705	1 090	1	174	...
Nigeria					
Ferro-manganese	399	837	...	...	...
Ingots & blooms	58 295	91 514	...	...	...
Somalia					
Ingots, blooms, billets	...	1 405	3 851	3 073	...
South Africa					
Pig-iron	204	217	20 663	28 066	18 903
Ferro-chrome	7 390	3 187	9 232	6 973	6 028
Ferro-silicon	182	316	4 385	1 824	2 612
Other ferro-alloys	588	1 310	986	2 251	1 271
Ingots & blooms	2 116	7 994	5 839	6 831	14 453
Scrap	30 486	16 345	7 910	27 902	10 807
Sudan					
Ingots, blooms, billets	6 025	7 472	9 361	6 150	...
Tanzania					
Pig-iron & ferro-alloys	2 936	882	...	...	...
Ingots & blooms	5 719	12 198	...	...	...
Tunisia					
Pig-iron	546	100	87	733	...
Ferro-alloys	1 257	1 455	2 117	785	...
Scrap	2 051	2 487	483	49	...
Zaire					
Ferro-alloys	622	404	450	...	...
Zambia					
Pig-iron	231	130	...	...	...
Ferro-alloys	709	8 569	...	...	...
Zimbabwe					
Ferro-chrome	1 184	1 108	1 234	1 833	...
Ferro-manganese	2 936	1 885	3 790	2 459	...

Imports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
Canada					
Pig-iron	11 913	2 556	9 913	2 075	6 964
Sponge & powder	8 617	8 031	9 876	8 661	9 770
Ferro-chrome	32 947	30 432	34 720	41 369	31 579
Ferro-manganese & spiegeleisen	29 404	26 812	83 699	29 436	36 657
Ferro-silico-manganese & silico-spiegeleisen	4 835	15 842	21 876	20 901	12 669
Ferro-silicon	9 131	10 487	19 855	18 508	18 630
Ferro-tungsten	103	74	27	9	5
Ferro-vanadium	138	151	349	520	562
Other ferro-alloys	17 115	17 364	6 707	10 506	17 804
Ingots, blooms, billets	61 388	54 305	177 450	104 647	167 066
Scrap	583 989	951 851	1 046 564	1 014 898	835 074
Costa Rica					
Ingots & blooms	43 152	36 368	25 515	25 051	...
Cuba					
Pig-iron	204 182	158 181	...	...	...
Dominican Republic					
Ferro-alloys	1 136	542	757	938	...
Ingots, blooms, billets	12 742	11 541	4 446	4 987	...
Scrap	15 282	17 026	13 566	29 566	...
El Salvador					
Ingots, blooms, billets	17 432	5 309	4 691	...	...
Scrap	47	12 122	28 091	...	...
Guatemala					
Ingots, blooms, billets	24 590	28 814	29 618	...	...
Honduras					
Ingots & blooms	2 836	3 263	...	...	...
Jamaica					
Ingots & blooms	3 988	3 087	12 985	2 981	...
Mexico					
Pig-iron	23 154	46 472	49 995	98 335	...
Sponge & powder	1 526	7 503	21 651	38 259	...
Ferro-chrome	1 542	1 318)		...
Ferro-manganese	220	1 749)		
Ferro-nickel	38	221)		
Ferro-silicon	700	4 576	)	12 964	11 296
Ferro-vanadium	—	118)		
Other ferro-alloys	358	1 357)		
Ingots, blooms, billets	26 638	38 660	86 363	381 637	...
Scrap	356 150	481 660	388 100	280 384	...
Panama					
Ingots, blooms, billets	4 641	9 092	15 437	...	...
Trinidad & Tobago					
Ingots, blooms, billets	2 950	10 135	7 852	16 139	...
USA					
Pig-iron	342 376	594 581	432 169	362 904	392 823
Sponge & powder	126 946	88 579	94 485	59 688	68 679
Ferro-chrome	198 515	282 461	219 504	269 634	388 492
Ferro-silico-chrome	14 722	500	38	4 610	10 374
Ferro-manganese	487 861	603 638	744 992	549 484	608 883
Ferro-silico-manganese	79 597	84 063	85 884	67 686	117 031
Ferro-molybdenum	87	165	73	21	533
Ferro-nickel	76 030	67 911	56 783	46 939	63 370
Ferro-niobium	1 868	2 902	3 849	4 130	4 234
Ferro-silicon	104 802	122 141	103 014	64 580	141 202
Ferro-titanium & ferro-silico-titanium	842	1 099	854	550	558
Ferro-tungsten & ferro-silico-tungsten	286	318	334	247	180
Ferro-vanadium	450	507	669	298	1 121
Ferro-zirconium	860	1 024	1 826	925	796
Ingots, blooms, billets	264 426	375 482	312 782	141 965	721 421
Scrap	557 323	720 263	689 720	506 353	504 544

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Argentina					
Pig-iron	135 619	39 580	185 483	...	...
Ferro-chrome	3 265	2 315	(d)	...	...
Ferro-manganese	1 028	396	508	...	...
Ferro-molybdenum	326	49	)	...	...
Ferro-silicon	381	46	)	2 562	...
Ferro-titanium	99	31	)	...	...
Other ferro-alloys	2 032	499	)	...	...
Blooms & billets	256 676	72 518	82 230	...	...
Scrap	160 189	16 391	6 399	...	...
Brazil					
Ferro-chrome	4 511	1 331	407	220	564
Ferro-silico-chrome	465	548	64	254	224
Ferro-manganese	99	—	1	0	0
Ferro-silicon	11 382	1 087	647	1 214	862
Other ferro-alloys	188	132	437	815	4 516
Ingots, blooms, billets	4	10 329	49 321	20 069	291 728
Chile					
Ferro-chrome	584	808	...	...	...
Ferro-silicon	107	284	...	...	...
Scrap	10 429	7 358	...	...	...
Colombia					
Ferro-chrome	200	86	435	156	466
Ferro-manganese	2 524	2 666	4 483	6 564	2 500
Ferro-silico-manganese	699	659	1 474	1 255	620
Ferro-silicon	1 157	1 587	1 993	2 310	1 676
Other ferro-alloys	74	213	169	232	163
Ingots, blooms, billets	11 181	17 241	38 112	25 993	37 279
Scrap	11 996	20 513	23 096	13 926	29 968
Ecuador					
Ingots, blooms, billets	144 571	90 004	97 652	...	...
Peru					
Ferro-chrome	159	...	...	...	...
Ferro-manganese	2 880	...	...	...	...
Ferro-silicon	285	...	...	...	...
Uruguay					
Ferro-alloys	409	233	461	253	143
Ingots, blooms, billets	25 336	22 580	58 966	38 583	32 903
Venezuela					
Pig-iron	76 395	33 170	4 938	...	...
Ferro-manganese	17 790	3 918	17 133	35 333	...
Ferro-silico-manganese	2 675	973	12 203)	...
Ferro-silicon	726	127	2 024	) 8 787	...
Other ferro-alloys	3 978	1 034	770)	...
Ingots, blooms, billets	484 555	314 882	147 449	...	...
Scrap	6 235	4 629	45 307	32 473	...
China					
Pig-iron & ferro-alloys (g)	* 760 000	* 727 000	* 724 000	* 406 000	...
Scrap (g)	* 17 400	* 4 500	* 5 000	* 2 000	* 2 000
Cyprus					
Pig-iron	1 971	1 717	1 000	—	...
Hong Kong					
Pig-iron	19 286	15 411	18 120	18 711	22 509
Ferro-manganese	1 053	3	234	3	511
Other ferro-alloys	53	1 207	3 011	1 920	3 034
Ingots, blooms, billets	137 526	183 770	257 273	156 083	127 018
Scrap	40 513	126 132	105 260	87 326	94 411
India					
Ferro-chrome	178	56	35	...	...
Ferro-manganese	184	...	41	...	...
Ferro-molybdenum	183	107	409	...	...
Ferro-nickel	...	4 084	1 893	...	...
Ferro-phosphorus	123	93	40	...	...
Ferro-silicon	66	70	198	...	...
Other ferro-alloys	79	121	123	...	...
Ingots, blooms, billets (e)	3 872	3 005	153 947	...	...
Scrap	73 843	109 326	144 697	...	...

Imports of Iron, Steel and Ferro-alloys

Country	1977	1978	1979	1980	1981
Indonesia					
Pig-iron	34 411	32 429	42 253	34 963	73 157
Ferro-manganese	1 251	2 594	4 238	3 142	2 744
Other ferro-alloys	1 381	1 578	2 828	12 303	3 486
Ingots, blooms, billets	163 756	198 557	276 216	468 238	496 556
Scrap	47 084	80 690	29 770	39 009	34 399
Iran (f)					
Pig-iron	9 230	* 14 100	* 400	* 600	...
Ferro-alloys	7 367	* 5 800	* 4 800	* 2 000	* 1 000
Ingots, blooms, billets	584 352	* 986 000	* 316 000	* 132 000	...
Israel (b)					
Pig-iron	426	260	611	352	594
Spiegeleisen	51	—	29	—	336
Ferro-manganese	584	236	630	667	469
Other ferro-alloys	747	1 156	1 032	690	1 333
Ingots, blooms, billets	4 640	62 063	64 403	6 202	23 713
Scrap	693	...	5 006	20 501	26 635
Japan					
Pig-iron	542 746	639 506	550 584	738 528	1 068 400
Sponge & powder	7 301	6 276	12 789	42 231	17 092
Ferro-chrome	104 098	168 597	250 317	257 157	189 928
Ferro-silico-chrome	5 497	5 951	23 046	23 210	9 764
Ferro-manganese	5 777	17 017	18 758	2 662	6 505
Ferro-molybdenum	222	651	547	448	266
Ferro-nickel	19 858	20 485	33 152	31 119	26 493
Ferro-niobium	905	1 177	1 989	1 419	1 586
Ferro-silicon	45 293	100 316	133 494	122 012	196 487
Ferro-tungsten	209	118	483	186	45
Ferro-vanadium	877	1 692	1 265	306	830
Other ferro-alloys	8 265	45 185	40 745	38 774	71 120
Ingots, blooms, billets	158 793	119 277	534 398	448 961	195 666
Scrap	1 440 286	3 229 156	3 345 998	2 986 171	1 790 950
Jordan					
Pig-iron	1 021	5 601	16 614	17 787	...
Ingots, blooms, billets	51 362	55 642	68 872	59 270	...
Korea, Republic of					
Pig-iron	19 680	...	79 917	16 971	63 914
Sponge & powder	2 087	...	1 851	6 000	1 922
Ferro-chrome	1 694	...	3 339	2 550	1 340
Ferro-manganese	1 682	...	2 583	857	4 625
Ferro-silicon	1 217	...	678	1 989	4 024
Other ferro-alloys	844	...	1 415	1 337	1 141
Ingots & blooms	274 149	...	273 342	74 693	116 980
Scrap	1 571 429	...	1 579 761	1 932 127	2 310 403
Kuwait					
Scrap	814	609	...	1 182	...
Malaysia					
Pig-iron	5 195	6 959	16 235	...	...
Ferro-manganese	2 083	2 661	4 073	...	...
Other ferro-alloys	3 043	829	757	...	...
Ingots, blooms, billets	10 728	91 624	150 773	...	...
Scrap	2 697	7 552	6 345	...	...
Pakistan (h)					
Scrap	103 818	210 623	113 570	213 243	572 661
Philippines					
Pig-iron	52 419	35 133	44 560	19 939	1 241
Ferro-manganese	1 743	2 936	5 537	3 214	1 079
Ferro-silicon	205	262	177	697	496
Other ferro-alloys	946	694	1 279	969	629
Ingots, blooms, billets	350 653	276 083	440 452	292 534	293 801
Scrap	62 234	79 282	95 465	8 966	8 789
Saudi Arabia					
Pig-iron	8 445	)	47 061	36 314	14 228
Sponge & powder	1 147	) 12 059	3 913	8 741	14 381
Ferro-alloys	863	)	1 178	11 680	346
Ingots, blooms, billets	5 102	17 086	288 807	82 618	79 765
Scrap	225	757	38 741	1 198	424

Imports of Iron, Steel and Ferro-alloys

tonnes

Country	1977	1978	1979	1980	1981
Singapore					
Pig-iron	7 852	55 807	79 861	31 490	61 245
Ferro-manganese	110	2 143	6 328	3 534	505
Other ferro-alloys	2 310	3 920	1 409	4 878	9 070
Ingots & blooms	32 288	63 452	109 520	96 126	43 599
Scrap	23 458	92 940	109 055	172 028	78 214
Sri Lanka					
Ingots, blooms, billets	19 175	25 243	58 920	56 745	24 004
Syria					
Pig-iron	12 048	5 494	4 272	7 411	5 389
Ingots, blooms, billets	80 245	75 359	160 756	94 125	60 969
Scrap	4 211	3 020	5 436	8 603	17 313
Taiwan					
Pig-iron	10 278	68 686	65 416	152 464	173 185
Sponge & powder	1 411	2 726	7 569	9 962	10 921
Ferro-chrome	543	1 204	2 887	556	785
Ferro-manganese	438	633	859	799	591
Ferro-silicon	135	206	335	669	1 378
Other ferro-alloys	400	584	848	902	670
Ingots, blooms, billets	94 205	26 673	70 440	266 435	71 727
Scrap	571 057	622 219	760 688	1 232 365	880 789
Thailand					
Pig-iron	20 337	50	22 460	4 621	...
Ferro-manganese	2 315	2 356	2 468	3 933	...
Ferro-silicon	3 484	2 052	3 311	3 392	...
Other ferro-alloys	826	271	776	1 241	...
Ingots, blooms, billets	333	4 272	13 992	44 270	...
Scrap	423 615	801 963	614 808	337 670	...
Australia					
Ferro-chrome	12 482	18 730	13 826	16 044	7 189
Ferro-manganese (c)	3 101	5 460	16 985	7 203	3 674
Ferro-silico-manganese	115	414	489	532	(d)
Ferro-molybdenum	205	191	220	283	171
Ferro-nickel	38	—	55	430	1 637
Ferro-silicon	6 437	3 244	7 149	14 598	9 736
Other ferro-alloys	1 869	1 475	4 379	2 551	7 528
Ingots & billets	578	469	15 801	36 157	...
Scrap (h)	191	659	1 049	1 255	...
Fiji					
Ingots, blooms, billets	8 207	12 966	9 022	11 213	...
New Zealand (h)					
Pig-iron	1 039	891	803	841	444
Spiegeleisen	108	183	108	—	—
Ferro-manganese	2 335	1 681	1 617	1 570	585
Other ferro-alloys	1 914	1 779	2 458	3 012	2 835
Ingots, blooms, billets	4 141	4 938	8 798	4 307	3 782
Scrap	17 036	16 962	1 475	938	1 937
Solomon Islands					
Billets & blooms	876	1 446	1 521	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) Including powder
- (d) Included with "other ferro-alloys"
- (e) Years ended 31 March following that stated
- (f) Years ended 20 March following that stated
- (g) IGS estimates, based on known exports from certain countries
- (h) Years ended 30 June of that stated

Production of Kaolin

Country	1977	1978	1979	1980	1981
United Kingdom (a)	2 775 000	2 859 000	3 102 000	2 839 000	2 629 000
Belgium	* 120 000	* 120 000	* 120 000	* 120 000	* 120 000
France (b)	578 516	265 000	315 000	338 000	332 033
Germany, Federal Republic of (g)	399 000	413 000	432 000	367 000	371 000
Greece	67 686	64 933	40 437	54 035	* 55 000
Italy	83 772	69 075	67 194	66 711	74 084
Austria (a)	74 147	69 503	78 553	83 882	79 214
Bulgaria	194 000	199 000	202 000	208 000	221 000
Czechoslovakia (c)	580 000	499 000	513 000	518 000	508 000
Hungary (c)	77 600	75 000	71 000	59 000	60 000
Poland	41 800	38 600	42 900	51 026	43 207
Portugal	72 860	73 555	80 039	61 729	69 358
Romania	* 90 000	* 90 000	* 90 000	* 90 000	* 90 000
Soviet Union	* 2 300 000	* 2 400 000	* 2 500 000	* 2 500 000	* 2 500 000
Spain (h)	232 145	193 136	204 106	181 116	* 190 000
Sweden (h)(i)	298	344	327	357	...
Turkey	59 162	43 685	70 584	60 263	44 795
Yugoslavia	(h) 41 000	180 079	177 958	180 000	* 180 000
Algeria	11 465	17 423	18 100	* 18 000	* 19 000
Burundi	* 2 500	* 2 750	* 1 800	* 1 800	* 1 800
Egypt	45 000	55 577	46 544	41 227	* 41 000
Ethiopia	* 40 000	31 750	30 000	55 000	* 54 000
Kenya	495	2 676	530	1 487	* 1 800
Madagascar	2 152	2 596	1 899	2 720	1 746
Nigeria	1 338	1 819	620	940	635
South Africa	88 619	122 024	148 740	141 509	150 003
Tanzania	77	7 345	12 468	7 434	5 400
Zimbabwe	4 543	1 017	2 686	4 450	4 657
Mexico	178 211	179 500	76 944	143 318	* 150 000
USA (e)	5 860 943	6 326 085	7 040 299	7 147 703	6 949 472
Argentina	74 284	45 940	132 107	92 000	103 000
Brazil	259 836	294 457	349 446	410 197	* 440 000
Chile	55 712	48 117	59 222	59 452	* 60 000
Ecuador	8 790	4 613	* 4 000	* 4 000	* 4 000
Paraguay	32 500	* 35 000	* 40 000	* 50 000	* 55 000
Peru	2 698	3 752	4 052	* 5 500	* 6 000
Venezuela	5 000	36 000	30 000	* 30 000	65 000
Bangladesh (d)	4 186	5 778	7 305	* 10 000	* 10 000
Hong Kong	2 466	25 046	2 841	748	2 040
India (c)	445 000	418 000	495 000	452 000	505 745
Indonesia	38 006	37 400	58 539	65 000	26 153
Iran	* 110 000	* 180 000	* 160 000	* 150 000	* 100 000
Israel	5 500	6 350	22 317	9 495	* 10 000
Japan	203 327	227 895	161 739	228 205	213 200
Jordan	4 000	10 000	25 000	25 147	10 439
Korea, Republic of	356 550	366 370	374 423	273 767	224 550
Malaysia	31 856	31 174	32 934	46 324	44 084
Pakistan	566	1 992	14 522	27 162	38 527
Sri Lanka	5 159	5 512	5 870	6 614	7 292
Taiwan	29 230	66 180	85 041	79 802	90 836
Thailand	24 810	33 764	42 769	19 934	14 086

Kaolin

Production of Kaolin

tonnes

Country	1977	1978	1979	1980	1981
Australia (c)(f)	88 884	89 200	145 326	219 070	* 150 000
New Zealand	94 742	33 471	25 590	46 112	49 307
World total	15 900 000	16 400 000	17 800 000	17 700 000	17 200 000

Note: In addition to the countries listed, China, Colombia, 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
- (i) By-product, total production not reported

Exports of Kaolin

Country	1977	1978	1979	1980	1981
United Kingdom	2 267 534	2 303 513	2 628 237	2 402 400	2 196 529
Belgium-Luxembourg	6 187	3 176	20 346	12 605	8 362
Denmark	738	937	1 553	990	732
France	120 996	121 325	154 671	181 593	167 284
Germany, Federal Republic of	101 120	102 600	114 578	102 005	92 602
Greece	15 565	13 171	13 878	16 487	...
Italy	64 596	42 544	29 447	30 013	20 564
Netherlands	71 194	84 085	88 931	79 203	81 526
Austria	13 404	21 271	25 269	29 075	24 987
Bulgaria (a)	* 7 800	* 8 100	* 6 900	* 6 700	* 4 100
Czechoslovakia	412 000	382 000	382 000	367 000	347 000
German Democratic Republic	83 475	87 413	106 356	133 984	15 883
Hungary	7 724	7 025	6 791	6 496	6 615
Soviet Union (a)	* 25 000	* 22 200	* 26 900	* 32 800	* 35 200
Spain	57 720	59 802	71 794	79 407	...
Sweden	744	131	376	886	560
Turkey	—	55	3 090	7 631	...
Yugoslavia	10 638	9 812	5 618	6 587	...
Algeria (b)	150	100	—	...	...
South Africa	1 047	988	1 263	1 798	1 346
USA	864 427	1 065 860	1 438 676	1 263 341	1 281 771
Argentina	85	75	...	...	...
Brazil	11 470	21 445	46 543	183 025	133 779
Suriname	2 500	2 500	2 500	...	...
Hong Kong	2 941	2 336	5 554	10 250	9 983
of which: Re-exports	—	6	3 182	9 750	9 677
India	5 265	4 112	3 430	...	...
Indonesia	2 175	2 558	1 574	5 313	9 310
Japan	2 386	2 470	2 328	4 522	2 502
Korea, Republic of	104 781	88 112	82 416	76 920	88 127
Malaysia	11 845	12 951	15 339	...	...
Singapore	893	1 593	1 613	1 941	1 840

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

(b) Including bentonite

Imports of Kaolin

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	7 363	6 560	5 853	4 535	3 396
Belgium-Luxembourg	275 973	289 598	290 085	259 510	237 297
Denmark	32 746	33 464	40 598	38 428	35 912
France	322 324	306 755	332 710	338 622	280 343
Germany, Federal Republic of	679 510	716 893	800 114	802 862	770 595
Greece	69 624	51 104	64 194	104 758	...
Italy	649 280	673 576	767 543	791 218	646 354
Netherlands	371 919	393 188	438 693	469 562	403 112
Austria	96 950	102 546	111 887	107 643	110 763
Bulgaria (e)	* 1 100	* 1 200	* 1 300	* 1 500	* 1 000
Finland	361 648	330 644	419 969	390 021	365 051
German Democratic Republic	27 500	47 400	15 000	15 200	11 200
Hungary	24 871	34 563	41 685	34 903	30 868
Norway	77 512	79 369	83 765	80 144	67 529
Poland	161 034	185 221	218 032	151 252	139 000
Portugal	9 334	10 357	12 413	9 943	...
Spain	165 756	165 311	172 379	167 245	...
Sweden	245 800	257 343	291 381	273 914	283 762
Turkey	5 041	693	1 899	962	...
Yugoslavia	67 062	73 464	75 805	86 363	...
Algeria (d)	12 393	7 193	18 891	...	...
Egypt (c)	18 846	—	—	—	...
Ivory Coast	114	167	138	...	114
Morocco	3 303	2 119	2 601	3 455	...
Tunisia	(d) 17 234	(d) 15 034	(d) 21 450	7 129	...
Canada	153 775	181 887	273 422	254 350	231 755
Guatemala	6 779	...	...	...	...
Mexico	45 507	56 147	71 450	82 749	...
USA	17 857	11 607	28 537	14 362	12 357
Argentina	17 778	18 934	...	...	...
Brazil	4 096	2 453	3 307	3 614	2 935
Chile	1 605	1 617	...	...	...
Colombia	5 550	5 236	828	3 246	5 566
Peru	3 387	...	...	...	...
Uruguay	1 864	2 110	3 313	3 205	2 461
Venezuela	30 087	21 539	19 510	...	...
Hong Kong	1 088	387	5 086	22 078	28 501
India	13	65	73	...	...
Indonesia	3 500	8 247	11 429	13 318	13 688
Iran (a)	16 618	...	...	...	...
Japan	404 320	467 410	578 548	565 404	521 681
Korea, Republic of	116 028	...	18 414	19 557	46 292
Malaysia	1 816	2 942	1 864	...	...
Pakistan (b)	3 756	3 824	10 603	5 592	4 811
Philippines	7 168	9 107	9 441	9 023	8 822
Saudi Arabia	7 538	...	6 472	885	1 579
Singapore	4 925	4 802	5 983	5 286	6 573
Taiwan	32 418	42 171	40 425	66 753	54 261
Thailand	1 342	2 296	3 452	3 800	...
Australia	6 432	10 202	6 193	3 083	11 294
New Zealand (b)	3 927	2 345	956	1 280	615

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) May include other clays

(d) Including bentonite

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

Mine Production of Lead

tonnes (metal content)

Country	1977	1978	1979	1980	1981
United Kingdom	8 178	4 582	4 701	3 600	6 965
France	31 481	35 500	29 531	28 847	19 200
Germany, Federal Republic of	31 132	22 374	25 200	23 000	21 600
Greece	16 024	20 300	21 638	21 617	22 700
Irish Republic	41 012	47 744	69 000	58 000	29 000
Italy	30 475	27 308	28 100	23 600	21 300
Austria	5 002	5 524	5 214	5 475	5 683
Bulgaria	110 000	110 000	108 000	100 000	90 000
Czechoslovakia	* 4 300	* 4 700	* 3 400	2 904	2 675
Finland	1 258	1 300	1 920	1 140	1 580
Greenland	28 800	30 600	31 900	34 300	30 000
Hungary	175	1 023	965	1 064	937
Norway	3 163	3 076	2 996	2 469	3 080
Poland	66 900	63 000	57 000	47 500	44 200
Romania	* 42 000	* 33 500	* 33 500	* 23 000	* 20 000
Soviet Union	* 625 000	* 600 000	* 590 000	* 580 000	* 570 000
Spain	65 540	71 341	72 262	87 105	81 829
Sweden	88 132	83 496	81 600	72 100	85 100
Turkey	8 718	9 992	7 334	7 800	8 300
Yugoslavia	129 977	124 389	129 776	121 500	118 600
Algeria	900	1 500	2 200	1 800	3 600
Congo	2 100	4 200	7 000	7 000	7 862
Morocco	104 308	109 420	108 264	115 454	116 200
Namibia	41 200	38 600	41 000	47 700	46 500
Nigeria	112	118	* 114	* 100	* 900
South Africa	—	—	—	86 059	*98 901
Tunisia	10 200	8 349	10 000	8 310	5 822
Zambia	13 533	15 803	17 554	14 131	18 018
Canada	327 593	365 782	341 777	296 641	332 045
Guatemala	(b) 108	(b) 119	100	100	* 100
Honduras	23 538	21 804	16 416	13 315	12 592
Mexico	163 479	170 533	173 455	145 549	157 400
USA (a)	537 499	529 661	525 569	550 366	445 535
Argentina	33 601	30 253	31 775	32 600	33 600
Bolivia	18 441	18 042	15 359	17 225	16 757
Brazil	24 039	21 203	27 927	27 849	* 24 000
Chile	876	431	252	461	242
Colombia	166	120	226	187	* 100
Peru (a)	175 700	182 700	174 000	189 133	186 735
Burma	8 000	9 200	14 500	5 900	4 000
China	* 150 000	* 150 000	* 155 000	* 160 000	* 160 000
India	21 516	13 076	14 403	14 433	15 200
Iran (c)	30 000	30 000	15 000	12 000	16 000
Japan	50 132	51 770	46 259	44 700	46 900
Korea, Dem. P.R. of	* 110 000	* 110 000	* 120 000	* 125 000	* 110 000
Korea, Republic of	16 552	16 100	11 073	11 406	13 635
Philippines	3 695	1 448	1 949	1 812	1 346
Thailand	506	1 678	8 719	10 560	17 283
Australia	432 204	400 291	421 581	397 491	388 642
World total	3 600 000	3 600 000	3 600 000	3 600 000	3 500 000

(a) Recoverable

(b) Smelter

(c) Years ended 20 March following that stated

Lead

Production of Refined Lead

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	351 078	345 788	368 330	324 790	333 360
Belgium (a)	122 796	125 040	113 412	127 912	109 935
Denmark (b)	23 153	20 576	25 166	23 018	24 030
France	205 800	208 200	219 712	218 831	227 998
Germany, Federal Republic of	373 500	369 000	373 300	350 300	348 300
Greece	20 400	22 600	22 000	21 067	20 900
Irish Republic	—	2 100	5 000	7 000	13 000
Italy	117 715	116 210	126 218	133 657	132 956
Netherlands	33 800	31 900	30 100	27 700	19 700
Austria	19 100	17 600	19 900	18 100	16 359
Bulgaria	* 112 000	* 125 000	* 120 000	* 118 000	* 123 000
Czechoslovakia	19 015	19 042	19 020	20 014	20 663
Finland	4 016	5 580	6 594	3 200	4 500
German Democratic Republic	45 000	45 000	42 000	42 000	45 000
Norway	953	951	418	284	200
Poland	85 400	86 700	84 200	82 000	69 000
Portugal	400	300	4 500	5 600	3 000
Romania	41 702	42 815	40 900	40 991	* 40 000
Soviet Union	* 720 000	* 770 000	* 780 000	* 780 000	* 800 000
Spain	118 600	122 200	127 000	120 700	117 200
Sweden	42 600	45 300	46 700	42 300	29 000
Switzerland	—	—	5 000	7 000	7 000
Turkey	3 000	3 567	5 900	6 500	4 800
Yugoslavia	129 890	116 703	111 040	101 751	86 401
Morocco	34 600	30 000	36 800	42 400	52 300
Namibia	42 700	39 500	41 700	42 700	41 700
Nigeria	—	—	1 500	2 000	2 000
South Africa	24 000	23 600	23 300	35 400	26 900
Tunisia	19 501	16 570	17 441	19 195	17 530
Zambia	13 400	12 701	12 758	10 047	9 866
Canada	240 600	245 900	252 400	234 580	238 108
Jamaica	* 1 500	* 2 000	* 2 000	* 2 000	* 1 000
Mexico	206 000	208 600	224 900	184 300	188 500
Trinidad & Tobago	* 1 500	* 2 000	* 2 000	* 2 000	* 2 000
USA	1 169 100	1 188 353	1 225 684	1 150 469	1 067 579
Argentina	45 000	31 800	33 600	41 700	34 600
Brazil	77 304	80 456	98 052	84 950	65 757
Colombia	* 1 500	* 2 000	* 2 500	* 3 000	* 3 000
Peru	84 300	79 300	90 700	87 300	84 200
Venezuela	8 000	9 000	10 000	10 000	10 000
Burma	5 498	4 873	6 237	6 014	4 068
China	* 150 000	* 160 000	* 170 000	* 175 000	* 175 000
India	20 000	21 000	20 600	25 500	25 400
Japan	287 700	291 100	282 700	304 941	317 017
Korea, Dem. P.R. of	* 70 000	* 75 000	* 70 000	* 65 000	* 65 000
Korea, Republic of	6 742	7 218	13 400	15 000	21 200
Malaysia	2 000	2 000	2 100	5 200	3 500
Philippines	3 400	3 500	1 900	4 800	4 000
Taiwan	10 000	14 000	20 000	16 800	24 000
Thailand	1 200	1 100	1 500	5 000	5 000
Australia	218 001	239 122	257 584	233 654	239 931
World total	5 300 000	5 400 000	5 600 000	5 400 000	5 300 000

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

(a) Including alloys

(b) Sales

Lead

tonnes

Exports of Lead

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	5 558	6 860	5 187	3 535	(g) 1 527
Unwrought	103 751	105 195	125 081	127 930	(g) 47 753
Unwrought alloys	22 320	16 914	11 467	14 108	(g) 14 769
Scrap	6 874	16 615	32 369	30 662	(g) 11 251
Belgium-Luxembourg					
Ore	16	25	1 197	8 058	—
Unwrought	69 312	76 206	63 437	72 012	59 904
Unwrought alloys	7 617	9 782	10 743	12 250	10 675
Scrap	12 698	15 653	22 531	16 718	13 417
Denmark					
Ore	600	580	515	—	—
Unwrought	9 559	9 834	5 887	4 375	5 926
Unwrought alloys	8 796	8 127	9 302	10 723	8 797
Scrap	1 189	801	1 322	1 707	1 889
France					
Ore	29	40	34	69	140
Unwrought	16 932	34 959	40 647	42 618	45 841
Unwrought alloys	20 330	18 466	17 880	15 007	16 348
Scrap	76 642	32 661	30 191	7 851	10 635
Germany, Federal Republic of					
Ore	6 639	10	2 577	2 000	300
Unwrought	81 642	82 124	73 981	65 952	63 273
Unwrought alloys	23 761	24 686	33 050	32 810	33 084
Scrap	18 564	16 801	18 414	19 032	16 522
Greece					
Ore	20 832	47 795	32 840	39 124	21 580
Irish Republic					
Ores & concentrates	71 886	69 175	115 276	110 238	63 779
Unwrought (a)	3 079	3 231	3 196	1 857	3 612
Scrap	—	1 976	954	1 881	2 226
Italy					
Ore	26 980	19 207	19 359	21 353	17 319
Unwrought (a)	5 123	8 313	20 504	4 199	4 434
Netherlands					
Unwrought	5 951	5 663	3 768	6 023	1 676
Unwrought alloys	9 002	16 059	14 939	13 673	12 090
Scrap	39 874	32 825	35 362	36 153	33 604
Austria					
Unwrought	766	673	413	391	334
Scrap	665	12	79	3	4
Bulgaria					
Unwrought (a)(f)	* 12 700	* 11 800	* 10 200	* 7 900	* 5 600
Czechoslovakia					
Ores & concentrates	* 7 600	* 7 100	3 700	2 800	...
Finland					
Ore	...	2 022	2 035	2 047	3 135
Unwrought (a)	1 303	808	992	869	853
Greenland					
Ores & concentrates	41 660	43 205	39 057	43 199	...
Norway					
Ore	5 846	4 432	6 293	3 754	5 161
Unwrought (a)	90	36	254	126	31
Scrap	6 687	6 303	7 598	8 753	8 020
Poland					
Unwrought	5 380	500	7 098	...	...
Portugal					
Ore	140	740	1 635	1 420	956
Unwrought (a)	1	504	13	5	19
Soviet Union					
Unwrought	* 95 000	* 95 000	* 95 000	* 100 000	* 100 000
Spain					
Ore	83	59	—	9 394	32 183
Unwrought (a)	1 769	10 548	19 644	7 632	23 379
Sweden					
Ore	68 445	58 385	59 190	56 788	91 349
Unwrought	46 827	52 779	43 185	39 856	24 273
Unwrought alloys	1 965	1 555	1 735	2 754	2 084
Scrap	99	86	36	65	—

141

Lead

Exports of Lead

tonnes

Country	1977	1978	1979	1980	1981
Switzerland					
Unwrought	3 387	2 796	4 874	4 063	4 847
Scrap	9 443	8 530	11 608	8 174	7 311
Turkey					
Ore (e)	8 448	—	—	4 275	...
Concentrates	4 525	—	—	—	...
Yugoslavia					
Concentrates	5 430	39 893	13 496	10 070	12 865
Unwrought	50 848	41 015	33 852	24 322	14 000
Unwrought alloys	563	3 401	3 121	3 243	1 697
Algeria					
Ore	2 682	1 000	3 720	4 556	...
Scrap	790	—	—	...	...
Congo					
Ore	9 656	...	...	...	...
Ivory Coast					
Scrap	563	547	776	...	844
Kenya					
Scrap	663	360	392	—	...
Morocco					
Ore	120 571	119 614	118 540	111 637	89 735
Unwrought	29 942	21 335	34 250	32 806	49 000
Senegal					
Unwrought & scrap	159	198	...	...	...
South Africa					
Concentrates (b)	—	—	—	64 922	139 617
Unwrought	24 000	39 000	26 000	24 000	22 300
Sudan					
Scrap	43	297	661	718	...
Tanzania					
Scrap	...	145	68	70	...
Tunisia					
Ore	1 550	—	—	—	...
Unwrought	14 549	12 153	11 116	11 943	6 500
Scrap	14 580	—	554	338	...
Zambia					
Unwrought	11 400	10 000	10 000	8 900	8 300
Canada					
Ore (b)	137 820	142 693	151 495	147 008	146 090
Unwrought	130 823	131 950	117 992	126 539	119 815
Scrap	15 963	17 636	21 882	21 106	9 919
Honduras					
Ores & concentrates (b)	18 786	14 319	19 804	12 185	12 000
Mexico					
Ores & concentrates	9 965	11 108	2 565	1 343	...
Unwrought	77 574	76 864	76 558	61 770	63 000
Nicaragua					
Ores & concentrates	2 318	1 915	39	...	...
Panama					
Unwrought (a)	410	500	688	428	...
USA					
Ores & concentrates (b)	...	54 231	33 090	38 021	33 050
Unwrought	1 842	2 145	6 587	148 355	14 485
Unwrought alloys	2 741	1 024	800	9 216	2 334
Scrap	77 692	98 687	119 854	119 759	59 454
Argentina					
Ores & concentrates	—	10 056	6 234	...	...
Bolivia					
Ore (b)	19 878	16 482	15 633	15 936	15 613
Colombia					
Ore	346	201	312	361	92
Peru					
Ores & concentrates	127 732	147 262	139 409	152 998	...
Unwrought	96 406	) 91 506	86 037	74 227	80 000
Unwrought alloys	1 344)			

Exports of Lead

Lead

tonnes

Country	1977	1978	1979	1980	1981
Burma					
Unwrought	2 625	...	...	...	...
Hong Kong					
Scrap	490	1 122	1 482	1 891	2 522
Iran (c)					
Ore	...	* 7 000	* 9 000	* 9 000	* 5 000
Japan					
Ores & concentrates	6 964	9 312	8 266	6 139	7 810
Unwrought (a)	8 297	7 815	9 152	6 296	2 900
Scrap	3 673	1 425	6 178	3 711	690
Korea, Republic of					
Ore	7 640	10 685	6 600	4 000	8 400
Philippines					
Concentrates	6 555	2 268	5 574	3 232	1 801
Singapore					
Scrap	1 699	2 642	4 354	2 256	3 524
Taiwan					
Unwrought	1 303	4 577	10 421	11 370	14 078
Thailand					
Ore	3 710	2 500	16 796	21 653	37 580
Australia					
Ores & concentrates	57 668	95 091	38 847	28 262	36 815
Unwrought-					
Base bullion (b)	167 533	147 101	162 235	151 244	136 593
Refined	125 108	149 816	) 164 978	168 495	170 534
Alloys	7 730	9 463)		
Scrap	2 440	9 757	7 614	9 563	5 299

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
- (f) IGS estimates, based on known imports into certain countries
- (g) Six months data only

Lead

Imports of Lead

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates (b)	30 217	42 932	67 812	56 060	59 832
Unwrought	180 277	191 480	199 805	199 516	159 408
Unwrought alloys	4 391	6 766	5 398	4 701	3 031
Scrap	7 268	2 598	9 081	10 571	788
Belgium-Luxembourg					
Ore	52 912	74 541	82 218	75 709	83 142
Unwrought	48 478	50 557	50 242	47 458	35 147
Unwrought alloys	6 222	5 837	7 558	6 828	6 087
Scrap	12 682	14 593	12 632	11 944	7 520
Denmark					
Unwrought	7 060	6 932	6 355	3 231	2 270
Unwrought alloys	1 048	349	2 522	3 292	1 302
Scrap	20 273	21 869	19 012	16 546	18 161
France					
Ore	125 561	134 738	134 824	139 029	142 392
Unwrought	39 775	34 048	45 749	47 455	33 848
Unwrought alloys	7 856	4 190	6 068	7 633	6 767
Scrap	58 893	17 246	26 411	31 187	21 058
Germany, Federal Republic of					
Ore	195 020	170 055	191 179	181 679	214 800
Unwrought	94 208	107 567	105 236	135 259	100 570
Unwrought alloys	20 611	23 535	23 797	25 390	15 219
Scrap	50 538	45 621	62 566	43 309	34 594
Greece					
Ore	7 277	...	—	7 022	...
Unwrought (a)	7 022	5 616	4 962	7 807	6 057
Irish Republic					
Unwrought (a)	2 627	4 443	4 007	3 352	1 389
Scrap	3 482	2 974	3 906	4 203	7 455
Italy					
Ore	14 264	18 589	48 761	44 264	24 373
Unwrought (a)	163 624	138 268	151 411	173 137	132 783
Scrap	41 124	38 275	48 707	44 139	15 267
Netherlands					
Unwrought	45 323	45 884	44 069	49 325	30 280
Unwrought alloys	15 362	14 034	12 004	13 295	11 112
Scrap	16 706	10 882	10 022	9 752	11 483
Austria					
Ore	7 822	4 258	6 193	4 156	1 728
Unwrought	23 198	24 510	29 539	32 396	35 740
Scrap	2 114	1 203	1 920	2 628	3 605
Bulgaria					
Unwrought (a)(h)	* 8 000	* 5 000	* 21 000	* 24 500	* 15 700
Czechoslovakia					
Unwrought (a)	35 000	39 000	40 000	40 000	...
Finland					
Unwrought (a)	14 613	12 332	16 306	20 498	21 422
Hungary					
Unwrought & semi-manufactures	16 582	15 005	13 240	12 891	11 033
Iceland					
Unwrought	68	66	34	115	16
Norway					
Unwrought	7 282	7 430	7 065	8 430	6 571
Unwrought alloys	4 772	5 748	5 037	5 179	5 208
Poland					
Unwrought	9 384	9 579	9 805	6 654	3 060
Portugal					
Unwrought (a)	12 349	16 623	14 896	16 638	17 808
Scrap	51	82	91	1 050	20
Soviet Union					
Ore	49 818	47 695	(h)* 40 000	(h)* 35 400	(h)* 34 800
Unwrought	* 55 000	* 60 000	* 80 000	* 80 000	* 100 000
Spain					
Ore	24 372	33 344	15 155	28 081	28 190
Unwrought (a)	1 396	3 653	1 165	4 324	7 174
Scrap	462	4 024	286	129	1 920

Imports of Lead

Country	1977	1978	1979	1980	1981
Sweden					
Unwrought	443	426	1 186	604	7 118
Unwrought alloys	2 808	1 263	1 749	1 165	1 278
Scrap	6 030	5 045	6 988	3 971	4 342
Switzerland					
Unwrought	14 477	15 048	11 592	17 981	10 155
Turkey					
Unwrought (a)	7 406	3 328	2 921	5 451	5 358
Scrap	103	—	—	1 059	101
Yugoslavia					
Concentrates	22	1 923	1 978	2 731	1 023
Unwrought	5 321	8 188	9 521	10 060	12 118
Scrap	2 187	...	1 124	—	—
Algeria					
Unwrought	1 098	7 866	4 225	) 8 843	...
Unwrought alloys	976	1 540	975)	...
Egypt					
Unwrought & scrap	10 066	15 955	4 803	9 106	...
Ghana					
Unwrought (a)	211	143	...	...	...
Kenya					
Unwrought (a)	2 185	878	272	162	...
Libya					
Unwrought	3 251	812	1 587	725	...
Madagascar					
Unwrought (a)	347	381	268	...	...
Mozambique					
Unwrought	465	...	...	...	...
Nigeria					
Unwrought (a)	557	694	...	...	...
South Africa					
Ore	—	—	—	950	17
Unwrought	2 202	5 662	3 365	9 303	9 406
Scrap	4 957	29 699	31 517	6 212	7 752
Sudan					
Unwrought	440	56	—	302	...
Tunisia					
Ore	5 850	1 456	8 277	9 985	...
Canada					
Unwrought	822	1 715	2 133	2 602	9 220
Costa Rica					
Unwrought (a)	288	232	...	177	...
El Salvador					
Unwrought (a)	100	123	350	...	...
Mexico					
Unwrought & scrap	818	286	385	1 264	...
Nicaragua					
Unwrought (a)	255	231	198	196	...
Trinidad & Tobago					
Unwrought (a)	484	563	282	175	...

Lead

Imports of Lead

tonnes

Country	1977	1978	1979	1980	1981
USA					
Ores & concentrates (b)	68 224	52 984	39 998	44 095	58 545
Unwrought-					
Base bullion	13 297	4 362	1 709	315	449
Other	221 959	202 617	174 279	71 640	92 166
Alloys	15 382	21 451	20 238	11 693	11 570
Scrap	3 153	2 767	3 645	5 244	5 266
Brazil					
Ore	42 601	44 765	41 994	34 801	15 405
Unwrought (a)	14 857	754	602	12	151
Chile					
Unwrought (a)	2 051	1 746	...	...	...
Colombia					
Unwrought (a)	484	2 899	2 051	2 612	1 944
Uruguay					
Unwrought	1 341	1 586	3 094	2 663	1 619
Venezuela					
Unwrought (a)	2 823	2 430	843	5 006	...
Scrap	6 984	2 034	3 378	3 225	...
China					
Refined (f)	10 600	24 000	34 700	31 500	28 500
Hong Kong					
Unwrought	1 112	(a) 1 190	(a) 1 902	(a) 2 065	(a) 1 460
Scrap	241	288	458	471	377
India					
Ore	20	101	47	...	...
Unwrought (c)	43 453	25 411	35 723	...	...
Unwrought alloys (c)	3 152	1 950	5 349	...	...
Indonesia					
Unwrought	4 299	6 547	4 833	7 397	8 083
Iran (d)					
Unwrought	997	* 11 000	* 4 000	* 2 000	...
Israel (g)					
Unwrought	706	2 266	2 883	1 089	1 878
Japan					
Ore	193 875	222 447	218 544	258 634	255 765
Unwrought	28 478	50 923	50 372	73 129	57 464
Unwrought alloys	3 597	8 436	12 300	17 583	10 008
Scrap	2 856	6 704	2 023	5 020	2 668
Jordan					
Unwrought & scrap	1 687	3 786	1 481	2 028	...
Korea, Republic of					
Unwrought (a)	11 493	20 500	19 750	20 616	40 156
Scrap	15 251	...	29 437	23 387	4 301
Malaysia					
Unwrought (a)	2 228	3 671	5 367	...	...
Scrap	757	2 357	883	...	...
Philippines					
Unwrought (a)	6 651	7 698	7 649	5 422	7 019
Singapore					
Unwrought	3 946	4 560	(a) 4 373	(a) 8 095	(a) 3 900
Syria					
Unwrought & scrap	3 774	3 711	2 154	1 624	1 573

Imports of Lead

Lead

tonnes

Country	1977	1978	1979	1980	1981
Taiwan					
Unwrought (a)	8 654	8 686	8 856	10 777	7 419
Scrap	12 869	22 050	46 964	44 690	38 796
Thailand					
Unwrought	6 597	7 951	9 447	14 417	...
Unwrought alloys	708	1 508	1 389	2 363	...
New Zealand (e)					
Unwrought (a)	7 497	8 625	7 522	6 758	6 556

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

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

Lithium

Production of Lithium Minerals

tonnes

Country	1977	1978	1979	1980	1981
Portugal					
Lepidolite	1 200	1 200	1 200	200	—
Soviet Union	* 50 000	* 50 000	* 50 000	* 55 000	* 55 000
Namibia	2 548	...	...	* 3 000	...
Rwanda					
Amblygonite	* 30	* 28	* 28	* 30	* 25
Zimbabwe	8 050	16 688	13 197	21 030	16 444
USA (a)(b)	* 4 000	* 4 000	* 5 000	* 5 000	* 5 000
Argentina	412	803	106	80	* 90
Brazil					
Amblygonite	489	434	187	182	* 200
Lepidolite	579	320	58	51	* 200
Petalite	1 028	1 996	1 501	2 487	* 2 500
Spodumene	112	885	—	98	* 100
China	* 10 000	* 10 000	* 10 000	* 14 000	* 14 000
World total (a)	* 5 500	* 5 700	* 6 600	* 6 900	* 6 800

(a) Li content

(b) Mostly spodumene

Lithium

Exports of Lithium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	1	1	0	0	(c) 2
Belgium-Luxembourg					
Lithium minerals	61	...	...	...	...
France					
Lithium minerals	24	...	...	...	...
Oxides	3	70	75	52	47
Germany, Federal Republic of					
Lithium minerals	1 307	...	...	...	...
Metal	13	16	12	23	19
Oxides	625	557	717	859	490
Netherlands					
Oxides	133	221	302	34	70
Mozambique					
Lithium minerals (a)	* 1 000	...	...	...	...
South Africa					
Lithium minerals (a)	* 5 000	...	* 3 000	* 4 000	...
USA					
Lithium minerals, compounds & metal (b)	* 1 600	* 1 800	* 2 200	* 2 300	* 2 400
Brazil					
Lithium minerals	758	—	1 075	2 000	2 284

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

(b) Li content

(c) Six months data only

Lithium

Imports of Lithium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	3	2	3	5	...
Oxides	460	427	611	428	340
Belgium-Luxembourg					
Lithium minerals	297	...	...	...	...
Metal	0	10	6	1	7
Oxides	159	135	159	255	133
France					
Lithium minerals	1 942	...	...	...	...
Metal	22	19	4	27	6
Oxides	435	485	520	451	467
Germany, Federal Republic of					
Lithium minerals	5 662	...	...	...	...
Metal	18	17	9	8	7
Oxides	727	469	464	568	1 205
Italy					
Lithium minerals	1 389	...	...	...	...
Metal	2	26	0	9	1
Oxides	389	260	385	277	293
Netherlands					
Oxides	228	309	400	81	132
Spain					
Lithium minerals	435	313	416	366	...
Metal	10	—	49	1	...
Oxides	119	96	138	127	...
South Africa					
Lithium minerals	11 722	9 262	4 452	5 327	870
USA					
Lithium minerals	—	...	3 983	5 247	* 4 000

Production of Magnesite

Country	1977	1978	1979	1980	1981
Greece	1 358 805	1 058 211	1 677 666	1 166 998	* 930 000
Austria	1 003 041	982 320	1 103 649	1 318 156	1 158 852
Czechoslovakia	661 000	658 000	654 000	666 000	664 000
Poland	24 000	23 746	20 010	19 610	11 282
Soviet Union	* 1 850 000	* 1 900 000	* 1 950 000	* 2 000 000	* 2 100 000
Spain	421 241	306 548	381 867	505 532	* 500 000
Turkey	516 162	418 002	729 442	825 876	772 966
Yugoslavia	345 000	333 000	293 000	262 000	300 000
South Africa	49 219	37 407	65 336	78 808	56 557
Zimbabwe	54 204	65 756	84 495	78 217	60 194
Canada (b)	* 42 000	40 356	52 553	* 59 000	* 60 000
Brazil	205 719	217 270	265 671	315 851	* 350 000
Colombia	1 770	1 400	1 582	1 582	* 1 600
China	* 1 500 000	* 1 800 000	* 2 000 000	* 2 000 000	* 2 000 000
India	402 007	414 166	392 211	385 104	453 410
Iran (a)	* 5 000	* 5 000	* 5 000	* 4 000	* 4 000
Korea, Dem. P.R. of	* 1 500 000	* 1 600 000	* 1 800 000	* 1 900 000	* 1 900 000
Pakistan	1 269	* 1 852	2 728	778	1 551
Australia	18 531	21 350	29 301	32 198	26 887
New Zealand	557	840	—	—	308
World total	10 000 000	9 900 000	11 500 000	11 600 000	11 400 000

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	1977	1978	1979	1980	1981
United Kingdom					
Crude	2 093	9 446	2 678	115	(a) 33
Calcined	48 165	10 412	5 777	4 850	(a) 2 082
Belgium-Luxembourg					
Crude	159	20	1 592	30 640	80
Calcined	3 159	3 514	3 070	3 769	1 418
France					
Crude	364	11	51	142	53
Calcined	187	1 679	514	1 153	1 363
Germany, Federal Republic of					
Crude	132	168	135	42	47
Calcined	11 146	16 259	13 314	11 367	22 879
Greece					
Crude	18 545	18 857	25 467	46 831	) 280 863
Calcined	338 827	348 099	448 054	374 336)
Irish Republic	37 341	51 146	35 901	73 395	77 361
Italy					
Crude	98	302	285	274	943
Calcined	19 991	57 404	49 336	49 737	58 306
Netherlands					
Crude	1 671	1 690	1 919	2 024	1 561
Calcined	29 981	33 554	32 334	28 601	26 169
Austria					
Crude	2 585	1 263	607	)	) 96 636
Calcined	100 461	108 274	111 414	137 837)
Czechoslovakia	367 000	382 000	377 000	385 000	305 000
Norway	—	18 210	17 534	17 120	19 247
Spain					
Crude & calcined	92 936	79 029	93 459	91 166	98 750
Sweden	105	138	520	225	169
Switzerland					
Calcined	10	60	32	35	7
Turkey					
Crude	10 756	12 650	2 360	4 520	) 115 606
Calcined	60 378	56 336	39 146	73 320)
Yugoslavia					
Calcined	29 093	31 342	28 325	24 321	29 359
South Africa (c)	£52 000	£44 000	£302 000	£136 000	£35 000
Zimbabwe	57 763	51 544	57 055	56 877	...
Brazil					
Calcined	63 788	56 219	104 399	88 836	106 188
China (d)	* 46 000	* 61 000	* 99 000	* 179 000	* 162 000
Hong Kong					
Crude & calcined (Re-exports)	616	903	1 000	5 074	8 988
India					
Crude	3 106	2 410	14	...	...
Calcined	9 972	8 742	5 415	...	...
Israel (b)	24 384	20 948	9 183	4 168	—
Japan	5 299	17	20	1 482	2 560
Korea, Dem. P.R. of	* 612 100	* 667 700	* 757 800	...	...
Korea, Republic of					
Crude & calcined	2 100	550	900	1 000	—
Singapore	114	50	102	337	333
Australia	173	3 832	4 228	4 627	2 617

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) Six months data only

(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

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

Imports of Magnesite

Country	1977	1978	1979	1980	1981
United Kingdom					
Crude	3 656	8 241	9 750	12 296	11 707
Calcined	124 638	90 036	102 111	60 799	75 500
Belgium-Luxembourg					
Crude	1 612	888	864	759	663
Calcined	23 740	23 129	20 834	12 037	10 862
Denmark					
Crude	27	443	355	395	1 393
Calcined	9 607	18 431	15 853	13 024	8 934
France					
Crude	9 830	6 832	412	1 022	395
Calcined	71 073	77 906	94 488	106 225	106 019
Germany, Federal Republic of					
Crude	3 550	3 430	3 356	2 097	733
Calcined	332 710	314 334	373 291	408 462	340 779
Greece					
Crude	2 757	210	) 457	881	275
Calcined	1 338	459)		
Irish Republic	16 591	22 479	29 776	32 116	19 816
Italy					
Crude	6 361	6 390	8 496	15 531	11 955
Calcined	51 605	58 245	74 407	89 262	56 653
Netherlands					
Crude	2 688	2 589	5 589	2 203	2 971
Calcined	58 771	63 032	62 711	68 356	54 815
Austria					
Crude	3 375	454	2	6	52
Calcined	85 214	88 107	113 184	125 512	104 440
Finland	1 215	7 176	15 379	15 865	16 775
Hungary					
Calcined	119 718	108 011	120 346	118 258	103 856
Norway	4 249	2 662	6 030	4 508	3 840
Poland					
Calcined	296 472	316 668	319 921	317 120	227 767
Portugal	919	729	422	1 596	...
Soviet Union					
Calcined	452 186	480 644	518 021	539 601	...
Spain					
Crude & calcined	50 307	49 070	53 822	72 725	78 680
Sweden	3 898	21 693	22 672	20 584	21 767
Switzerland					
Calcined	3 012	3 955	3 953	4 186	4 753
Yugoslavia					
Crude	6 874	6 531	2 232	30 232	) 90 170
Calcined	14 708	21 139	41 650	46 197)
Algeria					
Crude	5	60	78	) 803	...
Calcined	417	376	592)	...
Egypt	...	3 705	1 198	106	...
Morocco	204	125	109	140	...
Senegal	151	41	...	...	...
South Africa					
Crude & calcined	85 841	83 792	124 827	98 384	94 149
Tanzania	...	165	330	300	...
Zaire	268	228	274	...	...
Canada					
Calcined	54 028	65 307	84 931	76 599	59 017
Mexico					
Crude & calcined	18	4 391	28 794	29 099	...
USA					
Crude & calcined	73 725	85 944	90 400	77 267	91 754

Magnesite

Imports of Magnesite

tonnes

Country	1977	1978	1979	1980	1981
Argentina					
Calcined	24 519	5 360	25 729	...	...
Brazil					
Crude & calcined	109	7	48	3 193	849
Chile					
Calcined	3 655	3 072	...	...	...
Peru					
Crude & calcined	1 363	...	...	...	...
Venezuela					
Crude & calcined	5 652	10 156	10 720	5 163	...
Brunei	35	350	—	...	...
Hong Kong	1 396	2 413	2 475	8 493	10 332
India	57	7 641	27 153	...	...
Indonesia	109	440	967	1 085	225
Israel	1 535	1 458	2 097	1 426	544
Japan					
Crude	5 567	11 302	25 292	38 017	30 764
Calcined	46 096	59 736	96 741	142 700	169 309
Malaysia	778	699	3 192	...	...
Pakistan (a)	55	274	1 014	1 381	1 918
Philippines					
Crude & calcined	1 037	1 261	3 913	6 856	3 198
Singapore	97	180	288	638	431
Syria	35	33	20	87	523
Taiwan	1 145	750	4 272	7 685	7 446
Thailand					
Crude	5 081	5 181	5 682	8 981	...
Calcined	1 544	1 984	1 594	1 689	...
Australia					
Calcined	37	9 790	15 477	20 782	21 016
New Zealand (a)	1 088	976	4 617	6 190	2 622

Notes:

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

(a) Years ended 30 June of that stated

Production of Manganese Ore

Country		1977	1978	1979	1980	1981
Greece	(50%)	8 860	7 000	5 750	5 555	* 5 500
Italy	(30%)	9 314	9 741	9 782	9 165	8 756
Austria (e)		64 734	51 351	58 969	58 141	55 876
Bulgaria	(30%)	40 000	40 000	42 000	49 000	45 000
Czechoslovakia (d)	(17%)	910	* 910	* 910	* 910	* 910
Hungary	(30%)	119 700	114 000	83 000	82 564	70 833
Romania	(22%)	* 81 600	* 81 600	* 81 600	* 81 600	* 81 600
Soviet Union	(35%)	8 595 000	9 057 000	10 244 000	9 750 000	9 150 000
Turkey	(40%)	38 443	68 184	41 584	41 634	14 932
Yugoslavia	(34%)	24 750	27 400	30 150	30 000	31 000
Egypt	(35%)	3 848	173	—	—	—
Gabon	(50%)	1 850 529	1 661 000	2 300 092	2 163 500	1 400 000
Ghana	(40%)	292 400	316 700	253 800	249 900	233 146
Morocco	(50%)	113 585	126 222	135 709	130 662	109 647
South Africa						
Metallurgical	(40%)	4 876 365	4 179 995	4 952 920	5 328 737	4 698 831
Chemical	(55%)	171 590	137 049	229 423	366 689	340 856
Ferruginous	(20%)	242 155	95 699	—	—	—
Sudan	(48%)	457	—	—	—	—
Zaire	(48%)	41 019	—	21 183	16 586	* 10 000
Mexico	(36%)	* 486 622	* 523 167	* 492 664	* 447 128	* 578 300
USA (a)	(13%)	195 855	283 154	218 356	157 748	159 447
Argentina	(30%)	82 385	18 497	10 190	6 146	3 086
Brazil	(45%)	1 515 673	1 917 100	2 259 331	2 281 450	* 1 900 000
Chile	(38%)	18 002	23 243	24 969	27 701	* 25 366
China	(30%)	* 1 100 000	* 1 300 000	* 1 500 000	* 1 600 000	* 1 600 000
India (c)	(35%)	1 865 000	1 619 000	1 771 000	1 660 000	1 500 000
Indonesia	(50%)	5 981	5 290	5 900	4 300	* 4 500
Iran (b)	(34%)	40 000	30 000	* 23 000	* 20 000	* 20 000
Japan	(35%)	127 387	105 629	92 375	79 579	* 87 200
Korea, Republic of	(40%)	664	747	35	81	—
Malaysia (d)		54 724	42 701	31 605	4 003	—
Philippines	(44%)	20 599	3 911	3 769	2 556	10 737
Thailand	(45%)	76 962	72 211	35 366	54 310	10 917
Australia	(48%)	1 389 004	1 257 254	1 724 098	2 019 511	* 1 438 500
Vanuatu	(42%)	34 293	19 288	5 694	—	—
World total		23 600 000	23 200 000	26 700 000	26 700 000	23 600 000

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	1977	1978	1979	1980	1981
United Kingdom					
Ore (a)	6 767	7 169	4 043	8 331	(c) 3 711
Metal	961	425	363	405	(c) 100
Belgium-Luxembourg					
Ore	9 888	11 324	6 107	5 929	8 333
Metal	1	76	26	306	141
France					
Ore (a)	8 323	5 606	7 092	6 397	17 242
Metal	1 945	2 138	2 325	2 276	2 987
Germany, Federal Republic of					
Ore (a)	6 983	2 089	1 946	1 406	2 174
Metal	101	31	59	124	43
Greece					
Ore	2 109	1	200	750	1 500
Netherlands					
Ore	31 557	37 452	37 422	39 536	44 913
Metal	2 101	2 768	2 083	2 487	3 266
Bulgaria					
Ore (d)	* 873 000	* 8 200	* 8 100	* 8 000	...
Hungary					
Ore	37 961	49 649	56 795	37 745	221 066
Norway					
Ore	950	—	1 287	1 955	2 561
Portugal					
Ore	4 993	4 000	2 050	650	3 410
Soviet Union					
Ore	1 352 000	1 186 000	1 317 000	1 255 000	1 194 000
Sweden					
Ore	215	166	164	—	115
Metal	186	183	104	77	79
Turkey					
Ore	14 314	—	8 450	8 960	—
Yugoslavia					
Ore	3 070	—	922	—	1 274
Gabon					
Ore	1 859 000	1 694 416	2 304 700	2 136 000	1 400 000
Ghana					
Ore	321 560	286 691	(d)* 232 000	(d)* 211 000	(d)* 101 000
Morocco					
Ore	130 663	140 623	139 351	112 317	99 668
South Africa					
Ore (d)	* 2 600 000	* 2 600 000	* 3 500 000	* 3 350 000	* 3 200 000
Metal (d)	* 24 100	* 25 300	* 27 100	* 26 100	* 26 600
Zaire					
Ore	192 000	* 60 000	* 40 000	...	...
Mexico					
Ore	257 213	246 776	201 550	135 901	...
Metal	2 807	7 265	...	...	...
USA					
Ore	157 754	219 105	59 848	222 483	80 284
Metal	3 905	5 701	6 062	11 374	4 394
Brazil					
Ore	560 110	894 458	1 187 311	1 244 366	1 018 355
China					
Ore (d)	* 52 100	* 46 200	* 46 600	* 23 900	* 21 900
India					
Ore (b)	554 375	577 292	629 944	...	...
Indonesia					
Ore	260 044	88 528	1 770	9 574	29 018
Japan					
Ore	5 206	4 831	6 230	1 855	991
Malaysia					
Ore	12 697	5 000	11 500	...	...

Exports of Manganese

Manganese

tonnes

Country	1977	1978	1979	1980	1981
Philippines					
Ore (a)	10 660	7 715	7 383	1 000	2 800
Singapore					
Ore	12 949	18 501	20 706	32 788	27 203
Thailand					
Ore	55 322	37 972	35 738	50 820	17 400
Australia					
Ore	810 794	936 152	1 156 785	1 328 203	* 900 000
Vanuatu					
Ore	27 530	24 740	12 080	3 520	...

(a) Includes manganiferous iron ore

(b) Includes ferruginous manganese ore

(c) Six months data only

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

Manganese

Imports of Manganese

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ore (b)	327 784	260 853	544 220	126 610	278 056
Metal	3 946	2 824	3 072	3 292	1 942
Belgium-Luxembourg					
Ore	206 726	252 842	432 140	299 848	244 784
Metal	529	522	1 133	1 178	711
Denmark					
Ore	1 286	1 384	1 168	819	611
France					
Ore (b)	922 709	958 428	1 274 849	1 225 909	880 817
Metal	1 121	1 030	3 471	6 930	984
Germany, Federal Republic of					
Ore (b)	453 243	672 978	716 780	489 548	606 851
Metal	4 824	5 438	5 848	5 731	5 146
Greece					
Ore	103	18 208	4 726	29 278	5
Irish Republic					
Ore	26 039	37 120	27 035	32 391	16 103
Italy					
Ore (b)	269 243	284 320	424 231	409 846	354 225
Metal	1 145	1 165	1 887	1 397	1 711
Netherlands					
Ore	81 242	73 223	89 268	46 779	53 392
Metal	2 856	2 388	2 090	2 558	3 474
Austria					
Ore	643	520	433	1 726	459
Bulgaria					
Ore	95 000	72 000	100 000	99 700	114 000
Czechoslovakia					
Ore	1 324 000	526 000	541 000	525 000	480 000
Finland					
Ore	17 297	19 737	18 916	10 735	337
German Democratic Republic					
Ore (a)	81 700	73 400	73 800	46 600	46 000
Hungary					
Ore	15 054	14 787	15 569	15 537	150
Norway					
Ore	591 350	803 130	815 148	807 700	484 640
Metal	916	1 025	1 173	713	351
Poland					
Ore	697 863	651 414	739 889	664 187	583 207
Portugal					
Ore	201 054	144 616	235 709	173 823	109 916
Spain					
Ore	433 184	369 679	487 333	432 648	253 991
Metal	449	266	351	1 565	...
Sweden					
Ore	9 424	3 290	14 111	354	531
Metal	1 371	917	1 259	1 459	708
Turkey					
Ore	760	1 978	2 214	2 429	2 091
Yugoslavia					
Ore	126 860	96 346	115 041	131 053	87 741
Metal	437	...	...	...	...
Ivory Coast					
Ore	802	1 078	1 103	...	900
Kenya					
Ore	1 672	1 595	3 199	1 404	...
South Africa					
Ore	4 906	3 339	29 842	3 972	7 053
Zimbabwe					
Ore	5 516	5 890	5 850	5 295	...
Canada					
Ore (a)	57 644	136 446	45 150	95 161	119 746
Metal	6 850	7 943	8 275	6 957	10 369
Mexico					
Ore	58 022	37 398	29 637	99 298	...

Imports of Manganese

Country	1977	1978	1979	1980	1981
USA					
Ore	848 760	525 252	430 441	633 228	585 344
Metal	6 206	8 327	6 108	6 937	7 573
Argentina					
Ore	121 416	43 509	87 334	...	...
Brazil					
Ore	65 997	152 276	101 395	28 501	15 289
Metal	797	746	1 104	1 019	754
Colombia					
Ore	7 037	2 625	1 962	4 603	3 993
Hong Kong					
Ore	554	515	1 000	374	—
India					
Ore	5 048	4 045	5 143	...	...
Metal	217	167	392	...	...
Indonesia					
Ore	7 940	8 605	6 966	11 968	9 513
Japan					
Ore	2 753 503	2 011 670	2 692 042	2 953 309	2 482 728
Korea, Dem. P.R. of					
Ore	* 11 000	* 21 000	* 21 000	...	...
Korea, Republic of					
Ore	67 003	127 193	230 636	208 200	282 015
Malaysia					
Ore	2 410	2 253	2 498	...	...
Philippines					
Ore (b)	9 501	6 982	3 456	6 626	1 984
Singapore					
Ore	21 820	44 980	33 517	60 468	80 900
Taiwan					
Ore	64 293	96 254	148 013	142 975	62 742
Thailand					
Ore	5 275	2 841	2 304	9	...
Australia					
Ore	2 421	2 962	119	2 422	2 139
Metal	842	1 209	957	1 838	...

(a) Mn content

(b) Includes manganiferous iron ore

Mercury

Production of Mercury

kilograms

Country	1977	1978	1979	1980	1981
Germany, Federal Republic of	99 000	84 000	91 000	56 000	76 000
Italy	14 351	5 000	—	3 303	251 643
Czechoslovakia	183 000	196 000	171 000	159 000	153 000
Finland	8 597	39 477	46 000	75 000	67 189
Soviet Union	* 2 000 000	* 2 000 000	* 2 000 000	* 1 800 000	* 1 700 000
Spain	931 845	1 069 949	1 147 106	1 656 000	1 560 000
Turkey	161 520	173 064	162 768	141 240	210 204
Yugoslavia	108 000	—	—	—	—
Algeria	1 049 525	1 055 803	508 392	842 663	* 863 000
Mexico	333 000	76 000	68 000	145 000	138 000
USA	973 657	832 972	1 017 609	1 056 839	961 935
Chile	684	—	—	—	—
China	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
World total	6 600 000	6 200 000	5 900 000	6 600 000	6 700 000

Exports of Mercury

Country	1977	1978	1979	1980	1981
United Kingdom	45 692	51 092	137 320	79 888	(a) 33 009
Belgium-Luxembourg	43 400	56 000	17 800	19 900	14 200
France	42 000	122 000	132 000	38 000	23 000
Germany, Federal Republic of	58 000	76 000	80 800	219 600	137 000
Italy	355 112	773 000	328 250	229 977	49 700
Netherlands	64 000	62 000	101 000	189 000	149 000
Austria	7 800	28 200	15 100	5 200	6 600
Finland	11 600	13 900	21 000	55 000	52 000
Norway	0	39 000	47 000	98 000	69 000
Spain	773 069	1 480 000	1 303 000	665 000	742 000
Sweden	54 000	26 000	19 000	29 000	9 000
Switzerland	1 252	2 048	6 005	9 023	4 652
Turkey	196 611	295 625	83 283	135 110	156 000
Yugoslavia	48 272	...	...	...	110 000
Algeria	271 404	406 410	561 900	371 000	...
Mexico	478 130	216 428	183 269	385 876	...
USA	32 877	* 35 000	* 35 000	* 35 000	...
China (b)	* 243 000	* 301 500	* 276 200	* 353 300	* 390 400
Japan	79 256	238 847	539 922	321 970	238 448
Singapore	1 921	1 249	776	2 337	13 724

(a) Six months data only

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

Imports of Mercury

kilograms

Country	1977	1978	1979	1980	1981
United Kingdom	303 168	421 567	306 392	231 607	205 412
Belgium-Luxembourg	94 800	96 000	120 300	224 200	178 800
Denmark	6 600	13 500	14 000	10 100	8 800
France	212 000	182 000	138 000	145 000	108 000
Germany, Federal Republic of	244 500	434 100	461 300	436 400	212 200
Greece	4 211	9 102	3 000	3 000	1 000
Irish Republic	3 300	32 900	4 700	7 600	2 700
Italy	19 658	20 000	59 790	152 577	80 600
Netherlands	42 000	85 000	120 000	205 000	158 000
Austria	13 100	14 300	23 800	19 500	15 200
Finland	9 700	10 900	3 000	4 000	4 000
German Democratic Republic	* 64 500	* 192 900	* 174 100	...	...
Hungary	* 79 000	67 000	39 000	38 000	77 000
Norway	5 000	1 000	1 000	1 000	1 000
Poland	* 1 000	* 192 900	* 33 000	...	...
Portugal	28 100	34 700	28 100	32 300	29 000
Romania	* 117 000	* 200 000	* 309 200	...	...
Sweden	11 000	25 000	24 000	16 000	23 000
Switzerland	24 587	24 201	25 183	38 114	21 884
Yugoslavia	2 012	7 946	10 372	18 636	45 000
Algeria	286	2 112	6 525	1 000	...
Madagascar	208	2 055	40	...	...
Morocco	2 123	4 355	7 213	9 903	...
South Africa	67 700	71 900	52 800	103 000	94 900
Tunisia	21 829	3 559	5 715	188	...
Zaire	1 000	...	25	...	...
Canada	21 909	43 046	50 712	50 484	48 217
Dominican Republic	—	7 643	22 044	...	...
USA	967 660	1 528 131	1 002 642	472 523	455 112
Argentina	67 812	28 917	64 000	...	...
Brazil	151 476	144 361	158 448	201 443	93 372
Chile	16 024	19 746	...	...	...
Colombia	29 221	8 188	20 689	22 303	47 013
Peru	14 689	...	...	...	...
Uruguay	1 800	1 200	300	4 800	2 400
Venezuela	51 572	20 169	23 233	8 000	...
Hong Kong	23 967	53 380	74 221	91 690	98 927
India	334 000	74 000	211 000	...	...
Indonesia	9 974	22 515	3 628	53 997	23 645
Iran (b)	15 892	* 18 000	* 16 500	* 15 000	...
Israel (a)	—	3 000	10 000	14 000	11 000
Japan	89 447	105 697	108 350	91 759	69 509
Korea, Republic of	41 065	34 155	26 217	28 805	22 635
Malaysia	7 000	5 000	3 000	...	...
Pakistan (c)	3 805	14 058	32 860	31 754	50 798
Philippines	35 395	26 039	11 552	354	4 655
Saudi Arabia	11 133	...	215 374	1 684 392	83 241
Singapore	333	4 188	4 002	3 099	14 301
Sri Lanka	5 910	16 398	1 595	450	12 211
Syria	4 205	1 023	57	2 594	—
Taiwan	54 338	91 859	56 678	12 848	14 604
Thailand	8 455	5 829	12 529	12 583	...
Australia	43 899	75 941	47 990	38 874	57 791
New Zealand (c)	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

Production of Mica

Country	1977	1978	1979	1980	1981
France (e)	* 7 000	7 300	7 100	8 838	9 059
Norway (b)	* 6 000	* 6 000	* 6 000	* 4 500	* 4 600
Soviet Union	* 44 000	* 45 000	* 46 000	* 46 000	* 47 000
Spain (e)	2 934	3 345	5 169	4 831	* 5 000
Yugoslavia	139	69	338	300	* 280
Madagascar					
Phlogopite (c)	80	1 567	1 168	1 642	* 1 700
Morocco	—	—	370	480	1 805
Mozambique	* 800	* 900	250	* 200	* 200
South Africa					
Waste	2 890	2 542	1 720	2 528	2 395
Sudan	* 400	* 1 000	* 2 000	* 1 500	* 1 000
Tanzania					
Sheet	4	15	9	3	2
Zimbabwe	3 670	2 764	1 275	1 022	1 406
Mexico	771	401	243	331	* 350
USA (d)					
Waste (e)	117 000	126 000	122 000	105 000	121 000
Argentina					
Sheet	302	356	860	218	192
Waste	1 840	2 276	1 140	616	730
Brazil (a)	1 955	4 553	4 075	4 818	1 950
India					
Crude	9 352	9 592	9 073	7 930	8 377
Waste	5 319	4 681	5 107	4 425	4 352
Sri Lanka	...	140	369	145	182
Taiwan	1 334	1 388	1 150	338	85
World total	206 000	220 000	215 000	196 000	212 000

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

Mica

Exports of Mica

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Unmanufactured	476	810	966	966	(a) 245
Ground & waste	3 113	2 540	3 911	2 809	(a) 1 395
Belgium-Luxembourg					
Unmanufactured	24	52	22	41	—
Ground	91	43	138	23	38
Denmark					
Ground	13	65	58	30	12
France					
Unmanufactured	71	46	173	354	2 119
Ground	2 869	3 074	3 111	3 462	3 895
Germany, Federal Republic of					
Unmanufactured	11	68	25	20	71
Ground	743	709	618	640	1 020
Italy					
Unmanufactured	87	133	191	440	325
Ground	983	666	471	687	422
Netherlands					
Unmanufactured	42	21	21	75	676
Ground	789	692	1 209	906	2 407
Austria	12	57	185	230	448
Norway	2 818	2 688	2 915	2 112	2 298
Portugal	138	360	232	...	189
Spain	738	2 900	3 939	6 059	2 683
Sweden	3	5	10	—	—
Switzerland	66	73	46	117	27
Madagascar	204	316	1 205	691	...
Morocco	10	556	1	485	...
Mozambique	200	...	...	...	...
South Africa					
Ground	343	1 994	1 316	1 091	) (b)* 900
Waste	58	571	—	—	
Zimbabwe					
Ground	851	1 324	1 203	759	...
USA					
Unmanufactured	) 8 356	3 341	5 370	6 103	3 892
Ground		) 5 351	5 303	7 427	6 364
Argentina	3 884	3 069	2 202	...	...
Brazil	1 955	4 553	4 075	4 818	1 950
India					
Block	1 071	1 363	1 181	...	...
Splittings	3 797	4 345	4 135	...	...
Condenser films	66	54	71	...	...
Ground	7 505	8 548	3 637	...	...
Waste	10 301	9 674	7 248	...	...
Japan	144	303	246	326	373
Korea, Republic of	1 719	...	656	—	10
Singapore	79	14	110	272	351
Sri Lanka	149	381	555	628	1 393

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

(a) Six months data only

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

Imports of Mica

Country	1977	1978	1979	1980	1981
United Kingdom					
Block	92	98	69	89	19
Splittings	469	462	289	475	200
Ground	2 819	3 955	3 641	6 824	2 180
Waste	9 773	10 823	13 920	13 835	11 495
Belgium-Luxembourg					
Unmanufactured	3 076	2 526	621	3 755	410
Ground	1 039	1 104	1 183	1 250	1 202
Denmark	226	255	274	175	174
France					
Unmanufactured	2 672	9 171	2 701	5 943	3 930
Ground	942	993	717	1 013	989
Germany, Federal Republic of					
Unmanufactured	4 741	6 691	5 563	7 098	5 044
Ground	3 381	3 038	3 068	3 233	4 030
Greece	124	117	173	271	192
Irish Republic	202	594	847	358	313
Italy					
Unmanufactured	553	512	455	437	495
Ground	1 034	735	568	654	766
Netherlands					
Unmanufactured	261	52	57	69	49
Ground	1 552	1 866	2 094	1 930	3 865
Austria	313	340	250	318	231
Finland	273	246	291	253	177
German Democratic Republic	1 116	1 767	1 234	1 424	1 224
Norway					
Unmanufactured	89	147	94	657	283
Waste	2 322	1 825	1 991	1 512	1 588
Poland	1 902	1 641	1 756	1 844	1 442
Portugal	393	399	469	347	464
Soviet Union	* 500	* 550	* 550	* 550	* 550
Spain	1 153	837	1 030	1 421	1 358
Sweden	366	345	467	408	335
Switzerland	544	638	598	546	655
Turkey	76	52	45	52	22
Yugoslavia	523	541	1 134	686	539
Kenya	25	34	33	40	...
Morocco					
Ground	18	19	15	9	...
South Africa	559	567	685	1 187	950
Tanzania	16	16	4	13	...
Tunisia	249	28	75	94	...

Mica

Imports of Mica

tonnes

Country	1977	1978	1979	1980	1981
Canada	6 309	3 492	3 131	2 598	3 133
Jamaica	98	138	89	37	...
Mexico	196	61	72	99	...
Trinidad & Tobago	137	174	170	181	...
USA					
Block	204	112	110	32	14
Splittings	942	1 740	1 776	1 916	1 097
Ground	133	1 568	4 111	5 046	6 064
Waste	787	554	80	—	0
Other unmanufactured	929	2 164	2 888	3 433	3 674
Brazil	1	6	99	153	170
Colombia	71	84	84	49	80
Peru	66	...	...	...	...
Uruguay	19	10	22	184	71
Venezuela	898	869	785	1 338	...
Brunei	5	11	94	58	...
Hong Kong	51	31	585	31	33
Indonesia	270	339	105	260	389
Iran (a)	359	* 70	* 20	* 5	...
Japan					
Block	185	272	209	2 620	1 344
Splittings	635	527	621	708	516
Waste	4 307	4 092	611	3 502	4 833
Other unmanufactured	4 279	3 707	3 011	4 830	5 905
Korea, Republic of	102	207	163	134	121
Malaysia	56	18	39	...	...
Philippines	133	87	61	109	77
Saudi Arabia	880	270	769	1 038	908
Singapore	704	270	265	1 415	1 250
Taiwan					
Unmanufactured	119	153	160	92	34
Ground	144	282	364	245	258
Thailand	78	91	116	119	...
Australia					
Unmanufactured	387	203	293	338	243
Ground	701	277	336	621	562
New Zealand (b)	£37 700	£50 000	£70 000	£44 000	£45 000

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

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

Mine Production of Molybdenum

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Bulgaria	* 150	* 150	* 150	* 150	* 150
Soviet Union	* 9 700	* 9 900	* 10 200	* 10 400	* 10 900
Turkey	—	25	65	100	* 100
Canada	16 568	13 943	11 175	12 344	12 187
Mexico	1	11	48	74	* 300
USA	55 523	59 803	65 302	68 350	63 500
Chile	10 938	13 196	13 560	13 668	15 270
Peru	456	734	1 183	2 662	2 490
China	* 1 500	* 2 000	* 2 000	* 2 000	* 2 000
Japan	182	145	138	118	* 100
Korea, Republic of	102	221	190	302	467
Mongolia	...	...	...	* 340	* 680
Philippines	—	55	141	91	* 93
World total	95 000	100 000	104 000	111 000	108 000

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

Exports of Molybdenum

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	3 471	3 921	4 301	2 290	(b) 2 157
Metal	144	147	332	174	(b) 124
Oxides	215	552	381	1 937	(b) 512
Belgium-Luxembourg					
Ores & concentrates	4 338	5 872	5 945	5 542	9 092
Metal	77	121	177	117	183
Oxides	30	117	105	176	154
France					
Ores & concentrates	162	336	395	1 180	1 481
Metal	93	136	166	133	180
Oxides	245	34	22	21	1
Germany, Federal Republic of					
Ores & concentrates	1 173	1 117	6 669	6 984	5 428
Metal	217	236	391	488	319
Italy					
Ores & concentrates	459	269	184	175	209
Oxides	84	177	95	—	—
Netherlands					
Ores & concentrates (c)	22 850	24 239	23 363	29 159	16 768
Metal	187	153	185	181	148
Oxides	1 609	1 621	1 445	2 247	1 546
Austria					
Metal	922	872	1 101	1 017	1 018
Sweden					
Ores & concentrates	1 241	921	1 206	1 330	1 691
Metal	154	13	11	7	38
Canada					
Ores & concentrates (a)	15 326	13 422	11 482	14 585	13 664
USA					
Ores & concentrates (a)	29 786	31 422	32 789	31 011	23 291
Metal	517	776	1 097	937	1 643
Chile					
Ores & concentrates (a)	6 669	5 533	6 617	7 312	9 123
Oxides	5 351	3 630	...	...	...
Peru					
Ores & concentrates	1 061	1 118	2 131	2 995	...
Japan					
Metal	43	40	71	37	54
Korea, Republic of					
Ores & concentrates	90	120	374	322	651
Philippines					
Ores & concentrates	11	19	210	180	139

(a) Mo content

(b) Six months data only

(c) May include other ores

Imports of Molybdenum

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	13 934	14 383	15 285	13 672	15 149
Metal	162	224	274	237	176
Oxides	159	413	284	296	432
Belgium-Luxembourg					
Ores & concentrates	12 517	13 381	15 856	15 922	20 772
Metal	118	332	189	149	126
Oxides	64	331	28	17	120
France					
Ores & concentrates	7 314	6 963	7 413	7 094	9 078
Metal	149	114	206	263	117
Oxides	55	359	119	227	62
Germany, Federal Republic of					
Ores & concentrates	17 987	19 203	22 065	18 087	18 138
Metal	533	640	797	1 102	984
Oxides	309	457	515	453	502
Italy					
Ores & concentrates	5 808	5 638	5 866	6 039	4 522
Metal	189	176	251	163	120
Oxides	623	819	619	158	68
Netherlands					
Ores & concentrates (a)	27 000	27 644	27 944	28 247	21 501
Metal	208	153	235	175	148
Oxides	236	60	64	107	83
Austria					
Metal	44	87	366	366	188
Oxides	1 489	1 375	1 639	1 527	*1 493
Finland					
Ores & concentrates	269	40 111	512	675	454
Metal	91	2	4	5	4
Soviet Union					
Ores & concentrates (b)	* 2 500	* 4 400	* 3 400	* 500	* 1 000
Spain					
Metal	27	19	31	33	3
Sweden					
Ores & concentrates	5 305	6 484	7 927	6 014	5 648
Metal	84	75	69	103	43
Switzerland					
Metal	20	19	15	24	20
Yugoslavia					
Metal	12	18	16	15	15
South Africa					
Metal	19	17	32	19	11
Canada					
Oxides	192	330	336	362	423
Mexico					
Ores & concentrates	459	710	693	289	...
Metal	265	68	234	151	...
USA					
Ores & concentrates	2 175	2 723	2 408	2 050	2 249
Metal	1 021	246	238	305	...
Argentina					
Oxides	348	259	...	...	...
Brazil					
Ores & concentrates	2 169	2 874	8 535	2 123	2 240
India					
Metal	14	35	37	...	...
Japan					
Ores & concentrates	16 495	16 645	18 431	20 388	16 290
Metal	113	184	182	146	219
Oxides	498	497	613	826	660
Philippines					
Metal	169	60	71	4	127

Molybdenum

Imports of Molybdenum

tonnes

Country	1977	1978	1979	1980	1981
Singapore					
Metal	11	8	0	1	1
Taiwan					
Metal	27	41	48	44	44
Australia					
Ores & concentrates	309	326	243	326	...

(a) May include other ores

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

Mine Production of Nickel

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Greece (d)	9 610	15 100	14 632	13 900	11 800
Albania	* 7 500	* 8 000	* 8 500	* 8 500	* 8 800
Finland	6 810	5 481	6 618	6 030	6 871
German Democratic Republic	2 500	2 700	2 500	2 700	2 700
Norway	492	499	593	508	500
Poland	* 1 400	* 1 300	* 1 200	* 1 100	* 1 000
Soviet Union	* 135 000	* 140 000	* 145 000	* 143 000	* 145 000
Yugoslavia	...	* 500	* 500	* 500	* 2 000
Botswana	12 099	16 049	16 173	15 442	18 278
Morocco	200	100	500	500	500
South Africa (a)	21 955	* 22 500	* 25 300	* 25 700	* 25 000
Zimbabwe	16 671	15 701	14 591	15 075	13 018
Canada (b)	232 512	128 310	126 482	184 802	159 694
Cuba (c)	36 750	34 787	32 324	38 230	40 256
Dominican Republic (d)	24 905	14 302	25 111	16 347	* 19 000
Guatemala	298	1 079	6 199	6 744	—
USA	13 015	12 255	13 667	13 293	10 976
Brazil	4 241	3 600	2 964	4 291	* 4 000
Burma (e)	17	18	18	14	14
China	* 10 000	* 10 000	* 11 000	* 11 000	* 12 000
Indonesia	16 100	30 200	35 800	40 600	45 500
Philippines	36 781	29 528	33 287	47 114	* 40 000
Australia	85 868	82 359	69 709	74 323	74 475
New Caledonia (f)	116 795	67 156	83 019	89 424	80 570
World total	792 000	642 000	676 000	759 000	722 000

(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

Smelter/Refinery Production of Nickel

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	23 200	21 400	18 700	19 300	25 400
France	10 279	7 878	2 558	9 792	10 130
Greece	9 600	14 900	14 600	14 000	10 900
Albania	* 3 700	* 4 000	* 4 500	* 4 500	* 4 500
Czechoslovakia	* 4 000	* 4 000	* 3 000	* 1 800	* 1 600
Finland	9 274	7 292	11 176	12 806	13 310
German Democratic Republic	* 2 800	* 3 000	* 3 000	* 3 000	* 2 800
Norway	38 222	23 739	30 686	37 123	37 095
Poland	* 2 200	* 2 100	* 2 000	* 1 800	* 1 500
Soviet Union	* 155 000	* 160 000	* 160 000	* 165 000	* 170 000
South Africa	17 200	15 000	20 400	18 100	17 200
Zimbabwe	16 700	15 700	13 672	13 927	12 375
Canada	151 966	89 233	83 747	142 155	105 854
Cuba	18 626	18 307	19 052	20 049	20 900
Dominican Republic (a)	24 905	19 760	24 553	16 552	18 679
USA	34 380	33 836	40 089	40 120	44 275
Brazil	2 530	2 288	2 463	2 504	2 340
China	* 10 000	* 10 000	* 11 000	* 11 000	* 12 000
Indonesia	4 900	4 400	4 000	4 421	4 703
Japan	93 900	79 200	105 900	109 300	93 600
Philippines	19 300	16 200	18 800	22 731	19 353
Australia	34 140	37 327	39 341	35 309	42 505
New Caledonia	28 283	19 889	30 373	32 580	27 988
World total	715 000	609 000	664 000	738 000	699 000

Note: Data relate to refined nickel plus the nickel content of ferro-nickel and nickel oxide

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

Exports of Nickel

Country	1977	1978	1979	1980	1981
United Kingdom					
Mattes, sinters etc.	445	265	1 383	2 911	(f) 2 074
Unwrought	24 487	19 002	13 518	9 654	(f) 8 151
Unwrought alloys	1 834	1 411	1 348	1 332	(f) 1 035
Scrap	6 552	3 392	4 341	4 404	(f) 2 172
Oxides	228	220	252	58	(f) 131
Belgium-Luxembourg					
Unwrought	60	90	290	258	62
Unwrought alloys	222	243	116	55	56
Scrap	1 309	1 219	1 656	1 440	1 432
Denmark					
Scrap	130	52	178	95	32
France					
Mattes, sinters etc.	211	850	2 754	272	3
Unwrought	4 769	5 324	4 404	5 873	4 711
Unwrought alloys	220	536	774	884	553
Scrap	2 429	2 454	2 708	2 179	2 461
Oxides	810	521	1 033	547	235
Germany, Federal Republic of					
Mattes, sinters etc.	17	7	1 332	302	52
Unwrought	5 573	2 760	8 246	3 441	2 632
Unwrought alloys	1 242	2 416	3 091	2 995	1 869
Scrap	8 025	7 150	8 381	5 317	7 780
Oxides	103	290	147	135	95
Greece					
Ferro-nickel	44 697	67 458	65 526	49 468	49 349
Italy					
Unwrought (a)	282	100	226	169	131
Scrap	212	161	299	271	318
Netherlands					
Mattes, sinters etc.	681	2 568	4 034	3 686	2 602
Unwrought (a)	1 968	3 246	3 816	4 446	3 087
Scrap	1 795	1 845	2 071	2 168	1 564
Oxides	137	273	488	572	264
Austria					
Scrap	367	42	471	302	451
Finland					
Mattes, sinters etc.	...	...	686	1 657	2 690
Unwrought (a)	7 928	5 882	9 578	11 104	11 135
Norway					
Ore	14 222	12 212	12 692	13 773	11 360
Unwrought	20 732	40 854	33 088	31 250	36 931
Scrap	453	562	994	391	583
Soviet Union					
Unwrought (b)	* 10 900	* 21 400	* 25 600	* 30 000	* 28 300
Spain					
Scrap	439	359	302	168	79
Sweden					
Mattes, sinters etc.	358	798	64	—	—
Unwrought (a)	2 449	1 720	1 640	1 906	1 397
Scrap	831	498	482	503	525
Switzerland					
Unwrought, mattes, sinters, etc. & scrap	476	245	679	413	263
Yugoslavia					
Scrap	301	289	210	288	148
South Africa (b)					
Slurry, mattes, sinters etc.	* 4 400	* 35 000	* 47 500	* 54 900	* 79 100
Unwrought (a)	* 16 800	* 25 500	* 27 700	* 23 400	* 18 000
Canada					
Ores, concentrates, mattes, sinters etc. (c)	80 546	39 077	42 735	42 646	53 840
Unwrought	79 039	107 253	85 459	88 520	79 989
Scrap	2 208	2 308	2 401	2 664	2 927
Oxides (c)	35 005	27 793	17 191	16 989	14 422
Cuba					
Oxides (e)	24 825	19 764	21 671	19 656	...
Sulphide (e)	19 015	17 532	13 737	18 139	...

Nickel

Exports of Nickel

tonnes

Country	1977	1978	1979	1980	1981
Dominican Republic					
Ferro-nickel	59 946	50 007	64 500	46 614	49 073
USA					
Unwrought (a)	13 844	11 332	20 650	13 854	15 657
Scrap	7 665	4 238	9 241	18 806	9 834
Hong Kong					
Unwrought (Re-exports)	275	1 063	1 550	2 169	2 895
Scrap	118	193	205	209	435
Indonesia					
Ore	640 631	576 377	781 881	883 055	842 045
Mattes, sinters etc.	2 830	15 627	29 280	42 763	44 947
Japan					
Unwrought (a)	3 914	2 989	1 752	1 330	1 262
Philippines					
Ores & concentrates	488 597	578 034	704 299	608 825	557 583
Unwrought (a)	15 861	12 016	14 791	18 823	15 469
Taiwan					
Unwrought	188	152	41	54	36
Scrap	364	349	641	572	947
Australia (d)	* 62 600	* 61 400	* 58 300	* 53 000	* 51 200
New Caledonia					
Ores	2 604 354	1 540 093	2 142 152	2 012 082	1 600 877
Mattes, sinters etc.	31 314	21 752	17 810	21 980	22 500
Ferro-nickel	124 325	98 984	180 793	128 796	109 300

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)
- (f) Six months data only

Imports of Nickel

Country	1977	1978	1979	1980	1981
United Kingdom					
Mattes, sinters etc.	61 418	31 693	27 822	38 325	41 232
Unwrought	20 009	15 535	17 083	16 762	16 631
Unwrought alloys	1 506	1 274	876	1 478	526
Scrap	3 476	2 772	3 078	2 174	2 431
Oxides	451	700	341	1 020	257
Belgium-Luxembourg					
Mattes, sinters etc.	267	401	177	300	446
Unwrought	1 443	2 492	3 680	2 624	2 176
Unwrought alloys	148	573	570	437	273
Scrap	1 376	1 072	754	519	983
Oxides	137	137	402	164	106
Denmark					
Unwrought	128	152	193	131	115
Unwrought alloys	51	45	13	49	0
France					
Mattes, sinters etc.	20 427	12 986	10 500	15 050	19 374
Unwrought	10 648	12 177	16 005	18 029	16 802
Unwrought alloys	1 489	2 566	3 833	4 525	3 109
Scrap	1 340	719	1 444	763	983
Oxides	177	226	141	244	262
Germany, Federal Republic of					
Mattes, sinters etc.	16 136	16 465	15 746	14 116	12 361
Unwrought (a)	36 422	38 881	47 708	39 329	39 929
Scrap	4 636	4 003	6 505	7 552	5 469
Oxides	487	595	612	391	315
Irish Republic					
Unwrought (a)	149	284	108	254	188
Italy					
Mattes, sinters etc.	5 702	7 202	5 322	2 670	1 783
Unwrought	10 199	11 374	15 318	17 969	11 486
Unwrought alloys	1 311	859	1 534	785	651
Scrap	970	299	313	685	335
Oxides	2 179	3 720	3 755	2 534	2 897
Netherlands					
Mattes, sinters etc.	697	3 224	4 267	3 695	2 633
Unwrought	2 264	3 975	4 949	5 518	3 681
Unwrought alloys	178	79	129	49	54
Scrap	2 245	728	875	1 021	1 377
Oxides	825	887	725	1 127	1 075
Austria					
Mattes, sinters etc.	1 278	1 362	1 533	1 279	734
Unwrought (a)	2 288	2 401	2 849	2 378	2 586
Scrap	2 767	262	1 504	1 597	567
Czechoslovakia					
Unwrought (a)	6 410	4 862	5 580	7 919	...
Finland					
Ore	13 193	14 275	14 798	14 676	12 402
Mattes, sinters etc.	2 191	2 249	7 170	7 522	6 270
Unwrought (a)	1 093	2 297	2 846	4 299	2 460
Scrap	1 749	925	1 176	1 944	1 449
Norway					
Ore	376	—	89	—	—
Mattes, sinters etc.	71 330	54 429	78 897	89 855	84 252
Unwrought (a)	220	65	85	79	188
Scrap	3	573	1	7	21
Portugal					
Unwrought	180	233	206	139	455
Spain					
Mattes, sinters etc.	221	2 654	2 074	1 779	2 244
Unwrought (a)	(e) 10 798	6 708	6 500	6 104	3 670
Sweden					
Mattes, sinters etc.	2 438	5 249	3 475	4 453	3 113
Unwrought	7 928	8 138	11 257	10 518	7 744
Unwrought alloys	295	285	358	287	286
Scrap	2 322	2 002	2 713	2 614	2 092

Nickel

Imports of Nickel

tonnes

Country	1977	1978	1979	1980	1981
Switzerland					
Unwrought, mattes, sinters, etc. & scrap	1 539	1 520	1 806	1 504	1 404
Yugoslavia					
Unwrought	1 915	1 487	1 507	1 960	2 150
South Africa					
Mattes, sinters etc. Unwrought	1 653	909	362	0	150
Scrap	742	2 394	651	542	522
	300	236	37	89	27
Canada					
Ores, concentrates & scrap (b)	32 498	31 903	19 047	26 149	23 760
Unwrought (a)	2 988	4 014	3 108	5 224	2 925
Mexico					
Mattes, sinters etc. Oxides	2 997	2 929	4 590	3 208	...
	249	377	320	505	...
USA					
Ore	101	—	4 515	1 020	465
Slurry (b)	16 855	33 017	26 692	31 452	37 659
Unwrought (a)	92 769	136 160	101 530	107 497	109 804
Scrap	2 916	3 351	3 262	3 240	4 741
Oxides	4 169	5 518	1 650	3 794	3 928
Argentina					
Unwrought	647	629	825	...	...
Brazil					
Unwrought (a)	2 310	3 016	4 579	5 850	4 950
Venezuela					
Unwrought	112	203	181	185	...
Hong Kong					
Unwrought	727	1 943	2 248	3 487	4 534
India					
Unwrought (c)	3 371	3 774	2 474	...	...
Unwrought alloys (c)	703	639	802	...	...
Scrap	1 227	2 690	2 377	...	...
Japan					
Ore	3 951 141	2 999 406	4 014 772	3 950 321	3 462 801
Mattes, sinters etc. Unwrought	41 008	30 044	43 257	51 751	36 608
Unwrought alloys	11 046	10 603	19 263	15 202	17 732
Scrap	154	287	456	415	151
Oxides	3 883	3 522	1 948	1 806	2 252
	160	296	1 216	1 797	1 439
Korea, Republic of					
Unwrought	653	...	1 927	2 853	3 811
Scrap	104	...	77	10	4
Malaysia					
Unwrought (a)	178	4 685	6 890	...	...
Taiwan					
Unwrought (a)	1 457	4 188	2 324	2 230	2 479
Australia					
Mattes, sinters etc. Unwrought	3 380	1 502	2 683	1 928	...
Unwrought alloys	677	3 065	752	1 359	875
	353	172	98	276	646
New Zealand (d)					
Unwrought (a)	6	100	38	107	116

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) Including some intermediate products

Production of Crude Petroleum

thousand tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	37 420	52 932	76 596	78 917	87 849
Denmark (e)	514	430	421	* 270	760
France	1 037	1 117	1 196	1 405	1 676
Germany, Federal Republic of	5 401	5 059	4 774	4 631	4 459
Italy	1 083	1 452	1 662	1 800	1 465
Netherlands	1 382	1 402	1 316	1 280	1 316
Albania	* 2 300	* 2 300	* 3 280	* 1 590	* 2 190
Austria	1 787	1 790	1 726	1 475	1 338
Bulgaria	129	* 250	* 250	* 250	* 290
Czechoslovakia	123	117	108	93	89
German Democratic Republic	67	50	* 50	* 60	* 60
Hungary	2 191	2 198	2 027	2 031	2 024
Norway	13 554	16 957	18 819	24 451	23 577
Poland	364	363	331	329	315
Romania	14 650	13 724	12 323	11 511	11 644
Soviet Union	545 799	571 531	585 571	603 207	608 820
Spain	989	979	1 150	1 596	* 1 170
Turkey	2 714	2 735	2 845	2 330	2 364
Yugoslavia	3 951	4 076	4 143	4 229	4 375
Algeria	53 518	57 200	56 900	51 280	44 570
Angola	8 920	7 060	7 270	7 420	6 480
Cameroon	...	650	1 730	2 790	4 420
Congo	1 678	2 570	2 784	3 658	4 100
Egypt	20 900	25 890	28 220	29 450	32 100
Gabon	11 267	10 500	9 798	8 895	7 520
Libya	98 900	95 027	100 270	87 791	52 840
Nigeria	103 381	93 424	113 694	100 286	69 930
Tunisia	4 304	4 944	5 536	5 540	5 310
Zaire	1 215	916	1 057	1 000	1 040
Canada	69 737	69 330	79 110	75 997	67 853
Cuba	256	288	288	273	253
Mexico	50 364	62 092	75 032	99 670	118 730
Trinidad & Tobago	11 965	11 987	11 197	11 105	* 10 000
USA	410 541	433 590	425 827	428 104	426 876
Argentina	22 075	20 179	23 836	25 221	25 451
Bolivia	1 838	1 718	1 476	1 262	* 1 200
Brazil	8 809	8 791	9 056	9 934	* 11 000
Chile	1 033	911	1 097	1 763	2 191
Colombia	7 089	6 739	6 394	6 486	6 908
Ecuador	9 284	10 053	10 668	10 208	10 518
Peru	4 486	7 422	9 430	10 213	10 000
Venezuela	117 189	113 628	124 106	114 788	111 688
Abu Dhabi	79 062	69 236	69 998	65 260	54 870
Bahrain	2 895	2 760	2 560	2 424	2 300
Brunei	10 540	11 146	12 257	10 458	8 300
Burma (d)	1 387	1 298	1 419	1 404	1 160
China (a)	93 640	104 050	106 200	105 950	101 240
Dubai	15 962	18 130	17 728	17 476	17 370
India	10 185	11 270	12 841	9 397	13 990
Indonesia	83 712	81 206	78 993	78 549	* 78 000
Iran	282 230	258 215	149 558	72 590	64 840
Iraq	111 000	128 750	169 290	135 810	43 260
Israel	28	24	22	21	17
Japan	629	574	511	459	416
Kuwait	98 686	105 454	125 392	83 567	56 628
Malaysia	8 985	10 552	13 639	13 245	12 360
Neutral Zone (c)	19 080	24 020	29 180	28 040	19 160
Oman	16 793	15 521	14 574	13 978	16 330
Pakistan	405	499	523	497	480
Philippines	—	—	1 180	490	290

Production of Crude Petroleum

thousand tonnes

Country	1977	1978	1979	1980	1981
Qatar	23 554	25 783	24 038	22 784	19 270
Saudi Arabia	457 612	412 906	474 173	493 684	493 520
Sharjah	1 368	1 058	655	490	460
Syria	9 117	9 060	8 990	8 680	8 590
Taiwan	232	225	210	193	167
Australia	22 793	22 976	23 141	20 288	20 807
New Zealand (b)	785	660	435	382	460
World total	3 005 000	3 040 000	3 200 000	3 020 000	2 800 000

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
- (e) Sales

Production of Natural Gas

Million m³

Country	1977	1978	1979	1980	1981
United Kingdom	40 565	39 108	40 292	38 716	38 732
Belgium	40	44	39	47	43
France	7 598	7 610	7 769	7 536	7 076
Germany, Federal Republic of	19 104	20 450	20 685	18 645	19 058
Italy	13 717	13 701	13 466	12 531	13 943
Netherlands	96 899	88 730	96 488	91 153	84 617
Albania	* 350	* 350	* 370	* 370	...
Austria	2 393	2 414	2 312	1 903	1 437
Bulgaria	10	32	137	190	* 140
Czechoslovakia	940	740	851	626	662
German Democratic Republic	* 8 500	* 8 600	* 8 800	* 9 000	* 7 900
Hungary	6 611	7 346	6 521	6 142	6 011
Norway	3 139	14 891	21 581	25 973	26 131
Poland	7 296	7 991	7 335	6 329	6 172
Romania	35 281	35 543	34 057	35 171	35 093
Soviet Union	346 003	372 194	406 597	435 217	465 262
Yugoslavia	1 897	1 935	1 857	1 820	1 651
Algeria	7 945	13 200	21 030	* 10 000	* 13 200
Angola	* 2 500	* 2 500	* 2 500	* 2 500	* 2 500
Egypt	529	873	* 3 400	* 1 700	* 2 000
Gabon	60	56	61	72	* 70
Libya	5 051	5 121	6 785	7 362	* 7 500
Morocco	86	81	75	67	* 85
Nigeria	665	799	1 019	1 343	* 1 200
Tunisia	230	286	330	* 330	* 330
Canada	91 147	88 324	94 426	87 108	82 186
Mexico	16 992	21 093	25 906	31 978	34 383
Trinidad & Tobago	2 031	2 401	2 477	2 754	* 2 800
USA	567 058	565 602	579 681	577 063	571 825
Argentina	7 787	7 353	8 719	9 459	9 839
Bolivia	1 846	1 819	1 989	2 227	* 2 300
Brazil	1 056	1 016	990	1 260	* 1 300
Chile	3 791	3 500	3 910	* 3 800	* 3 700
Colombia	2 102	2 756	3 063	3 357	* 3 000
Peru	* 930	903	596	* 595	...
Venezuela	14 828	14 729	16 298	16 679	16 643
Afghanistan (c)	2 582	* 2 565	* 2 400	* 2 800	* 4 500
Bahrain	2 364	2 600	2 916	2 760	* 4 900
Bangladesh (d)	916	971	1 112	1 180	...
Brunei	9 070	8 890	9 360	9 290	* 9 700
Burma (b)	249	280	341	420	* 665
China	* 12 000	* 13 700	* 14 500	* 13 600	* 12 900
India	1 631	1 731	1 925	1 462	...
Indonesia	15 370	23 223	28 272	29 612	31 658
Iran	22 000	19 500	* 14 200	* 8 300	* 5 700
Iraq	1 580	1 609	2 230	2 237	1 760
Israel	57	51	68	142	175
Japan	2 764	2 628	2 421	2 473	1 980
Kuwait (a)	5 961	6 260	8 612	7 362	* 5 400
Malaysia	93	94	98	827	* 750
Pakistan	5 047	5 187	6 797	8 134	8 960
Qatar	1 607	1 479	4 363	* 4 150	...
Saudi Arabia (a)	* 6 000	* 6 800	* 11 700	* 14 600	* 14 600
Taiwan	1 886	1 841	1 721	1 708	1 502
Australia	6 766	7 324	8 381	9 567	11 268
New Zealand	2 257	2 125	1 307	1 069	* 1 200
World total	1 420 000	1 500 000	1 600 000	1 600 000	1 600 000

Note: So far as possible the figures in this table exclude flared gas

(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	1977	1978	1979	1980	1981
United Kingdom	15 470 043	23 138 777	38 833 712	38 595 732	(c) 26 464 287
Belgium-Luxembourg	51	80 903	3	2	58 553
Germany, Federal Republic of	33	31	44	70 197	133
Netherlands	683	2 962	15 387	14 683	46 633
Norway	13 556 881	16 685 295	18 710 771	23 197 329	20 453 396
Soviet Union	* 110 000 000	* 115 000 000	* 120 000 000	* 120 000 000	* 110 000 000
Algeria	47 456 571	47 360 501	51 739 198	45 000 000	...
Angola	7 574 900	* 7 220 000	* 7 500 000	* 7 500 000	...
Congo	1 301 196	1 109 533	3 721 086	74 984	...
Egypt	3 990 570	4 270 009	5 245 837	8 005 645	...
Gabon	10 167 288	8 829 843	6 939 400	7 687 100	...
Libya	103 051 406	98 262 445	104 155 494	89 864 479	...
Nigeria	100 234 929	85 529 262	109 143 000	95 000 000	...
Tunisia	4 144 877	4 673 652	5 253 953	4 609 280	4 991 407
Canada	17 546 865	14 221 630	15 277 740	11 349 029	8 677 140
Mexico	10 818 077	19 328 113	27 361 000	42 505 000	56 384 000
Netherlands Antilles	1 874 000	* 1 200 000	* 2 200 000	...	...
Trinidad & Tobago	7 818 153	7 950 743	7 872 600	7 193 801	...
USA	2 483 182	4 725 147	4 185 611	5 259 570	2 468 931
Bolivia	569 649	363 253	23 119	—	—
Ecuador	6 883 322	6 141 658	6 036 003	5 410 000	6 203 000
Peru	84 856	1 445 000	2 568 000	2 390 000	...
Venezuela	69 160 000	65 157 000	73 729 000	67 782 000	66 138 000
Brunei	10 762 801	11 200 833	12 239 044	11 218 160	...
China (d)	* 8 000 000	* 9 750 000	* 11 320 000	* 11 300 000	* 12 300 000
Indonesia	68 030 214	69 560 158	60 417 683	50 886 849	50 130 321
Iran (b)	53 711 000	219 143 000	118 611 000	39 367 000	* 23 500 000
Iraq	112 688 000	116 773 000	160 606 000	118 520 000	...
Kuwait	80 861 200	87 234 767	104 640 105	63 509 634	...
Malaysia	7 722 674	9 152 866	12 034 451	* 11 500 000	...
Neutral Zone (a)	15 511 800	...	...	...	...
Oman	17 695 331	15 642 760	14 546 685	13 775 372	...
Qatar	17 395 655	25 431 046	24 042 481	22 506 645	...
Saudi Arabia	428 189 200	383 306 900	440 137 000	454 661 000	444 021 000
Singapore	187 637	90 487	124 214	75 243	50 440
Syria	7 948 610	8 109 942	7 697 000	* 7 000 000	...
United Arab Emirates	95 891 000	87 892 000	87 666 000	* 82 786 000	...
Australia	196 322	269 670	303 723	63 052	...

(a) Neutral zone of Kuwait and Saudi Arabia

(b) Years ended 20 March following that stated

(c) Six months data only

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

Imports of Crude Petroleum

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	70 202 450	65 458 875	57 830 226	44 541 358	33 004 358
Belgium-Luxembourg	34 998 483	30 795 740	31 596 685	29 913 668	27 213 278
Denmark	7 335 965	7 724 824	7 951 692	5 764 051	5 017 574
France	118 274 281	116 387 810	126 010 262	109 722 147	90 095 874
Germany, Federal Republic of	96 289 675	94 375 050	107 354 974	96 875 766	79 246 855
Greece	9 403 074	12 371 250	15 495 179	10 187 382	8 904 000
Irish Republic	2 218 546	2 067 755	2 027 219	2 113 988	652 678
Italy	99 740 178	107 837 605	109 265 764	88 534 643	84 365 701
Netherlands	65 969 575	57 827 057	61 161 661	50 448 982	39 662 317
Austria	6 786 993	8 066 333	8 827 011	8 318 277	7 532 649
Bulgaria	11 763 000	12 644 000	* 13 000 000	* 13 000 000	...
Czechoslovakia	18 322 000	18 577 000	18 834 000	19 262 000	...
Finland	11 517 229	10 453 872	12 716 457	12 876 406	10 774 257
German Democratic Republic	19 042 000	19 925 000	20 694 000	21 876 000	22 734 000
Hungary	8 538 312	9 960 047	9 638 368	8 336 292	7 754 183
Norway	8 557 892	8 391 833	7 611 074	6 197 743	3 899 913
Poland	16 404 000	16 615 000	16 608 000	16 347 000	13 510 000
Portugal	5 949 028	6 437 121	7 690 682	8 032 076	7 503 753
Romania	8 844 000	12 937 000	14 298 000	15 961 000	12 900 000
Soviet Union	* 6 500 000	* 6 000 000	* 3 500 000	* 5 000 000	* 5 000 000
Spain	39 035 773	39 136 394	42 717 210	43 465 852	42 027 000
Sweden	14 278 448	15 641 573	16 160 000	17 898 000	14 744 000
Switzerland	4 144 882	3 872 225	4 203 409	3 832 443	3 241 634
Turkey	11 750 450	10 762 108	7 191 341	12 053 569	11 602 000
Yugoslavia	9 652 760	10 379 841	11 813 749	10 944 393	9 354 000
Canary Islands	6 871 572	5 934 783	6 031 883	6 143 221	...
Ethiopia	620 081	611 633	637 000	633 000	...
Ghana	695 569	631 833	* 600 000	...	...
Ivory Coast	1 601 868	1 550 623	1 973 807	...	1 520 979
Kenya	2 460 109	2 369 217	2 471 453	3 119 466	...
Liberia	—	99 590	548 366	592 466	...
Madagascar	449 859	467 608	299 237	133 000	...
Morocco	2 849 846	2 872 440	4 541 618	4 001 187	4 476 243
Mozambique	327 317	638 200	701 100	631 300	...
Senegal	765 460	852 016	* 800 000	* 800 000	...
Sierra Leone	231 441	246 331	318 726	205 239	...
South Africa	* 16 175 000	* 15 865 000	* 13 000 000	* 15 000 000	...
Sudan	—	1 023 600	* 1 050 000	690 834	...
Tanzania	710 000	1 106 452	570 000	516 000	...
Tunisia	1 034 711	942 498	1 454 996	1 146 325	1 399 364
Zaire	218 400	208 300	* 180 000	* 180 000	...
Zambia	863 416	820 800	* 900 000	* 950 000	...
Bahamas	35 408 565	...	...	...	...
Barbados	128 273	108 256	* 110 000	91 000	...
Canada	34 729 430	33 552 992	32 253 452	29 861 177	27 528 911
Costa Rica	335 247	419 595	366 234	538 696	...
Cuba	6 201 000	6 359 000	6 250 000	* 6 200 000	...
Dominican Republic	1 546 315	1 736 192	1 712 598	1 457 154	...
El Salvador	859 685	705 179	643 421	* 650 000	...
Guatemala	792 990	860 510	60 621	...	...
Honduras	450 810	429 724	* 448 000	* 410 000	...
Jamaica	1 026 675	1 011 389	1 211 505	982 578	...
Martinique	524 577	432 760	195 299	149 841	...
Netherlands Antilles	28 979 000	* 29 500 000	* 30 150 000	* 31 000 000	...
Nicaragua	642 104	507 220	437 136	587 670	...
Panama	2 853 159	2 330 355	2 165 654	* 2 100 000	...
Trinidad & Tobago	8 525 499	7 749 670	6 118 448	7 283 707	...
USA	365 917 817	347 232 620	357 765 623	286 983 297	255 897 319
Argentina	3 306 801	1 970 002	1 833 048	2 306 966	1 320 263
Brazil	40 089 067	44 749 557	50 158 455	43 590 021	42 209 325
Chile	2 825 020	3 563 892	...	...	...
Colombia	909 058	1 081 355	1 019 243	699 612	1 530 673
Paraguay	226 563	319 904	286 006	197 391	250 538
Peru	2 284 860	56 000	...	...	...
Uruguay	1 360 343	600 798	1 149 271	...	1 758 619

Imports of Crude Petroleum

tonnes

Country	1977	1978	1979	1980	1981
Bahrain	9 984 000	9 575 600	9 876 000	9 548 000	...
Bangladesh	1 092 000	1 064 000	1 040 000	1 278 000	...
Cyprus	447 303	486 120	514 253	624 353	623 950
India	14 548 000	14 892 000	15 467 000	15 979 000	...
Indonesia	2 941 677	2 180 800	3 069 846	4 903 138	2 676 126
Israel	7 682 300	8 149 000	7 927 000	7 399 000	...
Japan	241 750 785	238 729 354	249 255 344	223 917 000	202 897 396
Jordan	1 181 000	1 332 285	1 730 735	1 753 648	...
Korea, Republic of	20 743 348	23 790 300	25 047 873	24 844 075	24 529 305
Kuwait	4 477 600	...	...	...	...
Lebanon	1 747 900	* 1 829 000	* 1 855 000	* 2 047 000	...
Malaysia	3 771 711	4 225 302	4 426 235	* 4 250 000	...
Pakistan	2 881 835	3 367 918	2 945 695	4 619 075	3 954 967
Philippines	9 530 599	10 021 582	9 122 255	8 831 761	8 908 538
Singapore	23 631 341	27 651 237	28 163 001	25 085 274	31 664 934
Sri Lanka	1 529 629	1 516 127	1 438 009	1 860 653	1 698 503
Syria	2 916 065	2 371 185	3 322 276	3 154 711	4 954 216
Taiwan	13 569 489	17 129 796	17 435 865	18 107 629	17 183 443
Thailand	8 844 627	8 876 435	9 334 861	8 995 207	...
Yemen, People's Dem. Rep. of	* 1 917 000	* 1 930 000	* 1 950 000	* 1 950 000	...
Australia	9 209 819	10 328 206	10 020 845	9 688 736	10 079 169
New Zealand (a)	2 165 972	1 566 841	1 836 321	2 017 872	2 055 564

(a) Years ended 30 June of that stated

Production of Phosphate Rock

Country	1977	1978	1979	1980	1981
France	19 340	24 500	* 24 000	25 400	28 700
Germany, Federal Republic of	80 497	—	—	—	—
Finland	2 550	4 218	2 690	137 950	200 927
Soviet Union	* 24 250 000	* 24 800 000	* 24 500 000	* 24 700 000	* 25 200 000
Sweden	50 000	83 000	58 000	88 000	124 000
Turkey	65 418	32 205	37 571	82 655	103 129
Algeria	1 173 100	1 124 000	1 132 000	1 025 400	858 000
Egypt	513 000	638 734	623 000	658 000	* 700 000
Kenya					
Guano	55	20	6	—	—
Morocco	17 809 254	19 273 200	20 030 768	18 824 243	19 696 000
Senegal					
Phosphate rock	1 800 000	1 460 000	1 523 000	1 289 543	) 2 017 000
Aluminium phosphate	275 000	(a) 356 723	(a) 390 963	(a) 83 060)
Seychelles					
Guano (b)	5 277	6 089	6 383	4 285	1 440
South Africa	2 403 100	2 699 100	3 145 700	3 185 000	2 910 000
Togo	2 857 000	2 827 000	2 915 800	2 930 000	2 215 363
Tunisia	3 614 617	3 712 338	3 615 000	4 501 907	4 937 598
Uganda	* 1 000	—	—	—	—
Zimbabwe	104 800	106 639	136 238	130 337	122 235
Mexico	285 470	322 076	274 428	396 646	* 300 000
Netherlands Antilles	79 000	81 000	49 000	—	—
USA	47 256 000	50 037 000	51 611 000	54 415 000	53 624 000
Brazil	676 134	1 050 118	1 628 193	2 611 641	2 637 000
Chile					
Guano	7 017	240	—	—	—
Colombia	5 800	1 320	6 776	8 370	* 9 000
Venezuela	24 000	11 000	—	—	—
China	* 4 100 000	* 4 400 000	8 517 000	10 726 000	* 11 500 000
Christmas Island (b)(c)	1 262 608	1 378 046	1 360 852	1 638 315	1 374 656
India	740 322	789 270	681 486	540 932	561 944
Indonesia	3 599	6 071	5 323	* 5 000	* 5 000
Israel	1 228 000	1 553 900	2 085 500	2 307 100	1 918 700
Jordan	1 771 141	2 328 700	2 825 823	3 911 166	4 243 643
Korea, Dem. P.R. of	* 500 000	* 500 000	* 550 000	* 550 000	* 550 000
Philippines					
Phosphate rock	10 323	1 074	2 495	16 794	* 16 000
Guano	162	821	3 158	24 836	* 25 000
Syria	425 000	800 000	1 170 000	1 319 000	1 321 000
Thailand	3 100	3 485	4 542	5 570	2 610
Vietnam	* 1 600 000	* 1 600 000	* 400 000	* 500 000	* 550 000
Australia	449 631	248 328	7 557	6 621	4 937
Banaba (b)	418 650	468 400	(d) 445 700	—	—
Nauru (b)	1 145 674	1 998 900	1 828 420	2 086 676	1 479 900
World total	117 000 000	125 000 000	132 000 000	139 000 000	139 000 000

(a) Including lime phosphates

(b) Exports

(c) Including phosphate dust

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

Exports of Phosphate Rock

tonnes

Country	1977	1978	1979	1980	1981
Belgium-Luxembourg	11 553	14 203	18 433	11 291	14 779
France	10 085	16 503	26 017	15 498	3 441
Germany, Federal Republic of	1 280	1 230	952	1 555	1 959
Netherlands	75 915	66 605	71 427	64 064	26 250
Soviet Union (c)	* 5 925 000	* 6 025 000	* 6 025 000	* 6 025 000	* 6 025 000
Sweden	42 187	65 045	43 816	60 675	92 575
Algeria	775 501	614 450	836 122	768 000	791 000
Egypt	59 166	64 093	...	25 945	...
Morocco	15 783 537	17 284 372	17 856 090	16 527 145	15 635 480
Senegal					
Calcium phosphate	1 712 190	1 569 492	) 1 502 000	1 252 000	1 205 000
Aluminium phosphate	149 214	170 151			
Seychelles					
Guano	5 277	6 089	6 383	4 285	1 440
South Africa	4 510	—	5 321	2 841	21 521
Togo	2 886 000	2 849 000	2 991 000	2 896 000	2 215 000
Tunisia	2 091 426	1 669 010	1 598 246	1 317 125	951 028
Western Sahara	25 000	441 000	...	...	...
Mexico	2 344	1 021	—	0	...
Netherlands Antilles	75 206	78 800	* 48 000	18 373	...
USA	14 016 378	13 692 646	14 786 811	14 320 352	10 553 611
Christmas Island (a)	1 262 608	1 378 046	1 360 852	1 638 315	1 335 544
Israel (b)	479 708	479 401	474 653	601 887	1 215 523
Jordan	1 788 414	2 159 920	2 754 615	3 623 069	3 480 000
Singapore	22 550	13 019	12 465	18 653	29 988
Syria	610 219	919 804	1 253 389	744 034	955 497
Australia	* 212 000	* 284 300	* 40 000	—	...
Banaba	418 650	468 400	445 700	—	—
Nauru	1 145 674	1 998 900	1 828 420	2 086 676	1 479 900

(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

Country	1977	1978	1979	1980	1981
United Kingdom	1 826 694	1 771 722	1 751 800	1 755 115	1 456 130
Belgium-Luxembourg	1 926 116	1 941 348	2 155 347	2 326 081	2 251 950
Denmark	271 580	281 525	264 651	312 163	338 153
France	4 736 195	4 965 571	5 385 589	5 449 733	4 551 522
Germany, Federal Republic of	2 694 445	2 441 220	2 584 042	2 560 313	2 210 349
Greece	132 467	99 064	82 864	244 261	218 772
Irish Republic	120 995	104 728	106 400	87 059	36 859
Italy	1 601 809	1 618 707	1 624 800	1 739 719	1 377 281
Netherlands	1 991 525	2 207 702	2 451 072	2 485 238	2 137 710
Austria	347 705	314 341	410 100	409 810	421 341
Bulgaria (b)	* 545 000	* 671 000	* 697 000	* 328 000	...
Czechoslovakia (a)	348 000	317 000	322 000	323 000	271 000
Finland	407 366	429 807	672 526	613 628	410 231
German Democratic Republic (a)	506 300	460 200	544 700	533 500	416 100
Hungary	646 416	759 076	595 111	671 784	674 150
Norway	367 935	419 329	427 397	477 212	402 098
Poland	3 558 000	3 232 000	3 327 000	3 242 000	2 938 000
Portugal	349 717	389 748	355 748	457 055	342 560
Romania (a)	778 900	879 100	923 500	896 800	...
Spain	2 762 471	2 947 057	2 926 065	2 604 073	2 399 400
Sweden	582 049	574 401	619 160	579 657	618 932
Switzerland	10 393	11 393	13 020	13 055	9 799
Turkey	642 831	591 842	513 122	856 070	1 268 261
Yugoslavia	1 066 091	902 610	896 443	1 382 685	1 057 978
Canary Islands	11 579	8 270	6 350	2 745	...
Ivory Coast	7 175	9 315	6 207	* 15 000	* 6 100
Mozambique	5 000	3 000	3 000	4 000	4 000
Nigeria	16 000	3 000	25 000	15 000	32 000
Tanzania	27 102	20 588	17 951	50 000	31 000
Tunisia	2 468	1 801	1 000	1	...
Canada	2 439 021	3 043 899	3 341 039	3 816 514	3 245 447
Mexico	1 420 009	1 349 427	1 195 915	1 000 013	1 164 000
USA	288 417	920 305	893 495	487 049	16 801
Brazil	1 617 126	1 155 826	753 687	772 154	466 308
Colombia	37 792	65 049	48 842	40 758	37 849
Peru	9 999	* 10 000	* 4 000	...	...
Uruguay	75 275	65 140	130 145	68 540	50 560
Venezuela	39 803	40 781	95 020	95 040	...
Bangladesh	94 000	86 000	93 000	139 000	111 000
China	1 336 000	1 412 000	427 000	579 000	301 000
India	951 032	851 078	1 145 464	1 339 000	1 371 000
Japan	2 652 308	2 599 162	2 827 538	2 762 404	2 255 714
Korea, Dem. P.R. of	107 000	217 000	325 000	197 000	159 000
Korea, Republic of	1 169 231	1 645 000	1 845 039	1 670 321	1 136 814
Lebanon	300 730	236 000	438 000	313 000	322 000
Malaysia	169 303	173 554	160 861	234 000	99 000
Pakistan (c)	25 022	42 432	56 447	143 777	115 454
Philippines	79 918	21 776	96 632	30 011	5
Singapore	26 071	14 108	5 405	20 393	20 250
Sri Lanka	319	—	9	27 500	13 300
Taiwan	309 750	287 758	359 569	297 797	314 016
Australia	1 437 511	2 051 862	2 368 694	2 682 737	1 962 000
New Zealand (c)	1 049 744	1 137 193	1 349 279	1 209 305	1 024 671

(a) P₂O₅ content

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

(c) Years ended 30 June of that stated

Mine Production of Platinum Group Metals

kilograms (metal content)

Country	1977	1978	1979	1980	1981
Finland (a)	14	57	48	50	50
Soviet Union	* 90 200	* 95 000	* 100 000	* 101 000	* 104 000
Yugoslavia					
Platinum (a)	23	13	21	20	* 20
Palladium (a)	154	173	163	160	* 160
Ethiopia (c)	6	4	3	4	* 4
South Africa	* 89 300	* 88 950	* 93 800	* 96 400	* 93 300
Canada (b)	14 475	10 768	6 157	12 776	18 914
USA	172	256	227	104	191
Colombia	539	465	402	446	460
Japan					
Platinum (a)	303	317	378	385	* 300
Palladium (a)	707	753	700	901	* 800
Australia					
Platinum	115	92	86	64	* 60
Palladium	298	230	214	328	* 220
World total	196 000	197 000	202 000	213 000	218 000

Notes:

- 1 Wherever possible, figures relate to quantities of platinum group metals thought to be recovered from ores originating in the country stated. Figures for metal production are only given for countries where recovery is thought to be based predominantly on domestic materials or on imported materials which have not been recorded as mine production elsewhere in the table
 - 2 In addition to the countries listed, Bulgaria, China, Indonesia, Papua New Guinea and Philippines are also believed to produce platinum group metals
- (a) Metal production
(b) Platinum metals content of concentrates (produced from Ni-Cu ores), residues and matte exported
(c) Years ended 6 July of that stated

Exports of Platinum Group Metals

Country	1977	1978	1979	1980	1981
United Kingdom					
Platinum	19 658	22 075	21 451	28 967	(c) 13 568
Palladium	9 162	10 807	8 695	10 375	(c) 7 953
Other platinum metals	3 077	5 377	12 463	14 176	(c) 1 700
Waste & scrap	17 344	313	232	1 275	(c) 100
Belgium-Luxembourg					
Platinum	1 172	1 365	995	1 204	1 592
Platinum metals	2 025	2 295	2 527	2 901	4 214
France					
Platinum	2 121	1 889	2 484	3 120	2 865
Platinum metals	2 870	1 352	2 586	915	1 196
Waste & scrap	142	3 150	443	7 701	1 222
Germany, Federal Republic of					
Platinum	8 559	7 853	8 958	8 579	7 454
Palladium	6 031	3 450	4 067	3 250	2 808
Other platinum metals	3 429	2 518	3 564	2 579	2 817
Waste & scrap	111 380	25 386	44 562	37 568	137
Irish Republic					
Platinum & platinum metals	600	441	119	1 446	593
Italy					
Platinum	1 681	2 064	1 352	1 973	3 934
Platinum metals	231	45	383	1 757	747
Netherlands					
Platinum	394	723	905	813	735
Platinum metals	1 056	454	648	449	255
Austria					*
Platinum & platinum metals	215	238	179	320	288
Norway					
Platinum & platinum metals	1 240	968	1 161	833	1 060
Soviet Union					
Platinum & platinum metals (a)	* 60 800	* 73 800	* 67 100	* 46 000	* 46 000
Spain					
Platinum & platinum metals	132	387	1 481	311	...
Switzerland					
Platinum	19 065	27 869	19 645	18 389	29 233
Yugoslavia					
Platinum	145	2 076	1 997	126	...
Palladium	2 193	...	—	—	...
South Africa					
Platinum & platinum metals (a)	* 69 600	* 81 300	* 98 600	* 89 400	* 88 500
Canada					
Ores & concentrates (b)	12 391	10 557	4 906	12 369	10 096
Platinum metals	2 159	1 080	1 779	1 165	1 000
of which: Re-exports	1 040	169	43	9	0
Waste & scrap	994	1 324	1 665	1 431	3 394
USA					
Ores & concentrates (b)	558	451	466	87	296
Platinum	4 950	4 911	6 045	8 608	10 459
of which: Re-exports	685	368	192	693	278
Platinum metals	5 452	11 441	16 276	9 919	8 122
of which: Re-exports	1 374	766	1 552	924	918
Waste & scrap	3 829	5 139	5 476	5 296	6 398
Colombia					
Platinum	234	228	—	—	37
Hong Kong					
Platinum & platinum metals (Re-exports)	424	689	606	441	124

Exports of Platinum Group Metals

kilograms

Country	1977	1978	1979	1980	1981
Japan					
Platinum	2 271	1 282	1 701	1 101	1 884
Platinum metals	1 546	2 519	1 816	1 780	1 388
Taiwan					
Platinum & platinum metals	22	42	* 2	—	—
Australia					
Platinum & platinum metals	2 236	1 838	339	256	...

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
- (c) Six months data only

Imports of Platinum Group Metals

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates (a)	* £61 380 000	* £80 880 000	* £90 332 000	* £187 731 000	* £169 975 000
Platinum	5 631	3 859	7 815	8 025	4 664
Palladium	1 985	5 135	1 625	7 444	4 466
Other platinum metals	2 476	2 138	2 623	4 317	1 203
Waste & scrap	5 646	8 314	11 640	10 512	15 540
Belgium-Luxembourg					
Platinum	1 923	2 159	1 605	2 137	2 008
Platinum metals	1 100	494	1 006	537	838
Denmark					
Platinum & platinum metals	634	1 041	693	501	599
France					
Platinum	6 494	5 396	9 281	6 340	5 568
Platinum metals	4 023	2 544	4 048	5 465	9 858
Waste & scrap	3 198	2 578	2 100	3 092	3 479
Germany, Federal Republic of					
Platinum	11 703	9 374	15 853	12 930	14 411
Palladium	13 404	11 458	11 882	11 443	9 022
Other platinum metals	2 562	3 982	3 543	3 723	2 076
Waste & scrap	97 594	48 536	29 929	59 061	23 064
Irish Republic					
Platinum & platinum metals	300	1 445	535	935	552
Italy					
Platinum	2 458	2 807	3 050	3 574	2 377
Platinum metals	3 547	4 140	4 613	3 942	2 974
Netherlands					
Platinum	1 202	965	1 108	1 379	1 059
Platinum metals	1 532	943	896	586	545
Austria					
Platinum & platinum metals	748	2 118	705	813	687
Bulgaria					
Platinum & platinum metals (e)	...	* 20	* 500	* 600	* 300
Czechoslovakia					
Platinum & platinum metals (e)	* 400	* 200	* 100	* 500	* 200
Finland					
Platinum & platinum metals	183	104	112	182	55
Hungary					
Platinum & platinum metals (e)	* 300	* 400	* 300	* 400	* 400
Norway					
Platinum & platinum metals	149	298	210	172	237
Poland					
Platinum & platinum metals (e)	* 500	* 600	* 400	* 100	* 50
Portugal					
Platinum & platinum metals	188	186	272	271	...
Romania					
Platinum & platinum metals (e)	* 500	* 400	* 400	* 300	* 400
Spain					
Platinum & platinum metals	878	362	2 431	15 185	8 000
Sweden					
Platinum & platinum metals	2 000	3 000	4 000	4 000	2 000
Switzerland					
Platinum	18 033	15 741	15 410	30 876	26 348
Turkey					
Platinum & platinum metals	1 587	344	135	862	...
Yugoslavia					
Platinum	601	2 220	2 474	202	...
Palladium	2 481	...	...	—	...
Algeria					
Platinum & platinum metals	68	178	624	...	...
Nigeria					
Platinum & platinum metals	55	220	...	...	...
South Africa					
Platinum & platinum metals	329	669	854	715	886
Tunisia					
Platinum	40	3	91	11	...
Zambia					
Platinum	51	...	...	...	...

Imports of Platinum Group Metals

kilograms

Country	1977	1978	1979	1980	1981
Canada					
Platinum & platinum metals (c)	1 091	1 747	1 603	1 582	1 258
Costa Rica					
Platinum & platinum metals	206	...	...	...	...
Mexico					
Platinum	127	51	2	3	...
Palladium	126	133	148	107	...
Other platinum metals	18	23	12	34	...
Trinidad & Tobago					
Platinum & platinum metals	78	7	94	139	...
USA					
Ores & concentrates (d)	150	308	345	21	45
Platinum	25 549	36 541	44 612	44 715	33 291
Platinum metals —					
Palladium	35 054	38 075	46 795	40 952	38 285
Iridium, osmium & osmiridium	701	1 501	1 283	1 149	668
Rhodium	2 509	3 201	3 391	3 430	2 347
Ruthenium	2 738	2 287	3 885	3 063	5 612
Waste & scrap	8 168	5 851	4 873	11 711	17 940
Argentina					
Platinum	71	70	...	...	...
Palladium	54	393	...	...	...
Brazil					
Platinum	263	119	302	161	141
Palladium	406	388	515	656	334
Ecuador					
Platinum & platinum metals	389	101	1 693	...	...
Venezuela					
Platinum & platinum metals	51	245	2 074	...	...
China					
Platinum & platinum metals (e)	* 700	* 1 800	* 1 300	* 300	* 300
Hong Kong					
Platinum & platinum metals	5 244	3 834	1 995	1 544	2 448
India					
Platinum	398	417	393	...	...
Iran (f)					
Platinum & scrap	£77 000	* £147 000	* £280 000	* £600 000	...
Israel					
Platinum metals	...	* 130	192	136	187
Japan					
Platinum	36 879	38 946	30 486	31 410	38 078
Platinum metals	17 324	25 143	33 247	26 074	32 000
Korea, Republic of					
Platinum & platinum metals	1 607	1 263	3 093	2 350	56 339
Malaysia					
Platinum & platinum metals	53	283	87	...	...
Singapore					
Platinum	425	44	161	600	3 963
Taiwan					
Platinum & platinum metals	4 538	3 868	8 800	3 203	3 541
Thailand					
Platinum & platinum metals	44	6	7	38	...
Australia					
Platinum metals	26 413	4 669	4 157	25 670	23 422
New Zealand (b)					
Platinum & platinum metals	39	63	84	44	93

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

Production of Potash

tonnes (K₂O content)

Country	1977	1978	1979	1980	1981
United Kingdom					
Chloride	85 365	157 342	277 684	321 469	294 150
France					
Potassic salts	1 678 000	1 928 000	2 075 000	2 039 000	1 969 000
Germany, Federal Republic of					
Potassic salts	2 341 000	2 470 000	2 616 000	2 737 000	2 610 000
Italy					
Potassic salts	342 567	248 310	182 429	130 164	141 780
German Democratic Republic					
Potassic salts	3 229 000	3 323 000	3 395 000	3 422 000	3 460 000
Soviet Union	8 347 000	8 193 000	6 635 000	8 064 000	8 449 000
Spain					
Potassic salts	693 789	722 301	780 632	791 498	728 810
Congo	* 83 000	—	—	—	—
Canada					
Chloride	6 088 587	6 109 555	6 704 728	7 292 824	* 7 170 000
USA					
Potassic salts	2 229 000	2 253 000	2 225 000	2 239 000	2 156 000
Chile					
Nitrate	* 11 200	* 14 900	* 21 600	* 25 300	* 25 000
China	* 18 000	* 21 000	* 16 000	* 12 000	* 11 000
Israel					
Chloride	707 000	695 000	730 000	797 000	850 000
World total	25 900 000	26 100 000	25 700 000	27 900 000	27 900 000

Potash

Exports of Potash

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Sulphate	13	326	40	92	(d) 72
Chloride	35 047	62 951	164 700	200 240	(d) 49 002
Potassic chemicals	939	549	1 742	1 745	(d) 1 356
Belgium-Luxembourg					
Fertiliser salts (a)	63	138	566	729	713
Sulphate (a)	237 810	274 416	297 668	325 076	291 287
Chloride (a)	7 189	8 551	5 138	6 060	5 849
Potassic chemicals	2 383	1 651	1 389	1 700	2 113
France					
Fertiliser salts	12 420	11 533	18 453	13 293	8 807
Chloride	597 544	492 681	412 820	311 855	345 239
Other potassic fertilisers	36 903	30 621	33 937	23 553	21 825
Potassic chemicals	16 542	14 819	20 189	18 981	21 655
Germany, Federal Republic of					
Fertiliser salts	32 795	32 280	49 296	35 585	39 882
Sulphate	440 665	485 992	569 272	) 2 503 623	2 348 198
Chloride	1 314 663	1 891 526	1 863 298		
Potassic chemicals	37 815	33 628	34 132	32 413	38 000
Italy					
Sulphate	132 075	106 804	105 194	72 040	40 426
Potassic chemicals	3 038	301	303	214	20 625
Netherlands					
Chloride (a)	483	473	1 504	3 423	3 456
Potassic chemicals	612	1 719	1 738	1 351	1 912
German Democratic Republic					
Fertiliser salts (a)	2 740 000	2 744 000	2 745 000	2 817 000	2 860 000
Potassic chemicals	1 866	1 412	* 1 690	...	...
Poland					
Potassic chemicals	8 437	8 342	6 762	14 000	...
Portugal					
Sulphate	3 699	1 315	—	100	...
Other potassic fertilisers	—	—	100	1 295	...
Soviet Union					
Fertiliser salts	6 024 367	5 771 093	4 773 334	6 604 707	5 244 747
Spain					
Sulphate	61 785	64 466	80 369	78 485	95 436
Chloride	430 979	340 268	597 132	495 867	512 038
Potassic chemicals	6 751	12 771	19 473	13 478	...
Sweden					
Chloride	1 705	3 371	441	—	—
Potassic chemicals	3 291	3 128	3 643	3 692	3 696
Yugoslavia					
Potassic chemicals	1 733	1 073	2 349	2 115	130
Congo					
Potassic fertilisers	291 002	37	...	...	...
Ivory Coast					
Potassic fertilisers	201	57	52	...	6
Canada					
Chloride	9 206 094	9 275 810	10 630 584	10 565 401	10 067 852

Exports of Potash

Country	1977	1978	1979	1980	1981
USA					
Fertiliser salts	6 895	...	...	...	...
Sulphate	...	183 531	227 805	147 731	99 363
Chloride	1 181 582	1 126 000	891 378	1 174 548	712 887
Other potassic fertilisers	308 560	227 239	310 483	324 265	279 607
Potassic chemicals	17 501	22 457	27 323	34 155	27 206
India					
Potassic chemicals (c)	813	1 518	705	...	...
Israel (b)					
Potassic chemicals	2 575	3 413	2 435	3 938	3 851
Japan					
Sulphate	543	4 149	2 002	3	4 300
Chloride	1 622	4	4	3	3 918
Potassic chemicals	5 225	5 617	5 415	7 096	5 433
Singapore					
Potassic fertilisers	128 271	203 616	234 167	188 654	266 514
Taiwan					
Potassic chemicals	1 155	1 110	1 082	1 172	685
Thailand					
Potassic chemicals	561	1 220	2 674	436	...

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) K₂O 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) Six months data only

Potash

Imports of Potash

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Fertiliser salts	20 443	23 552	37 626	25 428	25 011
Sulphate	23 537	21 973	21 803	17 111	13 076
Chloride	710 980	644 822	607 860	534 836	466 620
Potassic chemicals	24 798	25 969	25 700	22 379	18 290
Belgium-Luxembourg					
Fertiliser salts (a)	9 520	8 419	10 827	8 010	7 388
Sulphate (a)	7 364	18 959	17 398	12 005	13 024
Chloride (a)	542 188	558 428	595 927	655 843	569 324
Potassic chemicals	9 377	8 079	8 846	8 205	7 338
Denmark					
Fertiliser salts	925	825	825	849	875
Sulphate	4 101	24 898	62 616	46 855	68 030
Chloride	221 180	194 748	177 777	192 380	177 177
Potassic chemicals	4 043	4 602	5 247	5 785	5 741
France					
Sulphate	157 155	155 548	177 885	177 714	154 368
Chloride	245 427	164 869	184 458	276 936	197 175
Potassic chemicals	18 472	23 660	27 954	27 410	15 450
Germany, Federal Republic of					
Chloride	83 452	92 365	88 086	91 601	88 134
Potassic chemicals	9 243	13 215	14 142	16 272	13 078
Greece					
Sulphate	5 600	20 303	9 116	48 480	5 075
Potassic chemicals	1 490	2 110	757	2 097	2 918
Irish Republic					
Sulphate	7 970	4 266	4 078	7 559	8 204
Chloride	269 352	327 357	373 008	258 761	311 562
Other potassic fertilisers	1 831	2 399	40	6 092	20
Potassic chemicals (f)	748	583	861	677	1 305
Italy					
Fertiliser salts	22 948	19 153	22 316	16 983	12 719
Sulphate	58 350	51 793	64 990	41 925	50 904
Chloride	397 654	479 212	632 046	631 323	480 139
Other potassic fertilisers	46	35	259	32 114	21 220
Potassic chemicals	19 620	21 513	16 614	16 738	15 272
Netherlands					
Fertiliser salts (a)	526	403	881	578	175
Sulphate (a)	51 918	38 781	44 617	30 961	37 928
Chloride (a)	165 082	154 944	160 386	157 754	166 019
Potassic chemicals	20 300	21 671	27 670	28 277	25 695
Austria					
Fertiliser salts	24 738	19 231	16 302	12 216	13 531
Sulphate	43 793	36 784	36 967	25 547	28 913
Chloride	253 598	215 872	257 027	269 149	260 144
Other potassic fertilisers	1	14	102	1 508	2 151
Potassic chemicals	4 057	3 909	3 815	4 676	5 489
Czechoslovakia					
Fertiliser salts (a)	627 000	670 000	624 000	578 000	639 000

Imports of Potash

Country	1977	1978	1979	1980	1981
Finland					
Sulphate	—	—	10 517	17 544	30 339
Chloride	240 664	243 382	289 498	288 983	262 794
Potassic chemicals	2 055	2 065	1 524	3 504	2 204
Hungary					
Fertiliser salts	3 460	3 140	1 897	2 312	2 719
Potassic fertilisers	1 248 000	1 525 000	1 110 300	1 322 200	1 396 505
Potassic chemicals	1 189	1 629	1 642	1 754	961
Iceland					
Sulphate	1 499	1 448	3 500	200	2 687
Chloride	8 619	4 353	2 173	6 999	5 697
Potassic chemicals	247	236	169	177	190
Norway					
Sulphate	90 650	106 612	98 338	122 527	103 185
Chloride	142 525	161 677	203 879	196 714	184 502
Other potassic fertilisers	228	380	373	231	376
Potassic chemicals	2 762	5 602	3 042	2 265	2 432
Poland					
Fertiliser salts	2 958 000	2 436 000	1 761 000	2 428 000	2 865 000
Chloride	21 094	22 599	21 646	18 230	13 409
Potassic chemicals	7 421	8 852	10 095	10 856	7 046
Portugal					
Sulphate	0	0	1 040	2 300	4 350
Chloride	79 765	72 983	89 944	83 826	86 507
Potassic chemicals	2 527	2 385	2 521	2 726	...
Romania					
Fertiliser salts (a)	128 500	161 900	179 000	150 100	226 000
Spain					
Potassic chemicals	2 229	3 938	7 284	4 892	8 332
Sweden					
Fertiliser salts	567	920	1 042	1 074	1 389
Chloride	4	3	53	—	55
Potassic chemicals	4 604	3 180	2 982	3 549	2 583
Switzerland					
Fertiliser salts	80 314	84 004	87 606	87 735	85 990
Potassic chemicals	7 917	7 059	8 843	9 413	8 175
Turkey					
Sulphate	6 093	—	28 465	23 064	) 51 383
Other potassic fertilisers	9 765	4 163	4 593	3 792)
Potassic chemicals	5 994	4 843	6 711	4 901	...
Yugoslavia					
Sulphate	12 240	17 768	13 455	13 582	) 444 941
Chloride	366 491	425 403	381 541	448 216)
Potassic chemicals	176	198 043	264 897	260 310	...

Imports of Potash

tonnes

Country	1977	1978	1979	1980	1981
Algeria					
Sulphate	78 535	54 760	42 416	47 047	...
Potassic chemicals	571	295	1 134	...	...
Angola					
Sulphate (a)	1 500	500	...	...	...
Chloride (a)	1 200	600	...	...	...
Cameroon					
Fertiliser salts	6 925	7 146	9 000	...	...
Potassic fertilisers	10 825	4 148	4 820	...	...
Canary Islands					
Potassic chemicals	1 430	1 359	2 251	2	...
Ivory Coast					
Sulphate	—	8 313	9 800	...	8 150
Chloride	26 886	41 176	32 537	...	35 327
Potassic chemicals	622	140	110	...	18
Kenya					
Potassic fertilisers	7 338	10 752	91	3 336	...
Liberia					
Potassic fertilisers	1 070	546	863	202	...
Libya					
Potassic fertilisers	19 960	16 165	17 576	38 814	...
Madagascar					
Potassic fertilisers	4 348	6 900	7 443	3 795	...
Malawi					
Potassic fertilisers	—	1 550	13 542	...	...
Mauritius					
Potassic fertilisers	22 674	20 590	25 638	...	...
Morocco					
Sulphate	37 416	31 285	47 195	36 734	...
Chloride	24 409	22 428	35 636	41 660	...
Potassic chemicals	1 034	1 406	1 644	1 436	...
Mozambique					
Potassic fertilisers	3 291	...	...	...	...
Nigeria					
Potassic fertilisers	30 993	354 590	...	...	...
Potassic chemicals	4 553	5 989	...	...	...
Senegal					
Potassic fertilisers	29 161	27 470	...	...	...
South Africa					
Fertiliser salts	222 043	153 627	42 901	98 949	75 550
Potassic fertilisers	3 958	111 244	158 467	145 624	198 210
Potassic chemicals	1 828	3 950	4 473	4 402	4 285
Sudan					
Potassic chemicals	102	36	151	202	...
Tanzania					
Potassic fertilisers	11 718	...	6 050	8 333	...
Tunisia					
Potassic fertilisers	4 851	6 719	12 228	15 112	...
Zaire					
Potassic fertilisers	4 397	1 495	2 593	...	...
Zimbabwe					
Sulphate	14	140	21 815	31 207	...
Chloride	...	...	28 644	...	...
Barbados					
Potassic fertilisers	852	2	...	...	...

Imports of Potash

Country	1977	1978	1979	1980	1981
Belize					
Potassic fertilisers	14	508	...	...	...
Canada					
Sulphate	11 447	20 036	20 106	9 414	18 288
Chloride	30 456	1 793	2 042	28 889	8 594
Other potassic fertilisers	63 731	53 851	49 626	44 549	52 864
Potassic chemicals	7 658	8 754	8 145	8 176	7 077
Costa Rica					
Potassic fertilisers	58 795	44 702	52 863	63 106	...
Cuba					
Sulphate	28 562	24 467	...	...	...
Chloride	191 372	258 307	...	...	...
Dominica					
Potassic fertilisers	2 074	5 631	...	...	...
Dominican Republic					
Sulphate	5 548	4 069	2 040	) 43 434	...
Other potassic fertilisers	18 319	19 415	15 411)	...
El Salvador					
Potassic fertilisers	13 720	3 653	13 991	...	...
Guadeloupe					
Potassic fertilisers	6 521	2 200	2 530	3 617	...
Guatemala					
Potassic fertilisers	8 579	4 733	12 091	...	...
Honduras					
Potassic fertilisers	10 819	9 443	...	...	...
Jamaica					
Potassic fertilisers	8 717	5 722	8 780	2 869	...
Martinique					
Potassic fertilisers	2 419	624	1 098	648	...
Mexico					
Sulphate	22 295	24 727	38 596	28 109	...
Chloride	49 923	111 493	116 886	120 564	...
Potassic chemicals	3 915	5 701	5 275	3 288	...
Nicaragua					
Potassic fertilisers	3 952	8 525	18	12 932	...
Panama					
Potassic fertilisers	1 063	4 564	8 743	...	...
St. Kitts-Nevis-Anguilla					
Potassic fertilisers	925	1 500	...	...	...
Trinidad & Tobago					
Potassic fertilisers	2 189	5 076	1 782	6 327	...
USA					
Fertiliser salts	22 736	66 655	33 035	35 788	38 789
Sulphate	68 981	58 097	20 190	45 302	36 756
Chloride	7 443 739	7 610 926	8 413 900	8 039 331	7 803 130
Other potassic fertilisers	3 947	3 404	86	2 878	137
Potassic chemicals	9 136	11 514	12 168	12 259	...
Argentina					
Sulphate	5 530	5 877	) 18 948	...	...
Chloride	3 961	6 392	)	...	...
Potassic chemicals	3 558	2 238	...	...	...
Brazil					
Sulphate	52 422	58 320	71 168	65 975	50 647
Chloride	1 554 049	1 602 315	1 758 874	2 119 950	1 222 908
Potassic chemicals	23 017	25 250	25 612	29 735	15 572
Chile					
Sulphate	3 795	13 997	...	...	...
Chloride	11 354	11 659	...	...	...
Colombia					
Sulphate	18 046	29 829	19 066	19 057	8 142
Chloride	95 251	105 697	82 392	135 749	89 034
Potassic chemicals	1 491	1 603	1 834	1 759	1 910
Ecuador					
Chloride	11 434	9 310	10 815	...	...
Guyana					
Potassic fertilisers	3 482	662	700	518	...
Peru					
Sulphate	13 500	...	...	...	...
Chloride	19 007	...	...	...	...

Potash

Imports of Potash

tonnes

Country	1977	1978	1979	1980	1981
Uruguay					
Sulphate	1 175	927	2 001	1 934	1 500
Chloride	5 845	4 942	11 117	7 480	6 028
Potassic chemicals	169	177	120	144	113
Venezuela					
Chloride	11 002	5	2	...	...
Potassic chemicals	30 868	3 479	1 087	...	...
China					
Potassic fertilisers (e)	* 50 000	* 75 000	* 429 000	* 397 000	* 760 000
Cyprus					
Potassic fertilisers	765	606	1 037	408	660
Hong Kong					
Potassic chemicals	1 703	948	676	1 589	1 621
India (b)					
Sulphate	6 702	10 665	8 445	...	...
Chloride	626 048	347 478	406 513	...	...
Other potassic fertilisers	162 677	67 282	70 568	...	...
Potassic chemicals	780	123	204	...	...
Indonesia					
Sulphate	3 572	315	2 950	5 852	32 631
Other potassic fertilisers	34 401	107 352	107 175	136 314	180 946
Potassic chemicals	642	1 305	913	901	1 424
Iran (c)					
Potassic chemicals	729	* 100	* 50	* 100	* 250
Japan					
Sulphate	177 500	200 703	208 435	234 658	190 651
Chloride	1 102 303	1 088 061	1 098 918	1 263 195	978 037
Other potassic fertilisers	30 936	33 687	34 419	35 547	40 275
Potassic chemicals	11 439	8 664	3 146	9 566	12 461
Jordan					
Potassic fertilisers	—	1 850	994	144	...
Korea, Republic of					
Sulphate	30 910	...	32 098	27 800	11 926
Chloride	96 393	...	242 688	231 237	217 104
Other potassic fertilisers	36 168	...	84 516	—	40 548
Potassic chemicals	4 022	...	5 404	4 827	5 631
Malaysia					
Fertiliser salts	24 826	1 245	214	...	...
Potassic fertilisers	239 726	284 546	377 114	...	...
Philippines					
Sulphate	4 800	4 560	8 246	4 899	8 365
Chloride	45 527	38	92 740	129 474	79 175
Other potassic fertilisers	19 514	5 342	6 505	1 102	1 436
Potassic chemicals	637	738	1 220	1 128	1 439
Singapore					
Potassic fertilisers	260 396	247 697	297 647	307 627	257 315

Imports of Potash

Country	1977	1978	1979	1980	1981
Sri Lanka					
Potassic fertilisers	0	20 786	38 529	94 932	72 351
Taiwan					
Chloride	165 092	107 110	161 647	224 387	247 244
Potassic chemicals	6 784	5 533	7 814	6 512	7 361
Thailand					
Sulphate	550	3 000	7 900	10 500	...
Chloride	3 630	15 952	—	18 505	...
Other potassic fertilisers	2 750	3 800	7 700	500	...
Potassic chemicals	7 165	2 669	11 239	4 877	...
Australia					
Sulphate	16 736	6 366	8 546	19 013	22 172
Chloride	158 012	173 463	158 064	183 522	178 467
Other potassic fertilisers	58	2 443	15 037	776	725
Potassic chemicals (d)	3 971	7 463	9 612	9 512	...
Fiji					
Potassic fertilisers	3 072	3 031	2 241	2 767	...
New Zealand (d)					
Sulphate	2 000	4 479	1 134	1 874	1 418
Chloride	226 088	230 502	220 463	149 752	198 806
Other potassic fertilisers	—	592	136	72	4 933
Potassic chemicals	739	1 230	1 778	1 292	632

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) K₂O 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) IGS estimates, based on known exports from certain countries
- (f) May include some sodium peroxide

Production of Rare Earth Minerals

tonnes

Country	1977	1978	1979	1980	1981
Burundi					
Bastnaesite	165	40	* 30	* 30	...
Nigeria					
Monazite	* 20	* 20	* 20	* 20	* 20
Zaire					
Monazite	96	77	92	51	* 50
USA					
Bastnaesite (a)	15 359	14 148	16 515	15 986	17 082
Monazite (a)	* 600	* 1 250	* 1 200	* 700	* 850
Brazil					
Monazite	2 441	2 541	1 900	2 532	* 3 000
India					
Monazite (d)	2 734	3 303	3 254	* 4 210	* 4 300
Malaysia					
Monazite (b)	1 976	1 607	466	347	320
Xenotime (b)	35	—	—	—	—
Sri Lanka					
Monazite	—	18	4	63	* 60
Thailand					
Monazite	—	—	32	152	107
Xenotime	50	—	6	52	45
Australia					
Monazite	9 379	14 992	16 340	14 079	13 251
Xenotime	12	23	19	27	...
World total (c)	43 500	48 300	51 700	49 400	51 800
World total (REO content)	* 26 100	* 28 900	* 31 000	* 29 500	* 31 000

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

Country	1977	1978	1979	1980	1981
United Kingdom					
Ferro-cerium & other pyrophoric alloys	32	29	22	31	(b) 9
Metals	17	110	48	56	(b) 31
France					
Cerium compounds	2 951	1 579	...	...	...
Other rare earth compounds	1 411	2 128	...	...	...
Ferro-cerium & other pyrophoric alloys	64	20	10	13	82
Metals	20	13	109	34	24
Germany, Federal Republic of					
Cerium compounds	1 264	943	1 773	1 874	1 712
Other rare earth compounds	289	220	126	86	66
Ferro-cerium & other pyrophoric alloys	58	62	39	75	55
Metals	445	249	154	157	147
Italy					
Ferro-cerium & other pyrophoric alloys	2	1	5	...	...
Metals	218	141	107	26	10
Austria					
Metals	585	310	300	196	275
Algeria					
Cerium metal	477	245	—	...	...
South Africa (a)					
Rare earth compounds	£22 900	£1 550	£1 500	£1 000	£1 200
USA					
Ores & concentrates	* 6 500	7 494	8 334	9 115	9 587
Rare earth compounds	876	...	...	...	...
Ferro-cerium & other pyrophoric alloys	239	17	38	16	10
Brazil					
Cerium compounds	734	530	120	—	15
Ferro-cerium & other pyrophoric alloys	481	592	600	450	235
Metals	48	29	4	18	70
Japan					
Ferro-cerium & other pyrophoric alloys	76	81	76	76	89
Malaysia					
Ores & concentrates	1 976	1 607	466	347	320
Thailand					
Ores & concentrates	114	696	47	10	...
Australia					
Ores & concentrates	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 area

(b) Six months data only

Rare Earths

Imports of Rare Earths

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ferro-cerium & other					
pyrophoric alloys	4	25	30	44	26
Metals	7	29	95	108	33
Belgium-Luxembourg					
Cerium compounds	35	15	53	52	97
Other rare earth compounds	4	18	6	23	5
Ferro-cerium & other					
pyrophoric alloys	2	1	1	28	14
Metals	15	29	43	21	1
Denmark					
Cerium compounds	5	1	2	1	1
Ferro-cerium & other					
pyrophoric alloys	4	3	2	2	2
France					
Cerium compounds	131	127	149	66	46
Other rare earth compounds	507	367	423	328	653
Ferro-cerium & other					
pyrophoric alloys	34	43	119	129	70
Metals	55	88	15	11	64
Germany, Federal Republic of					
Cerium compounds	819	831	965	752	509
Other rare earth compounds	198	146	230	152	188
Ferro-cerium & other					
pyrophoric alloys	44	67	37	14	30
Metals	155	110	107	60	76
Italy					
Ferro-cerium & other					
pyrophoric alloys	13	12	14	9	13
Metals	442	122	28	138	37
Netherlands					
Cerium compounds	1 178	1 356	1 075	1 263	1 354
Other rare earth compounds	44	36	54	29	335
Metals	—	1	5	0	0
Austria					
Metals	45	6	170	2	3
Finland					
Ferro-cerium & other					
pyrophoric alloys	1	1	4	1	10
Portugal					
Ferro-cerium & other					
pyrophoric alloys	3	4	5	5	2
Switzerland					
Ferro-cerium & other					
pyrophoric alloys	9	4	4	4	4
Metals	3	3	7	6	1
Turkey					
Metals	—	7	2	4	...
South Africa					
Rare earth compounds	£30 100	£68 800	£130 100	£84 000	£79 000
Ferro-cerium & other					
pyrophoric alloys	7	16	6	17	9

Imports of Rare Earths

Country	1977	1978	1979	1980	1981
USA					
Ores & concentrates	4 972	6 996	6 287	5 147	7 469
Cerium compounds	6	3	6	6	8
Other rare earth compounds	...	169	385	524	196
Ferro-cerium & other pyrophoric alloys	21	59	56	65	84
Metals	311	443	81	346	183
Argentina					
Cerium compounds	15	10	...	...	...
Other rare earth compounds	2	1	...	...	...
Ferro-cerium & other pyrophoric alloys	1	1	...	...	...
Metals	14	9	...	...	...
Brazil					
Cerium compounds	30	23	65	51	29
Ferro-cerium & other pyrophoric alloys	5	0	0	2	—
Metals	1	3	14	21	26
Venezuela					
Ferro-cerium & other pyrophoric alloys	4	8	3	2	...
Hong Kong					
Rare earth compounds	6	9	4	6	6
Indonesia					
Ferro-cerium & other pyrophoric alloys	33	47	58	61	3
Japan					
Cerium compounds	173	62	70	52	62
Other rare earth compounds	2 864	3 226	4 648	4 809	5 694
Ferro-cerium & other pyrophoric alloys	10	13	15	7	10
Metals	48	53	86	42	8

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

Salt

Production of Salt

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Rock salt	905 000	1 311 000	1 590 000	1 746 000	1 350 000
Brine salt	1 871 000	1 760 000	1 915 000	1 607 608	1 454 204
Salt in brine (a)	5 426 000	4 239 000	4 315 000	3 799 900	3 915 824
Denmark	313 717	325 093	380 448	347 423	397 578
France					
Rock salt	603 000	966 500	1 274 000	851 000	298 000
Salt in brine	3 490 000	4 100 000	5 042 000	4 415 310	3 870 300
Sea salt	557 000	864 500	1 814 000	1 275 000	1 376 000
Germany, Federal Republic of					
Rock salt	7 409 000	7 211 000	9 270 000	7 197 000	8 211 000
Brine salt	841 000	868 313	893 000	880 000	836 000
Salt in brine	4 306 454	4 880 030	5 182 885	4 578 299	4 461 585
Greece	191 029	124 711	162 534	123 000	* 118 000
Italy					
Rock salt & brine salt	3 600 388	3 721 266	4 490 118	3 997 096	3 600 846
Sea salt	1 429 700	1 210 200	1 179 000	* 1 270 000	* 1 270 000
Netherlands	3 111 000	2 939 000	3 951 000	3 464 000	3 578 000
Albania	* 50 000	* 50 000	* 64 000	* 70 000	* 70 000
Austria					
Rock salt	1 031	1 173	968	1 018	1 330
Salt in brine	145 000	156 000	208 000	220 000	* 227 000
Evaporated salt	323 345	320 886	380 329	410 130	462 485
Bulgaria	87 000	87 000	86 000	87 000	* 86 000
Czechoslovakia	348 085	351 293	372 277	371 241	409 401
German Democratic Republic	2 642 200	2 741 400	3 052 000	3 127 700	3 111 800
Malta (c)	797	759	823	* 900	* 900
Poland					
Rock salt	1 562 000	1 435 000	1 458 000	1 464 000	1 313 000
Brine salt	783 000	880 000	) 2 971 000	3 069 000	2 960 000
Other salt	2 012 000	2 078 000)		
Portugal					
Rock salt	350 688	326 255	408 959	402 739	406 146
Sea salt	148 484	149 835	166 620	127 000	* 118 000
Romania	4 535 000	4 739 000	4 720 000	5 056 000	* 5 003 000
Soviet Union	* 14 300 000	* 14 500 000	* 14 300 000	* 14 500 000	* 14 600 000
Spain					
Rock salt	1 901 335	2 091 919	2 187 419	2 379 476	* 2 404 000
Sea salt	1 175 668	1 252 020	1 236 864	1 103 665	) * 1 202 000
Other salt	24 448	25 000	23 090	25 570)
Switzerland					
Evaporated salt	30 599	35 651	34 006	30 020	29 902
Other salt	291 943	310 827	306 680	330 359	355 406
Turkey	776 673	929 349	1 087 843	1 169 331	1 319 770
Yugoslavia					
Sea salt	19 899	20 966	20 500)	
Rock salt	85 210	85 231	137 441	) 377 000	418 000
Other salt	189 828	193 987	194 111)	
Algeria					
Brine salt & sea salt	146 671	171 458	165 108	170 000	* 181 000
Angola	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Cape Verde Islands	31 317	16 891	...	...	...
Egypt	718 000	754 843	615 979	636 000	* 653 000
Ethiopia (d)	65 026	40 119	107 955	115 000	* 118 000
Ghana	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Kenya	39 932	19 514	16 158	26 966	* 27 000
Libya	8 400	11 330	* 10 000	* 10 000	* 10 000
Madagascar	26 000	30 000	* 30 000	* 30 000	* 32 000
Mali	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Mauritius (c)	6 000	* 6 000	* 6 000	* 6 000	* 9 000
Morocco	12 442	17 164	102 000	67 477	* 73 000
Mozambique	* 28 000	* 28 000	* 28 000	* 28 000	* 27 000
Namibia	* 220 000	* 227 000	* 227 000	* 227 000	* 227 000
Senegal	129 731	147 295	140 000	* 140 000	* 140 000
Somalia	2 000	2 000	30 000	30 000	* 27 000
South Africa	242 254	489 925	538 785	573 278	537 278
Sudan	91 712	100 000	81 210	* 82 000	64 253

Production of Salt

Country	1977	1978	1979	1980	1981
Tanzania	39 118	33 993	34 352	36 734	27 400
Tunisia (c)	408 000	431 000	417 000	436 516	455 000
Bahamas	1 670 000	1 633 000	440 000	684 000	970 000
Canada					
Rock salt	4 320 304	4 625 528	4 934 574	4 740 070	4 419 374
Other salt (e)	2 116 734	2 262 404	2 381 374	2 486 173	2 512 924
Costa Rica	27 000	34 000	46 000	40 000	* 41 000
Cuba	129 454	130 607	122 487	130 453	* 130 000
Dominican Republic	34 428	37 877	38 000	55 556	* 65 000
El Salvador (c)	* 27 000	* 27 000	* 27 000	* 27 000	* 23 000
Guatemala (c)	11 000	11 000	15 000	10 000	9 000
Honduras	* 32 000	* 32 000	* 32 000	* 32 000	* 32 000
Mexico	4 899 000	5 635 000	6 169 426	6 575 302	7 003 000
Netherlands Antilles	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Nicaragua (c)	* 16 000	* 18 000	* 18 000	* 20 000	* 18 000
Panama (c)	19 567	15 201	17 085	18 583	* 23 000
USA (f)					
Rock salt	13 570 000	13 325 000	13 509 000	10 710 000	10 769 000
Salt in brine	20 663 000	20 263 000	22 390 000	20 168 000	18 901 000
Evaporated salt	5 150 000	5 302 000	5 644 000	5 728 000	5 625 000
Argentina					
Rock salt	1 594	1 196	865	1 000	* 1 000
Other salt	1 145 505	699 482	618 692	1 003 000	1 093 000
Brazil					
Rock salt	292 582	571 734	688 905	795 781	803 000
Sea salt	2 481 330	2 726 951	2 866 000	3 042 396	3 202 000
Chile	424 165	393 499	589 845	441 105	* 400 000
Colombia					
Rock salt	347 020	377 193	383 459	346 568	316 000
Sea salt	594 415	459 559	369 456	491 097	400 000
Peru	318 000	348 000	399 000	457 000	* 500 000
Venezuela (c)	237 464	111 264	246 182	243 145	280 060
Afghanistan (g)	77 700	80 700	* 20 000	* 5 000	* 9 000
Bangladesh (j)	542 000	785 490	674 038	* 700 000	* 699 000
Burma (b)(c)(h)	201 000	243 000	258 000	268 500	* 272 000
China	* 17 100 000	19 530 000	14 770 000	17 280 000	18 325 000
Cyprus	—	3 293	5 920	7 581	9 298
India					
Rock salt	3 759	4 281	4 363	4 683	4 325
Other salt	5 328 000	6 696 000	7 031 000	* 7 250 000	* 7 250 000
Indonesia	787 000	235 000	706 000	690 000	* 700 000
Iran (g)	700 000	700 000	* 700 000	* 600 000	* 600 000
Iraq	* 60 000	* 82 000	* 91 000	* 91 000	* 82 000
Israel	* 100 000	121 560	107 352	118 010	* 120 000
Japan (i)	1 056 000	1 073 000	1 090 000	1 102 000	* 1 000 000
Jordan (b)	...	17 000	18 000	30 583	24 200
Kampuchea, Democratic	* 30 000	* 12 000	* 26 000	* 30 000	* 27 000
Korea, Dem. P.R. of	* 550 000	* 560 000	* 560 000	* 570 000	* 570 000
Korea, Republic of	794 000	650 000	500 000	455 400	602 000
Kuwait	16 703	18 972	19 986	20 825	18 931
Laos	* 10 000	* 15 000	* 18 000	* 20 000	* 18 000
Lebanon	* 25 000	* 25 000	* 20 000	* 20 000	* 20 000
Mongolia	* 15 000	* 15 000	* 15 000	* 15 000	* 18 000
Pakistan					
Rock salt	385 000	402 000	512 000	507 359	562 000
Sea salt	114 000	217 600	191 700	181 107	* 220 000
Philippines	200 000	225 650	322 131	346 387	355 289
Sri Lanka	47 104	115 320	121 443	114 270	104 388
Syria	48 400	* 100 000	* 75 000	* 90 000	* 91 000
Taiwan	496 058	340 552	366 355	722 425	351 330
Thailand					
Rock salt	12 750	11 839	11 000	16 744	11 000
Other salt	* 160 000	* 160 000	* 160 000	* 160 000	* 160 000

Salt

Production of Salt

tonnes

Country	1977	1978	1979	1980	1981
Vietnam	* 580 000	* 530 000	* 530 000	* 520 000	* 500 000
Yemen Arab Republic	* 75 000	* 27 000	* 60 000	* 65 000	54 900
Yemen Democratic Republic	* 75 000	* 75 000	* 75 000	* 80 000	* 73 000
Australia	4 715 873	5 873 070	5 215 201	5 664 893	* 5 300 000
New Zealand	53 000	65 000	55 000	5 500	55 500
World total	161 500 000	168 400 000	174 200 000	169 000 000	168 100 000

Notes:

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

- (a) Used for purposes other than salt-making
- (b) Brine salt
- (c) Sea salt
- (d) Years ended 6 July of that stated
- (e) Including salt in brine
- (f) Sold or used by producers
- (g) Years ended 20 March following that stated
- (h) Years ended 31 March following that stated
- (i) Government licensed plants
- (j) Years ended 30 June of that stated

Exports of Salt

Country	1977	1978	1979	1980	1981
United Kingdom	467 589	404 744	424 187	393 425	(e) 269 298
Belgium-Luxembourg	137 723	139 470	144 225	115 384	107 219
Denmark	61 531	67 094	38 212	46 177	121 378
France	197 195	167 728	230 393	129 735	235 312
Germany, Federal Republic of	2 021 929	1 934 742	2 499 321	1 840 658	2 047 691
Italy	192 618	497 315	1 235 023	740 051	393 956
Netherlands	1 988 435	1 891 672	2 475 143	2 159 021	2 297 827
German Democratic Republic	1 145 000	1 213 000	1 232 000	1 210 000	1 272 000
Norway	1 765	1 863	1 594	1 576	2 982
Poland	292 274	307 848	253 056	296 711	240 966
Portugal	23 431	4 083	15 025	1 524	370
Romania	714 600	780 600	841 200	1 024 700	...
Soviet Union	398 772	402 720	402 660	480 865	452 843
Spain	644 524	816 355	782 339	479 691	335 600
Sweden	340	2 619	5 037	1 314	4 313
Switzerland	1 995	377	3 459	234	278
Algeria	4 400	4 000	3 480	...	...
Cape Verde Islands	20 650	14 501	16 301	...	...
Egypt	72 102	98 925	84 960	49 407	...
Ghana	9 863	13 781	...	...	...
Kenya	815	85	146	703	...
Madagascar	2 671	1 343	2 575	...	...
Senegal	111 809	128 116	...	...	...
South Africa	10 672	38 260	53 612	53 745	54 554
Sudan	681	241	148	157	...
Tanzania	6 826	6 816	15 554	17 111	17 859
Tunisia	382 015	382 618	352 050	272 972	368 823
Bahamas	1 389 629	...	...	...	...
Canada	1 163 301	1 608 583	1 822 240	1 655 768	1 507 780
El Salvador	23 238	20 817	21 703	...	...
Jamaica	4 552	3 302	554 531	3 902	...
Mexico	3 691 209	4 460 079	5 233 356	5 256 506	...
Netherlands Antilles	184 370	302 940	231 572	300 837	...
Nicaragua	2 728	3 594	4 905	...	...
USA	916 507	704 203	632 308	753 871	946 194
Argentina	25 395	23 590	27 665	...	...
Brazil	—	111 679	138 240	178 778	141 861
Chile	222 056	37 377	...	...	...
Colombia	3	—	189 757	151 470	5 250
China (f)	* 490 000	* 167 000	* 188 000	* 771 000	* 614 000
India (b)	231 607	29 377	45 794	...	...
Iran (c)	2 103	...	* 200	* 200	...
Israel (a)	94	3 136	4 328	19 227	...
Japan	958	2 934	2 774	2 299	1 173
Jordan	392	...	554	17 981	...
Korea, Republic of	236	1 111	1 827	99	11 711
Kuwait	2 001	1 510	745	1 854	...
Malaysia	995	472	540	...	...
Pakistan (d)	8 033	11 236	17 215	20 120	5 659
Saudi Arabia	1 298	3 597	1 970	3 357	6 646
Singapore	18 146	17 029	14 131	13 695	14 033
Taiwan	14 078	12 377	16 106	13 950	3 065

Salt

Exports of Salt

tonnes

Country	1977	1978	1979	1980	1981
Thailand	77 157	92 942	113 271	123 989	...
Australia	4 057 442	4 653 612	4 512 965	4 514 717	3 962 000

- (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
- (e) Six months data only
- (f) IGS estimates, based on known imports into certain countries

Imports of Salt

Country	1977	1978	1979	1980	1981
United Kingdom	84 758	235 235	748 017	363 535	97 923
Belgium-Luxembourg	906 665	805 395	1 218 636	988 386	1 168 848
Denmark	377 889	279 107	366 142	267 231	206 346
France	156 397	104 968	187 546	139 160	160 776
Germany, Federal Republic of	795 845	700 421	914 847	599 406	675 021
Greece	—	42 926	7 288	38 927	26 226
Irish Republic	72 259	77 248	87 656	87 333	74 849
Italy	205 770	195 252	240 246	195 538	176 485
Netherlands	27 057	39 567	313 733	71 173	66 711
Austria	29 678	63 418	49 453	1 277	116
Bulgaria (c)	* 42 200	* 24 000	* 49 800	* 56 400	* 50 100
Czechoslovakia	* 153 900	* 130 200	* 127 500	...	...
Faeroe Islands	27 545	20 106	18 102	15 977	...
Finland	482 916	547 251	659 660	726 593	721 283
Greenland	1 976	5 015	8 503	8 088	...
Hungary	512 547	659 959	683 251	820 520	768 006
Iceland	48 913	56 998	49 243	105 556	77 810
Malta	£86 600	£85 000	£100 600	£136 900	£123 300
Norway	343 767	340 717	455 230	453 607	518 189
Portugal	22 110	92 812	48 800	92 042	51 564
Soviet Union	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Spain	4 417	1 999	838	1 033	1 271
Sweden	1 306 462	1 239 766	1 195 040	1 156 587	1 055 539
Switzerland	1 735	1 840	1 967	1 994	1 755
Turkey	76 964	132 293	50 015	25	59
Yugoslavia	158 055	149 216	194 103	282 389	337 155
Burundi	12 677	11 385	13 167	14 370	...
Cameroon	24 292	27 264	32 017	...	...
Canary Islands	287	236	423	1 033	...
Central African Empire	3 142	3 573	4 204	...	...
Congo	2 424	3 837	32 636	2 688	...
Gabon	...	...	...	6 984	7 876
Ivory Coast	36 267	38 852	43 850	...	46 158
Kenya	19 364	35 354	27 981	17 914	...
Liberia	4 003	3 431	6 177	3 138	...
Libya	4 878	7 745	4 920	5 842	...
Malawi	11 930	3 434	15 931	...	...
Mali	...	20 186	...	...	...
Mauritius	797	941	...	...	...
Morocco	5	9 103	9 454	5	...
Niger	16 238	...	...	...	...
Nigeria	214 610	331 431	...	...	...
Reunion	3 489	...	...	...	...
Seychelles	...	252	275	288	309
Sierra Leone	8 833	5 773	9 276	9 821	...
South Africa	35 637	15 142	23 413	20 502	25 673
Togo	4 748	...	...	...	...
Uganda	...	4 066	6 789	2 793	...
Upper Volta	11 454	13 574	14 372	3 693	...
Zaire	41 622	* 1 000	* 3 000	* 2 300	...
Zambia	38 316	9 007	...	...	...
Zimbabwe	44 830	46 885	48 644	55 007	...

Salt

Imports of Salt

tonnes

Country	1977	1978	1979	1980	1981
Bahamas	7 860	...	...	...	...
Barbados	2 231	2 003	...	...	...
Belize	971	320	...	...	...
Canada	1 126 226	1 330 475	1 275 627	1 151 203	1 254 992
Costa Rica	4 005	4 967	7 756	15 894	...
Dominica	508	549	...	...	...
Guadeloupe	2 940	2 061	2 704	2 360	...
Guatemala	19 440	19 947	18 827	...	...
Honduras	397	208	...	...	...
Jamaica	16 100	9 308	27 904	28 702	...
Martinique	1 968	2 232	2 400	2 526	...
Mexico	1 022	1 378	864	1 339	...
Nicaragua	29 984	30 043	16 513	28 165	...
Panama	725	550	683	...	...
St Kitts-Nevis-Anguilla	235	182	203	...	...
St Lucia	984	572	1 053	644	...
St Vincent	410	476	502	...	...
Trinidad & Tobago	13 119	18 112	29 207	28 694	...
USA	4 154 346	5 001 808	4 868 002	4 806 336	4 512 676
French Guiana	389	234	...	458	...
Guyana	5 338	4 090	5 109	1 817	...
Paraguay	24 895	23 036	22 490	18 040	20 363
Suriname	1 333	...	...	...	...
Uruguay	51 856	55 217	62 098	57 499	24 876
Venezuela	324	13 166	18 389	17 256	...
Abu Dhabi	1 253	883	6 806	7 883	...
Brunei	5 707	1 026	194	4 202	...
Cyprus	2 067	6 446	713	365	...
Dubai	17 250	8 540	10 563	9 023	...
Hong Kong	55 144	37 895	73 206	73 410	31 921
India	558	1 044	89	...	...
Indonesia	2 327	2 734	2 608	542	389
Iran (a)	4 130	* 3 000	* 100	* 500	* 1 200
Japan	6 415 321	6 436 106	6 817 626	7 477 049	6 509 749
Jordan	1 657	1 410	1 739	1 422	...
Korea, Republic of	380 315	387 391	489 880	716 288	970 242
Kuwait	5 186	5 674	5 701	37 134	...
Malaysia	142 166	144 509	203 910	...	...
Oman	2 611	2 381	1 831	2 335	7 042
Philippines	61 600	45 261	63 989	60 022	44 679
Qatar	1 336	1 666	1 406	1 039	...
Saudi Arabia	4 331	13 501	7 332	8 821	14 639
Singapore	51 090	50 993	47 139	48 064	41 477
Taiwan	393 374	492 751	677 456	563 710	481 271
Thailand	293	273	332	424	...
Australia	24 752	19 444	19 620	7 740	7 321
Fiji	537	2 984	3 043	1 732	...
New Caledonia	470	453	565	519	...
New Zealand (b)	61 859	58 737	32 610	62 761	65 209
Solomon Islands	689	501	897	1 206	...
Vanuatu	...	...	...	240	...
Western Samoa	684	702	581	793	...

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

Production of Sillimanite Minerals

Country	1977	1978	1979	1980	1981
France					
Andalusite	26 834	32 572	28 982	* 30 000	* 30 000
Soviet Union					
Kyanite (a)	* 50 000	* 50 000	* 50 000	* 70 000	* 70 000
Spain					
Andalusite & kyanite	2 981	5 087	5 903	6 471	6 530
South Africa					
Andalusite	113 076	112 040	134 177	196 516	181 272
Sillimanite	15 455	9 540	19 574	16 194	15 504
Zimbabwe					
Kyanite	6 339	1 835	—	716	870
USA					
Kyanite (b)	* 100 000	* 100 000	* 100 000	* 125 000	* 115 000
Brazil					
Kyanite	17	1 773	1 750	4 270	...
India					
Andalusite	387	225	—	—	—
Kyanite	42 123	30 897	40 709	48 740	38 283
Sillimanite	15 023	13 471	16 108	14 488	10 254
Korea, Republic of					
Andalusite	115	61	60	82	90
Australia					
Sillimanite (c)	550	568	568	661	331
World total	373 000	358 000	398 000	513 000	472 000

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

Sillimanite

Exports of Sillimanite Minerals

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Sillimanite minerals	4 601	4 959	4 889	5 037	(b) 1 211
Belgium-Luxembourg					
Sillimanite minerals—					
Crude	129	62	30	334	829
Other	651	405	162	68	135
Denmark					
Sillimanite minerals	890	298	328	46	529
France					
Sillimanite minerals—					
Crude	72	16	10	18	8
Other	5 809	2 074	163	419	310
Germany, Federal Republic of					
Sillimanite minerals—					
Crude	356	540	1 974	1 995	2 039
Calcined	5 190	5 659	7 538	7 495	11 534
Italy					
Sillimanite minerals—					
Crude & calcined	—	—	734	75	22
Other	—	—	273	75	155
Netherlands					
Sillimanite minerals—					
Crude	413	54	275	733	4
Other	267	207	244	1 163	543
South Africa					
Andalusite	71 739	54 457	69 810	106 786	60 047
Sillimanite	14 235	14 195	19 672	14 531	8 982
USA					
Kyanite & related minerals (a)	35 254	(c)* 51 000	(c)* 58 000	(c)* 64 000	(c)* 65 000
Brazil					
Kyanite	3 019	1 874	3 379	2 628	50
India					
Kyanite—					
Crude	6 052	) 3 875	1 659	...	...
Calcined	2 778)			
Sillimanite	550	151	25	...	...
Japan					
Sillimanite minerals, chamotte & dinas earth	16 496	16 470	22 721	21 460	15 281

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

(a) May include some chamotte and dinas earth

(b) Six months data only

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

Imports of Sillimanite Minerals

Country	1977	1978	1979	1980	1981
United Kingdom					
Sillimanite minerals	62 979	37 480	35 524	46 248	35 098
Belgium-Luxembourg					
Sillimanite minerals—					
Crude	770	982	441	1 349	365
Other	1 563	1 331	1 572	1 729	516
Denmark					
Sillimanite minerals	107	77	276	1 134	136
France					
Sillimanite minerals—					
Crude	2 274	2 930	2 782	3 195	604
Other	2 576	3 266	2 344	8 458	1 284
Germany, Federal Republic of					
Sillimanite minerals—					
Crude	19 444	15 327	22 120	50 729	15 536
Calcined	34 878	41 931	43 192	51 095	54 936
Greece					
Sillimanite minerals	114	—	9 162	8 450	11
Italy					
Sillimanite minerals—					
Crude	4 508	6 851	10 277	11 711	7 011
Other	16 401	6 015	7 366	19 988	20 529
Netherlands					
Sillimanite minerals—					
Crude	189	1 726	1 114	1 693	1 514
Other	345	417	350	1 666	397
Austria					
Sillimanite minerals	72 674	70 380	82 043	90 394	90 975
Norway					
Sillimanite minerals, chamotte & dinas earth	1 091	1 538	1 127	1 097	1 090
Mexico					
Mullite	2 237	234	458	1 310	...
Argentina					
Sillimanite minerals	306	739	...	...	...
Iran (a)					
Sillimanite minerals, chamotte & dinas earth	2 352	...	...	...	...
Japan					
Sillimanite minerals	22 432	22 987	22 801	26 682	28 280
Mullite, chamotte & dinas earth	48 768	50 534	77 961	66 849	47 371
Australia					
Sillimanite minerals & dinas earth	1 451	385	3 033	7 966	...

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

Mine Production of Silver

kilograms (metal content)

Country	1977	1978	1979	1980	1981
United Kingdom (b)	4 166	1 272	—	1 089	1 927
France	93 449	85 667	74 935	73 772	53 059
Germany, Federal Republic of	33 000	33 800	36 700	37 700	39 300
Greece	33 300	42 300	54 500	52 000	60 500
Irish Republic	29 100	19 600	32 900	24 000	28 000
Italy (a)	37 543	30 708	33 121	42 499	55 344
Bulgaria	* 25 000	* 28 000	* 25 000	* 24 000	* 23 000
Czechoslovakia	* 37 000	* 36 000	* 35 000	* 35 000	* 35 000
Finland	33 002	31 271	42 408	44 465	37 805
German Democratic Republic	* 50 000	* 50 000	* 48 000	* 47 000	* 45 000
Greenland	16 200	17 400	23 800	24 000	22 400
Poland	* 644 000	* 680 000	702 000	766 000	640 000
Portugal	801	703	1 095	861	714
Romania	* 35 000	* 32 000	* 30 000	* 28 000	* 25 000
Soviet Union	* 1 550 000	* 1 570 000	* 1 550 000	* 1 550 000	* 1 580 000
Spain	72 146	73 841	71 348	140 788	...
Sweden	169 153	263 556	175 700	166 000	* 175 000
Yugoslavia (a)	145 500	159 392	162 181	149 000	138 000
Algeria	* 1 250	* 2 500	* 3 100	* 3 100	* 2 500
Morocco	21 739	12 652	10 573	12 622	40 381
Namibia	42 700	46 100	53 500	51 300	58 700
South Africa	97 364	96 559	100 664	222 188	235 397
Tunisia	7 351	1 962	3 170	7 332	2 621
Zaire (b)	84 900	89 100	91 700	78 756	80 100
Zambia (b)	24 903	33 261	28 417	23 752	22 219
Zimbabwe	6 442	34 505	30 418	29 681	26 913
Canada	1 313 685	1 266 927	1 146 908	1 069 635	1 070 764
Dominican Republic	57 617	57 495	70 797	50 480	63 255
El Salvador	3 484	5 754	4 728	4 541	3 421
Honduras	87 683	86 719	75 708	54 930	74 700
Mexico	1 462 798	1 579 393	1 536 772	1 472 557	1 654 900
Nicaragua	4 774	15 000	12 143	5 100	4 700
USA	1 187 114	1 225 050	1 178 710	1 005 579	1 265 484
Argentina	76 225	63 466	68 714	71 700	* 71 500
Bolivia	183 098	200 284	178 592	189 715	205 332
Brazil	11 583	15 723	33 579	24 394	* 23 500
Chile	263 179	255 374	271 836	298 545	* 311 000
Colombia	2 829	2 388	3 090	4 714	4 450
Ecuador	1 776	890	651	899	528
Peru (c)	1 235 767	1 151 500	1 220 750	1 337 100	1 460 000
Burma	24 600	25 000	30 700	29 700	24 100
China	* 50 000	* 55 000	* 60 000	* 60 000	* 65 000
India	13 228	12 083	11 515	11 381	11 500
Indonesia	22 700	25 600	25 100	21 800	25 800
Japan	285 673	281 640	270 725	276 600	279 400
Korea, Dem. P.R. of	* 50 000	* 50 000	* 48 000	* 45 000	* 40 000
Korea, Republic of	65 512	43 073	70 848	71 301	95 214
Malaysia	12 752	14 276	13 467	13 436	* 13 400
Philippines	50 429	51 014	57 167	60 715	62 911
Taiwan	2 112	2 343	2 656	2 957	6 683
Australia	856 110	812 524	832 210	766 816	745 354
Fiji	457	323	324	214	260
New Zealand	236	63	51	23	* 3
Papua New Guinea	47 704	52 820	44 877	37 198	42 400
World total	10 668 000	10 824 000	10 690 000	10 622 000	11 195 000

(a) Smelter and/or refinery production

(b) Recovered as a byproduct of base metal refining

(c) Recoverable

Exports of Silver

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	1 649 353	1 705 080	1 668 387	2 493 727	(c) 1 155 747
Waste & scrap	516 939	310 182	552 346	296 810	(c) 75 041
Belgium-Luxembourg					
Metal	708 268	639 178	661 338	1 511 492	883 939
Denmark					
Metal	17 424	27 232	45 919	57 193	32 941
France					
Metal	897 453	428 783	401 468	947 144	556 192
Waste & scrap	287 371	308 164	459 869	337 595	227 930
Germany, Federal Republic of					
Metal	889 057	1 032 626	844 323	1 611 396	861 480
Waste & scrap	86 006	90 135	162 526	185 435	366 738
Greece					
Metal	—	—	25 322	49 765	46 040
Italy					
Metal	36 311	33 831	28 723	231 627	95 100
Netherlands					
Metal	493 564	277 663	314 142	252 792	116 196
Austria					
Metal	36 300	60 200	81 934	44 660	31 008
Waste & scrap	—	1 000	15 038	8 352	2 478
Finland					
Metal	17 926	22 430	17 277	45 000	56 000
Norway					
Metal	36 965	24 160	23 306	26 574	* 32 950
Poland					
Metal	333 000	348 000	347 000	516 000	397 000
Spain					
Metal	1 442	52 000	103 000	5 722 040	305 000
Sweden					
Metal	208 000	245 000	227 000	241 000	197 000
Switzerland					
Metal	1 087 182	1 212 793	1 040 984	1 039 455	718 473
Yugoslavia					
Metal	87 246	67 369	91 082	59 183	48 000
Waste & scrap	...	2 657	4 604	830	...
Morocco					
Metal	22 306	18 036	39 150	24 176	...
South Africa (d)					
Metal	* 65 000	* 70 900	* 94 200	* 75 700	* 67 500
Tunisia					
Metal	7 000	—	—	4 143	...
Canada					
Ores & concentrates (b)	464 086	482 876	415 737	396 801	547 035
Metal	1 144 873	1 077 084	923 135	886 640	916 903
El Salvador					
Metal	3 489	...	4 722	...	...
Honduras					
Concentrates (b)	82 710	65 429	) 76 205	50 513	* 50 000
Metal	1 568	786	)	...	...
Mexico					
Ores & concentrates	29 315 202	29 285 168	15 327 057	...	...
Metal	719 289	823 371	941 341	1 051 294	...
Nicaragua					
Metal (a)	5 424	18 775	8 786	...	...
USA					
Ores & concentrates (b)	3 038	1 065	1 355	9 564	6 634
Metal	364 861	339 468	540 636	1 806 418	493 915
Waste & scrap	426 467	393 004	596 914	726 100	390 855
Argentina					
Metal	114	2 704	...	...	...
Bolivia					
Ores & concentrates (b)	209 294	197 746	181 399	176 464	203 660
Chile					
Metal	181 200	209 226	...	...	...

Silver

Exports of Silver

kilograms

Country	1977	1978	1979	1980	1981
Peru					
Metal	777 593	701 026	740 031	485 000	...
Hong Kong					
Metal	20 094	13 341	45 266	61 192	40 208
of which: Re-exports	20 094	13 341	45 266	57 424	39 879
Waste & scrap	688	—	26 817	222 871	311 596
of which: Re-exports	—	—	16 411	74 770	211 343
India					
Metal	532 101	675 486	118 611	...	...
Japan					
Metal	69 260	97 554	121 210	214 828	148 447
Waste & scrap	5 000	15 000	24 000	29 000	...
Korea, Republic of					
Ores & concentrates	—	2 130 000	2 000 000	3 400 000	2 652 000
Metal	32 696	...	46 956	34 660	15 302
Philippines					
Metal	282	3 041	5 232	347	408
Singapore					
Metal	539	2 268	2 869	32 680	8 344
Thailand					
Metal	30 012	11 487	113 151	166 230	...
Australia					
Silver-lead bullion	370 849	290 207	354 556	385 270	333 498
Silver in all ores, concentrates etc.	153 687	166 097	79 543	91 687	...
Metal	134 955	75 972	84 830	85 195	90 228
Fiji					
Metal	401	308	339	232	...
Papua New Guinea					
Metal	47 704	52 820	44 877	37 198	42 388

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) Six months data only

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

Imports of Silver

Country	1977	1978	1979	1980	1981
United Kingdom					
Metal	1 118 911	1 450 508	1 220 010	3 791 483	1 941 981
Waste & scrap	386 674	364 756	701 254	584 952	984 538
Belgium-Luxembourg					
Metal	1 246 443	864 801	768 940	1 407 086	1 166 728
Denmark					
Metal	76 066	82 173	103 661	87 427	70 969
France					
Metal	1 535 899	1 343 305	931 601	832 048	663 630
Waste & scrap	48 779	192 624	76 389	148 431	33 937
Germany, Federal Republic of					
Metal	1 658 856	1 358 517	1 288 516	1 071 739	797 040
Waste & scrap	592 945	663 247	595 016	667 656	471 841
Greece					
Metal	134 000	139 000	131 578	34 936	14 204
Italy					
Metal	939 870	897 658	768 907	568 216	531 400
Netherlands					
Metal	281 530	251 933	146 279	216 149	143 676
Austria					
Metal	451 300	358 700	196 083	134 530	181 374
Waste & scrap	4	300	544	1 252	6 451
Finland					
Metal	57 198	48 557	47 622	112 000	86 000
Iceland					
Metal	1 500	1 700	853	920	1 007
Malta					
Metal	1 913	3 123	2 642	1 793	1 177
Norway					
Metal	136 886	109 842	82 884	60 385	70 120
Portugal					
Metal	35 941	38 979	44 236	11 264	35 000
Spain					
Metal	117 000	59 676	49 957	626 363	55 000
Sweden					
Metal	247 000	466 000	474 000	423 000	417 000
Switzerland					
Metal	1 183 586	1 120 040	789 323	1 577 818	901 160
Turkey					
Metal (b)	4 442	6 297	1 475	4 995	2 000
Yugoslavia					
Metal	237 625	39 917	20 746	510 504	9 000
Algeria					
Metal	11 152	8 068	5 940	...	...
Egypt					
Metal	—	11 305	4 359	667	...
Ivory Coast					
Metal	4 641	6 858	4 941	...	1 252
Kenya					
Metal	554	192	280	218	...
Libya					
Metal	9 303	15 401	14 215	9 571	...
Madagascar					
Metal	417	121	602	...	...
Morocco					
Metal	3 644	894	623	248	...
Nigeria					
Metal	2	191	...	...	...
Senegal					
Metal	5 640	9 384	...	...	...
South Africa					
Metal	12 647	29 983	23 052	23 607	25 658
Tunisia					
Metal	1 658	741	200	488	...

Silver

Imports of Silver

kilograms

Country	1977	1978	1979	1980	1981
Zaire					
Metal (c)	* 1 500	* 140	* 100	...	...
Zambia					
Metal	82	...	...	...	...
Canada					
Metal	33 004	36 002	38 309	339 188	327 336
Costa Rica					
Metal	963	...	...	...	...
Guatemala					
Metal	313	...	...	...	...
Jamaica					
Metal	1 809	1 134	4 418	297	...
Mexico					
Metal	476	179	...	...	...
Nicaragua					
Metal (a)	297	417	329	...	...
Panama					
Metal (a)	522	560	1 226	...	...
Trinidad & Tobago					
Metal	3 655	2 379	2 331	1 145	...
USA					
Ores & concentrates	584 566	670 372	588 461	535 954	713 685
Metal (e)	2 139 908	1 916 299	2 437 713	2 014 362	2 361 474
Waste & scrap	64 329	76 763	83 236	95 752	108 194
Argentina					
Metal	9 783	14 482	...	...	...
Brazil					
Metal	135 738	152 080	170 954	109 418	56 060
Chile					
Metal	2 767	3 251	...	...	...
Colombia					
Metal	330 501	511 524	329 004	2 629	9 415
Ecuador					
Metal	2 366	1 496	1 811	...	...
Uruguay					
Metal	600	1 100	1 900	100	100
Venezuela					
Metal	25 320	38 812	48 207	...	...
Brunei					
Metal	—	11	544	27	...
Hong Kong					
Metal	27 641	18 538	26 437	32 465	15 304
Waste & scrap	...	2 944	8 816	2 812	812
India					
Metal	944	425	1 247	...	...
Indonesia					
Metal	3 200	506	2 296	145	44
Iran (d)					
Metal (a)	18 134	...	...	(g)* 12 700	(g)* 10 900
Japan					
Ores & concentrates	4 000 000	4 109 000	4 113 000	3 400 000	—
Metal	557 127	535 253	731 613	593 694	440 385
Korea, Republic of					
Metal	44 048	36 796	21 780	71 980	4 955
Philippines					
Metal	1 344	3 061	2 654	189	687
Saudi Arabia					
Metal	47 944	87 511	3 063	11 794	13 399
Singapore					
Metal	13 036	21 377	24 905	22 345	68 610
Taiwan					
Metal	47 774	59 118	118 209	20 521	21 858
Thailand					
Metal	224 572	112 222	15 275	14 359	...

Imports of Silver

Silver
kilograms

Country	1977	1978	1979	1980	1981
Australia					
Metal	2 330	1 115	405	7 050	1 307
New Zealand (f)					
Metal	(b) 51 441	(b) 42 766	54 393	47 795	43 046

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

Production of Sulphur and Pyrites

thousand tonnes (sulphur content)

Country		1977	1978	1979	1980	1981
United Kingdom						
Recovered (a)(c)		58	53	57	66	38
Recovered (d)		60	80	80	80	75
Belgium						
Recovered (c)(d)		257	267	270	270	* 270
Denmark						
Recovered (d)		11	14	8	8	6
France						
Recovered (d)		2 020	2 075	2 120	2 059	1 932
Germany, Federal Republic of						
Pyrites (45%)		235	221	203	222	* 200
Recovered (c)		385	380	450	450	* 440
Recovered (d)		817	840	904	1 034	1 025
Recovered (e)		165	160	93	* 90	* 30
Greece						
Pyrites (45%)		58	62	75	71	* 70
Irish Republic						
Pyrites (47%)		22	20	14	12	11
Italy						
Pyrites (43%)		371	338	346	331	262
Recovered (d)		259	250	250	250	* 235
Sulphur ore		63	65	19	23	20
Netherlands						
Recovered (c)(d)		* 94	* 84	* 78	* 112	* 105
Austria						
Recovered		32	31	34	28	* 28
Anhydrite		27	27	27	23	* 24
Bulgaria						
Pyrites (42%)		* 305	* 310	* 315	* 300	* 300
Recovered		* 65	* 70	* 75	* 70	* 70
Czechoslovakia						
Pyrites (42%)		55	60	60	60	* 60
Recovered		9	10	10	10	* 10
Sulphur ore		5	5	5	5	* 5
Finland						
Pyrites (44%)		193	53	85	97	134
Recovered (c)		280	232	263	247	268
Recovered (d)		25	29	38	37	48
German Democratic Republic						
Pyrites (42%)		* 10	* 10	* 10	* 10	* 10
Recovered		340	* 350	* 350	* 350	* 350
Norway						
Pyrites (45%)		152	150	121	212	210
Recovered (c)(d)		* 45	* 43	* 46	* 46	* 46
Poland						
Frasch (g)		4 765	5 051	4 830	5 164	4 773
Recovered (c)		* 314	* 315	* 310	* 300	* 300
Recovered (d)		* 35	* 35	* 35	* 30	* 30
Anhydrite		* 30	* 20	* 20	* 20	* 20
Portugal						
Pyrites (44%)		159	139	152	170	126
Romania						
Pyrites (42%)		* 395	* 400	* 400	* 400	* 400
Recovered		* 110	* 120	* 130	* 140	* 150
Soviet Union						
Frasch		* 500	* 800	* 800	* 900	* 925
Pyrites (46%)		* 3 500	* 3 500	* 3 500	* 3 550	* 3 600
Recovered (c)		* 2 180	* 2 210	* 2 210	* 2 310	* 2 350
Recovered (d)		* 1 120	* 1 300	* 1 300	* 1 400	* 1 450
Recovered (e)		* 40	* 40	* 40	* 40	* 40
Sulphur ore		* 2 400	* 2 700	* 2 700	* 2 800	* 2 850
Spain						
Pyrites (47%)		1 099	1 046	1 091	1 152	1 103
Recovered (c)(d)		* 136	* 130	* 133	* 140	* 150

Production of Sulphur and Pyrites

thousand tonnes (sulphur content)

Country		1977	1978	1979	1980	1981
Sweden						
Pyrites	(48%)	193	232	215	190	202
Recovered (c)(d)		135	130	130	130	* 130
Sulphur ore		32	33	35	33	* 40
Turkey						
Pyrites	(45%)	18	18	16	35	30
Recovered		80	80	80	89	118
Sulphur ore		20	20	21	23	29
Yugoslavia						
Pyrites	(42%)	165	171	190	255	274
Recovered (c)(d)		* 205	* 205	* 205	* 205	* 204
Algeria						
Recovered (d)		10	15	15	14	* 15
Egypt						
Recovered (d)		5	3	3	* 3	* 20
Morocco						
Pyrites	(48%)	45	61	63	36	38
South Africa						
Pyrites	(48%)	398	367	319	557	502
Recovered (d)		28	* 25	* 25	* 25	) * 127
Recovered (c)		105	* 100	* 100	* 100)
Zaire						
Recovered (c)		31	* 30	* 30	* 30	* 30
Zambia						
Pyrites	(42%)	9	1	1	1	0
Recovered		87	109	74	92	* 90
Zimbabwe						
Pyrites	(42%)	22	23	28	29	27
Canada						
Pyrites	(50%)	12	5	14	14	14
Recovered (c)		736	676	667	895	904
Recovered (d)		6 500	6 311	6 282	6 183	5 614
Mexico						
Frasch		1 723	1 650	1 773	1 700	1 652
Recovered (c)		* 80	* 100	* 100	* 150	* 150
Recovered (d)		133	168	252	402	426
Netherlands Antilles						
Recovered (d)		95	95	91	91	* 90
Trinidad & Tobago						
Recovered (d)		34	54	77	80	* 80
USA						
Frasch		5 915	5 648	6 357	6 390	6 348
Pyrites	(40%)	169	301	400	322	307
Recovered (c)		1 019	1 164	1 274	1 081	1 231
Recovered (d)		3 624	4 062	4 070	4 073	4 259
Argentina						
Recovered (c)(d)		* 20	* 20	* 20	...	...
Sulphur ore (f)		27	18	55	—	—
Bolivia (h)						
Sulphur ore		6	15	14	11	10
Brazil						
Recovered (d)		44	57	65	58	* 60
Chile						
Recovered (c)		29	21	27	33	* 35
Sulphur ore (b)		32	32	77	87	115
Colombia						
Recovered (d)		2	3	2	1	* 2
Sulphur ore		27	35	16	26	* 30
Ecuador						
Recovered (d)		* 8	* 10	* 10	* 10	* 10
Sulphur ore		* 5	* 5	* 5	* 5	* 4
Venezuela						
Recovered (d)		95	95	85	85	* 85

Production of Sulphur and Pyrites

thousand tonnes (sulphur content)

Country		1977	1978	1979	1980	1981
China						
Pyrites (45%)		* 1 252	* 1 605	* 1 682	* 1 700	* 1 700
Recovered		* 300	* 350	* 400	* 400	* 400
Sulphur ore		* 170	* 200	* 200	* 200	* 200
Cyprus						
Pyrites (44%)		64	56	20	24	7
India						
Pyrites (37%)		12	24	25	31	* 30
Recovered (c)		117	115	* 115	* 115	* 115
Recovered (d)		8	8	4	5	4
Iran						
Recovered (d)		527	542	244	* 150	* 100
Sulphur ore		* 188	* 150	* 75	* 70	* 50
Iraq						
Frasch		620	600	550	700	* 700
Recovered (d)		* 40	* 40	* 70	* 70	* 70
Israel						
Recovered (d)		* 10	* 10	* 10	* 10	* 10
Japan						
Pyrites (49%)		389	327	300	311	* 290
Recovered (c)(g)		1 336	1 296	1 350	1 300	* 1 200
Recovered (d)		1 100	1 105	1 241	1 173	* 1 000
Korea, Dem. P.R. of						
Pyrites (40%)		* 250	* 255	* 255	* 255	* 255
Recovered (c)		* 12	* 10	* 10	* 10	* 10
Kuwait						
Recovered (d)		79	100	114	82	109
Pakistan						
Recovered		12	14	14	* 14	* 15
Philippines						
Pyrites (46%)		50	51	40	53	50
Saudi Arabia						
Recovered (d)		* 12	* 14	* 125	* 460	* 600
Singapore						
Recovered (d)		23	25	26	* 25	* 25
Taiwan						
Pyrites (36%)		3	0	0	0	0
Recovered		7	10	9	8	10
Australia						
Pyrites (48%)		108	93	29	—	...
Recovered (c)		337	327	366	350	...
Total Frasch		13 500	13 700	14 300	14 900	14 400
Total Pyrites		9 700	9 900	10 000	10 400	10 200
Total Recovered		25 900	26 700	27 100	27 600	27 200
Total Sulphur ore		3 000	3 300	3 200	3 300	3 400
World total (all forms)		52 100	53 600	54 600	56 200	55 200

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

Country	1977	1978	1979	1980	1981
United Kingdom					
Sulphur—					
Crude	1 387	1 421	1 344	1 116	(d) 570
Sublimed & precipitated	211	123	247	133	(d) 120
Belgium-Luxembourg					
Pyrites	412	53	522	32	193
Sulphur—					
Crude	17 255	10 026	11 578	14 032	9 129
Sublimed & precipitated	99	635	42	148	87
Denmark					
Sulphur—					
Sublimed & precipitated	5 409	4 441	1	0	24
France					
Sulphur—					
Crude	941 767	1 154 784	1 245 258	1 099 266	889 321
Refined	840	194	361	378	309
Sublimed	5 847	3 605	2 843	2 210	2 000
Precipitated	4	7	157	124	115
Germany, Federal Republic of					
Pyrites	636	1 361	1 238	968	2 089
Sulphur—					
Crude	341 928	304 693	356 669	394 400	448 041
Sublimed & precipitated	2 496	1 568	1 238	952	454
Greece					
Sulphur	23 937	20 259	10 756	2 036	5 758
Italy					
Pyrites	23 832	3 189	3 379	3 797	30 355
Sulphur—					
Crude	60	—	—	—	25
Other	3 577	3 612	5 449	3 817	3 069
Sublimed & precipitated	625	187	142	48	195
Netherlands					
Sulphur—					
Crude	10 759	9 648	10 997	16 002	13 689
Sublimed & precipitated	17	57	18	36	6
Finland					
Sulphur	1 633	8	4	6	6
Norway					
Pyrites	59 623	63 139	27 256	190 107	210 459
Sulphur	442	2 298	3 283	1 842	4 405
Poland					
Sulphur	4 399 000	4 294 000	3 892 000	3 903 000	3 817 000
Portugal					
Pyrites	782	135	133	1	—
Sulphur	64	92	205	82	120
Soviet Union					
Pyrites	826 000	852 000	915 000	911 000	536 000
Sulphur	* 440 000	* 440 000	* 430 000	* 430 000	* 440 000
Spain					
Pyrites—					
Iron	243 924	228 372	118 953	234 477	378 678
Cupreous	50 328	13 930	8 010	410	—
Sulphur—					
Crude	4 437	17 445	14 629	6 264	2 144
Sublimed & precipitated	16 178	8 508	2 966	6 993	10 487
Sweden					
Pyrites	0	—	7 046	84 705	60 363
Sulphur	19 838	17 332	20 597	29 513	22 888
Switzerland					
Sulphur—					
Crude	11	13	15	20	19
Sublimed & precipitated	8	10	5	10	8
Yugoslavia					
Pyrites	214 214	93 421	75 828	67 942	14 428
Sulphur	4 235	3 560	5 335	1 138	2 039

Exports of Sulphur and Pyrites

tonnes

Country	1977	1978	1979	1980	1981
South Africa					
Pyrites (c)	—	17 236	2 463	47 181	66 091
Zimbabwe					
Pyrites	—	—	5 776	9 345	...
Canada					
Pyrites	£114 000	£26 000	£113 000	£142 000	£45 000
Sulphur	4 291 032	4 984 546	5 154 832	6 850 566	7 309 352
Mexico					
Sulphur	1 013 008	1 230 584	1 120 171	1 150 402	1 194 000
Netherlands Antilles					
Sulphur	31 900	56 603	105 602	49 593	...
USA					
Pyrites	1 829	...	...	...	...
Sulphur—					
Crude	1 076 237	) 832 581	1 962 851	1 681 189	1 392 169
Sublimed & precipitated	11 761)			
Bolivia					
Sulphur	6 276	14 726	13 532	11 244	10 202
Venezuela					
Sulphur	42 136	28 074	42 832	8 645	...
Cyprus					
Pyrites	174 361	123 671	143 224	89 441	35 670
India					
Sulphur—					
Crude	553	791	271	...	...
Sublimed & precipitated	172	204	207	...	...
Iran (a)					
Sulphur—					
Crude	210 009	* 36 000	* 22 500	* 50 000	...
Japan					
Sulphur—					
Crude	467 929	320 986	414 884	364 268	231 326
Sublimed & precipitated	519	220	221	1 029	174
Kuwait					
Sulphur	70 436	164 257	72 531	240 380	...
Singapore					
Sulphur—					
Crude	13 371	17 137	5 190	3 130	9 006
Sublimed & precipitated	2 075	4 905	16 068	17 451	20 060
Taiwan					
Sulphur—					
Crude	1 949	2 252	3 695	1 310	817
Sublimed & precipitated	225	188	139	631	444
Australia					
Zinc concentrates (b)	87 900	119 800	96 500	134 100	...

(a) Years ended 20 March following that stated

(b) Recoverable sulphur

(c) S content

(d) Six months data only

Imports of Sulphur and Pyrites

Country	1977	1978	1979	1980	1981
United Kingdom					
Pyrites	19 624	)			13 273
Sulphur—		) 1 132 716	1 194 448	1 140 428	
Crude	1 110 053	)			886 018
Sublimed & precipitated	451	561	491	475	636
Belgium-Luxembourg					
Pyrites	214 322	202 917	195 210	189 433	207 379
Sulphur—					
Crude	451 692	482 732	549 346	481 737	444 699
Sublimed & precipitated	450	1 076	5 128	1 353	1 936
Denmark					
Pyrites	3	31	1	19	581
Sulphur—					
Crude	63 376	74 020	74 184	79 665	73 069
Sublimed & precipitated	119	126	115	114	119
France					
Pyrites	691	617	672	732	775
Sulphur—					
Crude	660 584	662 560	715 224	630 971	552 694
Refined	704	741	1 153	2 006	430
Sublimed & precipitated	334	415	412	586	254
Germany, Federal Republic of					
Pyrites	154 291	116 670	98 943	132 716	57 735
Sulphur—					
Crude	419 352	385 843	385 973	360 317	277 808
Sublimed & precipitated	548	572	732	661	507
Greece					
Pyrites	37 198	18 944	14 413	69 977	46 582
Sulphur—					
Crude	68 783	81 004	58 053	41 187	61 888
Sublimed & precipitated	16	112	339	48	102
Irish Republic					
Sulphur—					
Crude	10 754	8 592	534	528	473
Sublimed & precipitated	146	19	113	120	89
Italy					
Pyrites	163 512	247 158	286 351	291 010	252 991
Sulphur—					
Crude	628 495	606 052	754 861	609 564	476 015
Sublimed & precipitated	1 954	1 573	1 591	1 297	1 010
Netherlands					
Pyrites	61	103	169	153	164
Sulphur—					
Crude	424 685	452 920	455 504	467 883	456 933
Sublimed & precipitated	233	133	248	215	165
Austria					
Pyrites	10 781	5 856	3 264	3 834	582
Sulphur—					
Crude	97 787	101 332	112 019	124 693	102 818
Sublimed & precipitated	16	234	62	117	28
Bulgaria					
Sulphur (d)	* 6 100	* 6 000	* 3 500	* 59 000	* 76 900
Czechoslovakia					
Sulphur	422 000	456 000	501 000	485 000	537 000
Finland					
Sulphur—					
Crude	23 349	26 580	42 132	58 357	52 824
Sublimed & precipitated	6 347	1 859	3 205	16	19
German Democratic Republic					
Pyrites (a)	63 400	39 200	8 200	...	...
Sulphur	* 166 500	* 168 800	* 178 200	...	...
Hungary					
Pyrites	59 318	81 451	83 518	89 676	89 237
Sulphur	171 477	162 043	167 344	250 960	183 164

Imports of Sulphur and Pyrites

tonnes

Country	1977	1978	1979	1980	1981
Malta					
Sulphur	1 851	39	95	170	93
Norway					
Sulphur—					
Crude	11 926	6 014	2 583	2 853	3 002
Sublimed & precipitated	12	13	24	17	27
Portugal					
Sulphur	30 943	43 524	90 433	94 028	117 876
Romania					
Pyrites	* 135 700	* 74 700	* 75 800	...	...
Sulphur	* 123 200	* 173 000	* 224 300	...	...
Soviet Union					
Sulphur	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Spain					
Sulphur—					
Crude	168 179	119 401	109 576	94 116	112 949
Sublimed & precipitated	21	133	6 230	265	538
Sweden					
Pyrites	59 715	60 372	26 441	79 938	21 578
Sulphur—					
Crude	56 059	58 377	48 332	41 424	23 250
Sublimed & precipitated	15	2	32	1 138	4 515
Switzerland					
Pyrites	24 110	164	16 020	10 556	4 924
Sulphur—					
Crude	44 859	46 656	46 560	48 188	29 735
Sublimed & precipitated	287	213	158	231	188
Turkey					
Pyrites	197 474	116	—	—	117 695
Sulphur—					
Crude	26 250	61 085	52 682	41 048	91 289
Sublimed & precipitated	126	115	77	42	121
Yugoslavia					
Pyrites	72 625	19 126	124 227	68 413	49 232
Sulphur—					
Crude	2 428	3 833	12 268	11 700	) 59 575
Refined	54 301	55 339	54 374	44 718)
Sublimed & precipitated	1 852	1 763	1 078	506	479
Algeria					
Sulphur—					
Crude	87,870	76 334	66 322	52 117	...
Sublimed & precipitated	19 238	8 000	5 926	6 990	...
Canary Islands					
Sulphur	10 167	5 250	—	...	...
Egypt					
Pyrites	66 521	23 000	—	—	...
Sulphur	110 966	83 170	46 177	70 595	...
Ethiopia					
Sulphur	115	1 325	761	...	...
Ivory Coast					
Sulphur	5 337	8 750	7 997	...	7 797
Kenya					
Sulphur	2 132	2 526	1 199	6 901	...
Morocco					
Sulphur—					
Crude	427 714	77 136	517 145	702 271	...
Refined	30 095	297 400	45 407	115	...
Sublimed	5	3	7	3	...
Mozambique					
Sulphur	349	...	...	...	...
Nigeria					
Sulphur	1 195	1 530	...	...	...
Senegal					
Sulphur—					
Crude	15	6	...	...	...
Sublimed	20 824	24 432	...	...	...

Imports of Sulphur and Pyrites

Country	1977	1978	1979	1980	1981
South Africa					
Pyrites	30	53	904	10 772	5 091
Sulphur—					
Crude	548 225	638 411	811 730	913 609	764 888
Sublimed & precipitated	10 236	1 250	1 308	2 431	2 177
Tanzania					
Sulphur	12 610	10 677	10 635	12 145	...
Tunisia					
Sulphur	406 061	371 584	581 665	678 489	836 700
Zaire					
Sulphur	8 686	14 724	...	...	...
Zambia					
Sulphur—					
Crude	68	51	...	...	...
Precipitated	2 132	22	...	...	...
Zimbabwe					
Sulphur	18 432	20 527	18 440	15 705	...
Canada					
Sulphur	14 065	8 130	1 699	1 767	4 615
Costa Rica					
Sulphur	41	1 880	...	...	...
Cuba					
Sulphur	155 173	139 018	...	...	...
El Salvador					
Sulphur	5 556	40 577	14 781	...	...
Guatemala					
Sulphur	4 428	11 479	4 880	...	...
Jamaica					
Sulphur	9 561	10 818	5 766	5 516	...
Mexico					
Sulphur—					
Crude	504	866	771	761	...
Sublimed & precipitated	191	243	574	329	...
Nicaragua					
Sulphur	443	280	381	487	...
Trinidad & Tobago					
Sulphur	7 728	23	14 986	3 058	...
USA					
Pyrites	24 730	9 870	31 166	32 977	11 343
Sulphur	2 006 304	2 177 372	2 494 422	2 520 944	2 522 000
Argentina					
Sulphur	80 558	71 201	125 649	...	...
Brazil					
Sulphur—					
Crude	657 252	631 410	671 899	937 650	815 479
Refined	1 412	867	8 142	1 442	1 593
Sublimed & precipitated	218	277	317	657	472
Chile					
Sulphur—					
Crude	66 490	90 024	...	...	...
Sublimed & precipitated	81	90	...	...	...
Colombia					
Sulphur	23 102	55 770	35 262	46 662	21 907
Peru					
Sulphur	7 990	...	...	...	...
Uruguay					
Sulphur	15 735	19	22 452	18 114	11 651
Venezuela					
Sulphur—					
Crude	97	115	115	139	...
Sublimed & precipitated	89	36	42	...	...
China					
Sulphur (d)	* 250 000	* 205 000	* 250 300	* 347 200	* 223 300
Cyprus					
Sulphur	2 420	1 442	1 547	2 857	...

Imports of Sulphur and Pyrites

tonnes

Country	1977	1978	1979	1980	1981
Hong Kong					
Sulphur—					
Crude	209	264	344	1 104	1 218
Sublimed	2 101	1 360	779	109	1
India					
Sulphur—					
Crude	767 019	820 625	959 152	...	...
Sublimed	327	2 066	470	...	...
Indonesia					
Sulphur—					
Crude	2 132	1 335	2 643	2 623	10 399
Sublimed & precipitated	28 273	45 155	29 367	50 609	89 527
Iran (c)					
Sulphur	503	* 1 100	* 400	* 400	* 300
Israel					
Sulphur	...	...	50 700	37 053	87 475
Japan					
Pyrites	34 060	30 000	7 300	—	—
Sulphur	781	563	582	818	467
Jordan					
Sulphur—					
Crude	2 462	1 430	758	1 144	...
Sublimed & precipitated	289	440	644	334	...
Korea, Republic of					
Sulphur—					
Crude	421 913	) 513 784	582 055	519 184	386 430
Sublimed & precipitated	1 160	)	673	343	321
Malaysia					
Sulphur—					
Crude	13 843	15 973	8 019	...	...
Sublimed & precipitated	740	737	4 578	...	...
Pakistan (b)					
Sulphur	3 818	8 355	5 942	22 366	20 857
Philippines					
Sulphur—					
Crude	12 301	7 587	5 466	4 808	497
Sublimed & precipitated	159	16 972	12 675	23 820	19 007
Singapore					
Sulphur—					
Crude	188	373	568	245	219
Sublimed & precipitated	362	315	168	596	3 273
Sri Lanka					
Sulphur—					
Crude	46	143	520	431	125
Sublimed & precipitated	382	586	317	642	335
Syria					
Sulphur—					
Crude	2 763	3 194	7 696	12 778	25 623
Sublimed & precipitated	1 151	338	84	55	97
Taiwan					
Sulphur—					
Crude	198 952	176 855	186 479	122 737	75 887
Sublimed & precipitated	117 780	187 499	130 629	250 497	264 015
Thailand					
Sulphur—					
Crude	27 110	31 718	13 878	37 750	...
Refined	4 854	11 682	13 185	1 964	...
Sublimed & precipitated	87	148	643	284	...
Australia					
Sulphur	407 675	496 804	436 221	686 865	555 517
New Zealand (b)					
Sulphur—					
Crude	229 803	234 899	257 986	249 187	247 597
Sublimed & precipitated	232	263	275	325	235

(a) S content

(b) Years ended 30 June of that stated

(c) Years ended 20 March following that stated

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

Production of Talc

Country	1977	1978	1979	1980	1981
United Kingdom	14 700	18 000	16 600	17 297	18 312
France	267 000	275 000	268 000	316 000	300 000
Germany, Federal Republic of	15 971	15 446	14 986	15 499	* 15 000
Greece	2 723	1 078	...	2 129	* 1 500
Italy	162 437	169 000	157 382	165 905	163 708
Austria	103 743	106 848	116 420	116 708	116 425
Finland	163 912	265 151	256 087	317 901	307 915
Hungary	5 272	4 053	2 932	3 492	4 409
Norway	98 087	96 716	87 485	87 635	* 25 000
Portugal	1 610	1 709	2 748	2 598	6 363
Romania	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Soviet Union	* 450 000	* 470 000	* 480 000	* 490 000	* 500 000
Spain	60 070	61 892	71 047	73 949	* 75 000
Sweden	21 214	21 322	17 746	15 856	* 16 000
Egypt	7 291	5 905	4 406	4 007	* 4 000
South Africa					
Talc	8 095	7 487	9 451	9 466	9 464
Wonderstone (pyrophyllite)	5 109	5 159	5 795	4 900	5 662
Zimbabwe	1 415	758	1 170	456	386
Canada	72 400	61 661	90 330	92 000	89 000
Mexico	163	2 639	2 500	* 2 700	* 2 700
USA					
Talc	997 000	1 150 000	1 150 000	1 022 000	1 121 000
Pyrophyllite	96 000	105 000	168 000	103 000	97 000
Argentina					
Talc	43 306	41 117	24 059	)	23 120
Pyrophyllite	10 947	4 731	9 886	) 32 731	6 779
Steatite	454	964	882	)	3 120
Brazil					
Talc (b)	180 474	190 674	310 397	338 450	) * 435 000
Pyrophyllite (b)	73 408	69 846	55 081	74 606)
Chile	427	432	850	1 139	* 1 000
Colombia	3 380	4 320	6 085	6 085	* 6 100
Paraguay	130	160	210	250	* 260
Peru	11 435	8 909	15 970	* 14 700	* 14 700
Uruguay	1 659	1 945	1 800	* 1 800	* 1 700
Afghanistan (a)	5 711	1 775	500	—	—
Burma (c)	201	228	191	219	* 128
China	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
India					
Steatite	247 000	298 000	351 862	332 000	329 000
Pyrophyllite	34 619	38 883	34 708	33 624	* 30 000
Japan					
Talc	97 782	95 834	122 987)	
Pyrophyllite	1 253 587	1 016 095	933 790	) 1 750 000	* 1 500 000
Korea, Dem. P.R. of	* 130 000	* 150 000	* 160 000	* 170 000	* 170 000
Korea, Republic of					
Talc	171 925	202 078	236 824	204 662	169 401
Pyrophyllite	433 304	463 005	541 383	514 511	395 216
Pakistan	9 180	25 290	32 938	29 613	24 997
Philippines	1 200	4 061	3 570	863	* 900
Taiwan	10 160	9 946	11 194	9 911	24 774
Thailand	10 368	14 888	13 542	11 726	12 035
Australia					
Talc	112 920	137 553	138 266	159 962)
Pyrophyllite	16 039	9 401	19 209	11 002	) 87 744
World total	5 600 000	5 800 000	6 200 000	6 800 000	6 300 000

(a) Years ended 20 March following that stated

(b) Includes beneficiated and direct shipping ore

(c) Years ended 31 March following that stated

Talc

Exports of Talc

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	4 348	3 978	5 604	5 806	(b) 4 002
Belgium-Luxembourg	19 857	18 286	21 186	23 332	28 242
France	73 578	77 310	75 159	81 332	73 897
Germany, Federal Republic of	7 056	7 949	5 608	5 625	3 134
Greece	426	50	1 405	...	525
Italy	59 065	56 591	55 181	54 014	52 181
Netherlands	2 785	3 674	4 066	8 011	14 902
Austria	87 811	87 097	98 139	97 760	110 322
Czechoslovakia	* 4 560	* 6 670	7 000	7 000	...
Finland	31 876	27 509	59 317	54 044	60 314
Norway	60 771	59 166	52 446	55 729	53 203
Portugal	63	127	18	33	—
Spain	9 608	6 128	15 030	11 357	7 440
Sweden	3 812	4 703	3 776	5 649	6 378
Switzerland	58	71	71	97	152
Turkey	12	42	615	1 692	1 401
Yugoslavia	—	—	590	810	630
South Africa					
Wonderstone (pyrophyllite)	753	6 837	6 353	...	...
Other	614	—	69	500	—
Mexico	190	213	0	0	...
USA	291 928	242 047	287 034	274 946	282 330
Argentina	362	191	217	...	...
Brazil	190	159	320	495	488
China (a)	* 230 000	* 295 000	* 360 000	* 382 000	* 365 400
Hong Kong (Re-exports)	4 843	5 729	8 908	5 302	7 663
India	18 000	12 479	13 355	...	...
Japan	1 721	1 803	1 145	1 691	1 923
Korea, Dem. P.R. of	* 43 700	* 54 600	* 74 500	(a)* 45 200	(a)* 30 400
Korea, Republic of	82 110	77 878	69 134	53 478	50 444
Malaysia	160	114	9	...	...
Singapore	1 658	735	807	554	1 222
Taiwan	2 348	1 812	1 401	1 043	1 706
Australia	87 271	106 177	107 849	83 059	82 641

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

(b) Six months data only

Imports of Talc

Country	1977	1978	1979	1980	1981
United Kingdom	60 552	62 576	65 757	62 367	55 838
Belgium-Luxembourg	35 579	22 758	36 915	52 903	45 062
Denmark	10 842	10 507	8 775	7 991	8 958
France	12 147	19 258	18 028	20 514	20 811
Germany, Federal Republic of	113 164	127 515	125 688	130 765	122 478
Greece	1 665	2 680	2 564	2 267	1 601
Irish Republic	1 950	1 988	2 016	2 569	2 492
Italy	18 400	18 892	21 791	24 066	25 842
Netherlands	17 473	21 192	23 404	32 827	37 771
Albania (d)	—	* 100	* 700	* 1 900	* 1 100
Austria	2 860	2 427	2 746	2 118	1 674
Finland	656	656	868	805	573
Hungary	3 087	2 977	2 699	5 572	4 162
Norway	4 597	3 419	6 654	6 878	5 608
Poland	24 081	25 540	26 043	23 180	12 818
Portugal	3 459	4 145	3 336	3 670	4 075
Soviet Union	* 100 000	* 120 000	* 120 000	* 120 000	* 120 000
Spain	15 729	11 948	10 945	15 163	10 315
Sweden	18 857	18 780	45 745	36 716	34 853
Switzerland	11 042	10 766	10 911	12 951	13 255
Turkey	877	189	235	115	248
Yugoslavia	3 261	5 127	4 611	5 121	3 642
Algeria	5 169	1 835	2 219	1 428	...
Cameroon	261	346	297	...	...
Egypt	—	380	628	140	...
Ghana	771	530	...	...	...
Ivory Coast	1 558	1 030	915	...	1 375
Kenya	4 123	3 572	2 556	2 986	...
Libya	407	362	497	823	...
Morocco	1 048	936	797	917	...
Mozambique	217	...	...	...	...
Senegal	334	229	...	...	...
South Africa	1 962	1 744	1 819	2 412	2 701
Tunisia	3 563	1 580	1 676	1 875	...
Zaire	120	174	183	...	...
Canada	33 769	33 350	50 350	50 774	30 322
Costa Rica	925	...	...	...	...
Dominican Republic	521	838	811	...	...
El Salvador	292	...	231	...	...
Guatemala	490	294	632	...	...
Honduras	148	152	...	...	...
Jamaica	319	431	18 482	210	...
Mexico					
Pyrophyllite	50	80	246	172	...
Other	118 130	129 786	159 845	150 138	...
Nicaragua	327	362	160	...	...
Panama	371	405	488	...	...
Trinidad & Tobago	679	789	3 642	619	...
USA	19 110	17 526	20 298	18 687	24 497
Argentina	253	245	551	...	...
Brazil	122	131	111	117	86
Chile	561	446	...	...	...
Colombia	1 394	1 803	2 559	2 377	2 128
Ecuador	550	943	618	...	...
Peru	746	...	...	...	...
Venezuela	9 166	9 236	7 729	8 379	...
Cyprus	606	281	517	790	...
Hong Kong	7 207	7 684	10 793	7 488	9 607
Indonesia	12 834	11 159	10 533	10 977	12 880
Iran (a)	525	* 500	* 150	* 100	...
Israel (c)	80	120	655	711	1 455
Japan	360 612	447 718	550 265	501 086	441 604
Malaysia	6 027	7 233	7 326	...	...

Talc

Imports of Talc

tonnes

Country	1977	1978	1979	1980	1981
Philippines	4 722	8 547	4 347	8 098	9 779
Singapore	8 746	6 054	4 885	5 143	9 000
Sri Lanka	1 077	1 310	1 585	1 215	1 069
Syria	5 112	3 892	745	2 191	3 602
Taiwan	3 758	3 943	5 297	4 775	4 694
Thailand	10 776	10 996	15 533	11 775	...
Australia	335	527	420	382	329
New Zealand (b)	3 963	3 623	3 181	3 161	2 047

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

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

Production of Tantalum and Niobium (Columbium) Minerals

tonnes

Country		1977	1978	1979	1980	1981
Portugal						
Columbite-tantalite	(25%, 25%)	3	7	3	4	8
Spain						
Tantalite	(— , 25%)	...	45	41	51	...
Mozambique						
Tantalite	(14%, 42%)	39	39	* 34	...	...
Microlite	(4%, 55%)	40	40	* 32	...	...
Nigeria						
Columbite	(43%, 6%)	860	669	580	555	377
Tantalite	(30%, 30%)	1	1	1	1	2
Rwanda						
Columbite-tantalite	(30%, 23%)	94	54	47	60	57
Uganda						
Columbite-tantalite	(25%, 20%)	* 2	* 2	* 2	—	—
Zaire						
Columbite-tantalite	(27%, 27%)	113	47	38	92	* 75
Zimbabwe						
Columbite-tantalite	(11%, 28%)	30	31	30	41	45
Canada						
Pyrochlore	(43%, —)	4 182	4 054	4 053	4 105	4 567
Tantalite	(3%, 44%)	261	295	295	214	205
Brazil						
Pyrochlore	(42%, —)	15 613	17 877	28 909	30 700	* 32 000
Columbite-tantalite	(20%, 30%)	137	203	374	538	* 500
Djalmaite	(1%, 50%)	19	19	10	18	* 20
Malaysia						
Columbite	(40%, 14%)	45	23	40	33	23
Thailand						
Columbite	(27%, 16%)	115	64	382	213	) 48
Tantalite	(20%, 30%)	41	—	25	143)
Struverite	(— , 6%)	—	—	231	301	46
Australia						
Columbite-tantalite	(20%, 33%)	157	139	147	202	* 250
World total concentrates		22 000	24 000	35 000	37 000	38 000
Nb content		* 9 000	* 10 000	* 14 000	* 15 000	* 16 000
Ta content		* 400	* 400	* 500	* 600	* 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 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 in recent years is believed to have accounted for over 50% of all tantalum 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 and Zaire

Exports of Tantalum and Niobium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Niobium & tantalum ores & concentrates (b)	44	86	144	6	(c) 4
Tantalum	24	36	43	34	(c) 6
France					
Niobium & tantalum ores (b)	10	—	12	4	—
Tantalum	19	12	22	20	22
Germany, Federal Republic of					
Niobium & tantalum ores (b)	940	1 041	1 276	2 211	1 862
Tantalum	61	48	81	97	42
Niobium	11	19	41	90	50
Italy					
Tantalum	3	10	5	16	7
Niobium	1	6	—	0	—
Netherlands					
Tantalum	7	7	8	182	4
Austria					
Tantalum	10	10	15	10	9
Mozambique					
Columbite & tantalite	45	...	...	...	...
Nigeria					
Columbite	377	757	...	...	...
Zaire					
Columbite-tantalite (a)	* 60	* 100	* 50	* 50	...
Canada					
Pyrochlore	* 3 700	* 3 600	* 3 800	* 3 400	* 3 800
Tantalite	* 300	* 400	* 400	* 300	* 400
USA					
Tantalum ores & concentrates	67	29	149	212	45
Tantalum	320	411	334	362	208
Niobium	35	* 40	* 45	* 55	* 70
Brazil					
Pyrochlore	3 310	1 983	1 660	2 430	...
Columbite-tantalite	169	129	328	440	290
Japan					
Tantalum	45	42	30	40	27
Malaysia					
Columbite & tantalite	263	34	79	...	...
Tin slags	5 792	6 331	10 824	...	...
Singapore					
Tantalum ores & concentrates	55	21	31	187	123
Tin slags	152	93	1 194	6 678	2 326
Thailand					
Columbite & tantalite	230	112	432	496	...
Tin slags	2 575	2 736	3 507	3 306	2 043
Australia					
Tantalite-columbite	158	125	312	373	158

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

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

(c) Six months data only

Imports of Tantalum and Niobium

Country	1977	1978	1979	1980	1981
United Kingdom					
Niobium & tantalum ores & concentrates (a)	610	466	621	131	11
Tantalum	115	105	75	59	36
Niobium	4	7	36	23	13
Belgium-Luxembourg					
Niobium & tantalum ores (a)	1 984	1 952	2 245	2 537	2 679
Niobium	4	10	10	3	6
France					
Niobium & tantalum ores (a)	11	25	0	2	1
Tantalum	18	30	52	34	33
Niobium	...	11	5	3	3
Germany, Federal Republic of					
Niobium & tantalum ores (a)	1 557	870	1 458	1 341	553
Tantalum	219	251	252	255	115
Niobium	4	11	22	23	32
Italy					
Niobium & tantalum ores	—	(a) 1 818	(a) 449	24	—
Tantalum	9	8	7	7	7
Niobium	6	1	1	1	1
Netherlands					
Tantalum	2	3	1	2	3
Austria					
Tantalum	19	15	43	37	19
USA					
Tantalum concentrates	637	677	695	1 139	885
Niobium concentrates	1 506	1 941	1 708	2 197	903
Tantalum	105	102	106	118	68
Niobium	1	0	3	54	0
Tin slags (b)—					
Ta content	578	307	517	602	...
Nb content	399	198	514	643	...
Japan					
Niobium minerals	1 751	1 858	1 659	1 764	1 367
Tantalum ores & concentrates	170	128	304	309	38
Tantalum	53	54	77	47	26
Malaysia					
Tantalum	13	41	—	...	...

(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	1977	1978	1979	1980	1981
United Kingdom	4 189	3 132	2 708	3 291	3 729
Czechoslovakia	* 180	* 180	* 180	215	289
German Democratic Republic	* 1 400	* 1 500	* 1 600	* 1 800	* 1 600
Portugal	267	282	240	292	356
Soviet Union	* 17 000	* 18 000	* 18 000	* 17 000	* 16 000
Spain	642	711	496	437	483
Cameroon	10	11	18	* 24	* 24
Namibia	994	1 250	1 042	* 1 000	* 1 000
Niger	99	89	73	78	* 75
Nigeria	3 267	2 970	2 802	2 585	2 300
Rwanda	* 1 450	* 1 400	* 1 400	* 1 600	1 287
South Africa	2 876	2 887	2 697	2 913	2 811
Uganda	264	239	37	67	* 30
Zaire	3 662	3 376	2 464	3 159	2 468
Zimbabwe	920	945	969	934	1 157
Canada (a)	328	360	337	243	248
Mexico	220	73	23	60	28
USA	* 100	* 100	* 100	* 100	* 100
Argentina	537	362	386	351	340
Bolivia	32 616	30 881	27 648	27 271	29 801
Brazil	6 287	6 341	7 005	6 930	8 297
Peru (b)	329	458	870	1 077	1 519
Burma	* 400	* 800	* 1 000	1 295	1 396
China	* 13 000	* 14 000	* 14 000	* 14 600	* 15 000
Indonesia	25 926	27 437	29 436	32 527	35 238
Japan	595	599	661	549	562
Korea, Republic of	* 24	56	40	9	6
Laos	* 600	* 600	* 600	* 600	* 600
Malaysia	58 703	62 650	62 995	61 404	59 938
Thailand	24 205	30 186	33 962	33 685	31 474
Australia	10 634	11 864	12 571	11 588	12 496
World total	212 000	224 000	226 000	228 000	231 000

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

(b) Recoverable

Smelter Production of Tin

Tin
tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	10 458	8 445	8 025	5 829	6 863
Belgium	3 520	3 295	2 165	2 822	65
Germany, Federal Republic of	2 897	3 241	2 488	638	562
Netherlands (a)	2 100	1 625	* 1 720	* 1 148	* 3 500
Czechoslovakia	120	120	120	215	289
German Democratic Republic	* 1 400	* 1 500	* 1 600	* 1 800	* 1 500
Portugal	588	490	445	495	400
Soviet Union	* 17 500	* 18 000	* 18 000	* 17 000	* 16 000
Spain	5 343	4 575	4 546	3 121	3 443
Nigeria	3 315	2 984	2 858	2 684	2 486
South Africa	582	637	819	1 100	2 056
Zaire	663	496	458	213	450
Zimbabwe	880	912	949	918	1 139
Mexico	1 000	1 000	1 268	1 642	* 1 600
USA	6 724	5 900	4 600	3 000	2 000
Argentina	* 120	* 120	* 120	* 200	* 200
Bolivia (a)	13 048	16 181	15 696	17 533	19 937
Brazil	7 421	9 309	10 133	8 796	7 639
China	* 13 000	* 14 000	* 14 000	* 14 600	* 15 000
Indonesia	24 005	25 830	27 790	30 465	32 429
Japan	1 271	1 140	1 252	1 319	1 313
Malaysia	66 305	71 953	73 068	71 318	70 326
Thailand	23 102	28 945	33 058	34 689	32 636
Australia	5 561	5 129	5 423	4 819	4 215
World total	211 000	226 000	231 000	226 000	226 000

(a) Refined, including alloys

Tin

Exports of Tin

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Concentrates	180	3 608	4 019	3 038	(c) 2 052
Unwrought	6 800	6 971	6 243	7 050	(c) 1 349
Unwrought alloys	1 917	1 529	1 214	1 184	(c) 635
Scrap	212	49	22	112	(c) 26
Belgium-Luxembourg					
Unwrought	2 454	2 343	2 301	2 834	781
Unwrought alloys	161	74	72	120	44
Scrap	98	149	92	208	102
Denmark					
Unwrought	30	37	28	13	17
Unwrought alloys	835	620	740	496	393
Scrap	161	3	546	244	0
France					
Concentrates	18	10	7	8	35
Unwrought	259	739	564	244	722
Unwrought alloys	164	129	102	399	124
Scrap	753	717	881	915	655
Germany, Federal Republic of					
Unwrought	3 577	4 353	5 264	2 604	3 590
Unwrought alloys	785	460	520	535	1 126
Scrap	120	88	52	107	106
Italy					
Unwrought	251	228	123	282	112
Scrap	97	24	131	35	121
Netherlands					
Unwrought	852	437	525	1 101	2 081
Unwrought alloys	906	837	750	844	867
Scrap	698	549	513	361	258
Austria					
Unwrought	2	38	10	19	17
Czechoslovakia					
Concentrates	184	111	123	106	...
Norway					
Unwrought (a)	99	59	21	7	6
Spain					
Unwrought	1 624	153	435	135	) 248
Unwrought alloys	278	178	132	94)
Scrap	121	37	94	65	91
Sweden					
Unwrought	209	40	61	57	95
Unwrought alloys	29	14	2	1	81
Switzerland					
Unwrought	91	84	168	186	158
Scrap	79	68	90	117	72
Yugoslavia					
Unwrought (a)	134	64	114	49	56
Niger					
Concentrates	90	72	(b)* 25	(b)* 38	(b)* 37
Nigeria					
Unwrought (a)	2 169	2 093	2 581	2 719	2 517
Rwanda					
Concentrates (b)	1 607	1 398	1 286	1 270	1 469
South Africa					
Concentrates (b)	2 386	2 212	1 487	754	546
Tanzania					
Concentrates	18	24	17	9	...
Zaire					
Concentrates (b)	3 179	2 766	1 647	2 005	1 605
Unwrought	160	776	263	446	179
Canada					
Concentrates (b)	876	943	713	883	517
Jamaica					
Scrap	25 586	472	327	85 398	...

Exports of Tin

Country	1977	1978	1979	1980	1981
USA					
Unwrought (a)	5 487	4 693	3 418	4 294	6 081
of which: Re-exports	4 941	4 194	2 849	3 699	3 719
Scrap	4 512	6 349	6 068	7 519	3 901
Argentina					
Tin-silver ore	2 011	2 847	1 406	...	...
Bolivia					
Concentrates (b)	18 413	13 818	11 304	8 313	5 525
Unwrought	12 345	15 461	14 355	13 720	17 952
Brazil					
Unwrought	2 112	1 665	1 508	2 773	4 747
Peru					
Concentrates	754	1 786	2 355	2 214	...
Burma					
Concentrates (b)	1 213	1 141	2 157	2 214	1 666
China					
Unwrought (a)(d)	* 3 400	* 5 400	* 7 100	* 2 700	* 4 100
Hong Kong					
Unwrought	135	223	749	621	1 160
of which: Re-exports	135	223	680	472	934
Indonesia					
Concentrates	1 968	976	1 624	4 857	1 044
Unwrought (a)	21 314	22 859	26 274	26 169	32 128
Scrap	2 695	676	475	1 404	750
Japan					
Unwrought (a)	205	66	84	44	37
Laos					
Concentrates (b)	264	72	42	83	13
Malaysia					
Unwrought	66 517	70 189	72 113	69 383	66 443
Singapore					
Concentrates	10 440	8 271	6 382	5 351	3 318
Unwrought	2 702	7 096	9 835	13 885	15 335
Unwrought alloys	742	751	781	755	877
Thailand					
Unwrought	21 439	28 944	31 309	33 955	32 007
Unwrought alloys	2 276	1 307	40	25	138
Australia					
Concentrates (b)	5 126	7 015	6 435	7 425	7 353
Unwrought (a)	2 320	2 146	2 108	1 594	1 407

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) Six months data only

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

Tin

Imports of Tin

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Concentrates	45 104	39 105	35 987	36 656	38 407
Unwrought	8 360	7 834	7 747	5 157	6 354
Unwrought alloys	983	518	783	1 972	1 798
Scrap	1 477	1 355	1 314	913	1 006
Belgium-Luxembourg					
Concentrates	5 299	4 718	2 912	3 151	126
Unwrought	2 044	2 105	2 606	2 627	2 550
Unwrought alloys	108	128	188	361	194
Scrap	134	131	175	182	187
Denmark					
Unwrought	371	226	252	123	90
Unwrought alloys	104	122	71	124	20
Scrap	151	201	285	250	143
France					
Concentrates	—	504	941	—	0
Unwrought	10 079	10 650	10 348	10 362	8 852
Unwrought alloys	430	178	217	162	58
Scrap	268	136	99	194	23
Germany, Federal Republic of					
Concentrates	6 282	7 989	7 158	3 343	3 229
Unwrought	14 914	14 700	15 773	17 132	15 925
Unwrought alloys	705	781	1 325	1 172	1 127
Scrap	534	624	340	324	344
Greece					
Unwrought	401	320	799	468	417
Irish Republic					
Unwrought (a)	21	50	25	22	21
Italy					
Unwrought	6 265	5 899	6 732	6 336	4 487
Unwrought alloys	493	527	380	471	319
Netherlands					
Concentrates	3 938	2 820	3 437	3 338	6 053
Unwrought	4 090	4 616	4 728	5 233	5 330
Unwrought alloys	1 209	814	811	528	1 023
Scrap	925	971	470	402	242
Austria					
Unwrought	479	469	497	557	410
Czechoslovakia					
Unwrought (a)	3 196	3 894	3 940	4 085	...
Finland					
Unwrought (a)	121	211	302	267	191
Hungary					
Unwrought & semi-manufactures	1 520	1 739	1 724	1 662	1 369
Norway					
Unwrought	524	547	500	524	500
Unwrought alloys	98	97	83	91	57
Poland					
Unwrought	4 680	4 616	3 879	3 318	2 223
Portugal					
Concentrates	419	332	226	308	63
Unwrought	479	464	529	572	422
Soviet Union					
Concentrates	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Unwrought	* 6 000	* 7 000	* 7 000	* 7 500	* 7 500
Spain					
Concentrates	6 125	5 083	3 263	4 363	4 071
Sweden					
Unwrought	247	336	530	414	268
Unwrought alloys	90	79	98	61	45
Switzerland					
Unwrought	705	932	868	1 026	926
Turkey					
Unwrought	996	744	321	341	713

Imports of Tin

Country	1977	1978	1979	1980	1981
Yugoslavia					
Unwrought (a)	1 960	1 833	1 604	1 032	958
Algeria					
Unwrought (a)	53	94	92	123	...
Egypt					
Unwrought & scrap	215	361	241	35	57
Kenya					
Unwrought (a)	44	22	17	22	...
Morocco					
Unwrought (a)	154	148	167	185	...
Nigeria					
Unwrought (a)	1 833	992	...	...	...
South Africa					
Unwrought	845	450	386	225	276
Tunisia					
Unwrought & scrap	40	51	74	92	...
Zambia					
Unwrought	14	20	...	...	...
Canada					
Unwrought	5 028	4 809	4 689	4 527	3 811
Mexico					
Concentrates	2 689	2 940	2 016	2 482	...
Unwrought	152	275	609	566	...
USA					
Concentrates (b)	6 044	3 873	4 529	841	232
Unwrought	47 376	46 776	48 355	45 982	45 874
Unwrought alloys	702	770	990	865	805
Scrap	711	498	628	870	2 430
Argentina					
Unwrought	630	664	980	...	...
Brazil					
Concentrates	3 911	4 074	7 542	3 605	301
Chile					
Unwrought	307	546	...	...	...
Colombia					
Unwrought (a)	364	476	353	430	378
Peru					
Unwrought (a)	458	...	...	...	...
Uruguay					
Unwrought	61	38	69	21	39
Venezuela					
Unwrought (a)	519	339	511	187	...
Hong Kong					
Unwrought	896	1 445	2 042	1 694	1 769
India					
Unwrought (a)	2 509	2 570	1 879	...	...
Scrap	2 995	4 553	7 466	...	...
Iran (d)					
Unwrought	172	* 300	* 300	* 1 000	* 700
Japan					
Unwrought	28 200	28 563	30 478	31 068	30 223
Korea, Republic of					
Concentrates	519	693	543	331	151
Unwrought (a)	4 271	...	6 426	1 234	2 056
Malaysia					
Concentrates	11 495	17 245	18 863	...	...
Unwrought (a)	35	407	323	...	...
Philippines					
Unwrought (a)	704	767	422	437	6 339
Singapore					
Concentrates	3 177	3 118	4 227	3 370	1 996
Unwrought	338	1 174	1 015	2 089	1 380
Unwrought alloys	450	498	537	503	358
Scrap	43	60	156	1 032	1 503

Tin

Imports of Tin

tonnes

Country	1977	1978	1979	1980	1981
Syria					
Unwrought & scrap	93	242	4 132	79	73
Taiwan					
Unwrought	1 777	3 199	703	615	1 062
Australia					
Unwrought	222	204	5	44	102
New Zealand (c)					
Unwrought (a)	341	249	236	263	205

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

Country	1977	1978	1979	1980	1981
Finland					
Ilmenite	124 700	131 900	131 500	149 700	161 500
Norway					
Ilmenite	828 503	766 990	819 815	827 827	657 625
Portugal					
Ilmenite	229	251	268	232	334
Soviet Union					
Ilmenite	* 399 000	* 410 000	* 410 000	* 420 000	* 430 000
Rutile	* 9 000	* 9 000	* 9 000	* 9 000	* 9 000
Sierra Leone					
Rutile	—	—	7 500	45 440	50 795
South Africa					
Ilmenite (d)	—	* 154 000	* 487 300	* 584 500	* 629 200
Rutile	* 4 500	* 18 000	* 42 000	* 48 000	* 49 900
Canada (a)					
Ilmenite (d)	1 442 280	1 809 990	1 004 260	1 853 270	* 1 500 000
USA					
Ilmenite (b)	579 240	535 013	579 956	497 937	462 068
Brazil					
Ilmenite	13 268	20 077	13 191	16 839	* 17 000
Rutile	128	365	439	428	* 400
India					
Ilmenite	153 979	172 541	162 909	184 556	188 828
Rutile	7 058	7 107	6 642	7 192	8 752
Malaysia (c)					
Ilmenite	153 679	165 984	212 837	189 121	172 757
Sri Lanka					
Ilmenite	33 946	35 904	55 370	33 956	80 011
Rutile	950	11 497	14 675	12 789	13 301
Australia					
Ilmenite	1 033 358	1 254 994	1 181 010	1 384 563	1 332 277
Rutile	325 281	257 075	274 533	311 744	229 425
Leucoxene	10 621	16 103	22 470	23 943	19 261
World total					
Ilmenite (Wt. of concs)	4 800 000	5 500 000	5 100 000	6 100 000	5 600 000
Rutile (Wt. of concs)	347 000	303 000	355 000	435 000	362 000
All forms (TiO ₂ content)	* 2 720 000	* 3 031 000	* 2 886 000	* 3 506 000	* 3 177 000

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) Processed into slag. In 1981, Canada produced 762 000 tonnes (70–72% TiO₂) and South Africa produced 370 000 tonnes (85% TiO₂)

Titanium

Exports of Titanium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Titanium minerals	234	3 081	1 551	645	(c) 324
Oxides	97 709	94 888	94 602	108 149	(c) 44 485
Belgium-Luxembourg					
Titanium minerals	36	3	3 426	2 814	0
Metal	109	164	191	110	103
Oxides	60 417	57 964	58 418	56 755	66 727
France					
Titanium minerals	370	331	715	2 130	1 070
Metal	636	530	604	734	1 185
Oxides	101 969	110 843	126 370	107 461	126 407
Germany, Federal Republic of					
Ilmenite	27	639	1 535	3 149	5 186
Other titanium minerals	2 334	5 556	4 067	6 114	3 545
Metal	1 643	1 905	1 864	2 233	2 131
Oxides	172 682	190 086	204 353	178 572	210 431
Italy					
Metal	119	137	131	103	63
Oxides	29 065	25 648	24 579	19 733	31 872
Netherlands					
Ilmenite	886	563	2 457	4 174	1 919
Other titanium minerals	9 574	377	142	22 212	19 827
Metal	109	135	114	77	154
Oxides	24 760	28 283	28 446	25 300	31 776
Finland					
Oxides	54 240	50 511	...	...	...
Norway					
Titanium minerals	723 543	714 108	741 430	779 741	619 329
Oxides	853	1 133	1 227	1 137	1 110
Soviet Union					
Metal (b)	* 2 300	* 2 400	* 3 500	* 2 800	* 1 550
Spain					
Oxides	16 078	27 260	38 974	25 745	22 001
Sweden					
Titanium minerals	—	—	388	23	47
Metal	412	520	420	506	603
Yugoslavia					
Oxides	13 355	13 453	12 132	11 353	12 559
South Africa					
Titanium minerals (b)	...	* 15 000	* 53 000	* 57 600	* 151 000
Titanium slag (b)	...	...	* 23 000	* 63 500	* 66 000
Canada					
Titanium slag (a)	...	...	...	...	...
Metal (d)	231	774	728	698	1 899
Oxides (d)	14 185	15 642	17 970	9 367	14 252
Mexico					
Oxides	4 544	11 094	...	...	...
USA					
Titanium minerals	23 108	5 070	9 780	16 567	7 004
Metal	4 080	7 086	7 903	8 094	8 816
Oxides	15 134	35 696	46 680	41 562	56 661
China					
Oxides (b)	* 1 500	* 1 200	* 1 500	* 1 600	* 1 700
Hong Kong					
Oxides (Re-exports)	1 285	3 036	1 878	2 529	2 554
India					
Ilmenite	76 699	96 728	53 043	...	...
Oxides (e)	1 164	290	45	...	...
Japan					
Metal	3 444	5 741	7 113	8 065	10 005
Oxides	42 064	34 602	41 163	46 343	45 491
Malaysia					
Ilmenite	153 679	165 984	212 837	189 121	172 757
Sri Lanka					
Ilmenite	39 995	40 700	32 640	23 970	32 816
Taiwan					
Oxides	8 471	468	961	789	113

Exports of Titanium

Country	1977	1978	1979	1980	1981
Australia					
Ilmenite	1 082 504	993 636	906 779	1 058 712	799 986
Rutile	246 724	371 317	317 780	315 314	198 738
Leucoxene	12 728	6 516	24 926	24 207	14 900
Oxides (b)	* 11 100	* 13 500	* 16 800	* 14 300	* 15 900

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) Sorels slag (70–72% TiO₂): estimated at 700 000 tonnes per year
- (b) IGS estimates, based on known imports into certain countries
- (c) Six months data only
- (d) Exports to the USA only
- (e) Years ended 31 March following that stated

Imports of Titanium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom (a)					
Ilmenite	298 983	261 405	302 444	261 615	225 772
Other titanium minerals	89 055	45 302	80 546	50 809	62 929
Metal	3 952	7 981	...	...	...
Oxides	26 470	32 180	34 996	28 221	36 685
Belgium-Luxembourg					
Ilmenite	2 041	63 641	75 517	33 088	78 510
Other titanium minerals	67 244	36 979	26 577	45 020	41 435
Metal	607	1 463	4 097	1 420	914
Oxides	20 783	23 193	24 888	21 642	21 146
Denmark					
Oxides	7 042	7 559	7 898	7 421	8 321
France					
Ilmenite	135 944	146 577	119 708	85 377	90 755
Other titanium minerals	8 183	7 900	9 700	25 953	70 072
Metal	1 025	965	1 786	2 809	3 348
Oxides	37 620	45 576	45 211	43 885	44 860
Germany, Federal Republic of					
Ilmenite	478 333	406 992	521 534	451 088	516 503
Other titanium minerals	121 029	112 570	52 471	33 814	22 465
Metal	2 284	3 871	3 836	4 878	4 843
Oxides	61 308	69 603	73 206	70 834	70 260
Greece					
Oxides	3 313	2 179	17 122	8 692	663
Irish Republic					
Oxides	3 677	3 644	3 464	2 880	3 655
Italy					
Ilmenite	133 985	121 897	76 629	25	43
Other titanium minerals	7 527	4 531	5 538	5 425	3 874
Metal	1 954	2 770	2 856	1 539	1 945
Oxides	38 026	45 791	45 976	43 678	49 987
Netherlands					
Ilmenite	2 021	412	2 885	3 312	3 628
Other titanium minerals	5 971	934	1 372	33 826	20 658
Metal	221	240	260	239	394
Oxides	20 714	23 068	27 723	20 127	24 467
Austria					
Oxides	8 792	10 557	9 195	8 967	8 894
Bulgaria					
Titanium minerals (b)	* 1 250	* 2 800	* 1 800	* 5 600	* 4 300
Oxides (b)	* 1 800	* 2 300	* 2 700	* 2 300	* 2 000
Finland					
Titanium minerals	10 368	6 399	5 535	37 602	10 375
German Democratic Republic					
Oxides	* 16 200	* 16 750	* 21 500	...	...
Norway					
Oxides	3 445	3 168	4 582	4 490	4 189
Portugal					
Rutile	523	476	...	...	...
Oxides	7 528	7 834	8 278	8 840	8 937
Spain					
Ilmenite	133 272	106 200	162 977	134 920	146 798
Oxides	3 961	4 586	6 774	7 902	2 919
Sweden					
Titanium minerals	2 718	1 448	2 393	3 592	2 050
Metal	737	1 169	1 025	1 403	1 717
Oxides	16 705	17 819	18 419	16 384	17 374
Switzerland					
Oxides	7 768	7 194	6 141	3 773	1 826
Turkey					
Titanium minerals	3 226	700	1 930	2 111	...
Oxides	3 121	1 000	3 321	1 681	1 173
Yugoslavia					
Rutile	47 305	45 980	23 742	52 142	...
Oxides	2 853	6 686	6 876	5 397	1 760

Imports of Titanium

Country	1977	1978	1979	1980	1981
Algeria					
Titanium minerals	277	288	433	...	...
Oxides	3 030	2 902	4 561	7 516	...
Egypt					
Oxides	—	1 116	1 218	1 905	...
Morocco					
Oxides	1 939	2 624	3 245	2 333	...
South Africa					
Oxides	324	805	541	1 655	2 819
Canada					
Metal	372	641	731	616	552
Oxides	4 974	7 095	11 330	6 283	7 299
Mexico					
Ilmenite	40 602	63 572	59 724	63 588	...
Rutile sand (f)	1 437	1 944	2 692	2 938	...
USA					
ilmenite	402 872	280 022	167 356	324 308	225 425
Titanium slag	136 589	135 327	100 888	176 896	243 874
Rutile (c)	112 309	262 736	257 168	255 468	183 589
Metal	6 709	5 975	8 930	9 179	10 794
Oxides	105 547	106 529	95 203	88 532	113 367
Argentina					
Titanium minerals	2 053	2 493	748	...	...
Brazil					
Ilmenite	69 632	56 335	56 437	55 016	69 408
Rutile	2 066	4 070	2 942	4 964	2 421
Oxides	17 053	13 926	27 929	26 262	24 067
Chile					
Oxides	2 775	3 160	...	...	...
Colombia					
Oxides	3 976	5 343	7 108	5 241	4 967
Uruguay					
Oxides	1 009	1 972	3 404	1 745	2 210
Venezuela					
Oxides	12 618	10 203	9 897	...	...
China					
Oxides (b)	* 4 700	* 3 500	* 5 300	* 7 600	* 10 800
Hong Kong					
Oxides	4 349	6 968	6 077	5 406	6 246
India					
Oxides (d)	5 703	7 313	8 460	...	...
Indonesia					
Oxides	7 330	9 734	11 840	10 192	9 945
Japan					
Titanium minerals	495 967	399 131	420 433	409 080	323 057
Titanium slag	42 549	61 942	75 864	152 663	66 086
Oxides	11 644	13 416	20 486	21 011	27 230
Korea, Republic of					
Titanium minerals	22 292	31 963	12 314	31 150	21 376
Rutile sand	3 220	4 138	4 631	3 740	4 652
Oxides	7 689	...	15 113	10 099	14 235
Philippines					
Rutile	252	726	493	922	676
Oxides	4 796	6 443	6 802	4 393	5 448
Singapore					
Titanium minerals	491	655	1 177	541	85
Oxides	3 882	3 420	4 338	3 768	4 099
Taiwan					
Oxides	8 651	16 334	18 933	18 099	17 292
Thailand					
Rutile	441	618	799	930	...
Oxides	1 577	1 442	1 458	555	...

Titanium

Imports of Titanium

tonnes

Country	1977	1978	1979	1980	1981
Australia					
Oxides	788	1 162	804	792	682
New Zealand					
Oxides (e)	6 102	5 091	6 806	5 708	2 777

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% TiO₂)
- (b) IGS estimates, based on known exports from certain countries
- (c) Includes synthetic rutile
- (d) Years ended 31 March following that stated
- (e) Years ended 30 June of that stated
- (f) Micronised for use as an opacifier

Mine Production of Tungsten

tonnes (metal content)

Country	1977	1978	1979	1980	1981
United Kingdom	76	65	66	...	...
France	653	608	500	577	591
Austria	1 405	1 550	1 669	2 150	1 322
Czechoslovakia	* 80	* 80	* 80	* 80	* 80
Portugal (c)	1 005	1 104	1 387	1 580	1 399
Soviet Union	* 8 200	* 8 500	* 8 700	* 8 700	* 8 850
Spain	308	358	394	446	419
Sweden	199	381	371	327	365
Turkey	—	—	224	219	—
Namibia (d)	99	93	45	* 50	—
Rwanda	390	339	348	323	248
Uganda	110	110	* 55	* 50	* 40
Zaire (d)	171	148	89	72	135
Zimbabwe	120	130	110	90	60
Canada (a)	1 811	2 289	2 597	3 178	1 993
Mexico	191	234	252	266	191
USA (b)	2 725	3 128	3 013	2 754	3 605
Argentina	70	97	59	35	50
Bolivia	2 331	2 514	2 470	2 664	2 735
Brazil (a)	1 212	1 165	1 177	1 136	* 1 200
Peru	526	582	564	549	521
Burma (d)	278	486	719	848	845
China	* 9 000	* 12 000	* 13 000	* 15 000	* 14 000
Hong Kong	* 5	* 5	* 5	—	...
India	22	21	20	23	19
Japan	776	754	751	668	668
Korea, Dem. P.R. of	* 2 150	* 2 150	* 2 150	* 2 200	* 2 200
Korea, Republic of	2 635	2 681	2 713	2 737	2 739
Malaysia	93	71	52	35	35
Thailand	2 204	3 186	1 826	1 615	1 210
Australia (c)	2 358	2 707	3 193	3 575	3 250
New Zealand	5	8	8	4	5
World total	41 000	48 000	49 000	52 000	49 000

(a) Mainly scheelite

(b) Shipments from mine

(c) Wolframite and scheelite

(d) Including tin-wolframite concentrates

Tungsten

Exports of Tungsten

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Tungsten ore	366	135	30	222	(b) 76
Metal	455	336	227	333	(b) 142
Carbide	187	302	397	541	(b) 301
Belgium-Luxembourg					
Tungsten ore	49	45	9	—	0
Metal	230	217	159	165	142
France					
Tungsten ore	1 125	1 613	1 082	846	760
Metal	338	297	363	267	432
Germany, Federal Republic of					
Tungsten ore	172	87	174	139	182
Metal	573	541	606	704	1 038
Italy					
Metal	116	34	99	65	93
Netherlands					
Tungsten ore	864	1 260	1 161	1 656	344
Metal	220	243	202	202	300
Austria					
Tungsten ore	252	130	25	—	—
Metal	363	581	848	1 111	1 243
Portugal					
Tungsten ore	1 555	1 692	1 704	2 093	2 402
Spain					
Scheelite ore	191	174	256	3 903	) 621
Other tungsten ore	276	213	359	313)
Metal	29	22	28	49	12
Sweden					
Tungsten ore	86	103	431	330	691
Metal	28	49	54	50	46
Carbide	138	147	195	185	172
Switzerland					
Metal	64	23	24	51	49
Rwanda					
Tungsten ores & concentrates	845	665	744	* 1 000	...
South Africa					
Tungsten ore (c)	* 200	* 450	* 50	* 20	* 20
Uganda					
Wolframite ore	* 200	* 200	* 200	* 200	...
Zaire					
Tungsten ore	171	255	160	157	...
Zimbabwe					
Tungsten ore	251	260	223	201	...
Canada (a)	* 1 690	* 2 200	* 2 300	* 2 900	* 1 800
Mexico					
Tungsten ores & concentrates	408	726	310	396	* 250
USA					
Tungsten ores & concentrates	1 190	1 639	1 749	1 834	280
Metal	973	1 191	1 130	1 481	1 921
Ammonium paratungstate (a)	66	99	2	3	1
Carbide	694	664	635	662	550
Bolivia					
Tungsten ore (a)	2 820	2 852	2 647	3 435	3 091
Brazil					
Tungsten ore	1 353	992	538	770	1 741
Peru					
Tungsten ores & concentrates	977	1 024	1 131	996	...
Burma					
Tungsten ores & concentrates	266	* 400	* 500	* 600	...

Exports of Tungsten

Country	1977	1978	1979	1980	1981
China					
Tungsten ores & concentrates (a)	* 3 000	9 387	10 999	10 490	10 379
Japan					
Metal	130	172	209	216	242
Korea, Dem. P.R. of (a)	* 1 000	* 1 000	* 1 000	* 1 000	...
Korea, Republic of					
Tungsten ore	2 029	2 361	1 915	1 721	6 360
Malaysia					
Wolframite ore	147	59	128	...	...
Singapore					
Tungsten ore	137	440	396	848	971
Metal	44	57	42	87	146
Thailand					
Tungsten ore	4 094	5 799	3 608	3 638	1 716
Australia					
Wolframite ores & concentrates	714	1 068	1 624	2 311	2 093
Scheelite ores & concentrates	2 873	3 936	3 442	3 715	4 254

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) Six months data only

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

Tungsten

Imports of Tungsten

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Tungsten ore	3 365	3 655	2 996	2 622	3 309
Metal	208	567	245	298	162
Carbide	294	338	344	407	448
Belgium-Luxembourg					
Tungsten ore	98	—	—	3	19
Metal	237	199	300	224	253
Carbide	...	...	...	...	176
France					
Tungsten ore	2 034	2 468	1 586	1 438	1 159
Metal	173	251	307	241	258
Germany, Federal Republic of					
Tungsten ore	2 981	3 422	4 097	2 931	2 698
Metal	924	1 150	831	970	1 132
Carbide	...	...	...	...	280
Italy					
Tungsten ore	25	126	181	173	83
Metal	100	124	134	102	84
Netherlands					
Tungsten ore	1 341	1 699	99	232	121
Metal	220	205	123	142	428
Austria					
Tungsten ore	2 205	4 533	4 835	4 297	3 425
Metal	744	492	728	418	357
Finland					
Metal	31	29	20	83	27
Poland					
Tungsten concentrates	3 360	4 103	2 898	1 662	806
Soviet Union					
Tungsten concentrates	* 2 000	* 3 000	* 3 000	* 3 000	* 3 500
Sweden					
Tungsten ore	2 665	2 420	2 180	3 711	2 417
Metal	102	43	28	131	29
Carbide	205	310	260	334	327
Switzerland					
Metal	73	92	39	113	79
Yugoslavia					
Metal	18	23	24	25	13
South Africa					
Tungsten ores & concentrates	483	508	333	2 504	401
Metal	32	142	201	176	40
Carbide	62	66	53	101	65
Mexico					
Metal	46	37	113	117	...
USA					
Tungsten ore	7 140	9 512	11 494	10 932	5 389
Metal	288	350	788	531	4 411
Ammonium paratungstate (a)	168	233	198	202	474
Carbide	87	182	293	234	343
Venezuela					
Metal	37	11	140	24	...
India					
Tungsten ore	428	397	255	* 300	...
Metal	5	26	21	...	...
Japan					
Tungsten ore	3 247	2 264	3 133	3 480	2 256
Metal	113	126	162	159	187

Imports of Tungsten

Country	1977	1978	1979	1980	1981
Singapore					
Tungsten ore	68	417	487	1 347	1 925
Metal	42	54	3	23	23
Taiwan					
Metal	13	23	39	56	37
Australia (b)					
Metal	5	6	0	0	...

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) Years ended 30 June of that stated

Mine Production of Vanadium

tonnes (metal content)

Country	1977	1978	1979	1980	1981
Finland	2 898	3 431	3 632	3 009	3 279
Norway	* 540	* 460	* 570	* 490	* 490
Soviet Union	* 9 000	* 9 100	* 9 100	* 9 500	* 9 500
Namibia	775	462	—	—	—
South Africa	11 243	* 11 250	* 12 300	* 12 900	* 10 900
USA	5 900	3 875	5 008	4 360	4 650
Chile	* 860	* 690	* 460	* 270	* 130
China	—	* 2 000	* 3 600	* 4 500	* 4 500
World total	31 200	31 300	34 700	35 000	33 400

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

Exports of Vanadium

Country	1977	1978	1979	1980	1981
United Kingdom					
Pentoxide	144	158	55	15	(c) 12
Metal	2	0	0	2	(c) 0
Belgium-Luxembourg					
Vanadiferous residues	294	260	1 423	—	4 775
Pentoxide	167	105	212	143	134
Vanadium-titanium pig-iron	97	4	2	24	23
France					
Vanadiferous residues	—	422	1 563	168	112
Pentoxide	75	2	6	39	52
Germany, Federal Republic of					
Vanadiferous residues	860	1 137	904	705	2 175
Metal	1	55	109	124	193
Netherlands					
Vanadiferous residues	80	107	199	17	8
Vanadium-titanium pig-iron	2	95	3	9	6
Finland					
Pentoxide	3 500	4 931	4 928	...	...
Soviet Union					
Vanadiferous residues	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
South Africa					
Pentoxide (a)	* 4 600	* 6 100	* 7 900	* 6 300	* 5 000
Vanadiferous residues (a)	* 16 000	* 18 500	* 12 000	* 10 500	* 500
Lead vanadium concentrates (b)	* 7 600	* 4 500	—	—	—
USA					
Ores & concentrates (d)(e)	316	309	163	74	90
Pentoxide	...	1 128	1 057	662	318

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) Six months data only

(d) V₂O₅ content

(e) Figure for 1977 includes oxides and vanadates

Vanadium

Imports of Vanadium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Vanadiferous residues	893	960	596	751	8
Pentoxide	702	875	937	925	1 094
Vanadium-titanium pig-iron	200	100	49	—	—
Metal	59	103	100	93	133
Belgium-Luxembourg					
Vanadiferous residues	7 815	5 085	6 272	7 001	9 350
Pentoxide	643	1 771	1 169	1 535	1 542
Metal	20	20	—	1	64
France					
Pentoxide	796	1 444	1 315	1 207	1 513
Vanadium-titanium pig-iron	101	51	50	49	77
Metal	1	1	19	19	45
Germany, Federal Republic of					
Vanadiferous residues	22 237	26 903	31 766	44 422	36 685
Pentoxide	1 324	1 851	710	1 383	2 223
Vanadium-titanium pig-iron	359	342	410	485	625
Metal	19	27	42	—	2
Italy					
Vanadiferous residues	3 169	3 611	4 891	3 462	2 747
Pentoxide	375	1 009	864	490	194
Vanadium-titanium pig-iron	392	225	250	252	242
Netherlands					
Vanadiferous residues	7 675	8 802	737	—	308
Pentoxide	74	8	8	14	33
Vanadium-titanium pig-iron	100	100	75	50	25
Sweden					
Pentoxide	700	1 016	990	517	141
Mexico					
Pentoxide	124	118	278	250	...
USA					
Vanadiferous residues (a)	4 562	3 635	3 954	4 389	3 932
Pentoxide	603	1 062	1 469	1 386	572
Brazil					
Pentoxide	667	796	1 215	1 042	578
Japan					
Pentoxide	2 052	2 656	4 633	3 404	3 943

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

(a) V₂O₅ content

Mine Production of Zinc

tonnes (metal content)

Country	1977	1978	1979	1980	1981
United Kingdom (a)	7 528	2 718	572	4 444	10 855
France	41 828	39 900	36 583	36 812	37 429
Germany, Federal Republic of	115 638	88 863	117 100	120 800	110 700
Greece	18 427	25 600	24 102	24 605	26 800
Irish Republic	116 298	176 029	205 000	223 000	117 000
Italy	79 300	74 000	66 300	58 400	42 400
Austria	22 037	24 821	22 849	21 690	20 544
Bulgaria	80 000	78 000	75 000	70 000	65 000
Czechoslovakia	9 400	8 800	9 100	9 636	8 470
Finland	61 317	58 861	58 316	57 000	52 200
Greenland	76 600	82 400	87 300	86 800	86 400
Hungary	2 962	2 827	3 074	2 807	2 693
Norway	31 277	29 592	28 361	27 484	28 455
Poland	221 000	231 000	237 000	216 700	201 500
Romania	* 50 000	* 51 000	* 45 000	* 40 000	* 40 000
Soviet Union	* 1 040 000	* 1 030 000	* 1 020 000	* 1 000 000	* 1 010 000
Spain	98 316	146 844	142 745	183 120	175 164
Sweden	140 233	167 373	169 200	167 400	180 900
Turkey	50 300	39 996	24 894	20 400	30 700
Yugoslavia	112 383	103 794	101 699	95 300	88 600
Algeria	3 100	4 100	4 700	8 200	10 800
Congo	5 200	4 800	—	—	—
Morocco	11 200	5 100	6 300	6 071	7 900
Namibia	38 300	36 600	29 000	25 400	36 400
South Africa	72 416	68 700	56 500	87 777	87 172
Tunisia	7 100	7 400	8 700	8 332	8 458
Zaire	81 832	88 533	76 244	67 000	75 600
Zambia	45 112	50 409	46 492	37 076	42 170
Canada	1 300 228	1 245 248	1 204 401	1 058 714	1 095 958
Honduras	26 500	24 339	19 845	16 026	16 190
Mexico	265 469	244 892	245 477	238 231	211 600
Nicaragua	10 142	3 600	—	—	—
USA (b)	407 888	302 669	267 341	317 103	312 418
Argentina	39 155	36 585	37 509	33 700	34 900
Bolivia	60 766	59 323	44 141	50 260	47 029
Brazil	52 500	60 200	68 500	70 000	71 000
Chile	3 918	1 814	1 847	1 134	1 523
Ecuador	1 229	1 339	292	624	415
Peru (b)	405 250	402 600	432 000	487 596	496 707
Burma	1 700	2 645	3 028	4 079	3 556
China	* 150 000	* 150 000	* 155 000	* 150 000	* 160 000
India	35 500	39 300	42 951	32 229	34 200
Iran	61 500	45 000	25 000	30 000	35 000
Japan	275 731	274 629	245 320	238 108	242 042
Korea, Dem. P.R. of	* 150 000	* 145 000	* 135 000	* 130 000	* 130 000
Korea, Republic of	68 355	66 440	62 477	56 787	56 198
Philippines	12 442	9 468	9 670	6 845	5 828
Vietnam	10 000	10 000	10 000	10 000	10 000
Australia	491 608	473 293	529 157	495 312	517 405
World total	6 500 000	6 300 000	6 200 000	6 100 000	6 100 000

(a) In a mixed copper-zinc concentrate

(b) Recoverable

Production of Slab Zinc

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	81 481	73 575	76 686	86 682	81 700
Belgium (a)	258 228	240 516	261 720	249 214	250 406
France	238 271	231 197	248 977	252 769	257 100
Germany, Federal Republic of	354 780	306 836	355 500	365 200	366 100
Italy	169 391	177 552	202 782	206 659	180 904
Netherlands	109 398	135 399	153 982	169 539	177 363
Austria	16 774	21 655	23 238	22 102	22 674
Bulgaria	90 000	91 000	89 000	91 000	90 000
Finland	138 000	132 900	146 564	146 719	139 835
German Democratic Republic	* 15 500	* 16 000	* 17 000	* 16 000	* 16 000
Norway	69 790	71 628	77 763	79 416	80 279
Poland	228 200	222 041	209 246	217 485	167 118
Romania	51 860	49 790	46 486	45 906	52 000
Soviet Union	* 1 020 000	* 1 055 000	* 1 085 000	* 1 060 000	* 1 060 000
Spain	154 600	167 500	182 700	151 800	179 500
Turkey	16 100	17 300	17 200	12 600	18 100
Yugoslavia	98 845	95 232	98 906	84 537	96 370
Algeria	16 000	25 700	27 300	30 000	31 000
South Africa	76 000	79 100	75 400	81 400	80 900
Zaire	51 049	43 508	43 693	43 848	57 600
Zambia	40 114	42 493	38 163	33 970	33 298
Canada	494 938	495 243	580 449	591 565	618 650
Mexico	175 166	173 793	162 354	144 550	127 000
USA	408 365	406 698	472 481	340 456	343 662
Argentina	29 000	23 900	36 700	25 400	23 000
Brazil	47 032	56 097	63 494	78 303	91 944
Peru	66 949	62 900	68 400	63 800	128 600
China	* 155 000	* 160 000	* 160 000	* 155 000	* 160 000
India	35 997	59 388	63 323	43 627	57 434
Japan	778 406	767 949	789 352	735 187	670 162
Korea, Dem. P.R. of	* 135 000	* 130 000	* 120 000	* 105 000	* 105 000
Korea, Republic of	32 756	58 970	83 014	79 150	83 915
Vietnam	10 000	10 000	10 000	10 000	10 000
Australia	356 441	294 766	310 150	305 959	301 386
World total	6 000 000	6 000 000	6 400 000	6 100 000	6 200 000

(a) Including alloys

Exports of Zinc

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	9 795	9 443	—	7 695	(e) 12 437
Unwrought	17 160	15 032	12 178	27 378	(e) 11 279
Unwrought alloys	6 746	6 576	6 942	7 387	(e) 4 089
Scrap	3 856	6 018	4 818	5 422	(e) 4 190
Belgium-Luxembourg					
Ore	27 585	11 676	60 645	25 108	41 367
Unwrought	(a) 188 824	160 350	165 586	140 932	123 458
Unwrought alloys	...	26 752	28 040	27 246	25 094
Scrap	3 948	4 147	5 369	6 202	11 500
Denmark					
Unwrought	760	110	201	103	2
Unwrought alloys	39	22	72	823	163
Scrap	3 684	4 440	3 210	3 387	3 772
France					
Ore	24 174	54 588	46 530	43 979	50 642
Unwrought	38 692	51 974	44 533	32 913	56 554
Unwrought alloys	4 190	4 258	2 953	2 591	5 555
Scrap	2 385	1 786	4 280	3 209	7 861
Germany, Federal Republic of					
Ore	76 823	72 494	70 592	88 132	61 556
Unwrought	118 230	76 031	84 089	101 214	112 831
Unwrought alloys	13 205	11 507	12 942	9 991	13 049
Scrap	11 236	7 254	8 824	10 395	7 402
Greece					
Ores & concentrates	23 364	45 005	47 489	44 741	42 100
Irish Republic					
Ores & concentrates	210 506	344 426	413 872	462 096	254 132
Italy					
Ore	2 286	32	2 365	2 907	582
Unwrought	26 633	27 879	14 050	17 588	14 292
Unwrought alloys	1 102	1 507	2 503	2 752	6 279
Scrap	2 732	1 445	1 418	2 138	3 432
Netherlands					
Ore	15 142	3 200	11 501	7 306	15
Unwrought	101 720	115 465	129 044	156 103	152 920
Unwrought alloys	7 499	7 740	7 763	7 098	9 947
Scrap	6 053	6 352	4 419	6 576	14 840
Austria					
Ore	6 600	—	—	—	—
Unwrought	320	656	904	1 354	2 193
Scrap	88	75	217	70	703
Bulgaria					
Unwrought (a)(b)	* 25 500	* 20 900	* 12 600	* 10 400	* 9 600
Finland					
Unwrought	124 165	109 752	124 030	116 622	113 807
Unwrought alloys	—	3 853	5 535	3 991	2 262
Scrap	474	6	501	1 185	2 427
Greenland					
Ores & concentrates	135 772	138 737	128 911	168 818	...
Norway					
Ore	17 717	12 242	13 241	6 395	18 349
Unwrought	53 741	48 228	56 778	60 302	57 742
Unwrought alloys	6 876	8 801	5 155	5 436	7 965
Scrap	395	871	1 089	1 353	525
Poland					
Unwrought	59 231	43 161	33 162	41 408	22 161
Soviet Union					
Unwrought	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Spain					
Ore	4 657	7 515	13 891	54 795	44 376
Unwrought (a)	38 030	81 838	84 078	93 834	88 203
Sweden					
Ore	280 901	293 044	347 574	351 941	360 489
Unwrought (a)	313	167	249	342	1 113
Scrap	4 113	5 241	3 347	3 325	3 653

Zinc

Exports of Zinc

tonnes

Country	1977	1978	1979	1980	1981
Switzerland					
Unwrought	48	207	151	84	9
Scrap	671	757	1 242	892	1 264
Turkey					
Ores & concentrates	17 716	...	...	...	...
Yugoslavia					
Concentrates	...	2 271	6 600	8 831	6 047
Unwrought (a)	41 968	45 241	31 579	19 565	21 901
Algeria					
Ore	17 000	—	—	...	...
Unwrought	14 412	17 749	17 112	24 182	...
Morocco					
Ore	21 115	15 409	16 317	12 948	16 476
South Africa					
Ores & concentrates	59 569	41 600	37 367	* 37 000	* 39 000
Unwrought (b)	* 5 500	* 8 100	...	* 1 000	* 1 700
Tunisia					
Ore	5 440	3 525	6 421	20 309	17 073
Zaire					
Unwrought	47 343	28 020	21 359	16 100	69 900
Zambia					
Unwrought	34 800	39 500	42 700	32 200	32 100
Canada					
Ore (c)	598 451	688 187	598 279	434 178	516 210
Unwrought	295 376	443 468	433 009	475 594	459 182
Scrap	19 137	19 174	15 443	22 195	28 962
Guatemala					
Ore	1 856	...	...	...	...
Honduras					
Ores & concentrates (c)	19 123	23 356	16 630	14 672	14 000
Mexico					
Ores & concentrates	140 914	126 190	123 947	141 140	140 000
Unwrought	106 143	105 509	74 224	59 724	28 200
Nicaragua					
Ores & concentrates	19 836	11 040	—	...	...
USA					
Ore (c)	...	10 973	20 095	51 432	46 539
Unwrought (a)	2 452	1 107	765	759	756
Scrap (c)	7 445	14 985	28 149	29 542	30 361
Argentina					
Unwrought	271	6 495	481	...	...
Bolivia					
Ores (c)	61 356	51 621	53 923	46 236	44 681
Brazil					
Ore	6 128	5 688	9 108	—	—
Peru					
Concentrates	610 728	704 828	664 611	755 042	* 600 000
Unwrought (a)	77 582	64 935	56 697	37 532	96 900
Burma					
Concentrates	4 560	...	...	..	...
China					
Unwrought (a)(b)	* 5 800	* 10 800	* 8 500	* 10 500	* 11 900
Hong Kong					
Unwrought (Re-exports)	2 289	3 152	2 962	6 821	3 154
Iran (d)					
Ore	7 500	* 17 000	* 41 500	* 33 500	* 30 000
Japan					
Unwrought	70 105	57 857	37 294	41 700	51 278
Unwrought alloys	2 173	1 372	928	1 236	1 909
Scrap	3 063	4 245	2 640	664	821
Korea, Dem. P.R. of					
Ores & concentrates	* 25 500	* 21 500	* 64 700	(b)* 54 500	(b)* 50 400

Exports of Zinc

Zinc
tonnes

Country	1977	1978	1979	1980	1981
Korea, Republic of					
Ore	48 573	8 118	—	—	—
Unwrought (a)	...	...	8 885	11 612	8 393
Philippines					
Concentrates	24 234	16 126	22 295	14 859	11 873
Scrap	—	—	305	184	370
Singapore					
Unwrought	4 257	8 137	2 945	4 776	4 699
Scrap	226	698	1 018	1 281	1 344
Australia					
Ores & concentrates	343 444	467 718	376 806	524 274	461 032
Unwrought (a)	151 772	221 688	197 950	219 068	176 091

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
- (e) Six months data only

Zinc

Imports of Zinc

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Ores & concentrates	182 749	160 201	182 067	211 561	131 799
Unwrought	197 888	181 527	176 173	130 549	112 744
Unwrought alloys	5 400	7 117	1 973	3 918	7 534
Scrap	1 755	1 036	1 431	1 156	924
Belgium-Luxembourg					
Ore	544 917	532 471	554 133	429 909	420 328
Unwrought (a)	28 854	24 927	51 484	45 577	45 598
Scrap	9 448	5 551	6 648	6 618	6 756
Denmark					
Unwrought	13 793	13 614	16 003	14 972	11 981
Unwrought alloys	2 140	1 773	1 832	2 039	2 247
Scrap	245	270	233	128	128
France					
Ore	466 580	454 582	494 334	469 945	459 981
Unwrought	64 829	76 451	79 860	105 189	62 466
Unwrought alloys	21 306	17 281	21 393	18 930	22 393
Scrap	7 997	8 028	4 600	4 981	8 876
Germany, Federal Republic of					
Ore	562 456	498 930	502 951	618 984	506 148
Unwrought	123 008	139 880	151 729	148 021	124 367
Unwrought alloys	14 934	12 415	12 821	13 760	12 422
Scrap	4 859	9 637	12 369	10 969	23 968
Greece					
Unwrought	13 350	15 886	20 941	18 812	18 330
Irish Republic					
Unwrought (a)	2 020	2 184	2 810	2 349	2 098
Italy					
Ore	193 432	206 600	232 587	357 062	264 585
Unwrought	51 045	43 097	44 845	46 605	46 042
Unwrought alloys	15 336	10 945	11 651	8 644	4 050
Scrap	1 596	1 710	4 022	3 358	6 520
Netherlands					
Ore	262 532	307 817	340 492	346 655	348 713
Unwrought	27 248	21 803	22 375	24 937	19 285
Unwrought alloys	992	423	324	584	1 961
Scrap	6 118	7 191	9 447	9 805	6 398
Austria					
Ore	2 200	1	5 621	8 594	7 721
Unwrought	7 896	4 080	4 469	4 074	4 461
Scrap	54	322	579	339	251
Bulgaria					
Ore (i)	* 2 300	* 12 400	* 18 700	* 30 000	* 25 600
Czechoslovakia					
Unwrought	58 000	68 000	67 000	67 000	...
Finland					
Ore	127 162	169 199	146 816	189 488	135 547
Unwrought (a)	1 534	197	1 310	1 085	453
Hungary					
Unwrought (g)	21 709	22 820	22 471	24 319	26 660
Iceland					
Unwrought (a)	130	143	72	87	84
Norway					
Ore	57 581	74 386	73 102	81 839	109 986
Unwrought (a)	2 458	733	884	1 051	448
Scrap	1 604	1 713	2 629	2 414	3 123
Poland					
Concentrates	68 451	28 640	27 979	27 053	—
Unwrought	2 624	2 520	2 627	2 398	4 116
Portugal					
Unwrought	15 218	17 139	14 524	16 781	11 661
Scrap	105	98	781	1 138	51

Imports of Zinc

Country	1977	1978	1979	1980	1981
Soviet Union					
Ore	81 655	78 241	5 914	8 550	* 9 000
Unwrought	* 45 000	* 60 000	* 45 000	* 65 000	* 60 000
Unwrought alloys	* 4 000	* 4 000	* 4 000	* 5 000	* 5 000
Spain					
Ore	117 343	78 451	111 703	40 191	54 276
Unwrought (a)(b)	571	997	830	1 743	753
Sweden					
Unwrought	31 093	35 519	36 241	30 428	26 218
Unwrought alloys	3 323	3 920	5 377	7 336	4 291
Scrap	109	16	71	31	—
Switzerland					
Unwrought	26 696	25 855	21 605	25 242	21 316
Turkey					
Unwrought	18 150	1 515	475	726	5 231
Yugoslavia					
Concentrates	33 482	33 465	55 760	65 227	56 885
Unwrought	14 127	4 794	4 779	7 209	15 818
Algeria					
Ores & concentrates	20 000	27 976	55 474	30 491	...
Egypt					
Unwrought	1 222	2 597	2 865	2 731	...
Ivory Coast					
Unwrought (b)	2 995	3 800	5 188	...	5 244
Kenya					
Unwrought (a)	4 279	8 000	4 735	7 231	...
Libya					
Unwrought	0	151	55	7	...
Morocco					
Unwrought	2 299	2 785	2 948	2 958	...
Mozambique					
Unwrought	145	...	...	...	...
Nigeria					
Unwrought (a)	11 577	9 654	...	...	...
South Africa					
Ores & concentrates	1	4 196	2	0	—
Unwrought	463	11	0	1 825	8 288
Scrap	61	167	218	132	1 161
Sudan					
Unwrought	—	600	200	99	...
Tanzania					
Unwrought (a)	3 532	30 266	6 547	3 169	...
Tunisia					
Unwrought (b)	1 042	1 018	887	1 531	...
Canada					
Ores & concentrates (b)(c)	6 048	6 145	11 660	59 542	71 316
Unwrought	3 330	2 677	2 877	958	8 473
Costa Rica					
Unwrought (a)	4 364	4 085	4 958	5 447	...
Guatemala					
Unwrought (a)	3 393	3 926	4 530	...	...
Honduras					
Unwrought (a)	661	1 631	...	...	...
Jamaica					
Unwrought	1 270	1 269	1 210	458	...
Nicaragua					
Unwrought (a)	433	555	236	980	...
Panama					
Unwrought (a)	418	426	521	...	...
Trinidad & Tobago					
Unwrought	462	1 096	171	330	...

Zinc

Imports of Zinc

tonnes

Country	1977	1978	1979	1980	1981
USA					
Ore (c)	108 201	188 003	224 952	129 922	117 737
Unwrought (a)	534 021	617 863	527 213	410 642	602 695
Scrap	9 178	3 310	3 259	3 470	5 782
Argentina					
Unwrought	2 359	499	2 388	...	...
Brazil					
Unwrought	58 455	67 122	60 010	59 520	27 303
Unwrought alloys	24	189	48	50	61
Chile					
Unwrought (a)	3 488	5 560	5 200	5 800	7 100
Colombia					
Unwrought (a)	11 076	12 979	13 359	14 598	13 654
Uruguay					
Unwrought	1 620	1 965	2 952	1 645	1 122
Venezuela					
Unwrought	18 036	16 273	14 950	) 25 515	20 000
Unwrought alloys	2 272	1 696	2 143)	
Burma					
Unwrought (a)	288	...	...	...	...
Cyprus					
Unwrought (a)	41	52	217	110	...
Hong Kong					
Unwrought	16 884	(a) 25 838	(a) 27 319	(a) 29 361	(a) 35 593
Scrap	5	87	150	—	19
India					
Ores & concentrates	19 001	83 212	39 580	...	...
Unwrought (d)	41 445	39 789	37 119	...	...
Unwrought alloys (d)	30 724	19 228	29 285	...	...
Scrap	—	1 015	846	...	...
Indonesia					
Unwrought (a)	36 645	44 617	46 149	51 430	65 376
Scrap	166	—	0	662	1 050
Iran (e)					
Unwrought	2 605	* 11 000	* 2 000	* 4 000	...
Israel (h)					
Unwrought	9 889	8 103	6 549	2 230	4 867
Japan					
Ore	962 984	936 586	959 229	804 851	877 995
Unwrought	28 918	32 088	36 702	41 896	31 133
Unwrought alloys	204	1 395	3 792	3 233	1 797
Scrap	43	149	243	508	1 562
Korea, Republic of					
Ores & concentrates	...	31 123	42 601	43 760	90 323
Unwrought	15 080	11 900	2 830	36 279	2 072
Scrap	5 595	...	11 060	9 191	10 146
Malaysia					
Ore	26	2	53	...	...
Unwrought	8 841	10 631	11 267	...	...
Unwrought alloys	759	1 542	2 911	...	...
Pakistan (f)					
Unwrought	7 273	9 982	7 193	7 822	12 805
Philippines					
Unwrought (a)	18 521	27 095	26 549	16 175	19 476
Singapore					
Unwrought	13 653	17 877	17 388	18 693	16 738
Scrap	483	403	445	351	530
Sri Lanka					
Unwrought (a)	30 260	386	551	672	...
Syria					
Unwrought (b)	479	326	343	479	622
Taiwan					
Unwrought	27 891	50 868	37 350	38 382	43 394
Scrap	6 341	7 826	15 756	28 823	33 397
Thailand					
Unwrought	28 153	32 472	32 967	33 387	33 200
Unwrought alloys	1 148	1 108	955	1 036	...

Imports of Zinc

Country	1977	1978	1979	1980	1981
New Zealand (f)					
Unwrought (a)	23 344	17 311	20 255	22 594	19 296

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

Production of Zirconium Minerals

tonnes

Country	1977	1978	1979	1980	1981
Soviet Union	* 63 500	* 68 000	* 72 600	* 72 600	* 72 600
South Africa (a)	16 825	* 36 000	* 82 000	* 79 800	* 99 800
USA	* 90 000	* 80 000	* 60 000	* 60 000	* 50 000
Brazil (b)	4 649	4 301	2 623	3 410	* 3 500
India	* 10 700	* 11 200	* 12 200	* 14 800	* 15 000
Malaysia (c)	1 823	902	1 372	552	1 307
Sri Lanka	374	3 194	1 510	3 031	3 266
Thailand	303	25	116	61	104
Australia	398 229	391 606	444 975	491 547	425 064
World total	586 000	595 000	677 000	726 000	671 000

(a) Baddeleyite concentrates

(b) Zircon and baddeleyite

(c) Exports

Exports of Zirconium

Country	1977	1978	1979	1980	1981
United Kingdom					
Concentrates	1 144	602	1 569	1 811	(a) 353
France					
Concentrates	1 086	742	326	260	97
Metal	398	584	940	888	—
Germany, Federal Republic of					
Concentrates	7 100	6 885	8 205	11 487	12 372
Metal	113	97	128	50	64
Italy					
Concentrates	1 288	2 750	3 873	461	2 925
Netherlands					
Concentrates	17 311	859	270	24 840	24 414
South Africa					
Concentrates (b)	* 3 000	* 16 700	* 55 800	* 83 600	* 75 700
USA					
Concentrates	13 608	7 505	9 039	7 258	10 603
Metal	910	1 010	1 043	776	667
of which: Re-exports	39	76	205	145	49
Malaysia					
Concentrates	1 823	902	1 372	552	1 307
Australia					
Concentrates	327 883	390 043	479 440	501 812	444 186

(a) Six months data only

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

Imports of Zirconium

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom					
Concentrates	33 655	43 015	33 667	32 426	27 615
Metal	108	150	227	205	113
Belgium-Luxembourg					
Concentrates	1 927	1 729	2 228	2 431	4 793
Metal	117	182	108	125	191
France					
Concentrates	31 549	38 787	41 904	39 618	44 762
Metal	149	496	985	587	174
Germany, Federal Republic of					
Concentrates	29 456	36 817	50 185	56 086	69 444
Metal	362	348	218	279	169
Italy					
Concentrates	42 558	42 209	67 273	65 697	55 853
Netherlands					
Concentrates	22 885	230	214	27 011	34 108
Bulgaria					
Concentrates (a)	* 700	* 5 200	* 1 500	* 2 100	* 1 300
Spain					
Concentrates	9 720	20 991	26 526	45 230	37 585
Sweden					
Concentrates	665	981	1 129	1 592	1 151
Metal	159	148	196	174	200
Turkey					
Concentrates	93	60	42	169	...
South Africa					
Concentrates	129	91	33	49	140
Canada					
Metal	223	326	312	229	289
Mexico					
Zirconium sand (b)	4 203	4 719	6 286	6 880	...
USA					
Concentrates	58 974	82 562	100 555	103 223	82 652
Metal	562	899	831	655	494
Argentina					
Concentrates	1 295	1 500	...	...	...
Brazil					
Concentrates	7 694	11 193	1 249	2 792	5 146
Japan					
Concentrates	68 040	89 729	161 505	190 109	157 793
Korea, Republic of					
Concentrates	627	972	1 274	1 208	3 123
Malaysia					
Concentrates	48	16	28	...	...
Singapore					
Concentrates	107	155	377	1 102	2 081

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

(b) Micronised for use as an opacifier

Production of Beryl

tonnes

Country	1977	1978	1979	1980	1981
Portugal	—	5	12	19	16
Soviet Union	* 1 700	* 1 750	* 1 800	* 1 800	* 1 800
Madagascar	* 15	11	5	6	* 9
Mozambique	...	...	28	20	* 18
Rwanda	68	80	86	108	59
South Africa	3	4	1	0	122
Uganda	10	40	—	—	—
Zimbabwe	103	35	28	9	42
Argentina	165	22	12	31	* 30
Brazil (a)	450	739	453	500	811

Note: In addition to the countries listed, China and Namibia are also believed to produce beryl

(a) Exports

Production of Borates

tonnes

Country	1977	1978	1979	1980	1981
Finland	3 442	4 615	3 168	2 465	...
Soviet Union	* 181 000	* 200 000	* 200 000	* 200 000	* 200 000
Turkey	1 100 472	1 319 575	1 171 679	1 333 563	1 528 477
USA (a)	1 333 000	1 410 000	1 442 000	1 402 000	1 344 000
Argentina	83 051	127 187	132 655	156 000	163 000
Chile	4 248	26 544	3 049	3 275	3 135
Peru	* 5 000	* 6 000	* 12 000	* 21 000	* 16 000
China	* 27 000	* 27 000	* 27 000	* 27 000	* 27 000

Note: In addition to the countries listed, the Federal Republic of Germany and Iran are also believed to produce borates

(a) Sold or used by producers

Production of Germanium

tonnes (metal content)

Country	1977	1978	1979	1980	1981
France	...	...	...	10	13
Austria	4	4	5	5	4
Soviet Union	* 14	* 14	* 14	* 14	...
USA (a)	* 16	* 19	* 23	* 27	* 28
Japan	13	11	10	13	...

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

(a) Includes production of secondary metal

Production of Primary Magnesium Metal

tonnes

Country	1977	1978	1979	1980	1981
France	8 683	8 500	9 043	9 328	7 263
Italy	8 766	9 678	8 757	9 676	10 800
Norway	38 165	39 160	44 177	44 352	47 602
Soviet Union	* 65 000	* 70 000	* 72 000	* 75 000	* 76 000
Yugoslavia	—	—	500	* 2 500	4 300
Canada	7 633	8 309	9 015	9 252	8 875
USA	114 267	135 591	147 385	153 747	129 625
China	* 5 000	* 6 000	* 6 000	* 7 000	* 7 000
Japan	9 400	11 200	11 400	9 300	5 700

Production of Nepheline Syenite

tonnes

Country	1977	1978	1979	1980	1981
Norway	210 012	231 273	241 131	231 339	223 152
Soviet Union	* 2 500 000	* 2 500 000	* 2 500 000	* 2 500 000	* 2 500 000
Canada	574 558	599 121	605 699	599 699	606 000

Production of Perlite

tonnes

Country	1977	1978	1979	1980	1981
Greece	216 149	354 115	460 593	426 566	...
Italy	* 90 000	* 90 000	* 90 000	* 90 000	* 90 000
Czechoslovakia (a)	...	40 037	38 853	40 302	42 336
Hungary	103 270	92 630	97 895	99 270	95 190
Soviet Union	* 350 000	* 360 000	* 360 000	* 360 000	* 360 000
Turkey	14 640	36 612	44 084	77 272	3 650
Mexico	22 429	24 517	41 988	44 379	* 45 000
USA	790 000	852 000	768 000	748 000	644 000
Japan	* 70 000	* 72 500	* 75 000	* 80 000	* 75 000
Philippines	1 864	3 168	3 806	7 973	* 8 000
Australia	2 115	1 417	2 063	2 249	* 2 700
New Zealand	1 000	558	2 209	999	999

Note: In addition to the countries listed, Algeria, Bulgaria, China, Iceland, Mozambique, South Africa and Yugoslavia are also believed to produce perlite

(a) Expanded

Production of Selenium Metal

tonnes

Country	1977	1978	1979	1980	1981
Belgium	* 60	* 60	* 60	* 60	* 60
Finland	20	24	22	17	19
Sweden	80	56	57	51	* 68
Yugoslavia	50	53	46	* 50	* 45
Zambia	16	28	20	23	22
Canada (a)	410	393	512	434	420
Mexico	50	80	75	46	* 10
USA	227	231	266	141	252
Chile	8	8	28	17	15
Peru	16	13	17	23	22
Japan	456	481	510	471	* 430

Note: In addition to the countries listed, Australia, Federal Republic of Germany and Soviet Union are also believed to produce selenium metal

(a) Includes production of secondary metal

Production of Strontium Minerals

tonnes

Country	1977	1978	1979	1980	1981
United Kingdom	5 142	4 324	6 078	6 700	14 545
Italy	412	365	1 693	1 053	6 697
Spain	9 680	12 320	15 560	17 480	...
Turkey	19 810	14 550	20 529	20 000	25 000
Algeria	5 100	5 822	* 5 450	* 5 450	* 5 450
Mexico	45 633	34 224	39 519	37 518	* 37 000
Argentina (a)	839	1 195	122	268	* 270
Iran (b)	* 10 000	* 15 000	* 8 000	* 5 000	* 5 000
Pakistan	365	402	620	270	288

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

(a) May contain unbeneficiated material

(b) Years ended 20 March following that stated

Production of Tellurium Metal

tonnes

Country	1977	1978	1979	1980	1981
Canada (a)	37	45	47	45	* 45
USA	* 70	* 70	* 70	* 50	* 70
Peru	18	15	21	21	22
Japan	65	69	56	69	* 60
Fiji	* 12	* 23	* 23	* 11	—

Note: In addition to the countries listed, Australia, Belgium, Federal Republic of Germany and Soviet Union are also believed to produce tellurium metal

(a) Includes production of secondary metal

Mine Production of Uranium

tonnes (metal content)

Country	1977	1978	1979	1980	1981
France	2 048	2 174	2 390	2 633	2 554
Germany, Federal Republic of	15	41	29	41	36
Portugal	94	86	102	68	90
Spain	163	153	162	167	165
Gabon	907	1 022	1 100	1 033	1 000
Namibia	2 340	2 693	3 831	4 036	3 970
Niger	1 441	2 062	3 616	4 129	4 366
South Africa	3 368	3 975	4 780	6 186	6 135
Canada	5 787	* 6 800	6 530	6 739	7 746
USA	11 360	14 250	14 400	16 800	14 800
Argentina	185	143	166	179	* 180
Australia	356	516	706	1 561	2 860
World total	28 100	33 900	37 800	43 600	43 900
World total (U ₃ O ₈ equivalent)	33 200	40 000	44 600	51 400	51 800

Note: In addition to the countries listed, Brazil, China, Czechoslovakia, India, Israel, Japan and Soviet Union are also believed to produce uranium

Production of Vermiculite

tonnes

Country	1977	1978	1979	1980	1981
Egypt	...	593	700	* 725	* 725
Kenya	4 320	1 893	2 261	2 558	* 2 600
South Africa	165 419	209 093	191 573	185 699	190 601
USA (a)	326 000	306 000	314 000	306 000	290 000
Argentina	4 825	4 426	5 877	9 906	7 306
Brazil	3 617	4 031	7 382	12 181	* 14 000
India	2 878	1 886	3 109	3 677	3 624
Australia	—	244	—	—	—

(a) Sold or used by producers

Production of Wollastonite

tonnes

Country	1977	1978	1979	1980	1981
Finland	8 904	7 688	10 576	8 782	13 690
Kenya	300	102	200	—	—
Mexico	692	10 956	11 892	14 400	...
USA	* 63 000	* 72 000	* 68 000	* 82 000	* 90 000
India	3 330	1 928	3 794	5 790	15 940

Note: In addition to the countries listed, Japan, Namibia and Turkey are also believed to produce wollastonite

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