





BRITISH GEOLOGICAL SURVEY

WORLD MINERAL STATISTICS  
1987–91

Volume 2: Industrial minerals

Production: Exports: Imports

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**BRITISH GEOLOGICAL SURVEY**

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

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## PREFACE

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

The first volume in this series was published in 1978 but publication by the British Geological Survey, and its precursors, of descriptive statistics encompassing the mineral industry world-wide dates back to 1913 in the well-known *Statistical Summary of the Mineral Industry*. The current volume is therefore the latest in a continuous series encompassing 79 years.

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

Production data for 1992 will be made available on microfiche towards the end of this year. Publication of a special production supplement is to be resumed at the same time. The first issue will contain production data for 1992. Development of a dial-up subscription service, for accessing the World Mineral Statistics database on line, is continuing.

Trends in mineral production were generally downwards from 1990 to 1991, reflecting the recession in most of the major economies.

Coal recorded in 1990, its first year-on-year fall since 1967 and the decline steepened in 1991 with world production falling by 6% to its lowest level since 1984. Petroleum production fell slightly in 1991. Natural gas remained steady.

In contrast to 1990, the production of most of the industrial minerals also fell in 1991, although barytes, kaolin, magnesite and salt resisted this trend. The production of fluorspar fell sharply partly due to the decline, for environmental reasons, in the use of chlorinated fluoro-carbons.

The mine production of most metals fell in 1991, the second annual fall since the numerous all-time peaks of 1989 but precious metals and the major base metals, copper, lead and zinc, showed increases. These were not, however, matched by similar rises in consumption and as a consequence the levels of stocks rose, in general, worldwide. In contrast to the general situation, there was a fall in reported production of base metals in the Soviet Union, but exports from that country, especially of aluminium, lead and nickel, increased markedly.

An appendix showing reconstructed trade data, which was a feature of previous volumes, has not been included this year. However, the research required to produce this data is on-going and the reconstructed figures to appear in the commodity tables where they are shown as estimates. Price and production graphics have been discontinued in this issue. It is hoped that it will be possible to re-introduce them in up-graded form in future issues.

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

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

Many problems now surround the mineral production and trade statistics for countries of the former communist bloc, particularly where political revision has not yet been matched by reorganisation of the institutions responsible for the collection of statistics. Every effort has been made by the compilers of *World Mineral Statistics* to ensure that figures truly refer to the countries indicated but users of these volumes should take particular note of commentaries and footnotes in these cases.

The British Geological Survey continues to provide to customers a reliable, comprehensive and continuous set of data covering most of the minerals that enter international trade. In view of the political and economic changes that are taking place in several major mineral-producing countries, and the attention now given to sustainable development and other global environmental concerns, the availability of such a statistical series is vital for the intelligent analysis of the use of mineral resources. Funding constraints make the continuation of this service increasingly difficult but it is our hope that the present high standards will be maintained.

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

Peter J Cook  
*Director*

British Geological Survey  
Keyworth  
Nottingham NG12 5GG

16 November 1993

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## EXPLANATORY NOTES

### Coverage

*World Mineral Statistics: Volume 2* covers the majority of economically important, and internationally traded, industrial minerals. It should be noted that prior to 1992 (data to 1989) both metallic and non-metallic minerals were included in one volume of the same title. For each commodity constant efforts are made to ensure that as many producing and trading countries as possible are reported and that trade data cover all major traded forms. For some commodities, where statistics on production and trade are not publicly available, estimates are made. Users of this compilation are advised that more statistical information than can be included in a publication of this nature is in the Minerals Group files and is available for consultation. Historical data (1913–1970) can be obtained from the predecessor of this series entitled the *Statistical Summary of the Mineral Industry*.

### Arrangement of countries

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

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

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

*German Democratic Republic* For 1991, the data shown against Federal Republic of Germany includes data for the former German Democratic Republic, where available.

*Soviet Union* This country name has been retained for 1987–91 data pending clarification of statistical sources in the CIS.

### Trade data

*Federal Republic of Germany* Data up to 1990 include shipments to, and purchases from the German Democratic Republic.

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

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

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

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

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

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

Where an estimate for a trade statistic has been reconstructed from the imports/exports or 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.

#### *Acknowledgements*

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

Among the numerous overseas government agencies which have provided valuable information, particular acknowledgement is made to the United States Bureau of Mines; the Department of Energy, Mines and Resources of Canada; the Australian Bureau of Agricultural and Resource Economics; the Department of Mineral and Energy Affairs of South Africa; the Indian Bureau of Mines; and the Mines Departments of other countries whose regular statements, yearbooks and other reports are worthy of direct consultation by readers in search of detail.

Specialist commodity organisations which have kindly allowed information to be reproduced include the British Sulphur Corporation, the International Fertilizer Industry Association Ltd, the UN Food and Agriculture Organization, and the UNCTAD. In a few instances, information on specific commodities has been obtained directly from company sources.

Supplementary information is also obtained from publications dealing with a wider range of commodities such as *Annales des Mines*, *Realities Industrielles*; International Mining, *Yearbook*; Mining Journal, *Mining Annual Review*; and publications of the United Nations and its agencies.

#### *Units*

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

tonnes  $\times$  0.9842 = long tons

tonnes  $\times$  1.1023 = short tons

kilograms  $\times$  2.2046 = pounds

1 metric ton unit = 10 kilograms

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

#### *Symbols*

... figures not available

0 quantity less than half unit shown

— nil

\* estimated

BGS British Geological Survey

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





## **STATISTICAL TABLES**

**Production of Bauxite**

tonnes

Country	1987	1988	1989	1990	1991
France	1 388 200	977 700	550 427	489 805	9 253
Greece	2 455 988	2 460 782	2 550 015	2 511 036	2 164 773
Italy	16 557	17 125	11 761	338	8 700
Spain	1 050	2 500	—	—	—
Albania	16 002	37 669	35 343	23 489	8 000
Hungary	3 101 000	2 593 000	2 644 000	2 559 100	2 036 700
Romania	337 000	356 000	313 000	247 000	200 400
Soviet Union (a)	* 5 700 000	* 5 900 000	* 6 500 000	* 7 500 000	* 6 300 000
Turkey	259 075	269 437	534 273	772 673	460 829
Yugoslavia	3 394 000	3 033 794	3 252 468	2 952 460	(f) 2 542 000
Ghana	195 000	287 300	347 100	381 273	333 800
Guinea	16 413 000	17 859 000	17 547 000	16 150 000	17 065 000
Mozambique	5 114	6 548	5 501	7 186	7 760
Sierra Leone	1 390 600	1 379 200	1 561 800	1 445 120	1 376 200
Dominican Republic	186 671	167 800	150 813	85 164	6 514
Jamaica	7 702 000	7 316 000	9 487 000	10 965 000	11 610 000
USA (b)	576 000	588 000	670 000	* 495 000	* 50 000
Brazil (c)	6 376 650	7 388 000	7 893 000	9 875 600	10 364 200
Guyana	2 351 496	1 773 900	1 321 081	1 423 978	2 145 907
Suriname	2 522 000	3 426 000	3 457 348	3 266 759	3 136 341
Venezuela	245 157	521 504	701 770	771 422	1 997 066
China	* 3 200 000	* 3 500 000	2 055 200	3 655 200	5 926 000
India	2 778 678	3 960 799	4 344 936	5 277 000	4 738 000
Indonesia	635 309	513 053	862 313	1 163 820	1 246 322
Iran (d) (e)	60 000	92 537	74 097	92 509	* 80 000
Malaysia	482 125	360 798	355 174	398 180	376 418
Pakistan	3 447	2 500	1 967	2 581	4 324
Australia	34 101 721	36 192 000	38 584 000	41 391 000	40 510 000
World total	95 900 000	101 000 000	105 400 000	113 900 000	114 700 000

(a) Including nepheline concentrates and alunite

(b) Dried bauxite equivalent

(c) Including beneficiated and direct shipping ore

(d) Alunite

(e) Years ended 20 March following that stated

(f) Excluding data from August to December for the Republic of Croatia

## Production of Alumina

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	109 800	114 000	116 200	120 000	120 000
France (a)	712 000	551 000	478 000	466 540	403 765
Germany, Federal Republic of	1 312 828	1 162 786	1 173 993	1 172 808	1 148 310
Greece	338 833	336 373	331 007	378 595	392 157
Irish Republic	777 974	842 800	864 510	926 500	980 392
Italy	457 600	460 500	472 000	491 400	525 800
Spain	524 000	576 000	620 000	655 000	656 200
Czechoslovakia	149 917	182 651	204 615	209 229	186 600
German Democratic Republic (a)	50 880	64 000	69 000	27 000	—
Hungary (a)	857 612	873 232	881 505	826 000	635 000
Romania (a)	584 000	458 000	426 000	440 000	310 000
Soviet Union	* 4 400 000	* 4 600 000	* 3 900 000	* 3 700 000	* 3 400 000
Turkey	95 232	181 670	200 560	177 144	159 091
Yugoslavia	1 113 000	1 060 041	1 170 463	1 086 298	780 000
Guinea	543 000	593 000	627 000	642 100	650 900
Canada	952 690	992 576	1 048 432	1 087 029	1 131 000
Jamaica	1 622 000	1 520 000	2 221 070	2 868 844	3 014 585
USA	* 4 150 000	* 4 770 000	* 5 000 000	* 5 230 000	* 5 230 000
Brazil	1 365 000	1 487 850	1 632 000	1 654 800	1 742 500
Suriname	1 363 000	1 633 000	1 567 051	1 531 460	1 509 638
Venezuela	1 360 012	1 284 036	1 293 219	1 404 769	1 481 000
China	* 1 320 000	* 1 300 000	1 318 000	1 463 800	1 522 000
India	650 000	1 188 000	1 419 000	1 334 000	1 435 000
Japan	465 000	508 000	564 000	458 893	564 700
Australia	10 109 290	10 510 514	10 823 000	11 231 000	11 713 000
World total	35 400 000	37 300 000	38 400 000	39 600 000	39 700 000

## Notes(s):

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

(a) Calcined

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
<b>United Kingdom</b>					
Bauxite	2 148	4 120	10 951	4 774	8 291
Alumina	8 031	7 453	9 614	11 735	11 033
Alumina hydrate	34 335	41 695	45 492	42 105	42 674
Unwrought	69 108	79 378	73 816	60 795	39 105
Unwrought alloys	64 447	75 672	95 379	95 804	91 217
Scrap	87 372	114 286	99 334	94 452	80 171
<b>Belgium-Luxembourg</b>					
Bauxite	2 416	3 648	1 713	1 725	1 236
Alumina	1 102	1 202	2 143	1 079	955
Unwrought	8 278	4 996	4 566	3 162	3 132
Unwrought alloys	19 277	27 922	30 785	29 735	50 594
Scrap	60 186	77 770	74 729	67 769	69 055
<b>Denmark</b>					
Unwrought	73	309	574	469	463
Unwrought alloys	12 581	10 703	7 629	9 045	7 760
Scrap	25 186	26 645	28 003	29 068	26 822
<b>France</b>					
Bauxite	187 433	13 487	28 916	13 143	17 450
Alumina	93 276	84 106	104 355	96 287	83 726
Alumina hydrate	101 992	127 969	138 981	131 590	94 769
Unwrought	41 028	36 704	49 703	53 067	40 220
Unwrought alloys	78 254	76 436	71 932	82 767	87 307
Scrap	109 206	160 811	155 886	150 037	141 033
<b>Germany, Federal Republic of</b>					
Bauxite	33 385	57 050	71 666	86 019	198 495
Alumina	312 760	330 355	287 282	239 600	238 977
Alumina hydrate	252 435	270 136	269 317	306 068	313 082
Unwrought	91 826	68 866	53 299	64 734	54 878
Unwrought alloys	241 764	254 938	272 717	254 705	235 549
Scrap	134 983	141 019	164 157	198 958	316 585
<b>Greece</b>					
Bauxite	1 224 490	416 811	518 723	401 648	824 573
Alumina	348 700	178 762	222 450	286 046	333 100
Unwrought (a)	73 494	51 415	57 041	61 186	61 552
Scrap	1 466	3 625	4 130	2 378	2 080
<b>Irish Republic</b>					
Alumina	736 485	854 157	853 012	862 448	1 039 839
Alumina hydrate	5 002	46 936	62 337	53 440	37 877
Unwrought (a)	1 475	1 902	2 574	1 970	1 615
Scrap	8 468	11 147	11 028	12 210	11 278
<b>Italy</b>					
Bauxite	21 141	14 333	23 134	15 617	3 611
Alumina	561 315	388 535	410 382	412 368	389 418
Alumina hydrate	29 509	14 078	14 967	15 451	10 147
Unwrought	11 298	5 069	6 155	10 135	5 982
Unwrought alloys	40 338	33 341	23 660	18 150	11 548
Scrap	6 049	8 061	10 365	7 132	10 556
<b>Netherlands</b>					
Bauxite	9 283	17 913	22 351	25 048	21 909
Alumina	61 934	87 557	101 045	98 806	97 375
Alumina hydrate	105	1 497	2 379	2 441	4 066
Unwrought	156 306	90 836	101 842	119 967	99 846
Unwrought alloys	158 083	238 950	246 992	242 497	232 565
Scrap	105 385	138 871	149 824	132 672	129 089
<b>Portugal</b>					
Scrap	5 705	8 052	6 923	5 378	5 552
<b>Spain</b>					
Bauxite	1 849	2 066	2 987	1 182	627
Alumina	124 132	283 368	207 186	233 102	247 077
Alumina hydrate	35 655	26 863	48 521	48 559	56 504
Unwrought	34 436	31 666	14 348	8 515	19 576
Unwrought alloys	72 043	58 223	96 966	98 303	103 547
Scrap	810	2 807	3 348	3 736	7 588
<b>Austria</b>					
Unwrought (a)	39 447	44 894	42 985	52 057	64 680
Scrap	63 587	46 911	35 508	26 881	32 320
<b>Bulgaria</b>					
Unwrought (a) (f)	* 3 600	* 2 700	* 3 600	* 2 200	* 1 500
Scrap (f)	* 4 900	* 5 400	* 1 900	* 2 300	* 3 200

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Czechoslovakia					
Unwrought (a) (f)	* 11 200	* 14 800	* 16 400	* 14 900	* 33 700
Finland					
Unwrought (a)	24 286	25 291	24 023	23 285	20 430
German Democratic Republic					
Unwrought (a) (f)	* 30 700	* 28 500	* 24 500	* 30 700	—
Scrap (f)	* 6 000	* 8 000	* 9 100	* 3 000	—
Hungary					
Bauxite	437 987	378 533	338 428	280 338	...
Alumina	665 226	715 214	676 892	613 163	...
Alumina hydrate	2 729	1 513	—	—	...
Unwrought	63 354	59 135	76 479	121 761	...
Scrap	8 748	9 868	9 534	11 312	...
Iceland					
Unwrought (a)	89 081	81 071	89 657	86 392	86 267
Norway					
Alumina	17 764	16 241	27	104	36
Unwrought	326 307	241 612	240 743	211 412	241 677
Unwrought alloys	431 308	513 051	529 603	565 864	568 547
Scrap	38 156	50 536	52 079	28 678	28 407
Poland					
Unwrought (a)	2 595	2 647	2 638	15 456	15 450
Romania					
Unwrought	157 300	193 700	108 100	...	...
Scrap (f)	* 2 800	* 500	* 3 200	* 1 600	* 500
Soviet Union					
Unwrought (a) (f)	* 610 300	* 641 200	* 709 900	* 675 400	* 785 500
Scrap (f)	* 57 600	* 43 200	* 33 100	* 16 000	* 39 400
Sweden					
Alumina	676	356	210	452	191
Unwrought	8 056	25 654	25 125	14 427	9 979
Unwrought alloys	35 509	34 233	33 689	49 713	47 823
Scrap	11 259	11 069	13 691	20 882	34 006
Switzerland					
Alumina	459	1 313	830	1 432	2 655
Unwrought (a)	(i) 60 991	32 872	32 476	30 618	32 928
Scrap	...	35 776	39 143	36 846	34 537
Turkey					
Bauxite	104 525	79 997	58 243	83 015	57 800
Alumina	17 746	66 450	77 483	63 016	34 048
Unwrought (a)	320	6 326	8 945	9 890	7 080
Yugoslavia					
Bauxite	584 714	639 528	600 084	506 966	(k) 241 280
Alumina	389 531	457 136	587 188	584 741	(k) —
Alumina hydrate	29 231	58 966	99 890	115 827	(k) —
Unwrought	130 242	129 829	144 122	196 275	(k) 49 365
Unwrought alloys	29 515	23 914	22 965	34 444	(k) 6 973
Scrap	1 702	1 594	1 427	591	(k) 370
Cameroon					
Unwrought & scrap	47 356	63 100	69 304	67 700	61 300
Ghana					
Bauxite	226 375	299 939	374 646	369 000	* 324 000
Unwrought (a)	160 784	97 109	118 500	127 500	129 700
Guinea					
Bauxite (f)	* 13 200 000	* 13 700 000	* 14 200 000	* 13 200 000	* 12 700 000
Alumina	500 000	600 000	600 000	640 000	650 000
Sierra Leone					
Bauxite	1 280 000	1 428 000	1 557 000	1 430 000	1 176 800
South Africa					
Unwrought (a)	94 000	68 000	53 415	71 835	82 661
Scrap (f)	* 2 600	* 2 500	* 2 300	* 2 300	* 2 000
Canada					
Alumina	(b) 45 624	139 094	128 256	134 334	85 696
Unwrought	(a) 1 171 887	659 922	615 238	664 549	769 866
Unwrought alloys	...	495 096	544 445	617 647	703 317
Scrap	127 181	165 216	164 493	188 363	173 675
Cuba					
Scrap (e)	3 778	2 498	1 524	412	970

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Dominican Republic					
Bauxite (h)	328 046	199 933	174 871	76 529	30 337
Jamaica					
Bauxite	3 711 396	3 494 440	4 189 739	3 885 758	4 260 881
Alumina	1 557 008	1 561 349	2 140 885	2 885 131	3 031 988
Mexico					
Unwrought & scrap	9 649	19 126	11 860	18 061	* 10 000
USA					
Bauxite	203 711	68 252	65 022	90 723	75 178
of which: Re-exports	2 214	5 321	21 278	17 214	8 669
Alumina	1 108 975	1 021 372	1 295 075	1 216 084	1 431 849
Alumina hydrate	29 004	24 160	51 404	52 664	54 145
Unwrought	249 563	362 559	481 293	510 513	633 392
Unwrought alloys	35 345	40 111	112 116	173 557	158 489
Scrap	369 745	487 714	575 890	537 994	461 521
Argentina					
Unwrought	73 009	83 473	81 802	136 184	111 000
Brazil					
Bauxite	2 813 587	4 660 509	4 636 700	5 463 921	5 823 521
Alumina	52 903	70 429	175 995	172 114	120 440
Unwrought (a)	426 893	514 898	470 266	591 982	751 607
Guyana					
Bauxite	1 372 000	1 297 000	1 311 000	1 389 000	1 320 000
Suriname					
Bauxite	340 900	7 460	—	—	—
Alumina	1 342 100	1 629 980	1 445 088	1 448 158	1 393 449
Unwrought	3 200	8 000	26 111	27 416	29 431
Venezuela					
Alumina	516 969	366 856	152 932	102 869	231 822
Unwrought	302 515	287 925	379 641	452 178	412 954
Bahrain					
Unwrought (a)	122 551	94 817	96 043	112 711	98 300
China					
Bauxite	(j) 785 003	(j) 1 250 502	(j) 1 491 702	680 315	541 554
Alumina	...	...	...	556 149	646 294
Unwrought (a)	60 680	130 378	13 411	65 125	68 556
Scrap	(f)* 3 100	(f)* 7 200	(f)* 5 000	1 715	2 706
Dubai					
Unwrought (a)	146 000	154 000	165 100	171 000	235 800
Hong Kong					
Bauxite (g)	25 971	15 010	16 654	14 461	10 561
Alumina (g)	1 193	20 137	133 729	38	17
Unwrought	36 181	77 616	26 412	17 381	21 955
of which: Re-exports	36 131	77 252	26 291	17 281	21 857
Scrap	27 656	31 929	30 240	32 999	31 895
India (c)					
Bauxite	147 402	93 547	...	187 782	121 618
Alumina	10 637	404 170	...	317 218	334 442
Unwrought (a)	1 196	13 830	...	26 940	68 094
Indonesia					
Bauxite	583 900	466 517	843 476	813 637	1 077 036
Unwrought (a)	163 337	125 628	142 885	125 162	123 016
Israel					
Unwrought (a) (f)	* 2 600	* 4 500	* 5 900	* 6 800	* 2 100
Scrap (f)	* 2 600	* 2 800	* 2 400	* 2 200	* 4 100
Japan					
Alumina	101 057	126 353	151 192	158 656	121 012
Alumina hydrate	96 789	71 917	98 273	119 991	131 084
Unwrought	854	665	307	547	1 338
Unwrought alloys	1 073	2 768	2 640	4 267	3 311
Scrap	8 707	7 334	9 893	7 751	6 874
Jordan					
Scrap	3 133	7 162	4 241	1 207	1 440
Korea, Dem. P.R. of					
Unwrought (a) (f)	* 7 400	* 5 800	* 5 800	* 3 900	* 3 000
Korea, Republic of					
Unwrought (a)	2 850	7 643	3 819	6 307	1 810
Malaysia					
Bauxite	199 000	222 100	321 750	407 670	302 048
Scrap	6 548	11 249	5 127	...	4 826

## Exports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Saudi Arabia					
Scrap	27 552	52 266	54 544	49 826	23 052
Singapore					
Alumina	31 102	32 414	29 300	20 581	11 788
of which: Re-exports	30 090	32 297	28 617	20 468	11 659
Unwrought	13 107	106 582	65 907	21 890	43 205
of which: Re-exports	11 193	104 842	63 571	19 362	39 311
Scrap	15 770	20 386	21 779	20 591	19 067
Taiwan					
Alumina	3 721	562	3 459	3 833	950
Unwrought	17 254	(a) 34 753	(a) 30 204	(a) 47 687	(a) 52 728
Scrap	7 969	5 211	4 412	5 557	5 275
Australia					
Bauxite	* 4 500 000	* 4 800 000	* 5 000 000	* 5 700 000	* 4 900 000
Alumina	8 299 277	8 558 000	8 426 000	8 785 000	9 274 000
Unwrought (a)	710 425	815 600	921 800	936 400	953 400
Scrap (d)	43 801	44 205	48 777	50 046	62 793
New Zealand (d)					
Unwrought (a)	211 521	227 259	243 992	230 556	240 941
Scrap	5 659	10 013	8 299	9 207	9 602

## Note(s):

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

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
<b>United Kingdom</b>					
Bauxite	429 390	491 480	443 537	440 915	387 027
Alumina	609 630	601 850	655 396	625 284	586 109
Alumina hydrate	19 549	17 646	21 409	17 204	23 513
Unwrought	65 257	119 757	129 134	130 688	122 361
Unwrought alloys	110 566	115 263	106 317	110 318	99 403
Scrap	12 621	18 664	24 138	16 864	29 040
<b>Belgium-Luxembourg</b>					
Bauxite	26 534	37 841	25 077	37 310	44 774
Alumina	8 029	9 032	10 650	11 025	10 383
Alumina hydrate	28 842	23 858	30 841	47 101	53 027
Unwrought	238 168	208 265	196 711	225 569	251 813
Unwrought alloys	77 346	146 873	161 407	141 923	118 815
Scrap	90 872	112 805	120 849	117 184	140 597
<b>Denmark</b>					
Bauxite	1 024	1 414	1 675	2 667	2 185
Alumina	1 606	688	648	814	544
Alumina hydrate	3 350	4 866	5 196	4 515	4 929
Unwrought	872	914	984	1 926	427
Unwrought alloys	26 961	29 235	28 202	28 046	29 788
Scrap	7 162	8 790	4 575	6 082	9 637
<b>France</b>					
Bauxite	894 330	1 069 102	1 348 886	1 388 476	1 239 070
Alumina	121 762	230 645	371 255	373 484	355 082
Alumina hydrate	24 030	36 502	38 924	78 103	36 737
Unwrought	186 105	203 915	208 744	248 642	254 583
Unwrought alloys	221 015	257 960	275 506	292 455	296 966
Scrap	70 185	96 994	122 986	137 528	203 559
<b>Germany, Federal Republic of</b>					
Bauxite	2 879 377	2 576 992	2 879 675	3 076 544	2 549 118
Alumina	857 845	851 658	1 033 220	970 227	877 748
Alumina hydrate	7 201	106 588	22 865	35 750	69 750
Unwrought	448 670	467 538	569 135	545 143	666 475
Unwrought alloys	285 363	339 184	374 056	355 557	340 544
Scrap	205 285	283 217	271 198	229 002	195 137
<b>Greece</b>					
Bauxite	5 616	—	5 028	800	200
Alumina	261	235	381	419	620
Unwrought (a)	14 259	5 506	13 180	11 843	26 627
Scrap	32	1 734	1 898	1 258	1 444
<b>Irish Republic</b>					
Bauxite	1 440 106	1 746 828	1 606 158	1 746 337	1 976 987
Alumina	4 234	4 355	5 142	3 852	4 362
Unwrought (a)	2 252	2 812	3 711	7 705	7 720
<b>Italy</b>					
Bauxite	1 380 836	1 394 092	1 465 981	1 680 619	1 667 669
Alumina	266 522	240 880	243 024	210 232	196 319
Alumina hydrate	69 951	88 875	148 762	146 823	128 488
Unwrought	215 962	270 397	306 670	339 639	298 966
Unwrought alloys	160 962	147 721	154 334	198 994	212 679
Scrap	159 707	184 202	207 982	174 198	168 084
<b>Netherlands</b>					
Bauxite	141 702	160 273	142 971	142 916	133 475
Alumina	612 071	642 945	530 875	459 077	567 626
Alumina hydrate	35 066	44 301	40 697	43 689	57 017
Unwrought	97 818	105 308	114 755	138 298	134 939
Unwrought alloys	47 718	62 423	62 563	51 926	48 161
Scrap	81 662	105 655	138 241	126 757	118 272
<b>Portugal</b>					
Bauxite	1 793	1 836	1 658	1 786	1 971
Alumina	8 562	8 066	7 557	7 943	7 690
Unwrought	5 825	(a) 45 127	(a) 47 105	15 320	14 232
Unwrought alloys	38 225	...	...	34 157	35 935
<b>Spain</b>					
Bauxite	1 663 191	1 389 690	1 725 327	1 922 855	1 935 071
Alumina	16 499	19 658	22 338	24 718	21 879
Alumina hydrate	10 796	11 227	13 222	13 809	15 380
Unwrought	5 623	38 638	6 629	15 400	35 910
Unwrought alloys	7 772	11 235	7 378	15 771	26 033
Scrap	16 103	16 088	22 339	24 198	15 080



## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Austria					
Bauxite	32 661	49 223	54 922	34 466	48 763
Alumina	282 983	298 833	224 419	222 498	176 497
Alumina hydrate	8 227	8 139	8 226	8 552	8 715
Unwrought (a)	81 133	108 266	130 428	150 097	150 197
Scrap	54 621	56 043	47 231	41 628	51 683
Bulgaria					
Unwrought (a) (f)	* 14 400	* 29 600	* 11 000	* 8 000	* 8 900
Czechoslovakia					
Bauxite	453 000	445 000	478 000	...	...
Alumina (f)	* 30 500	* 3 200	* 400	* 700	* 3 400
Unwrought (a)	76 000	108 000	106 000	...	...
Finland					
Bauxite	5 633	2 043	236	7 070	8 037
Alumina	1 372	1 447	1 717	3 317	1 134
Alumina hydrate	32 186	26 207	32 296	21 513	27 166
Unwrought	18 825	18 127	17 528	20 754	15 585
Unwrought alloys	4 697	5 452	6 208	5 382	3 859
Scrap	57 677	69 811	70 477	27 004	37 758
German Democratic Republic					
Bauxite	141 600	148 300	152 900	...	—
Alumina (f)	* 100 900	* 83 000	* 56 900	* 25 500	—
Unwrought (a) (f)	* 120 500	* 119 200	* 113 900	* 102 000	—
Hungary					
Unwrought	189 961	197 577	204 974	204 070	...
Iceland					
Alumina	142 335	140 525	160 763	160 290	185 459
Norway					
Bauxite	5 792	14 746	9 463	14 185	19 010
Alumina	1 604 669	1 287 319	1 334 530	1 861 687	1 697 538
Alumina hydrate	40 467	277 169	232 489	35 809	33 442
Unwrought	19 444	71 541	86 300	71 411	67 715
Unwrought alloys	37 702	18 654	15 804	9 548	13 323
Scrap	1 417	2 085	4 371	23 732	28 246
Poland					
Bauxite	52 248	51 891	44 236	...	...
Alumina	221 042	193 457	185 179	130 000	...
Unwrought	88 631	88 755	96 415	44 961	...
Romania					
Bauxite (f)	* 529 100	* 463 300	* 495 000	* 398 200	* 572 000
Alumina (f)	* 72 100	* 16 800	* 10 000	* 28 200	* 32 100
Soviet Union					
Bauxite (f)	* 4 823 500	* 4 563 600	* 5 300 700	* 3 813 900	* 3 559 600
Alumina (f)	* 928 500	* 736 800	* 1 322 200	* 1 558 800	* 675 600
Sweden					
Bauxite	46 425	51 108	56 593	48 816	65 879
Alumina	184 283	189 820	189 798	165 454	445 735
Alumina hydrate	86 615	63 896	63 709	53 972	59 921
Unwrought	21 725	28 191	27 030	15 607	21 073
Unwrought alloys	21 399	30 628	29 111	31 110	27 896
Scrap	2 526	3 592	5 223	6 808	4 593
Switzerland					
Bauxite	2 625	3 852	1 747	691	1 051
Alumina	156 382	140 614	146 529	150 483	144 331
Unwrought	(b) 90 239	59 738	78 598	63 586	64 597
Unwrought alloys	...	35 088	39 003	41 010	28 793
Scrap	...	4 042	5 734	4 110	6 191
Turkey					
Bauxite	40 461	55 684	51 367	44 790	36 129
Alumina	1 499	2 293	1 165	1 851	2 958
Unwrought (a)	89 638	59 193	48 243	100 961	62 982
Yugoslavia					
Bauxite	132 797	364 761	691 925	439 702	(g) 22 545
Alumina	118 165	128 230	264 843	245 465	(g) 434
Unwrought	33 981	17 587	14 945	18 180	(g) 11 595
Unwrought alloys	147	3 253	1 376	4 564	(g) 416

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Algeria					
Alumina	186	290	352	15	2 092
Unwrought (a)	7 665	7 946	8 061	8 475	5 574
Cameroon					
Alumina	161 945	160 000	164 675	170 000	...
Ghana					
Alumina	182 461	158 087	170 000	165 000	...
Kenya					
Alumina	1 984	3 926	...	...	...
Morocco					
Bauxite	4 575	5 118	10 651	9 102	6 351
Alumina	2 885	3 029	2 798	4 761	4 091
Unwrought (a)	1 139	1 717	2 151	2 461	2 039
Nigeria					
Unwrought (a)	11 306	5 000	5 000	3 000	...
South Africa					
Bauxite	21 765	4 983	5 587	7 294	...
Alumina	322 058	339 264	351 415	321 733	...
Scrap	536	273	312	1 699	...
Tanzania					
Unwrought (a)	3 909	1 061	1 023	...	...
Tunisia					
Alumina	18 847	24 904	33 333	24 560	28 195
Alumina hydrate	2 438	3 803	4 440	5 562	4 131
Unwrought	936	1 296	2 189	(a) 1 583	(a) 2 610
Canada					
Bauxite	2 019 119	2 351 595	2 540 694	2 310 461	2 773 509
Alumina	2 068 390	1 875 546	2 040 947	1 982 952	2 456 234
Unwrought	(a) 53 479	23 973	20 037	27 300	27 676
Unwrought alloys	...	35 342	44 941	57 358	46 201
Scrap	56 959	62 161	58 203	52 603	46 339
Costa Rica					
Unwrought (a)	506	3 436	3 496	7 707	4 235
Mexico					
Bauxite	40 264	53 040	51 247	46 028	44 051
Alumina	137 192	150 178	147 089	141 745	...
Alumina hydrate	27 668	44 441	47 512	40 320	...
Unwrought & scrap (a)	38 065	48 155	49 912	47 494	71 234
Panama					
Unwrought (a)	1 989	546	1 013	761	1 167
USA					
Bauxite, crude dried	9 819 080	10 502 783	11 346 182	12 628 163	11 174 990
Bauxite, calcined	338 589	393 699	531 000	558 000	376 000
Alumina	4 078 048	4 647 390	4 330 405	4 087 503	4 622 317
Unwrought	706 200	514 037	422 416	438 543	517 338
Unwrought alloys	539 385	512 786	502 970	523 194	510 797
Scrap	188 614	200 498	206 380	214 853	208 423
Argentina					
Bauxite	31 525	20 457	25 696	19 911	...
Alumina	226 437	261 862	292 403	207 153	347 000
Alumina hydrate	12 787	9 137	8 008	9 211	...
Brazil					
Bauxite	2 998	2 028	129 259	349 678	356 708
Alumina	393 438	378 243	372 956	419 838	677 155
Unwrought	118	33	1 287	329	1 029
Unwrought alloys	2 192	67	1 239	4 806	1 163
Scrap	4 931	759	2 621	4 751	4 440
Chile					
Unwrought	3 010	3 728	3 834	6 371	7 644
Colombia					
Bauxite	* 7 000	6 733	8 384	6 201	5 906
Alumina	* 3 000	3 908	5 039	5 202	5 066
Unwrought (a)	17 901	8 690	13 791	21 221	22 923
Ecuador					
Unwrought	4 773	4 947	4 256	3 428	4 453
Peru					
Bauxite	1 874	2 504	3 021	2 949	1 266
Alumina	1 636	2 301	735	1 918	646
Unwrought	5 082	4 190	759	1 046	3 408

## Imports of Bauxite, Alumina and Aluminium

tonnes

Country	1987	1988	1989	1990	1991
Uruguay					
Bauxite	8 455	4 071	4 400	3 400	3 990
Alumina	1 102	1 120	1 661	1 335	1 205
Unwrought	2 693	2 306	1 439	2 090	1 900
Venezuela					
Bauxite	3 023 945	3 086 130	3 158 812	2 422 895	...
Alumina	6 832	7 818	6 435	5 638	13 568
Alumina hydrate	2 249	2 167	798	1 862	1 600
Unwrought	1 816	3	106	258	...
Abu Dhabi					
Scrap	5 017	9 197	...	8 625	6 461
Bahrain					
Alumina	346 191	363 151	351 694	436 846	...
China					
Alumina	322 149	159 535	298 006	583 012	686 178
Unwrought (a)	148 130	75 381	175 510	71 771	43 711
Scrap	(f)* 1 600	(f)* 4 100	(f)* 8 000	5 490	6 149
Dubai					
Alumina	284 000	315 000	320 000	300 000	...
Hong Kong					
Bauxite	25 815	16 471	17 289	12 497	9 850
Alumina	474	84 000	181 969	—	0
Alumina hydrate	469	29	881	60	60
Unwrought	70 480	111 187	52 889	46 208	58 666
Scrap	3 072	5 512	5 660	5 693	8 460
India (c)					
Alumina	3 025	4 321	...	6 682	3 890
Unwrought (a)	52 276	12 145	35 900	16 148	14 712
Indonesia					
Alumina	226 509	287 585	372 591	303 594	225 280
Alumina hydrate	36 499	44 590	59 238	54 469	63 958
Unwrought (a)	12 086	6 818	7 324	24 777	55 638
Iran (e)					
Alumina	26 980	27 100	43 275	40 000	...
Unwrought	9 500	3 532	1 005	...	...
Israel					
Alumina (f)	* 1 800	* 1 100	* 1 100	* 900	* 900
Unwrought (a)	18 180	17 698	15 932	18 244	...
Japan					
Bauxite	1 872 020	2 148 590	2 269 477	2 302 206	2 048 992
Alumina	26 984	44 092	28 294	19 008	33 489
Alumina hydrate	14 791	27 956	48 667	54 448	70 874
Unwrought	1 435 037	1 716 070	1 745 362	1 983 773	2 057 144
Unwrought alloys	400 253	575 926	617 828	669 290	773 874
Scrap	430 642	399 154	400 226	352 699	291 742
Jordan					
Alumina	11 529	22 174	20 820	22 871	31 498
Unwrought	5 319	3 883	3 651	3 588	4 799
Korea, Dem. P.R. of					
Alumina (f)	* 7 600	* 30 600	* 6 600	* 9 400	* 12 100
Unwrought (a) (f)	* 150	* 400	* 1 300	* 700	* 2 500
Korea, Republic of					
Bauxite	30 359	24 733	31 320	34 536	37 396
Alumina	38 603	43 242	42 144	14 328	13 191
Alumina hydrate	68 406	75 233	96 032	100 765	120 263
Unwrought	480 535	217 744	442 379	301 611	300 104
Unwrought alloys	32 955	48 831	43 179	60 315	91 690
Scrap	43 240	27 840	55 601	39 576	57 805
Malaysia					
Alumina	12 030	18 661	16 298	...	19 867
Unwrought	11 724	15 072	19 700	217 130	28 326
Unwrought alloys	19 812	18 636	22 410	31 452	38 611
Scrap	849	3 462	2 448	...	3 045
Pakistan (d)					
Alumina	2 487	2 500	...	2 360	...
Unwrought (a)	8 921	14 471	...	8 630	...
Scrap	26 688	26 451	...	27 017	...

**Imports of Bauxite, Alumina and Aluminium**

tonnes

Country	1987	1988	1989	1990	1991
<b>Philippines</b>					
Bauxite	933	4 637	7 669	1 962	7 105
Alumina	8 257	5 775	7 798	7 155	8 478
Unwrought (a)	10 808	10 222	13 771	14 631	17 617
<b>Saudi Arabia</b>					
Bauxite	77 602	147 531	214 534	182 905	126 428
Unwrought (a)	18 625	14 405	14 662	22 273	16 196
<b>Singapore</b>					
Alumina	12 093	1 215	1 064	1 426	1 901
Alumina hydrate	63 131	84 780	69 124	62 258	76 948
Unwrought	40 628	125 646	38 576	46 158	55 067
Scrap	1 525	3 101	4 452	3 357	3 989
<b>Taiwan</b>					
Bauxite	36 235	39 635	31 297	48 025	45 321
Alumina	4 888	9 097	23 065	33 085	22 725
Alumina hydrate	7 215	11 685	13 579	22 191	28 254
Unwrought	195 095	136 553	162 521	170 088	214 008
Unwrought alloys	...	56 851	60 304	75 269	101 596
Scrap	23 211	64 115	71 711	70 265	128 649
<b>Thailand</b>					
Bauxite	21 714	30 426	32 131	25 102	32 076
Alumina	7 842	6 151	9 853	10 008	8 339
Alumina hydrate	12 117	19 592	26 570	17 800	9 051
Unwrought	43 804	1 036 106	66 030	75 581	83 911
Unwrought alloys	9 932	26 601	32 234	52 555	62 836
Scrap	1 499	4 716	4 570	2 012	709
<b>Australia</b>					
Bauxite	10 107	21 429	35 000	19 000	20 000
Alumina	5 639	10 939	12 000	10 000	10 000
Unwrought (a)	1 060	2 800	3 400	1 600	2 400
Scrap (d)	1 397	1 834	2 552	2 574	2 752
<b>New Zealand (d)</b>					
Alumina	472 601	520 223	471 467	511 261	493 688
Unwrought (a)	1 565	6 942	5 172	8 341	5 839

## Note(s):

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

## Production of Asbestos

tonnes

Country	1987	1988	1989	1990	1991
Greece	60 135	71 114	73 300	65 993	4 788
Italy	101 834	94 549	44 348	3 800	—
Bulgaria	400	300	300	500	* 500
Czechoslovakia	194	196	147	...	...
Soviet Union	2 555 000	* 2 600 000	* 2 600 000	* 2 400 000	* 2 400 000
Turkey	10 097	500	—	—	—
Yugoslavia	10 964	17 030	9 111	6 578	(d) 5 289
Egypt	209	166	312	367	450
South Africa					
Amosite	26 026	20 325	26 124	26 566	27 383
Crocidolite	20 682	11 885	23 689	31 521	31 551
Chrysotile	101 722	113 468	115 452	103 407	101 563
Swaziland					
Chrysotile	25 925	22 804	27 291	35 938	13 888
Zimbabwe					
Chrysotile	193 295	186 581	187 066	160 500	141 697
Canada					
Chrysotile	650 000	664 000	732 000	725 000	639 000
USA (a)	50 600	18 233	17 427	* 20 000	20 061
Argentina	332	2 328	225	* 300	* 250
Brazil	231 543	227 118	206 296	232 332	237 000
Colombia (c)	132 723	152 896	159 149	159 600	164 825
China	144 673	157 478	181 500	191 800	* 230 000
Cyprus					
Chrysotile	18 070	14 586	—	—	—
India					
Amphibole	27 019	31 123	36 502	26 053	24 094
Iran (b)	3 300	3 410	* 3 300	* 2 800	* 3 000
Japan					
Chrysotile	3 143	* 3 000	21 727	5 184	4 395
Korea, Republic of	2 518	2 428	2 361	1 534	—
World total	4 400 000	4 400 000	4 500 000	4 200 000	4 000 000

## Note(s):

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

(a) Sold or used by producers

(b) Years ended 20 March following that stated

(c) Crude

(d) Excluding data from August to December for the Republic of Croatia

**Exports of Unmanufactured Asbestos**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	463	289	274	291	111
Belgium-Luxembourg	141	551	222	310	103
France	406	557	411	101	386
Germany, Federal Republic of	1 219	1 193	293	608	2 184
Greece	38 491	53 906	57 465	56 963	27 728
Italy	51 541	50 936	37 302	4 893	1 156
Netherlands	238	—	—	—	—
Spain	23	302	76	127	86
Austria	1	28	247	675	48
Hungary	(a)* 1 000	(a)* 1 800	1 934	5 784	...
Soviet Union	(a)* 271 400	(a)* 275 500	(a)* 228 800	(a)* 230 200	(c) 194 540
Yugoslavia	1 179	204	1 119	73	(b) 1
South Africa	154 061	169 091	171 892	178 750	147 504
Swaziland	27 929	22 565	...	19 292	...
Zimbabwe	195 828	197 597	...	172 206	138 838
Canada	648 843	684 905	707 816	649 485	686 053
USA	60 092	31 545	27 096	28 875	25 694
Brazil	35 725	41 568	58 711	53 142	67 765
China	473	571	1 889	7 135	612
Cyprus	22 340	15 776	56	—	—
Japan	121	72	50	142	147
Saudi Arabia	480	9 829	1 586	422	47
Singapore	848	263	250	2 181	700
of which: Re-exports	848	263	250	2 180	692

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

(b) Data for the Federal Republic of Yugoslavia only

(c) Data for the Russian Federation only

## Imports of Unmanufactured Asbestos

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	23 865	24 266	19 702	16 022	11 248
Belgium-Luxembourg	27 357	20 507	24 139	26 514	24 601
Denmark	4 381	1 078	1 109	800	802
France	70 206	76 365	66 556	63 672	67 373
Germany, Federal Republic of	55 411	44 585	37 161	15 692	4 431
Greece	964	1 773	1 393	2 299	2 417
Irish Republic	5 045	5 752	4 529	5 533	4 590
Italy	48 864	46 315	60 594	63 438	58 906
Netherlands	8 718	6 594	9 148	6 252	6 263
Portugal	14 247	14 742	13 575	12 284	10 550
Spain	45 652	47 408	48 509	39 609	37 112
Albania (d)	* 1 200	* 600	* 1 200	* 250	...
Austria	17 749	14 858	15 750	6 167	1 613
Czechoslovakia	46 879	43 664	40 360	32 776	16 974
Finland	962	853	1	—	0
German Democratic Republic	53 200	55 200	41 200	...	—
Hungary	28 440	27 681	29 663	33 375	...
Poland	71 983	63 366	56 026	65 621	...
Romania (d)	* 3 400	* 3 100	* 4 400	* 3 000	* 1 500
Sweden	937	972	967	595	420
Switzerland	5 778	5 894	2 877	1 341	576
Turkey	33 340	38 058	35 581	26 259	31 392
Yugoslavia	45 603	38 456	36 613	28 323	(f) 2 091
Algeria	18 260	17 047	31 181	17 382	15 726
Burundi	400	285	342	68	383
Egypt	9 300	12 230	17 033	...	...
Ghana	14	3 750	...	...	...
Kenya	478	713	...	...	...
Morocco	1 885	5 691	3 944	7 157	7 411
Nigeria	38 156	...	...	...	...
Senegal	742	573	584	646	...
South Africa	11 437	12 903	12 150	12 354	...
Tunisia	7 057	5 825	6 181	7 179	6 695
Zaire	* 600	...	...	...	...
Zambia	1 267	1 595	...	2 472	29 022
Canada	238	365	1 174	879	867
Cuba (c)	1 212	1 024	2 013	500	—
El Salvador	2 382	2 805	1 135	904	121
Guatemala	80	725	504	24	40
Honduras	784	2 277	1 375	...	...
Mexico	38 450	34 055	35 428	39 316	50 401
Panama	164	121	210	352	279
USA					
Crocidolite	1 692	1 252	593	835	282
Chrysotile	88 821	78 967	51 514	34 308	28 807
Other unmanufactured	3 828	5 108	3 199	6 188	5 676
Argentina	14 324	8 109	7 093	6 588	9 000
Bolivia	832	377	1 121	1 297	1 691
Brazil	4 134	5 566	6 570	11 373	12 476
Chile	(d)* 7 700	10 557	8 831	7 749	9 567
Colombia	10 265	16 392	14 370	13 437	14 977
Ecuador	3 743	7 036	3 000	1 151	515
Peru	9 922	3 506	1 172	1 060	3 079
Uruguay	1 193	1 320	1 509	1 794	855
Venezuela	15 560	8 572	1 505	1 417	3 196
China	1 243	466	500	1 083	2 249
India (e)	79 454	104 033	...	93 165	77 773
Indonesia	12 205	18 698	20 986	28 599	32 213
Iran (a)	20 612	13 285	32 238	69 446	...
Israel	5 111	2 889	3 214	2 955	...
Japan	277 238	320 393	295 168	287 659	272 088
Korea, Republic of	77 595	87 470	77 475	74 549	88 753
Kuwait	1 299	...	1 597	...	...
Malaysia	20 153	21 050	28 276	...	27 798

**Imports of Unmanufactured Asbestos**

tonnes

Country	1987	1988	1989	1990	1991
Pakistan (b)	5 606	7 258	...	4 525	...
Philippines	1 911	2 074	2 111	1 869	2 070
Saudi Arabia	1 810	2 780	2 941	2 005	1 599
Singapore	2 194	1 701	1 733	4 741	2 035
Sri Lanka	8 156	9 898	...	7 002	1 126
Syria	3 860	...	...	1 548	...
Taiwan	36 469	32 680	29 464	15 165	8 080
Thailand	71 407	109 103	118 520	116 652	271 011
Australia (b)	6 294	2 072	2 128	1 706	1 342

- (a) Years ended 20 March following that stated  
(b) Years ended 30 June of that stated  
(c) Exports from Canada  
(d) BGS estimates, based on known exports from certain countries  
(e) Years ended 31 March following that stated  
(f) Data for the Federal Republic of Yugoslavia only



## Production of Barytes

Country	1987	1988	1989	1990	1991
United Kingdom	77 000	76 253	70 026	67 551	85 505
Belgium	* 40 000	* 35 000	* 40 000	* 40 000	90 000
France	104 500	104 400	111 840	92 600	* 90 000
Germany, Federal Republic of	173 356	165 317	144 106	147 776	147 219
Greece	4 799	1 316	1 247	1 617	546
Irish Republic	70 000	83 500	82 000	101 000	94 300
Italy	82 181	77 273	60 331	44 345	* 49 000
Portugal	660	1 740	1 730	1 480	* 1 400
Spain	7 776	6 585	6 745	* 7 000	* 6 000
Bulgaria	214 990	171 798	269 357	192 881	150 000
Czechoslovakia	57 300	60 794	62 438	* 87 000	* 85 000
Finland	11 000	10 993	1 614	—	—
German Democratic Republic	87 400	92 100	89 400	* 85 000	—
Poland	59 300	53 000	57 900	25 300	* 25 000
Romania	* 40 000	* 40 000	25 250	* 20 000	* 26 000
Soviet Union	* 540 000	* 540 000	* 540 000	* 500 000	* 450 000
Turkey	291 913	405 017	425 519	366 995	260 596
Yugoslavia	19 270	23 350	23 558	40 329	(f)* 30 000
Algeria	43 900	42 797	49 000	53 078	44 361
Egypt	4 530	5 651	7 295	6 197	* 6 000
Morocco	126 817	321 562	341 743	364 000	434 660
South Africa	8 617	8 735	8 570	2 490	4 790
Tunisia	18 000	31 300	36 800	33 600	48 000
Zimbabwe	191	3 400	1 900	320	866
Canada	41 000	49 000	47 000	41 000	50 000
Guatemala	1 202	5 064	2 663	421	...
Mexico	401 336	534 954	326 000	310 606	191 962
USA (b)	406 000	404 000	290 000	430 000	448 000
Argentina	33 462	48 972	57 558	* 50 000	33 300
Bolivia	1 337	—	—	300	1 277
Brazil (d)	158 083	78 842	51 407	55 576	* 65 000
Chile	2 109	43 135	59 873	3 038	3 153
Colombia	3 792	4 550	5 460	5 380	9 288
Peru (e)	20 019	47 731	55 012	...	...
Afghanistan (c)	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
China	* 900 000	* 1 400 000	1 510 100	1 462 000	* 1 750 000
India	211 726	445 604	548 103	633 000	615 000
Iran (c)	42 430	44 309	59 660	77 423	75 000
Japan	30 379	...	22 886	18 336	18 944
Korea, Republic of	2 942	2 573	3 735	2 923	1 014
Malaysia	17 008	17 280	16 250	* 20 000	16 600
Myanmar (a)	17 242	12 678	11 481	10 262	14 225
Pakistan	10 031	21 926	29 718	23 329	28 751
Philippines	371	349	348	* 500	* 500
Thailand	33 370	40 587	87 052	107 707	92 974
Australia	10 363	20 649	* 20 000	* 22 000	* 22 000
World total	4 400 000	5 600 000	5 700 000	5 600 000	5 600 000

## Note(s):

- (1) This table may include small quantities of witherite
- (2) In addition to the countries listed, Cuba is believed to produce barytes
- (a) Years ended 31 March following that stated
- (b) Sold or used by producers
- (c) Years ended 20 March following that stated
- (d) Including beneficiated and directly shipped material
- (e) Exports
- (f) Excluding data from August to December for the Republic of Croatia

## Barytes

## Exports of Barytes

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	8 214	17 104	14 572	25 365	9 057
Belgium-Luxembourg	64 985	51 297	72 044	52 167	49 621
France	82 963	93 888	89 037	78 032	33
Germany, Federal Republic of	32 180	36 829	35 460	36 854	37 353
Irish Republic	77 707	69 969	74 767	100 772	95 927
Italy	1 741	10 018	8 740	9 948	8 599
Netherlands	62 765	80 545	75 756	73 133	87 869
Spain	22 346	2 334	2 822	2 762	2 705
Czechoslovakia (b)	* 500	* 500	* 700	* 2 800	* 600
Norway	22 613	10 574	3 699	16 563	8 047
Turkey	231 026	233 899	301 096	177 017	116 156
Yugoslavia	9 277	10 095	9 136	4 295	(e) —
Algeria	1 000	17 500	21 700	11 636	...
Morocco	254 463	398 090	358 909	373 857	444 939
Tunisia	4 822	3 851	1 116	930	20 407
Canada	6 052	9 312	6 214	9 945	12 080
Mexico	65 939	44 633	54 243	41 161	35 197
USA	14 005	288	17 120	12 511	43 687
Bolivia	1 445	—	—	300	1 363
Brazil	125	6 445	6 334	12 498	6 368
Chile	...	25 076	26 929	...	...
Peru	20 019	47 731	55 012	...	...
China	813 800	1 095 854	1 031 302	1 442 997	1 124 746
Hong Kong (c)	2 396	5 941	5 400	4 150	1 967
India (a)	123 508	433 068	...	304 150	392 070
Indonesia	1 716	2 178	7 695	5 246	1 902
Malaysia	7 171	1 438	1 268	...	278
Singapore	12 870	17 624	8 401	18 562	19 033
of which: Re-exports	10 878	6 835	5 806	8 195	8 679
Thailand	47 704	74 561	99 316	105 232	44 542
Australia (d)	1 409	436	80	1 179	275

## Note(s):

- (1) Trade in barytes is reported under item 278.92 of the Standard International Trade Classification (Revision 3) and is described as 'barytes and witherite'. However, only small quantities of witherite are traded
- (a) Years ended 31 March following that stated
- (b) BGS estimates, based on known imports into certain countries
- (c) Re-exports
- (d) Years ended 30 June of that stated
- (e) Data for the Federal Republic of Yugoslavia only

## Imports of Barytes

Country	1987	1988	1989	1990	1991
United Kingdom	112 042	157 892	113 018	217 427	183 430
Belgium-Luxembourg	7 084	7 694	9 565	9 666	10 080
Denmark	17 379	13 030	7 934	16 917	29 920
France	34 620	34 250	45 440	42 058	53 855
Germany, Federal Republic of	188 872	216 526	218 489	232 327	169 577
Greece	1 234	1 375	1 071	2 249	1 432
Irish Republic	2 652	4 737	2 379	2 668	1 430
Italy	42 985	40 300	61 779	74 217	58 242
Netherlands	88 147	107 033	150 665	94 774	94 482
Portugal	1 428	627	1 428	1 042	2 704
Spain	7 243	10 657	17 492	23 121	24 706
Albania (b)	* 3 100	* 9 000	* 8 500	* 8 000	* 6 500
Austria	3 112	6 555	2 668	2 948	3 251
Finland	1 883	1 845	2 036	1 864	1 407
Hungary	12 333	15 958	9 753	91	...
Norway	111 194	162 357	219 642	194 465	216 697
Poland	(b)* 13 500	(b)* 5 100	7 616	14 053	26 612
Romania (b)	...	...	...	* 13 300	* 14 200
Soviet Union (b)	* 198 800	* 135 000	* 180 200	* 123 300	* 119 700
Sweden	6 489	5 440	5 016	3 809	3 215
Switzerland	985	3 068	4 228	1 548	1 289
Yugoslavia	328	2 979	7 069	181	(c) 20
Cameroon	301	...	...	...	...
Gabon	...	...	...	2 802	...
Ivory Coast	...	1 071	...	...	...
Kenya	2 001	2 006	...	...	...
South Africa	2 093	2 761	2 041	1 542	...
Canada	4 573	4 736	5 577	7 995	12 493
Mexico	88	81	233	36 083	85 601
Trinidad & Tobago	18 027	28 684	48 304	20 687	31 856
USA	759 331	1 146 422	1 034 150	1 044 301	858 908
Argentina	1 577	212	52	32	...
Colombia	...	12 093	16 029	3 070	5 126
Ecuador	3 007	91	51	1 901	95
Venezuela	35 970	92 731	84 105	80 738	134 664
Abu Dhabi	12 983	16 993	...	25 986	46 389
Hong Kong	3 060	6 450	6 703	4 783	1 939
Indonesia	15 364	33 197	61 484	82 394	67 580
Japan	68 996	91 355	129 383	115 684	106 038
Korea, Republic of	3 241	3 533	4 148	47 839	39 104
Malaysia	15 992	737	700	...	1 392
Philippines	2 257	1 298	757	366	846
Saudi Arabia	664	567	3 922	4 829	3 519
Singapore	12 766	14 488	10 056	30 830	30 998
Syria	239	...	...	13 605	...
Taiwan	1 586	1 619	1 719	11 960	5 832
Australia (a)	1 541	1 222	14 164	10 151	12 832
New Zealand (a)	2 029	3 279	1 880	1 929	957

## Note(s):

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

(a) Years ended 30 June of that stated

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

(c) Data for the Federal Republic of Yugoslavia only

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

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Fuller's earth (a)	213 055	213 000	210 000	205 000	188 800
France					
Bentonite	* 8 000	* 8 000	* 8 000	* 10 000	* 10 000
Germany, Federal Republic of					
Bentonite	167 000	197 000	200 000	223 000	224 000
Fuller's earth	677 000	670 000	636 000	653 000	708 000
Greece					
Bentonite	681 101	730 501	1 096 177	592 684	600 286
Italy					
Bentonite	319 127	321 121	234 212	228 153	* 230 000
Fuller's earth	38 150	38 955	43 550	45 800	* 45 000
Spain					
Bentonite	103 420	103 753	141 283	* 145 000	* 145 000
Attapulgite	40 818	43 585	23 990	* 25 000	* 25 000
Sepiolite	374 758	383 649	384 449	...	...
Czechoslovakia					
Bentonite	152 656	157 284	156 719	143 130	84 918
Hungary					
Bentonite	102 000	65 000	58 000	25 000	18 000
Poland					
Bentonite	88 600	100 000	93 098	68 692	34 662
Romania					
Bentonite	* 180 000	* 180 000	* 180 000	* 150 000	* 120 000
Soviet Union					
Bentonite	* 2 900 000	* 2 900 000	* 2 900 000	* 2 700 000	* 2 400 000
Turkey					
Bentonite	89 262	80 218	93 256	71 538	95 424
Yugoslavia					
Bentonite	154 288	125 069	139 693	102 681	(h)* 75 000
Algeria					
Bentonite	24 600	26 000	39 200	41 600	25 806
Fuller's earth	* 3 500	* 3 500	* 3 500	7 840	4 526
Egypt					
Bentonite	3 978	3 166	3 629	4 904	* 4 500
Morocco					
Bentonite	2 948	3 445	3 970	* 3 900	* 3 900
Fuller's earth (f)	46 271	52 697	40 820	45 230	* 45 000
Mozambique					
Bentonite	936	986	126	—	660
Senegal					
Attapulgite	117 873	323 470	98 882	114 610	99 377
South Africa					
Bentonite	48 953	66 750	62 987	66 059	64 600
Attapulgite	6 026	7 161	6 609	7 628	8 109
Canada					
Bentonite	70 281	88 800	...	...	...
Guatemala					
Bentonite	24 781	976	8 236	* 9 000	12 000
Mexico					
Bentonite	129 596	163 916	123 927	144 895	134 384
Fuller's earth	49 112	37 226	24 603	29 865	27 800
Nicaragua					
Bentonite	3 496	3 853	1 889	2 083	2 300
USA					
Bentonite (c)	2 545 772	2 870 971	3 112 365	3 473 595	3 432 000
Fuller's earth (c)	1 865 890	1 792 232	1 881 511	2 307 475	2 740 000
Argentina					
Bentonite	108 595	173 930	150 000	* 150 000	93 800
Fuller's earth	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Brazil					
Bentonite	216 591	147 149	113 720	167 618	* 160 000
Colombia					
Bentonite	2 048	2 458	2 950	3 100	3 178
Peru					
Bentonite	16 194	50 741	* 40 000	* 40 000	* 55 000

## Production of Bentonite and Fuller's Earth

tonnes

Country	1987	1988	1989	1990	1991
Cyprus					
Bentonite	79 600	90 300	59 744	81 800	58 400
India					
Bentonite	119 000	226 000	...	...	...
Fuller's earth	20 000	26 000	...	...	...
Indonesia					
Bentonite	7 962	8 266	3 862	5 914	21 512
Iran (g)					
Bentonite	52 523	37 028	31 547	51 096	40 452
Israel					
Bentonite (e)	* 4 500	* 3 000	* 3 500	* 3 500	* 3 500
Japan					
Bentonite	415 806	455 137	526 131	549 414	554 145
Korea, Republic of					
Bentonite	12 600	16 600	24 400	28 900	35 100
Myanmar (d)					
Bentonite	297	418	733	364	610
Pakistan					
Bentonite	2 537	4 370	5 466	4 213	5 106
Fuller's earth	17 945	15 282	15 436	16 489	22 075
Philippines					
Bentonite	2 021	2 030	2 782	16 484	42 066
Australia					
Bentonite	30 392	35 671	* 35 000	* 35 000	* 35 000
Fuller's earth	10 960	* 15 000	* 15 000	* 20 000	* 15 000
New Zealand					
Bentonite	—	1 255	1 342	1 393	—
World total Bentonite	8 870 000	9 450 000	9 970 000	9 660 000	9 140 000
World total Fuller's earth (b)	3 480 000	3 620 000	3 410 000	3 890 000	4 340 000

## Note(s):

- (1) Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important
- (2) Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process
- (3) In some countries, such as the United Kingdom, calcium bentonite is known as fuller's earth, a term which is also used to refer to attapulgite, a mineralogically distinct clay mineral but exhibiting similar properties
- (4) In addition to the countries listed, Austria, Bulgaria, China and Tanzania are believed to produce bentonite and France, Iran and Japan may produce fuller's earth
- (a) BGS estimates of saleable production based on data from producing companies
- (b) Including attapulgite and sepiolite
- (c) Sold or used by producers
- (d) Years ended 31 March following that stated
- (e) A low grade form of bentonite, known as metabentonite
- (f) Smectite
- (g) Years ended 20 March following that stated
- (h) Excluding data from August to December for the Republic of Croatia

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

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Bentonite	35 605	39 027	49 012	62 097	52 093
Fuller's earth	24 824	31 091	33 663	33 747	27 794
Belgium-Luxembourg					
Bentonite	86	453	553	1 498	12 461
Fuller's earth	82	547	1 220	1 758	1 819
France					
Bentonite	7 419	9 006	19 315	23 044	20 517
Fuller's earth	2 507	3 971	4 113	5 425	3 803
Germany, Federal Republic of					
Bentonite	31 097	43 388	59 087	55 326	63 502
Fuller's earth	5 093	4 735	2 970	1 421	369
Greece					
Bentonite	511 351	391 781	85 390	73 045	100 938
Italy					
Bentonite	24 155	37 919	59 523	42 954	38 880
Netherlands					
Bentonite	28 045	39 936	35 010	40 936	35 805
Fuller's earth	991	—	502	670	1 140
Spain					
Bentonite	36 914	49 814	59 789	65 850	45 527
Sepiolite	459 883	486 464	505 231	511 769	541 328
Fuller's earth	2 702	3 956	6 087	7 624	7 429
Austria					
Bentonite	—	34	1 114	782	1 132
Czechoslovakia					
Bentonite (c)	...	* 500	* 1 200	* 8 200	* 9 100
Hungary					
Bentonite	10 875	12 496	...	912	...
Turkey					
Bentonite	24 740	26 227	40 248	29 401	29 808
Yugoslavia					
Bentonite	4 799	2 792	11 633	7 521	(h) 229
Morocco					
Bentonite	—	3 000	5 500	17 600	—
Fuller's earth (a)	42 002	75 000	76 200	89 100	58 074
Senegal					
Fuller's earth (b)	8 171	71 714	10 350	...	...
South Africa					
Bentonite	580	808	505	878	—
Canada					
Bentonite	(e) 1 522	1 120	2 398	1 170	1 139
Mexico					
Bentonite	11 846	3 075	5 345	1 126	...
USA					
Bentonite	489 209	569 071	671 437	698 904	661 921
Fuller's earth	96 991	112 265	96 897	46 901	27 488
Argentina					
Bentonite	6 489	6 375	8 753	...	13 200
Colombia					
Bentonite	...	796	395	455	1 125
China					
Bentonite (c)	* 1 400	* 8 600	* 18 900	* 19 300	* 24 300
Fuller's earth (c)	* 1 000	* 1 800	* 200	* 1 900	* 1 900
Cyprus					
Bentonite	...	...	5 936	12 732	12 088
India (d)					
Bentonite	39 312	68 472	...	49 011	76 857
Fuller's earth	148	382	...	109	357
Indonesia					
Bentonite	25 832	5 544	12 114	7 708	14 453
Fuller's earth	18	1 500	—	688	850

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

tonnes

Country	1987	1988	1989	1990	1991
Korea, Republic of Bentonite	1 682	4 608	3 727	6 119	5 660
Singapore Bentonite	11 985	19 365	21 327	23 284	21 503
of which: Re-exports	11 985	19 365	21 327	20 472	15 275
Fuller's earth (f)	960	6 179	3 636	2 556	4 556
Australia Bentonite (g)	...	...	5 803	21 325	8 609

## Note(s):

- (1) See notes 1–3 to production table
- (2) The figures in this table refer to natural and sodium-exchanged bentonite, and fuller's earth, Standard International Trade Classification (Revision 3) 278.27
- (3) Activated bentonite and fuller's earth, Standard International Trade Classification (Revision 3) 598.65 are excluded
- (4) Some countries are believed to include sodium-exchanged bentonite, often referred to as activated bentonite, under Standard International Trade Classification (Revision 3) 598.65, e.g. Italy
- (a) Smectite
- (b) Attapulgite
- (c) BGS estimates, based on known imports into certain countries
- (d) Years ended 31 March following that stated
- (e) Imports into the USA
- (f) Re-exports
- (g) Years ended 30 June of that stated
- (h) Data for the Federal Republic of Yugoslavia only

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

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Bentonite	98 133	115 114	117 483	154 133	137 444
Fuller's earth	1 284	3 068	3 582	6 114	6 379
Belgium-Luxembourg					
Bentonite	19 893	37 102	28 112	31 876	24 040
Fuller's earth	800	481	307	1 132	884
Denmark					
Bentonite	5 608	7 884	10 280	12 306	13 214
Fuller's earth	540	691	599	738	3 069
France					
Bentonite	77 629	114 725	125 749	127 278	117 588
Fuller's earth	1 405	1 142	2 618	5 966	2 744
Germany, Federal Republic of					
Bentonite	119 114	187 642	252 864	225 056	231 644
Fuller's earth	10 809	11 672	14 875	13 067	12 657
Greece					
Bentonite	566	353	415	581	315
Italy					
Bentonite	39 228	38 493	72 727	84 091	76 651
Fuller's earth	2 143	3 631	5 167	6 801	7 926
Netherlands					
Bentonite	67 407	85 396	99 267	108 305	73 327
Fuller's earth	5 451	11 534	8 283	5 428	5 053
Portugal					
Bentonite	23 064	16 259	12 963	12 237	9 736
Fuller's earth	436	201	18	177	...
Spain					
Bentonite	28 692	35 913	34 675	44 776	34 064
Fuller's earth	4	62	705	27	607
Austria					
Bentonite	6 361	12 620	15 042	12 722	20 662
Fuller's earth	...	538	604	795	627
Finland					
Bentonite	...	9 412	5 674	7 841	7 583
German Democratic Republic					
Bentonite (c)	* 11 700	* 12 400	* 11 000	* 10 000	—
Fuller's earth (c)	* 1 700	* 900	* 1 500	* 1 000	—
Norway					
Bentonite	28 446	23 362	16 778	16 616	16 525
Fuller's earth	12 022	197	126	544	649
Poland					
Bentonite (c)	* 24 700	* 17 700	* 14 500	* 11 900	* 6 400
Sweden					
Bentonite	11 958	7 693	9 961	11 810	10 576
Fuller's earth	...	7 570	6 595	6 435	6 717
Switzerland					
Bentonite	...	8 566	12 288	10 668	14 692
Fuller's earth	...	609	1 329	1 624	1 507
Algeria					
Bentonite (b)	33	0	85	4 023	...
Morocco					
Bentonite	547	62	22	112	104
Senegal					
Bentonite	1 684	603	1 570	...	...
Tunisia					
Bentonite	563	1 102	1 562	2 226	1 513
Zimbabwe					
Fuller's earth (b)	1 413	...	...	...	...
Canada					
Bentonite	318 071	334 872	294 267	229 959	268 612
Fuller's earth	10 787	6 477	7 377	6 643	6 138
Mexico					
Bentonite	1 319	2 950	2 900	4 670	...
USA					
Bentonite	3 665	3 200	2 427	2 045	2 207
Fuller's earth	239	487	16	69	82



## Imports of Bentonite and Fuller's Earth

tonnes

Country	1987	1988	1989	1990	1991
Brazil					
Bentonite	13 519	16 989	31 595	35 589	41 526
Chile					
Bentonite	(c)* 5 200	3 843	10 065	4 771	5 337
Colombia					
Bentonite	...	9 074	3 743	3 745	10 221
Peru					
Bentonite	915	294	583	703	383
Uruguay					
Bentonite	417	221	...	...	479
Venezuela					
Bentonite	10 897	12 447	3 947	13 551	13 245
Indonesia					
Bentonite	2 157	13 532	11 707	30 462	12 518
Israel					
Bentonite (c)	* 2 600	* 3 000	* 1 900	* 500	* 500
Japan					
Bentonite	...	128 280	169 298	202 908	236 906
Fuller's earth	...	4 781	6 321	8 776	8 243
Korea, Republic of					
Bentonite	3 749	10 728	6 892	11 549	15 102
Kuwait					
Bentonite	24 878	37 742	17 596	21 395	...
Malaysia					
Bentonite	56 192	27 278	64 748	...	53 361
Fuller's earth	2 145	14 180	7 402	...	7 424
Pakistan (a)	1 522	15 854	...	2 871	...
Philippines	2 322	4 601	7 461	8 500	6 206
Singapore					
Bentonite	9 431	44 902	27 750	54 723	31 113
Fuller's earth	1 467	5 848	4 531	22 937	4 744
Taiwan					
Bentonite	20 051	23 712	26 533	49 133	34 227
Thailand					
Bentonite	5 369	11 474	12 043	32 390	22 407
Australia					
Bentonite (a)	26 591	15 193	21 344	28 476	28 348

## Note(s):

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

## Bromine

**Production of Bromine**

kilograms

Country	1987	1988	1989	1990	1991
United Kingdom	26 184 000	27 128 000	29 907 000	26 800 000	29 323 000
France	* 18 500 000	* 18 000 000	* 18 000 000	3 100 000	* 3 200 000
Germany, Federal Republic of	* 2 000 000	2 000 000	2 000 000	1 500 000	* 1 500 000
Italy	* 450 000	* 450 000	* 400 000	* 400 000	* 400 000
Spain	* 300 000	* 300 000	* 300 000	* 300 000	300 000
Soviet Union	* 65 000 000	* 65 000 000	* 65 000 000	* 60 000 000	* 50 000 000
USA (a)	152 000 000	163 300 000	174 600 000	177 000 000	* 170 000 000
India	1 181 600	1 241 900	1 272 200	1 505 000	2 047 000
Israel	* 110 000 000	118 000 000	134 725 000	130 000 000	135 000 000
Japan	* 15 000 000	* 15 000 000	* 15 000 000	* 15 000 000	* 15 000 000
World total	390 600 000	410 400 000	441 200 000	415 600 000	406 800 000

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

## Exports of Bromine

Country	1987	1988	1989	1990	1991
United Kingdom	2 556 122	2 146 979	2 690 302	3 161 019	4 386 570
Belgium-Luxembourg	17 800	17 200	33 200	52 800	17 800
Germany, Federal Republic of	219 200	7 100	69 000	22 700	132 400
Italy	4 900	7 000	12 000	25 000	500
Netherlands	686 000	724 000	691 000	586 000	550 000
German Democratic Republic (a)	* 1 826 000	* 2 416 000	* 1 956 000	* 1 274 000	—
USA	3 348 000	4 328 000	3 557 291	2 943 290	5 685 761
Israel	(a)* 29 200 000	(a)* 32 200 000	43 119 000	31 885 000	...

Note(s):

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

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

## Bromine

## Imports of Bromine

kilograms

Country	1987	1988	1989	1990	1991
United Kingdom	8 968 048	9 725 931	9 592 918	7 196 864	7 424 357
Belgium-Luxembourg	1 842 700	2 121 700	2 273 200	1 801 800	1 528 100
Denmark	104 500	52 000	95 400	24 100	13 100
France	5 799 500	6 967 000	8 314 000	7 514 000	7 626 000
Germany, Federal Republic of	6 959 700	6 677 300	6 917 100	5 487 100	4 434 000
Irish Republic	...	...	183 000	280 279	298 741
Italy	2 140 000	2 232 500	1 787 000	1 439 000	474 300
Netherlands	8 267 000	9 332 000	8 125 000	10 640 000	8 622 000
Spain	59 000	107 000	59 000	85 000	58 000
Hungary	843 000	521 000	...	...	...
Turkey	2 029	344	...	...	...
Yugoslavia	72 000	54 000	12 000	6 000	(d) —
South Africa	31 500	59 781	28 740	20 930	...
Canada	...	1 331 828	1 417 596	1 505 136	1 386 971
Mexico	146 000	* 180 000	(c)* 350 000	(c)* 180 000	(c)* 190 000
USA	248 306	256 696	459 881	755 631	145 638
Argentina	24 000	20 000	...	...	...
Brazil	17 099	30 397	50 361	11 381	...
Colombia	...	19 078	62	34	...
Peru	92	339	...	843	177
Venezuela	5 775	319	3 445	...	...
India (a)	—	469 792	...	118 330	203 696
Israel (c)	* 62 700	* 91 300	* 90 800	* 98 600	* 7 000
Korea, Republic of	162 856	285 682	192 125	195 761	471 900
Pakistan (b)	2 016	4 032	...	15 991	...
Taiwan	796	80	259	20 517	112 647

## Note(s):

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

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

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

(d) Data for the Federal Republic of Yugoslavia only

## Production of Chromium Ores and Concentrates

tonnes

Country	1987	1988	1989	1990	1991
Greece	63 825	49 335	47 324	22 400	20 108
Albania	1 072 000	1 109 000	1 101 000	1 011 000	586 700
Finland (b)	503 159	536 309	573 715	461 277	458 000
Soviet Union	3 570 000	3 700 000	3 800 000	* 3 800 000	* 3 800 000
Turkey (a)	762 071	851 425	1 415 038	1 089 942	1 381 633
Madagascar	106 773	171 484	165 397	122 276	145 583
South Africa	3 862 000	4 244 632	4 950 854	4 618 000	5 100 299
Sudan	10 000	25 000	30 000	35 000	25 000
Zimbabwe	570 298	561 630	627 500	562 600	563 634
Cuba	52 400	52 200	50 600	* 50 000	* 30 000
Brazil (a)	191 033	229 912	270 198	256 453	336 900
India	623 591	820 863	1 002 659	939 000	958 000
Iran (b) (c)	92 120	60 289	72 628	77 189	90 119
Japan	11 815	9 508	11 674	8 075	* 7 500
Oman	* 4 000	* 4 000	12 810	...	...
Pakistan	9 963	4 924	27 105	18 191	* 18 000
Philippines (b)	188 647	165 710	379 521	234 600	210 267
Vietnam	4 000	2 600	4 000	4 600	* 3 500
New Caledonia	61 832	70 341	60 281	6 223	—
World total	11 800 000	12 700 000	14 600 000	13 300 000	13 700 000

## Note(s):

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

(a) Including beneficiated and direct shipping ore

(b) Including foundry sand and/or lumpy ore

(c) Years ended 20 March following that stated

## Chromium

## Exports of Chromium

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Ores & concentrates	217	207	64	36	75
Metal	3 733	3 469	3 409	3 301	3 787
Belgium-Luxembourg					
Ores & concentrates	85	1 484	290	12 484	16 491
Metal	123	133	82	65	11
France					
Ores & concentrates	1 368	3 113	9 676	2 395	4 089
Metal	1 659	2 205	2 358	3 900	2 674
Germany, Federal Republic of					
Ores & concentrates	11 392	14 419	16 237	13 466	18 221
Metal	143	189	364	1 184	1 798
Greece					
Ores & concentrates	7 089	6 484	17 510	7 967	8 539
Italy					
Ores & concentrates	2 053	13 475	2 999	3 940	1 960
Metal	307	28	817	157	69
Netherlands					
Ores & concentrates	28 005	31 902	39 777	37 703	37 183
Metal	6	5	65	50	44
Albania					
Ores & concentrates	671 900	669 700	620 800	468 800	...
Austria					
Ores & concentrates	—	213	94	131	140
Finland					
Ores & concentrates	144 017	200 693	109 976	9 106	2 008
Soviet Union					
Ores & concentrates	521 000	632 000	741 000	587 000	(c) 350 673
Metal (b)	...	* 300	* 800	* 1 900	* 3 200
Turkey					
Ores & concentrates	569 733	843 116	882 627	676 499	577 358
Yugoslavia					
Ores & concentrates	10 589	2 459	3 124	—	—
Madagascar					
Ores & concentrates	83 842	148 500	152 591	125 558	129 342
South Africa					
Ores & concentrates	1 442 747	1 461 713	1 541 011	1 200 919	1 010 101
Cuba					
Ores & concentrates	49 664	...	...	...	...
USA					
Ores & concentrates	5 982	4 964	42 820	10 373	8 808
of which: Re-exports	4 837	1 033	2 375	4 052	—
Metal	379	322	1 503	345	440
Brazil					
Ores & concentrates	8	29 931	41 863	34 995	59 253
China					
Metal (b)	* 1 300	* 1 200	* 1 100	* 2 500	* 1 500
India (a)					
Ores & concentrates	185 196	588 700	...	179 580	397 547
Iran					
Ores & concentrates (b)	* 13 500	* 7 500	* 30 500	* 30 700	* 67 400
Japan					
Ores & concentrates	309	298	2 429	495	356
Metal	...	2 014	2 322	2 822	2 020
Philippines					
Ores & concentrates	105 676	163 499	201 683	198 366	197 764

**Exports of Chromium**

Country	1987	1988	1989	1990	1991
New Caledonia Ores & concentrates	72 112	71 646	64 651	6 782	—

## Note(s):

- (1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) Years ended 31 March following that stated
- (b) BGS estimates, based on known imports into certain countries
- (c) Data for the Russian Federation only

## Chromium

## Imports of Chromium

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Ores & concentrates	124 318	199 043	170 461	154 919	80 278
Metal	504	391	709	854	910
Belgium-Luxembourg					
Ores & concentrates	2 581	3 404	3 861	19 926	28 515
Metal	406	374	392	570	465
Denmark					
Ores & concentrates	667	697	6 481	14 770	2 878
France					
Ores & concentrates	24 771	80 910	81 288	88 144	77 035
Metal	253	264	506	1 047	1 557
Germany, Federal Republic of					
Ores & concentrates	258 912	272 541	343 779	245 513	276 511
Metal	1 144	1 347	2 147	3 236	3 207
Greece					
Ores & concentrates	27 354	42 600	73 812	47 284	39 575
Irish Republic					
Ores & concentrates	3 010	13	22	47	44
Italy					
Ores & concentrates	218 974	304 149	383 158	179 711	159 914
Metal	223	376	289	649	478
Netherlands					
Ores & concentrates	17 229	34 477	42 777	54 066	34 378
Metal	82	155	137	261	175
Portugal					
Ores & concentrates	779	1 136	1 055	1 571	1 922
Spain					
Ores & concentrates	76 902	104 254	87 766	54 695	40 115
Metal	143	80	104	110	117
Austria					
Ores & concentrates	39 282	58 712	60 936	43 752	47 997
Czechoslovakia					
Ores & concentrates	188 000	171 000	171 000	...	...
German Democratic Republic					
Ores & concentrates (b)	41 000	47 400	41 600	...	—
Hungary					
Ores & concentrates	(a)* 20 100	(a)* 27 500	18 315	16 169	...
Norway					
Ores & concentrates	760	558	64 663	159 457	338 719
Poland					
Ores & concentrates	190 731	168 081	159 110	147 000	...
Romania					
Ores & concentrates	130 100	115 500	146 700	...	...
Sweden					
Ores & concentrates	314 495	432 148	397 178	190 308	230 352
Metal	216	220	271	315	253
Switzerland					
Ores & concentrates	...	1 211	2 404	2 682	1 568
Metal	...	112	115	184	247
Yugoslavia					
Ores & concentrates	225 856	290 212	334 479	283 601	(d) 19 389
Canada					
Ores & concentrates	(b) 19 797	32 529	33 843	21 309	20 957
Mexico					
Ores & concentrates	45 016	39 019	29 376	29 037	...
USA					
Ores & concentrates	489 900	625 490	525 044	565 357	212 139
Metal	3 957	4 104	4 184	6 713	5 765
Argentina					
Ores & concentrates	27 558	14 776	20 393	17 160	...
Brazil					
Ores & concentrates	14 380	8 649	18 358	6 568	1 779
Chile					
Ores & concentrates	6 084	12 233	22 111	9 148	12 840
Peru					
Ores & concentrates	2 658	3 246	2 006	2 001	...
Venezuela					
Ores & concentrates	20 149	7 072	11 958	3 383	6 160



## Imports of Chromium

Country	1987	1988	1989	1990	1991
China					
Ores & concentrates	230 375	429 808	595 783	641 267	544 648
Japan					
Ores & concentrates	674 743	976 168	1 043 468	789 225	755 059
Metal	...	725	830	571	812
Korea, Dem. P.R. of					
Ores & concentrates (a)	* 24 000	* 21 000	* 25 700	* 20 000	...
Korea, Republic of					
Ores & concentrates	41 147	7 408	3 250	528	501
Philippines					
Ores & concentrates	12 000	52 111	46 541	20	15
Singapore					
Ores & concentrates	...	4 045	7 010	1 073	673
Taiwan					
Ores & concentrates	20 899	12 238	35 709	4 492	5 595
Thailand					
Ores & concentrates	174	4 492	7 359	5 872	2 944
Australia					
Ores & concentrates (c)	4 395	2 579	8 154	5 302	7 394
Metal (c)	84	61	79	91	95

## Note(s):

- (1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) BGS estimates, based on known exports from certain countries
- (b) Cr<sub>2</sub>O<sub>3</sub> content
- (c) Years ended 30 June of that stated
- (d) Data for the Federal Republic of Yugoslavia only

## Diamond

**Production of Diamond**

carats

Country	1987	1988	1989	1990	1991
Soviet Union	* 14 800 000	* 15 000 000	* 15 000 000	* 15 000 000	* 15 000 000
Angola	871 391	1 044 551	1 320 000	1 280 000	961 000
Botswana	13 225 344	15 229 000	15 252 000	17 351 000	16 506 000
Central African Republic	413 087	359 752	447 676	418 667	429 734
Ghana	442 000	215 900	171 200	636 503	687 736
Guinea	195 000	146 440	148 000	127 286	* 100 000
Ivory Coast (a)	67 365	116 543	...	...	...
Liberia (a)	294 996	167 030	154 554	* 100 000	* 100 000
Namibia	1 030 092	974 565	926 765	762 837	1 186 874
Sierra Leone	310 000	17 492	128 967	78 000	251 534
South Africa	9 050 992	8 504 016	9 115 880	8 708 231	8 431 389
Swaziland	* 40 000	72 676	55 264	42 488	57 420
Tanzania	122 824	85 892	75 885	74 480	99 762
Zaire	19 650 310	18 162 555	17 652 206	19 427 551	* 18 300 000
Brazil	522 437	544 588	500 141	* 1 500 000	* 1 500 000
Guyana	7 469	4 357	8 054	15 279	21 909
Venezuela	112 812	128 405	213 264	336 976	337 022
China	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
India	18 915	14 191	15 451	18 121	17 660
Indonesia	* 29 000	* 29 000	* 32 000	* 30 000	* 32 000
Australia	30 331 701	35 221 000	35 079 000	34 662 000	35 956 000
World total	92 500 000	97 000 000	97 400 000	101 700 000	101 100 000

## Note(s):

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

(a) Exports

## Exports of Diamond

carats

Country	1987	1988	1989	1990	1991
United Kingdom					
Rough	43 165 362	51 482 512	52 538 712	34 676 265	42 000 201
Cut	350 798	1 205 380	824 100	362 307	210 863
Industrial	9 811 635	15 218 700	23 245 260	27 054 112	13 675 479
Dust	...	9 507 960	13 095 360	25 069 200	20 858 820
Belgium-Luxembourg					
Rough	61 175 323	69 309 541	73 010 340	60 624 921	76 041 911
Cut	4 297 277	4 716 709	4 683 881	4 425 511	4 743 900
Industrial	12 297 579	17 715 358	20 844 348	19 131 379	12 493 222
Dust	6 985 440	9 620 000	14 506 840	20 113 060	16 413 585
France					
Rough	6 675	7 932	12 298	9 285	6 508
Cut	45 342	31 013	43 982	30 106	24 835
Industrial	184 013	178 948	142 454	53 345	128 957
Dust	773 915	837 265	1 193 995	2 324 495	1 490 435
Germany, Federal Republic of					
Industrial	321 105	302 117	296 042	337 547	136 038
Dust	...	46 235 000	15 790 000	17 840 000	21 520 000
Other	173 268	186 461	188 724	130 629	137 392
Irish Republic					
Industrial	—	685 000	9 760 000	9 860 000	1 075 000
Italy					
Industrial	5 083	10 784	...	404 237	186 613
Dust	...	2 575 000	...	...	3 000 000
Other	250	18 928	...	127 179	274 430
Netherlands					
Rough	417 832	231 191	150 773	211 275	184 059
Cut	97 536	163 343	77 318	60 478	56 741
Industrial	1 023 087	898 393	783 373	526 887	228 287
Dust	...	84 460	—	246 130	705 875
Portugal	87 155	112 375	...	84 599	60 000
Spain					
Industrial	...	5 960	117 859	257 189	223 474
Other	...	1 305	1 376	3 087	2 849
Austria					
Industrial	240 000	65 000	100 000	285 000	965 000
Other	5 000	150 000	25 000	35 000	150 000
Malta	£2 189 000	£1 068 000	£1 521 000	£2 292 000	£1 546 000
Soviet Union					
Diamond (b)	* 1 096 200	* 894 600	* 838 800	* 563 700	* 688 100
Dust (b)	* 2 781 200	* 7 983 600	* 6 810 200	* 12 901 400	* 6 985 900
Sweden					
Industrial	£47 000	£53 000	£43 000	£86 000	£61 000
Other	£1 736 000	£1 360 000	£1 112 000	£7 028 000	£734 000
Switzerland					
Industrial	...	145 000	175 000	480 000	285 000
Other	...	13 770 000	12 970 000	10 025 000	7 355 000
Central African Republic					
Gem	410 938	356 852	362 934	312 438	305 950
Industrial	—	—	80 806	104 398	122 141
Ghana					
Industrial	396 720	306 700	246 000	...	...
Ivory Coast	67 365	116 543	...	...	...
Kenya	25 000	20 090	...	...	...
Liberia	294 996	167 030	154 554	...	...
Mauritius					
Industrial	£1 148	£1 572 900	£1 230 900	...	...
Other	—	£12 936 100	£12 929 400	...	...
Namibia	1 058 586	924 998	923 407	779 395	1 134 270
Sierra Leone	300 000	20 000	130 000	89 600	250 170
South Africa (c)					
Industrial	£1 776 000	£238 209 000	£138 727 000	£25 438 000	...
Other	£890 847 000	£449 250 000	£719 143 000	£875 220 000	...
Tanzania	120 390	101 417	46 915	...	...
Tunisia					
Industrial	255 000	295 000	310 000	145 000	70 000
Other	655 000	805 000	680 000	755 000	455 000
Zaire	19 651 000	18 445 000	...	...	...

## Diamond

## Exports of Diamond

carats

Country	1987	1988	1989	1990	1991
Canada					
Cut	47 669	59 740	175 352	65 513	29 303
of which: Re-exports	47 669	47 264	126 074	53 584	19 928
Industrial	187 413	249 981	195 252	43 105	82 252
of which: Re-exports	187 413	209 539	71 310	28 122	56 754
Dust	1 748 415	2 714 739	2 801 820	3 720 527	2 887 771
of which: Re-exports	1 738 250	2 244 108	2 794 020	3 315 615	2 785 047
USA					
Rough	1 684 400	1 367 803	1 877 191	1 707 593	2 702 270
of which: Re-exports	1 684 200	1 367 597	1 866 832	1 543 797	2 239 814
Cut	845 868	767 275	778 548	1 003 760	1 010 609
of which: Re-exports	258 671	176 863	88 601	797 209	839 638
Industrial	2 539 863	2 993 356	2 755 240	3 320 638	4 273 235
of which: Re-exports	1 538 122	1 163 513	1 233 902	2 010 845	2 246 959
Dust	...	...	5 433 109	2 983 475	3 254 850
of which: Re-exports	...	...	1 539 757	489 801	404 524
Brazil					
Rough	233 325	95 265	251 900	* 250 000	* 200 000
Gem	36 335	50 365	47 480	51 375	...
Venezuela					
Rough	—	—	430 000	...	...
China					
Industrial	(b)* 100 100	9 365	110 535	71 610	40 240
Other	(b)* 311 400	280 135	233 300	228 850	206 060
Hong Kong	883 666	1 370 457	1 708 062	2 088 551	2 038 301
of which: Re-exports	878 732	1 367 357	1 701 741	2 078 535	2 033 247
India (d)					
Gem	£1 156 637 000	£1 656 391 000	...	£1 508 306 000	£1 432 058 000
Israel					
Cut	4 376 000	...	4 378 000	...	...
Japan					
Industrial	89 000	38 820	109 076	120 509	598 841
Dust	...	9 187 305	20 775 195	13 011 974	6 426 903
Other	9 267	3 797	2 411	2 973	2 905
Korea, Republic of	£356 000	£520 000	£572 000	£508 000	£466 000
Malaysia					
Cut	£15 386 000	£4 528 000	£17 927 000	...	£40 880 000
Other	£702 000	£12 003 000	£11 353 000	...	£1 206 000
Singapore					
Rough	£57 000	£401 000	£469 000	£969 000	£217 000
of which: Re-exports	£57 000	£401 000	£469 000	£969 000	£201 000
Cut	£11 676 000	£11 393 000	£20 669 000	£29 436 000	£55 464 000
of which: Re-exports	£11 234 000	£9 841 000	£19 555 000	£28 952 000	£55 178 000
Industrial	£134 000	£177 000	£6 885 000	£558 000	£721 000
of which: Re-exports	£104 000	£165 000	£6 669 000	£483 000	£654 000
Sri Lanka					
Industrial	—	—	2 722	27 807	8 821
Other	316 288	268 622	343 286	948 674	778 139
Taiwan					
Industrial	32 060 000	12 710 000	57 225 000	—	1 610 000
Other	29 660 000	10 625 000	13 170 000	60 000	15 375 000
Thailand					
Industrial	—	126 628	52 632	72 514	82 138
Dust	...	2 573 115	9 409 400	35 807 500	5 455 400
Other	228 251	260 406	484 856	747 744	924 660
Australia					
Gem (a)	25 333	631 392	1 242 000	911 000	1 485 000
Industrial	145 137	1 572 718	144 000	110 000	127 000

## Note(s):

- (1) Carats have been used as the unit in this table except where the only obtainable figure is the value. In these cases the national currency figure has been converted to £ sterling
- (2) See explanatory notes at the front of the volume regarding currency conversion
- (a) Excluding unsorted rough diamonds
- (b) BGS estimates, based on known imports into certain countries
- (c) Values shown are for the common customs area
- (d) Years ended 31 March following that stated

## Imports of Diamond

carats

Country	1987	1988	1989	1990	1991
United Kingdom					
Industrial	3 939 407	7 370 042	9 471 872	8 700 514	...
Other	43 364 474	53 882 723	55 936 537	35 865 608	...
Belgium-Luxembourg					
Rough	66 204 960	66 154 145	74 616 865	62 928 645	70 841 435
Cut	3 543 728	4 060 064	4 402 608	4 270 948	4 577 689
Industrial	18 592 351	21 943 039	24 380 043	22 491 771	27 221 175
Dust	15 560 140	16 545 000	26 218 635	27 476 800	20 170 745
France					
Rough	15 173	48 512	29 709	40 446	36 370
Cut	372 972	443 950	314 179	314 213	219 165
Industrial	280 955	360 430	554 106	219 801	268 256
Dust	5 863 980	7 140 455	8 947 820	7 581 500	7 088 875
Germany, Federal Republic of					
Rough	9 224	14 104	10 798	18 339	6 332
Cut	563 920	601 688	650 622	577 768	562 680
Industrial	1 155 651	983 250	1 255 480	1 067 101	691 414
Dust	...	61 195 000	38 205 000	39 650 000	41 800 000
Greece					
Industrial	38 608	99 903	69 350	149 400	80 450
Dust	...	18 149 450	3 080 000	3 525 000	3 695 000
Other	23 645	78 809	78 409	113 815	166 077
Irish Republic					
Industrial	110 000	185 000	925 000	2 725 000	38 770 000
Other	...	1 475 000	1 365 000	1 100 000	865 000
Italy					
Industrial	169 003	316 734	283 038	490 569	367 437
Dust	...	33 575 000	39 911 380	35 416 890	33 330 000
Other	231 400	1 476 352	2 170 329	304 087	337 198
Netherlands					
Rough	485 550	421 154	227 864	331 724	124 387
Cut	135 534	314 466	162 003	158 022	113 429
Industrial	1 325 000	848 112	773 027	380 351	274 733
Dust	...	729 325	1 350 635	1 089 380	1 038 345
Portugal	139 144	...	199 474	157 241	120 000
Spain					
Rough	...	92	246	3 438	1 244
Industrial	...	143 921	43 807	113 482	623 865
Dust	...	3 713 930	14 444 415	6 463 575	6 398 625
Other	...	169 205	96 252	320 395	120 066
Austria					
Industrial	10 000	10 135 000	5 060 000	205 000	130 000
Dust	...	4 505 000	5 440 000	5 940 000	7 315 000
Other	110 000	60 000	45 000	110 000	35 000
Bulgaria (a)	* 25 200	* 18 700	* 16 000	* 118 600	* 21 700
Czechoslovakia (a)	* 180 200	* 47 800	* 21 800	* 32 300	* 5 300
Finland					
Industrial	15 000	210 000	245 000	190 000	95 000
Other	640 000	125 000	20 000	25 000	15 000
German Democratic Republic (a)	* 39 300	* 90 400	* 39 700	* 10 900	—
Hungary					
Industrial	29 149	120 487	21 647	4 103	...
Malta					
Rough	£2 094 000	£1 638 000	£2 600 000	£2 943 000	£2 556 000
Industrial	£4 000	£36 000	£1 000	£31 000	£1 000
Norway					
Industrial	15 000	15 000	25 000	105 000	30 000
Other	80 000	30 000	20 000	20 000	10 000
Romania (a)	* 614 100	* 560 200	* 591 400	* 557 700	* 23 500
Sweden					
Industrial	£347 000	£545 000	£499 000	£1 092 000	£632 000
Other	£7 344 000	£5 742 000	£5 957 000	£5 030 000	£3 919 000
Switzerland					
Industrial	...	465 000	310 000	270 000	255 000
Other	...	15 850 000	11 195 000	9 810 000	8 270 000
Turkey					
Industrial	140 000	65 000	240 000	1 245 000	115 000
Other	50 000	35 000	5 460 000	585 000	1 275 000
Yugoslavia					
Industrial	£461 000	£506 000	£640 000	£590 000	(d) £183 000
Other	£231 000	£125 000	£462 000	£63 000	(d) —

## Imports of Diamond

carats

Country	1987	1988	1989	1990	1991
Algeria					
Industrial	55 000	75 000	75 000	45 000	...
Mauritius					
Industrial	£23 700	£1 029 000	£2 222 000	...	...
Other	£7 112 000	£9 995 000	£2 082 000	...	...
South Africa					
Rough	343 500	418 420	244 075	2 089 925	...
Cut	22 500	3 845	42 700	19 895	...
Industrial	596 500	802 105	452 035	888 270	...
Tunisia					
Industrial	5 000	115 000	1 465 000	145 000	80 000
Dust	30 000	1 120 000	775 000	715 000	580 000
Other	625 000	750 000	860 000	610 000	325 000
Zambia					
Industrial	70 000	1 280 000	30 000	50 000	435 000
Canada					
Cut	273 018	91 934	104 501	197 029	240 826
Industrial	3 348 200	2 110 586	1 331 724	2 016 843	1 023 704
Dust	2 457 987	6 394 797	2 653 848	243 957	226 216
Costa Rica					
Industrial	210 000	5 000	45 000	55 000	60 000
Mexico					
Industrial	4 280 000	1 300 000	...	15 200 000	...
Dust	38 800 000	3 405 000	15 560 000	30 495 000	...
USA					
Rough	1 369 360	1 644 298	1 818 742	1 285 664	1 846 237
Cut	7 752 028	8 752 889	8 870 080	6 304 959	6 691 310
Industrial	3 833 816	6 908 427	12 661 094	12 478 222	8 840 456
Bort	326 548	515 145	...	...	...
Dust	12 677 384	12 479 416	12 086 560	12 200 699	10 863 584
Argentina					
Industrial	870 000	115 000	...	...	...
Dust	600 000	260 000	...	...	...
Brazil					
Cut	100	—	10 000	...	...
Industrial	128 370	171 455	640 000	* 250 000	...
Dust	4 698 335	6 068 840	6 920 000	* 5 500 000	...
Colombia					
Industrial	...	105 000	295 000	25 000	...
Other	...	65 000	50 000	50 000	...
Venezuela					
Industrial	725 000	1 790 000	925 000	...	...
Abu Dhabi	110 000	60 000	...	80 000	70 000
China					
Industrial	106 148	1 044 235	408 415	261 865	430 290
Other	119 183	342 575	478 320	412 970	293 560
Cyprus	£1 053 000	...	£1 576 000	£1 688 000	£4 622 000
Hong Kong					
Rough	99 698	216 690	267 007	478 921	878 085
Cut	2 472 936	2 791 158	2 848 252	2 451 193	2 733 564
Industrial	355 698	653 788	227 070	88 423	217 445
India (c)					
Rough	58 813 329	72 452 779	...	52 750 651	63 895 598
Industrial	5 170 000	125 000	...	—	—
Israel					
Rough	10 757 000	12 521 000	10 296 000	...	...
Cut	601 000	810 000	851 000	...	...
Industrial	8 529 000	...	...	...	...
Japan					
Rough	23 431	40 279	108 629	38 348	34 038
Cut	2 356 713	3 344 661	3 243 934	3 266 006	3 044 706
Industrial	519 349	631 311	654 918	691 293	710 149
Dust	1 541 830	1 810 015	2 072 354	1 883 547	2 158 125
Korea, Republic of					
Industrial	30 000	235 115	216 130	63 640	15 439 110
Dust	96 590	1 243 200	153 750	111 625	38 940
Other	45 000	14 980	14 600	36 005	35 540

## Imports of Diamond

carats

Country	1987	1988	1989	1990	1991
Kuwait	4 315 000	1 780 000	1 750 000	...	...
Malaysia					
Rough	£13 335 000	£17 075 000	£31 094 000	£34 634 000	£37 190 000
Cut	£6 945 000	£7 060 000	£9 685 000	£14 264 000	£17 080 000
Industrial	£44 000	£883 000	£226 000	...	£294 000
Philippines					
Industrial	226 862	132 950	107 751	59 350	55 523
Qatar	1 500	...	205 000	7 915 000	505 000
Saudi Arabia					
Industrial	2 340 000	380 000	105 000	85 000	30 000
Other	305 000	1 895 000	165 000	85 000	50 000
Singapore					
Rough	£62 000	£240 000	£173 000	£1 515 000	£136 000
Cut	£30 724 000	£40 463 000	£49 729 000	£72 567 000	£118 129 000
Industrial	£223 000	£454 000	£2 610 000	£7 152 000	£1 688 000
Sri Lanka					
Industrial	81 169	166 231	...	532 671	93 776
Other	329 633	437 343	...	443 803	655 437
Taiwan					
Industrial	5 085 000	265 000	490 000	25 000	290 000
Dust	7 085 000	9 825 000	27 925 000	17 070 000	19 125 000
Other	25 000	...	250 000	4 940 000	1 850 000
Thailand					
Rough	612 143	3 542 997	870 670	1 180 871	429 958
Cut	443 824	6 405 575	1 843 326	3 501 382	2 403 514
Industrial	6 927	787 404	317 915	423 385	305 639
Dust	...	1 316 400	1 918 155	6 718 070	2 920 930
Australia					
Rough	90 554	313 343	8 000	20 000	9 000
Gem	113 639	127 555	148 000	152 000	167 000
Industrial	2 749 365	2 176 931	1 577 000	1 542 000	2 546 000
New Zealand (b)					
Industrial	£182 000	£129 000	£63 000	£43 000	£9 000
Other	£4 670 000	£3 934 000	£4 375 000	£5 179 000	£3 591 000

## Note(s):

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- (2) See explanatory notes at the front of the volume regarding currency conversion
- (a) BGS estimates, based on known exports from certain countries
- (b) Years ended 30 June of that stated
- (c) Years ended 31 March following that stated
- (d) Data for the Federal Republic of Yugoslavia only

## Diatomite

**Production of Diatomite**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	350	320	270	240	220
Denmark (a)					
Moler (d)	94 995	* 95 000	* 100 000	* 90 000	* 90 000
France (b)	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Germany, Federal Republic of	47 200	47 200	46 800	49 800	44 300
Italy	* 27 000	* 28 000	* 25 000	* 25 000	* 23 000
Portugal	2 890	2 070	2 990	2 270	2 410
Spain (b)	66 217	81 331	83 943	108 000	* 110 000
Iceland	23 345	25 142	24 900	24 856	23 016
Romania	* 55 000	* 55 000	* 50 000	* 50 000	* 40 000
Soviet Union	* 255 000	* 260 000	* 260 000	* 250 000	* 220 000
Turkey	5 149	—	—	—	—
Yugoslavia	5 458	5 364	6 081	6 119	* 4 000
Algeria	3 300	3 087	4 400	4 156	3 629
Kenya	616	711	1 968	750	2 395
South Africa	194	199	133	2 798	2 352
Canada	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
Costa Rica	5 200	5 200	6 000	6 000	* 6 000
Mexico	34 708	36 524	44 920	51 064	55 916
USA (c)	596 000	629 000	617 000	631 000	610 000
Argentina	5 098	7 122	6 301	* 7 000	6 100
Brazil (e)	16 011	14 387	21 320	13 279	12 442
Chile	3 218	2 919	3 315	3 877	5 557
Colombia	2 800	3 000	3 600	3 100	3 890
Peru	20 916	29 650	* 20 000	* 20 000	26 000
Korea, Republic of	64 783	71 952	75 019	55 445	91 126
Thailand	177	470	1 424	4 593	7 328
Australia	10 263	11 279	* 12 000	* 10 000	* 11 000
World total	1 600 000	1 670 000	1 670 000	1 670 000	1 650 000

## Note(s):

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

(a) Sales

(b) Including tripoli

(c) Sold or used by producers

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

(e) Including beneficiated and directly shipped material



## Exports of Diatomite

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	484	679	707	2 556	539
Belgium-Luxembourg	537	730	3 480	2 202	2 665
Denmark					
Diatomite	77 890	81 552	81 866	85 978	85 424
Moler bricks	15 795	23 705	...	...	...
France	31 741	36 309	36 767	41 661	35 767
Germany, Federal Republic of	1 409	2 274	2 401	2 509	1 930
Italy	2 942	2 543	2 894	2 765	1 872
Netherlands	831	586	860	866	778
Spain	7 780	8 739	8 096	4 658	2 250
Austria	2 653	2 811	3 671	5 780	5 914
Czechoslovakia (a)	* 4 900	* 5 300	* 5 400	* 5 100	* 4 700
Hungary (a)	* 1 700	* 1 800	* 1 400	* 400	* 100
Iceland	23 214	25 840	23 553	24 251	21 788
Sweden	95	125	112	188	37
Switzerland	60	70	23	76	19
Turkey	2 692	513	314	968	640
Yugoslavia	369	712	687	1 340	(d) —
Algeria	380	968	940	965	452
Kenya	414	530	...	...	...
Mexico	5 824	6 145	7 986	5 106	...
USA	126 394	147 324	137 131	144 459	152 599
Chile	* 700	721	857	1 461	2 205
Hong Kong (b)	624	1 440	1 972	1 403	1 837
Japan	1 400	1 986	2 541	1 863	2 374
Korea, Republic of	422	100	228	623	183
Singapore (b)	223	661	543	778	412
Taiwan	731	22	136	195	528
Australia (c)	483	311	235	260	154

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

(b) Re-exports

(c) Years ended 30 June of that stated

(d) Data for the Federal Republic of Yugoslavia only

## Imports of Diatomite

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	25 689	42 718	39 211	35 718	33 471
Belgium-Luxembourg	13 252	13 670	16 015	16 011	19 684
Denmark	5 669	5 867	5 547	4 505	4 915
France	10 568	11 688	14 130	20 160	17 458
Germany, Federal Republic of	39 326	37 903	38 857	46 043	50 795
Greece	1 529	1 793	2 609	2 771	2 670
Irish Republic	224	149	269	214	276
Italy	5 883	6 662	7 475	7 487	7 240
Netherlands	22 034	20 749	22 435	25 398	22 214
Portugal	4 352	3 780	4 361	4 528	3 406
Spain	3 173	3 448	4 435	4 073	3 702
Austria	13 049	14 342	14 080	13 657	13 404
Bulgaria (b)	* 600	* 1 900	* 1 800	* 2 200	* 1 600
Czechoslovakia (b)	* 1 200	* 1 700	* 1 500	* 2 000	* 1 400
Finland	4 910	2 785	3 443	3 610	2 913
German Democratic Republic (b)	* 1 700	* 1 900	* 2 100	* 1 000	—
Norway	2 020	1 835	2 067	1 922	1 602
Poland (b)	* 2 300	* 2 300	* 3 200	* 1 900	* 2 100
Romania (b)	* 400	* 500	* 400	* 1 100	* 1 300
Sweden	2 884	2 810	2 656	2 186	2 351
Switzerland	6 308	7 196	7 047	6 877	6 073
Turkey	147	131	232	383	380
Yugoslavia	1 160	1 372	1 051	1 422	(e) 841
Algeria	54	233	10	25	100
Cameroon	* 600	* 700	* 500	* 300	* 400
Gabon	...	...	...	212	...
Morocco	126	341	416	697	362
South Africa	1 568	2 671	2 422	2 667	...
Tunisia	436	795	763	3 183	3 699
Zambia	100	242	184	401	...
Zimbabwe	291	486	...	970	...
Canada	24 482	19 592	21 041	20 951	22 250
Costa Rica	291	186	315	316	143
El Salvador	199	527	215	255	301
Guatemala	289	340	297	296	427
Honduras	646	314	501	...	470
Mexico	422	594	2 095	519	...
Panama	575	316	471	748	532
USA	6 022	2 761	838	689	436
Argentina	1 822	2 038	1 738	1 788	...
Brazil	1 750	1 200	2 174	4 557	2 848
Colombia	2 345	1 471	1 406	2 132	...
Ecuador	688	355	221	245	327
Peru	2 631	1 097	292	1 796	536
Venezuela	14 664	7 330	2 587	2 837	...
China	(b)* 2 200	(b)* 2 500	(b)* 2 700	765	1 847
Cyprus	186	...	360	239	176
Hong Kong	1 227	2 330	2 716	2 149	2 855
India (d)	776	1 303	...	1 185	1 210
Indonesia	1 323	2 045	1 298	2 071	1 591
Iran (c)	431	343	181	482	...
Israel (b)	* 700	* 1 200	* 1 100	* 1 000	* 1 000
Japan	5 006	6 860	5 327	4 501	5 517
Korea, Republic of	96	345	417	414	159
Malaysia	688	937	1 062	...	1 716
Pakistan (a)	194	408	...	257	...
Philippines	795	628	405	738	211
Saudi Arabia	698	1 867	4 785	1 190	2 674
Singapore	1 139	1 956	1 645	1 943	2 090
Sri Lanka	60	41	...	89	28
Taiwan	4 623	7 150	11 039	6 117	6 920
Thailand	373	105	143	275	243

**Imports of Diatomite**

Country	1987	1988	1989	1990	1991
Australia (a)	5 367	6 285	7 710	6 452	6 623
New Zealand (a)	1 870	2 466	2 549	2 654	2 002

- (a) Years ended 30 June of that stated
- (b) BGS estimates, based on known exports from certain countries
- (c) Years ended 20 March following that stated
- (d) Years ended 31 March following that stated
- (e) Data for the Federal Republic of Yugoslavia only

## Feldspar

## Production of Feldspar

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	5 692	6 422	6 470	6 257	6 417
France	216 000	322 000	360 500	395 840	386 000
Germany, Federal Republic of	310 400	308 800	332 600	337 600	328 800
Greece	8 260	37 531	28 903	17 608	11 800
Italy	1 188 700	1 367 546	1 336 375	1 605 431	1 350 000
Portugal	40 917	51 903	65 855	54 873	* 70 000
Spain (c)	161 631	195 668	191 238	214 152	200 000
Austria	4 692	8 222	7 351	8 788	10 429
Finland	45 817	54 170	51 743	50 905	47 225
Norway (d)	80 016	90 338	59 709	63 440	* 65 000
Poland	57 600	* 50 000	* 50 000	* 45 000	* 45 000
Romania	* 82 000	* 82 000	59 960	* 55 000	* 53 000
Soviet Union	* 330 000	* 330 000	* 330 000	* 300 000	* 250 000
Sweden (e)	34 226	38 180	38 437	41 197	32 000
Turkey	30 336	82 225	84 932	182 266	229 543
Yugoslavia	45 000	35 614	48 276	43 000	* 40 000
Egypt	15 963	6 131	5 527	21 299	32 636
Kenya	—	—	1 112	1 290	—
Morocco	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Nigeria	535	75	945	714	* 700
South Africa	50 930	61 440	52 964	56 124	70 324
Zambia	45	120	20	60	718
Zimbabwe	2 962	3 730	2 697	2 197	3 820
Guatemala	7 079	7 200	10 079	11 895	6 961
Mexico	106 490	83 170	121 978	124 497	138 732
USA	655 000	650 000	655 000	630 000	580 000
Argentina	29 282	39 469	23 688	* 24 000	47 100
Brazil (f)	118 608	109 534	103 891	* 100 000	* 100 000
Chile	705	4 569	8 081	2 980	4 006
Colombia	33 760	30 500	40 850	38 675	75 575
Ecuador	7 876	10 562	7 463	* 8 000	...
Peru	14 552	2 738	* 10 000	* 10 000	3 000
Uruguay	3 016	2 787	2 680	4 311	3 656
Venezuela	43 214	96 744	83 557	100 779	138 369
Hong Kong	22 853	11 050	5 152	3 820	—
India	49 663	57 656	56 690	54 135	65 089
Indonesia	10 664	...	13 025	19 779	13 674
Iran (b)	16 226	14 781	20 458	32 071	64 754
Japan	472 808	504 068	548 084	528 201	536 588
Jordan	63	200	10 300	9 200	2 000
Korea, Republic of	180 269	241 511	232 607	237 447	247 969
Myanmar (a)	5 620	4 938	1 812	1 666	3 759
Pakistan	6 675	9 510	7 703	10 249	10 210
Philippines	11 996	9 199	36 803	46 102	47 979
Sri Lanka	7 442	7 278	1 282	9 750	9 908
Taiwan	28 116	19 101	9 806	7 321	1 339
Thailand	168 881	293 686	515 206	311 249	384 000
Australia	11 499	15 877	* 12 500	* 16 000	* 16 000
World total	4 700 000	5 400 000	5 700 000	5 800 000	5 700 000

## Note(s):

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

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) Including pegmatite

(d) Unground: production of ground withheld

(e) Sold or used by producers

(f) Including beneficiated and directly shipped material

## Exports of Feldspar

Country	1987	1988	1989	1990	1991
United Kingdom	450	823	2 350	2 447	1 017
France	62 775	77 857	119 843	123 367	110 846
Germany, Federal Republic of	27 329	29 131	32 335	33 010	36 678
Italy	29 632	34 557	29 989	29 132	26 308
Netherlands	1 364	1 216	1 608	1 840	1 938
Portugal	(a) 22 706	14 501	10 537	6 999	3 427
Spain	(a) 3 382	2 413	3 060	9 361	10 800
Czechoslovakia (b)	* 6 700	* 2 200	* 4 000	* 900	* 950
Finland	(a) 32 964	34 050	32 328	32 770	31 401
Norway	74 953	69 059	71 763	71 265	79 756
Sweden	(a) 16 047	26 386	20 070	24 211	19 549
Turkey	17 898	20 094	(a) (c) 43 751	(a) (c) 96 546	(a) (c) 162 910
Yugoslavia	3 026	3 576	4 635	6 356	(f) 1 590
South Africa	3 475	4 514	5 797	6 029	2 974
Guatemala (a) (c)	3 946	3 665	4 067	4 993	4 210
Mexico	3 845	5 591	11 764	10 307	...
USA	(a) 8 773	(a) 12 510	9 705	24 795	8 604
Brazil	2 500	6 925	2 242	6 660	3 179
China	(b) (g)* 89 200	(b) (g)* 108 300	(b) (g)* 145 400	222 945	318 804
Hong Kong (c)	77 515	79 524	105 673	146 487	177 932
of which: Re-exports	51 805	56 324	84 473	112 687	151 917
India (d)	44 811	28 593	...	38 182	47 894
Japan	31 281	28 841	34 369	31 331	40 412
Korea, Republic of	19 258	24 101	6 611	24 566	20 805
Singapore (a)	1 597	4 002	7 950	7 524	15 173
of which: Re-exports	1 597	4 002	7 950	7 522	14 581
Thailand	96 644	263 370	380 217	333 739	255 423
Australia (e)	...	...	9 214	12 548	20 751

(a) May include some leucite and nepheline

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

(c) Including some fluorspar

(d) Years ended 31 March following that stated

(e) Years ended 30 June of that stated

(f) Data for the Federal Republic of Yugoslavia only

(g) May include some fluorspar, leucite and nepheline

## Feldspar

## Imports of Feldspar

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	53 985	50 756	46 375	49 010	41 200
Belgium-Luxembourg	19 853	23 799	25 607	19 035	15 525
Denmark	3 837	4 595	3 938	4 083	3 874
France	28 331	29 021	32 008	32 340	40 228
Germany, Federal Republic of	62 299	66 710	78 046	76 606	95 350
Greece	3 357	3 497	4 365	7 812	6 532
Irish Republic	(a) (c) 3 668	3 262	71	43	43
Italy	10 917	23 020	70 866	100 470	158 095
Netherlands	14 425	11 203	9 157	12 739	19 641
Portugal	424	630	1 582	7 340	(a) 13 041
Spain	(a) 32 607	42 837	70 048	81 353	73 575
Austria	(a) 4 716	4 767	4 386	4 944	4 472
German Democratic Republic (a) (b)	* 20 300	* 18 100	* 16 200	* 6 300	—
Hungary	625	545	590	304	...
Norway	82	1 362	751	233	311
Poland	15 578	12 401	12 182	...	...
Sweden	(a) 12 431	10 035	8 410	5 907	8 270
Switzerland	(a) 14 994	16 207	16 459	14 266	12 462
Yugoslavia	1 676	2 373	1 139	1 393	(f) 20
Algeria (a)	1 627	4 116	2 700	2 650	5 201
Egypt (a) (c)	9 079	15 345	11 379	...	...
Morocco (a)	1 022	1 095	648	836	766
Tunisia	1 462	2 041	2 049	2 177	2 418
Canada	(e) 1 691	13 235	3 961	2 589	2 437
Costa Rica (c)	3 907	3 521	4 702	4 621	4 876
Mexico	206	522	1 445	1 431	...
Panama (a) (c)	209	1 517	38	3 164	185
USA	4 384	6 705	12 003	11 318	17 876
Venezuela	1 841	1 077	704	803	776
Hong Kong (c)	69 976	85 947	126 087	178 243	185 599
Indonesia	(a) 14 193	(a) 16 000	18 977	16 723	17 930
Israel (a) (b)	* 6 200	* 2 500	* 2 700	* 3 300	* 3 300
Japan	(a) 17 977	11 709	4 298	12 636	4 440
Jordan (a) (c)	805	1 382	549	669	721
Korea, Republic of	1 905	2 849	2 329	8 728	6 206
Malaysia	(a) (c) 25 846	31 668	41 821	...	97 392
Philippines	(a) (c) 6 516	(a) (c) 3 423	(a) (c) 7 724	(a) (c) 6 258	4 246
Saudi Arabia	(a) (c) 560	(a) (c) 619	(a) (c) 617	(a) (c) 393	701
Singapore (a)	1 613	5 686	13 385	20 889	33 780
Syria (a) (c)	937	...	...	678	...
Taiwan	(a) (c) 224 733	(a) (c) 338 580	479 824	533 896	590 115
Thailand (a)	2 910	879	1 158	1 679	3 115
New Zealand (d)	(a) (c) 758	(a) (c) 912	354	146	257

(a) May include some leucite and nepheline

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

(c) Including some fluorspar

(d) Years ended 30 June of that stated

(e) Exports from the USA

(f) Data for the Federal Republic of Yugoslavia only

## Production of Fluorspar

Country	1987	1988	1989	1990	1991
United Kingdom	120 000	103 797	122 057	118 498	77 903
France	184 300	185 400	208 200	257 896	187 500
Germany, Federal Republic of	85 200	77 700	73 800	85 400	60 900
Greece	112	604	450	* 200	* 200
Italy	135 550	140 885	118 692	125 467	105 000
Spain	151 427	142 575	172 325	148 000	112 000
Czechoslovakia	* 95 000	* 95 000	68 910	46 966	* 40 000
German Democratic Republic	115 600	111 400	99 200	* 80 000	—
Romania	* 18 000	* 18 000	* 16 000	* 15 000	* 14 000
Soviet Union	* 410 500	* 410 500	* 410 000	* 380 000	* 350 000
Sweden	220	—	—	—	—
Turkey	* 10 000	13 240	* 13 000	* 13 000	* 13 000
Egypt	502	1 849	1 611	1 249	* 1 200
Kenya	60 190	67 351	111 300	78 510	80 144
Morocco	78 500	100 500	105 000	87 000	74 600
Namibia	—	3 989	25 679	27 107	27 816
South Africa	316 606	328 421	368 340	311 032	270 341
Tunisia	43 300	56 000	53 700	40 974	38 000
Canada	* 10 000	* 40 000	* 50 000	* 25 000	—
Mexico	723 594	756 096	779 357	633 814	370 297
USA	* 63 500	* 63 500	* 66 000	* 63 500	* 58 000
Argentina	54 975	18 052	23 317	* 20 000	14 800
Brazil (a)	88 944	89 998	106 638	84 480	81 313
China	* 1 000 000	* 1 400 000	1 680 000	1 650 000	* 1 600 000
India	18 457	20 392	28 065	* 21 700	* 22 000
Iran (b)	7 352	6 483	* 6 000	4 767	6 000
Korea, Dem. P.R. of	* 40 000	* 40 000	* 40 000	* 40 000	* 41 000
Korea, Republic of	63	261	856	560	290
Mongolia	843 000	919 000	999 000	884 000	370 000
Pakistan	3 673	375	4 741	5 312	1 349
Thailand	102 398	76 321	98 375	94 757	62 067
World total	4 800 000	5 300 000	5 900 000	5 300 000	4 100 000

## Note(s):

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

(a) Including beneficiated and directly shipped material

(b) Years ended 20 March following that stated

## Fluorspar

**Exports of Fluorspar**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	4 732	8 115	8 439	3 983	3 938
Belgium-Luxembourg	—	3 069	3 715	4 130	3 753
France	47 046	38 564	57 842	40 204	32 045
Germany, Federal Republic of	20 463	24 897	27 207	41 232	33 780
Italy	37 732	19 674	1 381	4 958	5 955
Netherlands	461	1 863	964	1 704	1 235
Spain	90 970	72 720	51 600	54 787	40 644
German Democratic Republic (b)	* 33 500	* 27 700	* 15 500	* 15 800	—
Sweden	1 458	2 108	1 600	1 514	912
Kenya	45 681	98 105	...	...	...
Morocco	87 708	89 694	108 664	81 748	76 300
South Africa	281 427	313 186	323 410	245 695	247 338
Tunisia	8 536	15 000	11 070	1 945	1 039
Canada	(c) 5 596	38 301	40 123	22 620	1 599
Mexico	474 774	509 444	554 390	379 086	225 218
USA	2 679	3 163	6 486	16 261	74 590
China	775 848	911 976	1 183 533	1 094 047	933 694
Japan	(a) 245	1 558	506	338	582
Thailand	114 542	25 487	73 864	79 695	84 210

(a) May include some leucite and nepheline

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

(c) Imports into the USA



## Imports of Fluorspar

Country	1987	1988	1989	1990	1991
United Kingdom (b)	* 17 900	* 26 700	* 16 000	* 12 800	* 6 500
Belgium-Luxembourg	10 643	17 663	17 109	20 442	12 725
Denmark	491	420	445	453	448
France	14 554	14 220	21 852	18 440	28 571
Germany, Federal Republic of	190 138	242 761	254 641	225 582	205 145
Greece	13 839	4 597	1 050	20 288	4 482
Italy	67 317	65 528	104 246	115 071	91 746
Netherlands	30 330	35 963	26 045	30 520	18 122
Portugal	2 716	2 230	2 049	1 963	603
Spain	1 387	7 628	4 924	5 015	4 714
Albania (b)	* 1 000	* 200	...	...	...
Austria	13 919	11 387	16 779	19 756	15 994
Bulgaria (b)	* 300	* 700	* 500	* 500	...
Finland	8 260	7 548	7 851	8 654	6 709
Hungary	5 912	4 124	5 454	1 706	...
Norway	46 804	48 942	44 238	47 070	56 994
Poland	22 898	17 685	4 695	...	...
Romania (b)	* 4 800	...	...	* 17 200	* 16 200
Soviet Union (b)	...	...	...	* 165 700	* 2 500
Sweden	10 956	11 832	13 915	11 407	9 550
Switzerland	...	696	860	998	575
Turkey	80	436	446	595	1 003
Yugoslavia	8 280	10 349	4 838	6 036	(f) 695
Algeria	26	369	100	5	...
Egypt (a) (c)	9 079	15 345	11 379	...	...
Tunisia	2 840	2 798	1 805	6 575	13 337
Canada	134 567	194 057	162 664	151 255	112 093
Costa Rica (c)	3 907	3 521	4 702	4 621	4 876
Mexico	65	46 399	47 265	33 308	...
Panama (a) (c)	209	1 517	38	3 164	185
USA	542 319	693 412	655 410	502 971	368 197
Brazil	14 591	—	2 344	5 139	9 542
Chile	(b)* 4 300	(b)* 3 400	9 929	1 533	4 460
Peru	279	382	184	1 420	284
Venezuela	1 203	1 209	659	607	479
Hong Kong (c)	69 976	85 947	126 087	178 243	185 599
India (e)	19 431	23 346	...	41 266	31 839
Japan	527 545	609 113	708 957	567 023	565 831
Jordan (a) (c)	805	1 382	549	669	721
Korea, Republic of	61 752	50 453	74 503	52 936	72 030
Malaysia	(a) (c) 16 799	1 660	1 784	...	2 224
Philippines	(a) (c) 6 516	(a) (c) 3 423	(a) (c) 7 724	(a) (c) 6 258	1 687
Saudi Arabia (a) (c)	560	619	617	393	—
Syria (a) (c)	937	...	...	678	...
Taiwan	(a) (c) 224 733	(a) (c) 338 580	14 587	25 431	25 956
Thailand	754	2	—	42	127
Australia (d)	29 923	22 726	16 725	28 223	19 681
New Zealand (d)	(a) (c) 758	(a) (c) 912	91	304	63

(a) May include some leucite and nepheline

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

(c) Including some feldspar

(d) Years ended 30 June of that stated

(e) Years ended 31 March following that stated

(f) Data for the Federal Republic of Yugoslavia only

## Graphite

**Production of Graphite**

tonnes

Country	1987	1988	1989	1990	1991
Germany, Federal Republic of (b)	9 900	9 700	10 600	10 400	8 900
Austria (a)	39 391	7 577	15 307	22 705	19 750
Czechoslovakia	12 763	14 304	14 676	12 171	* 12 000
Norway	—	—	1 800	6 930	760
Romania	* 12 000	* 12 000	10 000	* 10 000	* 10 000
Soviet Union	84 000	* 84 000	* 84 000	* 80 000	* 75 000
Turkey	11 760	12 911	11 873	18 712	25 867
Madagascar	13 569	14 564	15 865	18 036	14 078
Zimbabwe	13 530	11 441	18 147	16 384	12 903
Canada	* 2 000	* 6 000	7 000	14 500	10 323
Mexico	38 461	49 607	40 246	24 916	30 165
Brazil (c)	41 919	52 789	45 899	43 000	* 44 000
China	* 185 000	* 200 000	494 400	678 900	* 600 000
India	26 864	57 325	47 731	50 000	50 000
Korea, Dem. P.R. of	* 25 000	* 25 000	* 35 000	* 35 000	* 35 000
Korea, Republic of	107 345	108 445	101 468	99 600	76 791
Sri Lanka	6 718	6 394	3 993	5 558	6 409
World total	630 000	672 000	958 000	1 147 000	1 032 000

## Note(s):

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

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

(a) Crude

(b) Including production from imported crude graphite

(c) Including beneficiated and directly shipped material

## Exports of Graphite

Country	1987	1988	1989	1990	1991
United Kingdom	3 184	3 250	3 416	2 888	2 681
France	567	616	726	562	473
Germany, Federal Republic of	10 287	9 981	13 175	9 101	7 557
Italy	342	426	913	456	500
Netherlands	514	1 283	1 890	1 880	2 082
Spain	72	296	749	628	138
Austria	8 330	8 926	8 723	8 376	6 018
Czechoslovakia (a)	* 3 100	* 2 900	* 3 200	* 3 000	* 1 900
Norway	56	24	818	6 686	1 137
Madagascar	11 141	...	15 049	6 875	13 554
South Africa (a)	* 400	* 1 200	* 1 700	* 1 900	* 1 500
Zimbabwe	12 503	9 934	...	13 930	11 080
Canada	* 2 000	6 101	999	10 530	8 535
Mexico	19 598	22 843	18 645	10 016	...
USA	11 700	28 201	21 583	11 863	19 574
Brazil	9 986	12 706	13 006	8 491	7 298
China	(a)* 88 200	(a)* 105 200	(a)* 142 700	141 234	153 061
Hong Kong (c)	3 781	3 930	3 840	1 576	2 410
India (b)	312	247	...	2 790	653
Japan	2 019	1 767	2 059	1 314	1 484
Korea, Dem. P.R. of (a)	* 6 600	* 9 200	* 12 400	* 10 000	* 11 000
Korea, Republic of	56 827	51 537	52 629	48 697	29 925
Sri Lanka	10 388	8 958	4 338	4 654	2 376
Taiwan	178	70	144	16	27

## Note(s):

(1) This table excludes synthetic graphite

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

(b) Years ended 31 March following that stated

(c) Re-exports

## Imports of Graphite

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	19 729	23 437	28 447	24 767	15 050
Belgium-Luxembourg	824	578	1 288	700	879
Denmark	1 068	1 599	1 445	1 748	1 579
France	5 864	5 707	6 424	5 203	4 374
Germany, Federal Republic of	30 504	30 264	43 061	35 828	27 794
Greece	741	656	1 351	1 243	354
Italy	7 465	6 792	10 840	12 271	30 281
Netherlands	1 726	2 306	3 392	4 467	2 305
Portugal	541	241	281	202	356
Spain	4 692	4 108	5 161	4 413	2 442
Austria	2 083	3 291	8 362	2 933	5 051
Bulgaria (d)	* 1 700	* 1 000	* 1 100	* 150	* 50
Czechoslovakia (d)	* 300	* 300	* 400	* 600	* 200
Finland	115	77	301	188	100
German Democratic Republic	4 947	5 338	5 643	...	—
Hungary	2 270	4 690	1 602	1 282	...
Norway	233	61	146	180	626
Poland	4 066	4 957	4 108	...	...
Sweden	789	599	456	627	701
Switzerland	187	158	150	210	202
Turkey	509	453	725	1 436	2 366
Yugoslavia	2 415	2 560	2 458	1 802	(f) 474
Egypt	1 365	859	1 036	...	...
Mauritius	...	1 813	737	416	...
South Africa	3 182	3 894	4 287	5 094	...
Canada	(e) 8 621	9 237	6 047	6 278	5 414
Mexico	399	1 181	1 229	1 747	...
USA	43 334	53 830	69 597	50 213	33 575
Argentina	435	553	1 317	1 202	...
Venezuela	1 014	1 560	637	1 620	1 946
Hong Kong	4 104	2 995	4 593	1 394	2 546
India (c)	423	457	...	315	206
Indonesia	704	448	766	1 687	1 761
Iran (a)	653	144	133	2 666	...
Japan	94 268	96 611	119 251	126 527	122 650
Korea, Republic of	3 784	5 942	6 341	23 692	11 917
Kuwait	650	632	784	...	...
Malaysia	734	697	718	...	705
Pakistan (b)	2 630	2 433	...	2 627	...
Philippines	365	328	213	231	235
Singapore	314	587	715	1 002	1 240
Taiwan	8 390	14 890	10 106	7 393	13 429
Thailand	1 138	665	1 275	984	838
Australia (b)	1 551	2 176	2 773	2 086	1 557
New Zealand (b)	121	75	23	91	109

## Note(s):

(1) This table excludes synthetic graphite

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

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

(e) Exports from the USA

(f) Data for the Federal Republic of Yugoslavia only

## Production of Gypsum

Country	1987	1988	1989	1990	1991
United Kingdom	3 420 000	3 700 000	3 570 000	3 100 000	* 2 500 000
France	5 409 000	5 628 000	5 684 000	5 796 000	5 934 000
Germany, Federal Republic of					
Gypsum	1 397 300	1 451 300	1 367 300	1 427 500	1 450 600
Anhydrite	309 700	291 400	* 350 000	400 000	300 000
Greece	665 144	599 011	540 637	630 243	664 897
Irish Republic	284 200	326 500	314 400	394 800	342 800
Italy	1 215 000	1 300 000	1 230 544	1 262 228	* 1 200 000
Luxembourg	* 400	* 400	* 400	* 400	* 400
Portugal	323 035	338 029	* 300 000	* 300 000	* 300 000
Spain	6 684 653	7 468 618	* 5 500 000	* 5 000 000	* 5 000 000
Austria					
Gypsum	578 614	624 101	693 711	633 054	558 348
Anhydrite	86 437	97 644	111 943	118 591	96 246
Bulgaria					
Gypsum	306 000	* 350 000	(a) 499 600	(a) 494 391	(a) 450 000
Anhydrite	103 000	* 100 000	...	...	...
Czechoslovakia (a)	770 998	774 133	796 000	744 000	* 700 000
German Democratic Republic	1 134 000	1 155 000	1 062 000	* 1 150 000	—
Hungary	100 400	117 845	115 000	189 933	128 175
Poland (a)	1 127 000	1 110 000	1 416 000	915 000	788 000
Romania	* 1 500 000	* 1 600 000	* 1 400 000	* 800 000	* 600 000
Soviet Union	4 781 000	4 902 000	4 900 000	4 500 000	* 4 000 000
Switzerland	* 230 000	* 230 000	* 230 000	* 230 000	* 230 000
Turkey	301 743	231 218	213 731	171 518	307 246
Yugoslavia	553 000	555 231	543 819	534 650	426 000
Algeria	* 275 000	* 275 000	* 275 000	* 250 000	152 400
Angola	* 20 000	* 57 000	* 57 000	* 57 000	* 57 000
Egypt (f)	1 088 472	1 337 000	1 309 426	1 279 000	* 1 250 000
Ethiopia	* 1 400	* 1 900	* 2 100	* 2 200	* 1 900
Kenya	38 819	37 565	36 478	36 000	* 36 000
Libya	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Mauritania	19 402	6 033	6 350	3 600	2 839
South Africa	349 079	372 169	406 743	390 765	420 146
Sudan	8 500	10 000	28 000	30 000	...
Tanzania	29 645	19 570	5 895	36 155	8 765
Tunisia	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Canada (a)	9 949 000	9 430 000	9 179 000	8 790 000	6 830 000
Cuba	* 130 000	* 130 000	* 130 000	* 150 000	* 150 000
Dominican Republic	59 777	66 261	* 70 000	78 146	117 600
El Salvador	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Guatemala	53 323	35 371	57 268	65 560	51 519
Honduras	* 22 000	* 22 000	* 25 000	* 25 000	* 25 000
Jamaica	176 300	145 500	78 010	82 210	135 840
Mexico	4 575 416	4 779 827	5 390 391	5 433 804	5 500 000
Nicaragua	7 299	* 7 000	* 7 000	13 444	16 200
USA	14 163 120	14 868 880	15 988 300	14 883 120	14 021 000
Argentina	618 817	520 153	402 399	* 400 000	437 700
Brazil (e)	659 217	637 714	706 651	* 700 000	* 800 000
Chile	235 173	315 904	277 276	253 744	335 678
Colombia	302 100	307 236	553 025	608 328	638 744
Ecuador	30 666	8 118	10 670	24 122	24 000
Paraguay	3 100	3 600	4 500	4 500	* 4 500
Peru	34 218	* 150 000	* 160 000	* 150 000	* 150 000
Uruguay	142 629	145 105	* 145 000	* 145 000	* 145 000
Venezuela	247 312	221 532	318 521	248 522	243 998
Afghanistan	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
China	* 7 200 000	* 8 100 000	9 010 000	10 420 000	10 500 000
Cyprus	45 700	32 710	10 980	37 000	18 300
India	1 733 720	1 424 674	1 539 276	1 661 000	1 553 000
Iran (c)	7 109 867	7 648 475	7 858 283	7 724 265	8 050 000
Iraq	* 350 000	* 350 000	* 450 000	* 380 000	* 190 000
Israel	35 000	31 181	* 31 000	* 38 000	25 570
Jordan	114 560	84 866	132 400	92 700	55 300
Laos	* 70 000	80 000	104 000	* 115 000	* 100 000

## Gypsum

**Production of Gypsum**

tonnes

Country	1987	1988	1989	1990	1991
Lebanon	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Mongolia	* 32 000	* 32 000	* 32 000	* 32 000	* 27 000
Myanmar (b)	22 895	31 716	31 396	30 888	36 070
Pakistan (a)	449 013	374 258	466 969	477 671	521 891
Philippines	16 299	2 250	2 500	2 000	...
Saudi Arabia	134 976	151 722	160 766	* 160 000	* 160 000
Syria	248 000	179 000	180 000	175 451	* 175 000
Taiwan	1 378	2 438	3 904	1 743	3 723
Thailand	3 030 919	4 549 010	5 477 237	5 753 351	7 196 390
Vietnam	* 25 000	* 25 000	* 25 000	* 25 000	* 30 000
Yemen, Republic of (d)	150 000	160 000	* 160 000	* 160 000	100 000
Australia	1 580 331	1 655 956	* 1 800 000	* 1 800 000	* 2 000 000
World total	87 200 000	92 100 000	94 200 000	92 300 000	88 600 000

(a) Including anhydrite

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

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

(e) Including beneficiated and directly shipped material

(f) Years ended 30 June of that stated

## Exports of Gypsum

Country	1987	1988	1989	1990	1991
United Kingdom					
Crude	1 951	1 378	1 903	2 015	7 904
Calcined	10 195	12 176	15 128	14 496	14 066
Belgium-Luxembourg					
Crude	37 366	25 970	20 551	11 053	14 740
Calcined	94 073	102 402	98 677	116 974	121 005
Denmark					
Crude & calcined	3 886	4 716	1 349	5 059	36 908
of which: Re-exports	3 189	3 994	164	1 737	1 017
France					
Crude	941 296	915 105	769 463	759 277	802 935
Calcined	228 276	241 979	235 425	255 497	269 088
Germany, Federal Republic of					
Crude	188 384	184 425	164 413	235 071	279 192
Calcined	189 072	227 885	270 880	241 219	536 372
Greece	99 430	4 928	2 069	36 432	23 235
Irish Republic					
Crude	5 557	20 239	33 864	46 839	41 354
Calcined	46 359	35 776	35 268	34 707	33 067
Italy					
Crude	8 488	658	2 654	5 563	10 681
Calcined	4 799	12 735	13 133	15 320	16 093
Netherlands					
Crude	97 978	74 852	44 191	66 037	52 794
Calcined	11 945	9 759	44 085	6 658	10 639
Spain					
Crude	2 579 764	2 785 429	2 429 382	2 647 446	2 357 353
Calcined	15 608	29 108	39 792	93 173	111 557
Austria					
Crude	64 217	66 137	74 290	79 072	67 437
Calcined	53 062	61 612	77 047	80 867	91 937
German Democratic Republic					
Calcined	83 596	95 051	76 646	...	—
Poland	...	...	32	1 667	21 379
Romania (a)	* 12 700	* 11 100	...	...	...
Soviet Union (a)	* 18 300	* 21 900	* 19 500	* 4 500	* 9 800
Sweden					
Crude & calcined	326	281	636	814	649
Switzerland					
Crude & calcined	18 972	13 827	15 283	13 265	14 692
Turkey					
Crude & calcined	1 280	14 227	611	2 127	1 342
Yugoslavia	9 145	16 158	8 183	47 137	(f) 327
Kenya	72	4 003	...	...	...
Morocco					
Crude	(d) 130 368	203 250	236 950	164 202	144 993
Calcined	...	662	2 892	649	2 152
South Africa	—	—	—	78	1 015
Tunisia					
Crude & calcined	1 200	1 571	2 654	1 252	2 451
Zimbabwe					
Crude	6 000	...	...	...	...
Canada					
Crude	5 723 359	5 680 756	5 195 621	5 804 951	4 963 732
Calcined	...	20 037	18 637	769	9 989
Dominican Republic	71 887	105 739	88 020	42 134	...
Guatemala	33 186	15 252	17 623	11 058	8 824
Jamaica	117 577	89 497	37 584	59 473	...
Mexico	2 183 696	2 241 219	2 603 744	2 065 277	2 629 636
USA					
Crude	3 417	4 423	98 152	170 926	213 580
Calcined	111 899	241 718	96 611	85 514	87 048
Argentina	12 350	20 334	14 396	16 030	...
Venezuela	—	1	13 101	38 059	30 813
Abu Dhabi					
Crude & calcined	3 513	2 167	...	430	...
China	(a)* 30 500	(a)* 32 200	(a)* 34 500	130 797	153 878

## Gypsum

**Exports of Gypsum**

tonnes

Country	1987	1988	1989	1990	1991
Cyprus					
Crude	11 749	17 500	2 901	30 114	11 965
Calcined	4 158	...	237	64	127
Hong Kong (c)	4 960	2 928	19 859	7 736	16 205
India (b)	5 879	5 785	...	8 903	15 006
Indonesia					
Crude	80 421	116 213	110 753	81 639	89 300
Japan					
Crude	866	1 061	780	1 553	2 677
Calcined	4 166	4 835	5 166	4 253	4 896
Korea, Republic of					
Crude	12	11 205	16 220	11 032	82
Calcined	70	83	345	463	1 305
Philippines					
Crude	61 227	60 790	94 638	53 443	9 750
Saudi Arabia					
Crude & calcined	18 593	25 228	31 394	25 175	28 149
Singapore					
Crude & calcined	5 040	7 279	9 215	4 968	7 257
of which: Re-exports	4 656	6 386	7 515	4 253	6 230
Syria	72 606	...	...	59 974	...
Taiwan	741	1 747	3 068	3 299	6 295
Thailand					
Crude	1 147 271	3 833 944	8 735 772	11 727 007	11 157 399
Calcined	324 888	20 734	26 637	31 324	37 147
Australia					
Crude & calcined (e)	382 400	127 102	83 646	10 072	59 002

## Note(s):

- (1) In this table the term 'crude' may include some anhydrite
- (a) BGS estimates, based on known imports into certain countries
- (b) Years ended 31 March following that stated
- (c) Re-exports
- (d) Including calcined
- (e) Years ended 30 June of that stated
- (f) Data for the Federal Republic of Yugoslavia only



## Imports of Gypsum

Country	1987	1988	1989	1990	1991
United Kingdom					
Crude	88 461	169 119	132 501	262 557	283 803
Calcined	55 645	64 501	71 304	169 051	254 301
Belgium-Luxembourg					
Crude	436 366	516 063	459 122	489 572	496 249
Calcined	148 755	179 578	217 474	213 077	233 123
Denmark					
Crude	248 719	293 946	323 213	272 216	260 548
Calcined	10 357	23 836	19 764	49 253	58 865
France					
Crude	120 361	169 547	138 025	116 614	163 578
Calcined	38 765	59 784	47 525	31 321	21 651
Germany, Federal Republic of					
Crude	698 306	590 642	483 064	416 793	426 183
Calcined	86 260	154 656	206 096	196 191	201 297
Greece					
Crude	164	156	129	214	86
Calcined	780	742	1 039	1 466	1 341
Irish Republic					
Crude	4 896	1 550	562	3 419	799
Calcined	3 348	5 335	5 624	6 041	4 625
Italy					
Crude	4 875	12 258	11 272	27 203	21 941
Calcined	11 782	15 122	28 551	45 820	51 448
Netherlands					
Crude	316 316	340 126	330 515	263 521	178 051
Calcined	192 993	207 383	248 017	245 234	181 372
Portugal					
Crude	48 095	(c) 63 997	(c) 75 732	(c) 85 763	59 383
Calcined	5 675	...	...	...	38 635
Spain					
Crude	7	143 431	39 778	11 939	4 456
Calcined	1 100	1 513	13 396	33 189	24 283
Austria					
Crude	5 160	5 002	4 758	4 853	29 831
Calcined	7 222	5 515	7 149	8 368	19 311
Czechoslovakia	20 000	24 000	23 000	...	...
Finland					
Crude	218 806	203 648	258 410	242 744	185 854
Calcined	3 374	4 786	7 094	6 580	7 748
Hungary					
Calcined	69 686	76 984	...	38 292	...
Iceland	6 683	9 993	5 739	6 408	6 197
Norway					
Crude	130 280	38 208	13 245	5 853	56 711
Calcined	100 525	221 321	247 905	285 631	253 046
Sweden					
Crude	406 680	492 098	521 192	500 874	441 707
Calcined	11 532	9 969	10 277	11 120	8 107
Switzerland					
Crude	132 730	65 281	59 933	56 594	53 488
Ground & calcined	48 379	49 923	62 025	72 064	68 443
Turkey	35 173	35 890	35 873	23 358	1 999
Cameroon					
Crude & calcined	36 491	...	33 170	...	...
Egypt	1 126	...	...	...	...
Ghana	18 468	5 104	...	...	...
Ivory Coast					
Crude	...	27 622	...	...	...
Calcined	...	3 897	...	...	...
Kenya	2 148	18 803	...	...	...
Liberia					
Crude & calcined	5 049	...	...	...	...
Reunion					
Crude & calcined	11 660	8 121	...	...	...
Senegal					
Crude	8 574	12 282	15 930	(c) 14 546	...
Calcined	1 160	1 575	1 013	...	...

## Gypsum

## Imports of Gypsum

tonnes

Country	1987	1988	1989	1990	1991
South Africa					
Crude & calcined	12 215	38 338	34 828	22 256	23 365
Togo					
Crude & calcined	10 937	18 000	16 285	23 099	...
Tunisia					
Crude & calcined	478	679	393	562	515
Zaire					
Crude & calcined	* 13 300	* 5 600	...	...	...
Zambia					
Crude & calcined	10	10 010	3 187	5 469	...
Zimbabwe					
Crude & calcined	31	6 338	...	11	...
Bahamas	404	2 925	511	522	685
Canada					
Crude	217 624	275 362	291 033	303 395	255 538
Calcined	25 898	* 30 000	32 901	33 401	29 353
Costa Rica					
Crude & calcined	15 420	26 880	29 697	28 289	30 225
El Salvador					
Crude & calcined	21 029	11 547	16 151	9 761	9 807
Guadeloupe	10 918	17 651	9 192	15 079	12 660
Martinique	12 459	17 833	11 039	16 995	12 318
Mexico					
Crude	1 581	29 449	10 203	38 123	...
Calcined	4 079	4 874	4 822	4 143	...
Panama	9 532	13 045	...	14 899	16 490
Trinidad & Tobago					
Crude & calcined	6 815	12 224	13 925	19 650	24 688
USA					
Crude	8 815 373	8 780 753	8 440 848	7 916 468	6 921 348
Ground & calcined	2 344	2 638	2 346	1 324	10 029
Colombia	35 982	34 822	32 121	66 042	57 047
Ecuador	31 874	65 820	30 790	8 475	68 962
Paraguay					
Crude & calcined	3 375	5 070	...	5 667	...
Uruguay					
Crude & ground	1 225	8 929	...	...	1 409
Venezuela	50 785	94 885	63 203	34 464	110 845
Abu Dhabi	2 947	3 684	...	9 167	9 498
Bahrain	2 891	8 719	7 742	...	...
Hong Kong	124 717	113 482	132 623	77 441	90 446
Indonesia	122 373	92 531	141 394	248 631	234 464
Israel (a)	* 1 800	* 5 200	* 3 400	* 5 500	* 6 500
Japan					
Crude	1 468 129	2 909 802	3 245 275	3 632 538	3 947 570
Calcined	2 693	4 244	13 755	4 735	6 849
Jordan	2 701	686	1 887	2 524	3 221
Korea, Republic of	198 680	395 178	203 261	234 443	402 282
Kuwait	86 558	71 726	105 034	48 243	3 197
Macao	28 162	30 521	27 355	28 147	22 717
Malaysia					
Crude & calcined	137 416	178 213	223 265	...	269 100
Oman	1 630	1 629	1 357	1 363	...
Philippines					
Crude	122 681	170 764	210 390	157 634	195 879
Calcined	5 222	7 613	6 934	7 978	9 960
Qatar	4 186	5 540	6 689	8 150	9 895
Saudi Arabia	21 367	61 963	69 858	51 876	49 841
Singapore					
Crude & calcined	77 647	53 960	51 702	67 949	74 316
Sri Lanka	23 621	20 858	...	12 202	10 771
Taiwan					
Crude	155 631	412 782	480 927	460 567	536 399
Calcined	30 215	16 843	2 859	2 068	2 970
Thailand					
Crude & calcined	22 231	1 862	35 739	21 357	11 135

**Imports of Gypsum**

Country	1987	1988	1989	1990	1991
Australia (b)	2 559	1 906	1 960	1 760	52 469
Fiji	3 166	17	...	...	...
New Caledonia					
Crude & calcined	4 227	4 067	6 204	5 122	5 277
New Zealand (b)					
Crude	136 846	176 869	83 374	127 461	93 776
Calcined	218	83	0	0	601

## Note(s):

- (1) In this table the term 'crude' may include some anhydrite
- (a) BGS estimates, based on known exports from certain countries
- (b) Years ended 30 June of that stated
- (c) Including calcined

## Iodine

**Production of Iodine**

kilograms

Country	1987	1988	1989	1990	1991
Soviet Union	* 2 000 000	* 2 000 000	* 2 000 000	* 1 900 000	* 1 800 000
USA	* 1 000 000	1 015 000	1 508 000	1 973 000	1 999 000
Chile	3 181 000	4 035 000	4 881 000	5 000 000	5 700 000
China	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Indonesia	8 227	9 753	14 275	59 820	36 353
Japan	7 014 000	7 451 000	7 592 000	7 581 000	7 502 000
World total	13 700 000	15 000 000	16 500 000	17 000 000	17 500 000

## Exports of Iodine

Country	1987	1988	1989	1990	1991
United Kingdom	145 488	149 883	74 951	288 723	90 674
Belgium-Luxembourg	21 100	36 700	100	26 100	23 000
Denmark	144 400	—	3 100	300	—
France	75 000	68 500	30 000	37 000	10 000
Germany, Federal Republic of	71 500	123 500	138 900	295 000	401 900
Italy	3 600	10 100	63 000	140 000	2 500
Netherlands	6 000	7 000	168 000	214 000	...
Portugal	100	1 000	...	...	...
Spain	5 362	7 000	865 000	8 000	8 000
Switzerland	...	7 376	7 753	7 131	465 816
Chile	3 099 750	3 954 342	4 639 700	3 980 490	5 410 750
Hong Kong (b)	2 475	15 201	12 763	2 076	31 241
Indonesia	—	—	12 500	18 550	37 000
Japan	(a) 6 091 360	6 120 490	6 136 161	5 192 230	4 792 500
Taiwan	3 350	3 601	611	—	3 000

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

(b) Re-exports

## Iodine

## Imports of Iodine

kilograms

Country	1987	1988	1989	1990	1991
United Kingdom	1 665 688	1 602 149	1 487 554	1 440 525	1 658 860
Belgium-Luxembourg	129 300	16 000	83 300	32 100	27 200
Denmark	26 700	4 300	26 400	7 200	10 200
France	1 142 700	859 700	931 000	881 000	827 000
Germany, Federal Republic of	1 087 800	916 500	1 112 000	1 414 400	1 205 600
Greece	1 000	750	1 000	1 000	53 000
Italy	726 700	991 200	1 107 000	848 000	878 000
Netherlands	355 000	547 000	809 000	502 000	494 000
Portugal	14 300	22 000	24 000	24 000	...
Spain	335 000	318 000	373 000	351 000	572 000
Austria	...	3 500	4 200	3 000	3 800
Finland	...	6 000	7 000	3 000	8 000
Hungary	47 500	35 400	...	...	...
Norway	...	943 000	602 000	559 000	680 000
Romania (c)	* 7 600	* 22 900	* 25 900	...	...
Soviet Union (c)	* 85 800	* 35 000	* 34 000	* 38 000	* 45 000
Sweden	...	5 000	10 000	3 000	5 000
Switzerland	...	37 554	61 496	100 024	84 628
Turkey	5 638	3 603	...	...	...
Yugoslavia	5 000	12 000	14 000	7 000	(d) 11 000
Algeria	1 406	746	1 728	864	...
Morocco	...	485	1 138	405	138
South Africa	...	14 270	13 542	12 352	...
Tunisia	—	950	1 319	1 446	1 741
Canada	89 000	36 734	44 722	103 699	107 856
Mexico	207 000	173 974	260 903	152 205	...
USA	3 143 411	3 228 608	3 313 556	2 847 621	3 503 729
Argentina	16 000	13 000	...	...	...
Brazil	179 031	182 039	281 884	176 431	...
Colombia	...	9 439	1 851	17 859	...
Ecuador	4 000	...	...	...	...
Peru	1 530	1 752	1 000	822	3 080
Uruguay	10 900	900	...	...	4 500
Venezuela	24 364	21 667	5 791	...	...
China (c)	* 2 000	* 117 000	* 123 000	* 309 000	* 333 000
Hong Kong	2 426	15 800	11 940	2 780	29 600
India (a)	593 843	726 338	...	888 437	664 620
Indonesia	16 397	20 620	20 008	5 127	5 226
Japan	...	58 915	291 352	289 076	393 970
Korea, Republic of	13 213	10 805	12 782	13 571	13 713
Pakistan (b)	12 284	29 627	...	39 465	...
Taiwan	33 241	27 555	32 680	24 545	25 835
Thailand	5 429	2 987	5 968	6 337	7 960
Australia (b)	18 150	22 710	21 536	18 567	12 034
New Zealand (b)	...	5 176	11 062	12 413	14 495

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

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

(d) Data for the Federal Republic of Yugoslavia only

## Production of Kaolin

Country	1987	1988	1989	1990	1991
United Kingdom (a)	3 058 821	3 276 795	3 139 672	3 037 486	2 911 484
Belgium	* 45 000	* 40 000	* 35 000	* 35 000	* 30 000
Denmark	9 304	39 554	16 029	17 423	17 057
France	309 000	337 000	281 000	370 130	343 800
Germany, Federal Republic of (g)	553 000	612 000	673 000	601 000	557 000
Greece	144 634	127 395	67 234	169 986	189 235
Italy	57 074	71 522	64 196	67 321	* 67 500
Portugal	116 687	101 365	101 029	71 151	* 74 000
Spain (c)	450 968	589 000	380 636	* 375 000	* 350 000
Albania	7 960	8 200	10 053	8 256	2 000
Austria	91 537	89 491	85 310	81 265	72 361
Bulgaria	281 000	220 000	203 000	186 467	* 180 000
Czechoslovakia (h)	581 000	579 000	557 000	533 000	425 000
Finland	4 754	5 494	5 718	7 026	6 879
German Democratic Republic	* 150 000	* 165 000	* 150 000	* 115 000	—
Hungary (c)	38 468	34 901	28 612	22 000	18 000
Poland	60 300	69 530	61 604	48 100	44 100
Romania	* 400 000	* 400 000	* 400 000	* 250 000	* 200 000
Soviet Union	* 2 000 000	* 2 000 000	* 2 000 000	* 1 800 000	* 1 600 000
Turkey	126 119	204 478	238 251	251 182	186 517
Yugoslavia	255 772	218 673	254 949	198 513	(k)* 190 000
Algeria	15 700	17 800	18 000	18 000	21 460
Burundi	5 290	4 021	4 305	5 281	6 682
Egypt (d)	125 256	124 122	121 515	149 000	* 150 000
Madagascar	1 427	365	1 315	485	496
South Africa	151 730	152 500	139 711	132 421	134 485
Tanzania	2 522	1 666	1 534	2 021	1 738
Zimbabwe	780	95	17	—	65
Mexico	151 104	162 415	141 519	156 140	166 640
USA (e)	8 007 911	8 973 089	8 973 668	9 143 000	9 575 000
Argentina	100 128	93 871	45 598	* 50 000	61 000
Brazil (b)	742 825	867 902	911 780	* 800 000	* 850 000
Chile	44 533	54 464	58 512	32 416	63 083
Colombia (j)	366 300	408 141	540 000	* 540 000	...
Ecuador	7 120	3 399	11 018	15 580	* 25 000
Paraguay	72 000	76 000	74 000	* 74 000	* 74 000
Peru	626	8 849	* 7 000	* 8 000	* 8 000
Venezuela	29 604	24 357	16 076	14 636	38 882
Bangladesh (d)	12 272	10 097	7 092	7 223	7 338
China	* 500 000	* 500 000	* 500 000	* 600 000	* 700 000
India (i)	93 720	107 381	110 505	104 000	* 110 000
Indonesia	122 046	147 109	170 000	160 098	139 915
Iran	* 70 000	* 100 000	* 90 000	* 45 000	* 60 000
Israel	* 29 000	30 600	33 280	42 212	53 000
Japan	172 781	167 771	155 073	164 802	129 942
Jordan	11 336	23 452	38 600	38 800	46 200
Korea, Republic of	587 000	774 000	1 134 000	1 446 598	1 755 225
Malaysia	96 882	116 869	108 347	152 972	186 699
Pakistan	32 208	40 422	39 907	46 947	44 738
Philippines	5 370	4 730	* 5 000	...	...
Sri Lanka	6 769	7 097	15 760	7 734	7 622
Taiwan	67 525	81 879	98 115	105 084	92 970
Thailand (h)	184 179	223 252	176 558	208 348	256 276

## Kaolin

**Production of Kaolin**

tonnes

Country	1987	1988	1989	1990	1991
Australia (c) (f)	176 958	159 067	* 185 000	* 200 000	* 190 000
New Zealand	25 548	29 649	26 324	25 435	21 338
World total	20 800 000	22 700 000	22 700 000	22 700 000	23 000 000

- (1) In addition to the countries listed, Lebanon and Vietnam are believed to produce kaolin
- (a) Sales
- (b) Including beneficiated and directly shipped material
- (c) Including beneficiated material
- (d) Years ended 30 June of that stated
- (e) Sold or used by producers
- (f) White clays; including kaolin and ball clay
- (g) Washed and dried
- (h) Beneficiated
- (i) Beneficiated; excludes directly used natural kaolin
- (j) Crude
- (k) Excluding data from August to December for the Republic of Croatia



## Exports of Kaolin

Country	1987	1988	1989	1990	1991
United Kingdom	2 600 398	2 902 034	2 708 127	2 596 334	2 518 303
Belgium-Luxembourg	41 019	77 279	96 598	121 240	123 909
Denmark	648	598	551	548	504
France	168 310	248 253	267 080	267 938	247 032
Germany, Federal Republic of	134 928	191 564	207 572	220 059	262 325
Greece	27 839	22 855	33 873	39 998	34 620
Italy	29 833	46 940	44 291	49 785	35 324
Netherlands	143 393	140 380	124 064	153 738	166 336
Portugal	2 594	2 538	10	171	49
Spain	160 924	165 960	130 312	162 726	144 875
Austria	48 860	48 568	50 040	39 967	34 931
Bulgaria (a)	* 30 300	* 32 900	* 24 300	* 33 500	* 30 400
Czechoslovakia	391 000	414 000	388 000	358 000	366 000
German Democratic Republic	126 578	136 668	138 340	...	—
Hungary	6 904	6 888	...	7 091	...
Soviet Union (a)	* 31 300	* 30 000	* 26 100	* 22 000	* 20 500
Sweden	2 807	1 706	639	1 935	974
Turkey	25 726	12 113	57 077	48 814	50 761
South Africa	682	193	554	39	78
USA	1 838 498	2 143 157	2 338 688	2 827 196	2 887 608
Brazil	213 756	315 003	307 768	292 446	343 006
China (a)	* 191 400	* 290 800	* 448 800	* 266 000	* 683 400
Hong Kong	176 647	263 611	325 633	213 896	323 580
of which: Re-exports	170 796	251 611	321 788	213 896	323 580
India (b)	16 637	9 068	...	7 790	25 727
Indonesia	76 405	82 682	121 468	129 661	125 125
Japan	6 151	7 061	7 145	7 377	11 353
Korea, Republic of	49 296	48 180	46 854	37 776	37 660
Malaysia	47 905	52 621	83 903	108 316	131 305
Thailand	4 718	7 218	4 160	8 592	13 117
Australia (c)	...	...	97 974	126 263	149 647
New Zealand (c)	...	...	21 289	20 144	24 107

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

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

## Kaolin

## Imports of Kaolin

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	7 654	8 265	9 061	16 925	28 460
Belgium-Luxembourg	369 848	489 747	430 852	462 223	405 980
Denmark	28 311	24 776	28 727	24 929	22 703
France	340 115	373 662	378 275	404 983	418 671
Germany, Federal Republic of	919 567	1 000 595	1 070 985	1 005 860	889 568
Greece	54 109	25 879	30 820	28 514	25 078
Italy	684 532	675 185	696 289	685 915	703 283
Netherlands	471 362	465 546	451 417	478 972	496 870
Portugal	17 261	25 763	29 225	47 342	56 695
Spain	195 495	232 606	271 650	297 883	281 997
Austria	99 744	140 888	140 850	188 342	183 517
Bulgaria (c)	* 3 300	* 2 900	* 2 500	* 400	* 100
Czechoslovakia (c)	* 7 300	* 6 300	* 5 500	* 6 100	...
Finland	792 504	950 300	932 299	967 917	937 236
German Democratic Republic	4 600	4 400	2 600	...	—
Hungary	59 564	60 158	54 303	33 969	...
Norway	76 492	88 665	99 475	106 511	102 280
Poland	159 001	160 137	144 564	...	...
Romania (c)	* 25 000	* 24 100	* 24 500	* 15 500	* 11 000
Sweden	442 104	441 103	352 788	374 746	399 834
Switzerland	...	111 219	111 432	102 766	87 827
Turkey	10 031	9 433	15 387	16 258	22 262
Yugoslavia	91 810	83 307	80 977	76 352	(f) 14 285
Algeria (d)	5 014	6 591	6 396	12 870	...
Morocco	5 456	7 757	9 790	12 380	10 559
Tunisia	34 539	26 291	28 144	30 223	34 036
Zimbabwe (e)	1 413	1 904	...	1 671	...
Canada	417 405	389 724	431 516	506 432	520 562
Mexico	91 832	110 688	107 638	104 613	...
USA	9 548	7 601	3 106	3 067	3 373
Argentina	30 258	24 135	18 100	...	18 100
Brazil	862	844	1 153	1 065	1 194
Chile	(c)* 5 400	(c)* 3 400	12 276	12 544	10 334
Colombia	...	9 133	7 803	8 797	9 887
Ecuador	3 149	1 760	4 702	2 284	4 054
Peru	2 237	3 094	1 158	819	1 035
Uruguay	5 009	4 934	...	...	4 770
Venezuela	29 958	31 061	9 898	19 666	21 153
Bangladesh (b)	104 570	84 308	9 243	7 674	...
China (c)	* 2 300	* 4 300	* 4 800	* 9 500	* 10 300
Cyprus	...	...	16 317	20 728	17 850
Hong Kong	197 422	265 948	388 503	208 669	274 369
Indonesia	27 597	35 301	50 646	56 787	56 301
Iran (a)	8 671	8 448	12 823	25 528	...
Israel (c)	* 13 500	* 8 900	* 11 600	* 10 700	* 10 000
Japan	763 079	970 491	1 029 809	1 167 957	1 253 735
Korea, Republic of	103 665	148 077	145 944	171 319	222 853
Malaysia	2 004	944	7 996	...	24 366
Pakistan (b)	7 102	8 293	...	7 044	...
Philippines	15 024	22 913	25 147	13 474	21 676
Saudi Arabia	2 364	3 398	2 061	4 280	4 092
Taiwan	156 723	149 557	358 541	568 628	844 865
Thailand	14 400	26 666	27 709	33 047	40 742
Australia (b)	9 531	12 345	17 174	11 896	11 331
New Zealand (b)	6 543	8 642	10 174	10 094	8 780

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

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

(d) Including bentonite

(e) Including fuller's earth

(f) Data for the Federal Republic of Yugoslavia only

**Production of Lithium Minerals**

Country	1987	1988	1989	1990	1991
Portugal Lepidolite	9 380	14 109	18 264	7 614	* 10 000
Soviet Union	* 55 000	* 55 000	* 55 000	* 55 000	* 50 000
Namibia	927	1 642	1 398	1 268	1 152
Zimbabwe	14 959	15 073	20 647	19 053	9 186
Canada	* 11 300	* 11 300	* 8 700	* 9 200	* 11 300
USA (a) (b)	* 4 000	* 4 000	* 4 500	...	...
Argentina	178	119	104	* 120	* 110
Brazil					
Amblygonite	52	25	159	* 100	* 100
Petalite	2 946	1 115	1 133	* 1 200	* 1 200
Spodumene	505	331	296	* 300	* 300
Chile (c)	6 139	7 332	7 508	9 082	8 575
China	* 15 000	* 15 000	* 15 000	* 15 000	* 15 500
Australia					
Spodumene	16 621	27 396	* 40 000	* 40 000	* 40 000
World total (a)	* 7 400	* 7 900	* 8 700	* 8 800	* 8 500

(a) Li content

(b) Mostly spodumene

(c) Carbonate

## Lithium

**Exports of Lithium**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Oxides	199	201	221	275	269
Carbonate	432	548	734	594	607
Belgium-Luxembourg					
Oxides	—	99	—	41	83
France					
Oxides	36	100	3	1	20
Germany, Federal Republic of					
Metal	49	...	...	...	...
Oxides	909	712	745	724	609
Carbonate	1 444	1 371	1 819	1 685	1 670
Netherlands					
Oxides	—	17	40	18	80
Carbonate	132	64	61	36	50
Spain					
Lithium minerals	96	392	187	—	—
Soviet Union					
Oxides (a)	* 180	* 30	* 150	* 340	* 230
Carbonate (a)	* 400	* 300	* 400	* 600	* 200
Yugoslavia					
Carbonate	...	138	130	17	(c) —
Namibia					
Lithium minerals	314	2 220	1 515	1 210	1 019
South Africa					
Lithium minerals (a)	* 100	* 400	...	...	...
Zimbabwe					
Lithium minerals	18 053	17 976	...	20 149	20 714
USA					
Oxides	2 917	3 788	4 731	3 147	3 079
Carbonate	5 783	7 168	9 068	9 333	9 380
Chile					
Carbonate	6 063	7 153	8 102	8 228	8 262
China					
Oxides (a)	* 600	* 800	* 600	* 1 000	* 1 100
Carbonate (a)	* 1 300	* 1 400	* 1 000	* 1 600	* 1 500
Australia					
Lithium minerals (b)	...	...	29 593	35 664	34 489

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

(b) Years ended 30 June of that stated

(c) Data for the Federal Republic of Yugoslavia only

## Imports of Lithium

Country	1987	1988	1989	1990	1991
United Kingdom					
Metal	51	...	...	...	...
Oxides	625	630	692	764	3 526
Carbonate	1 742	2 066	1 958	1 932	2 019
Belgium-Luxembourg					
Oxides	225	198	151	143	163
Carbonate	249	271	312	326	399
France					
Oxides	415	388	378	371	389
Carbonate	578	624	778	805	714
Germany, Federal Republic of					
Metal	22	...	...	...	...
Oxides	1 515	1 631	966	779	1 538
Carbonate	5 034	4 368	5 972	5 490	6 362
Italy					
Metal	45	...	...	...	...
Oxides	396	369	154	184	342
Carbonate	702	626	926	956	846
Netherlands					
Oxides	68	65	165	181	137
Carbonate	514	469	513	666	595
Spain					
Lithium minerals	803	325	606	622	797
Oxides	206	127	139	197	109
Carbonate	282	313	415	333	336
Finland					
Carbonate	...	93	97	121	3
Sweden					
Carbonate	...	100	101	98	124
Yugoslavia					
Carbonate	...	168	134	37	(b) 0
South Africa					
Lithium minerals	623	...	...	...	...
Oxides	151	138	102	135	...
Canada					
Carbonate	1 260	1 522	1 561	1 587	1 184
USA					
Lithium minerals	16 487	14 361	...	...	...
Carbonate	...	...	3 326	4 197	3 110
Brazil					
Oxides	471	503	401	256	...
Carbonate	118	237	207	291	...
Japan					
Metal	81	...	...	...	...
Oxides	888	935	1 020	1 036	1 025
Carbonate	3 096	3 318	3 933	3 835	4 136
Korea, Republic of					
Oxides	588	152	129	149	194
Carbonate	309	513	455	621	694
Taiwan					
Carbonate	...	...	216	230	181
Australia					
Oxides (a)	145	221	141	159	101

(a) Years ended 30 June of that stated

(b) Data for the Federal Republic of Yugoslavia only

**Production of Magnesite**

tonnes

Country	1987	1988	1989	1990	1991
Greece	1 132 186	1 104 523	890 105	701 096	560 373
Spain	396 002	467 816	470 000	* 460 000	* 420 000
Austria	946 943	1 121 585	1 204 942	1 179 162	978 315
Czechoslovakia	671 000	631 000	642 000	561 000	328 000
Poland	22 300	23 867	24 133	23 300	8 100
Soviet Union	* 1 875 000	* 1 825 000	* 1 825 000	* 1 600 000	* 1 400 000
Turkey	1 189 667	1 125 844	1 343 893	845 124	1 152 337
Yugoslavia	403 000	382 000	364 000	268 000	(e) 228 000
Egypt	5 038	110	...	9 426	...
South Africa	74 961	74 088	75 695	114 182	98 782
Zimbabwe	28 991	30 121	33 423	32 639	23 295
Canada (b)	* 150 000	* 150 000	* 150 000	* 150 000	* 170 000
Brazil (c)	396 830	402 463	425 834	* 400 000	...
Colombia	15 444	17 760	20 425	19 300	18 768
China	* 2 000 000	* 2 000 000	* 2 000 000	2 400 000	* 2 600 000
India	419 933	507 873	479 530	544 000	539 000
Iran (a)	5 161	2 777	6 967	1 405	* 2 000
Korea, Dem. P.R. of	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 600 000
Nepal (d)	38 388	45 000	27 978	* 25 000	* 25 000
Pakistan	3 824	3 766	8 750	4 274	5 191
Philippines	1 355	—	4 796	* 700	* 700
Australia	53 941	62 848	65 000	* 65 000	* 365 000
World total	11 300 000	11 500 000	11 600 000	10 900 000	10 900 000

## Note(s):

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

(a) Years ended 20 March following that stated

(b) Officially described as magnesitic dolomite and brucite

(c) Including beneficiated and directly shipped material

(d) Years ended 15 July of that stated

(e) Excluding data from August to December for the Republic of Croatia

## Exports of Magnesite and Magnesia

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Magnesite	50	4 028	446	376	2 010
Magnesia	86 055	72 917	89 209	75 144	57 638
Belgium-Luxembourg					
Magnesite	534	994	195	373	3 037
Magnesia	4 445	2 112	5 232	7 022	2 080
France					
Magnesite	218	450	573	81	45
Magnesia	21 972	21 704	19 580	19 523	25 386
Germany, Federal Republic of					
Magnesite	204	3 024	1 930	2 048	2 366
Magnesia	55 929	62 622	70 082	66 059	73 373
Greece					
Magnesite	3 075	15 867	12 220	8 879	4 181
Magnesia	287 701	258 077	294 267	236 487	210 203
Irish Republic (a)	* 62 600	* 81 700	* 78 400	* 59 700	* 62 000
Italy					
Magnesite	713	3 342	3 686	4 013	4 068
Magnesia	99 852	109 355	126 301	119 678	96 259
Netherlands					
Magnesite	2 260	2 224	3 881	5 457	5 967
Magnesia	34 614	37 570	44 756	47 970	58 384
Spain					
Magnesite	216	13 851	15 311	20 937	9 516
Magnesia	87 058	82 954	80 628	76 785	69 519
Austria					
Magnesite	387	58	219	347	81
Magnesia	140 875	150 026	165 686	166 604	143 687
Czechoslovakia					
Magnesite	303 000	306 000	248 000	583 000	111 000
Finland					
Magnesia	(d) 581	33	30	519	22
Norway					
Magnesite	...	161	155	177	78
Magnesia	(d) 4 170	3 332	3 108	4 074	3 297
Soviet Union (a)	* 8 000	* 5 800	* 4 500	* 6 200	* 5 100
Sweden					
Magnesite	...	185	518	116	186
Magnesia	(d) 796	346	532	176	101
Turkey					
Magnesite	32 069	80 806	143 456	117 529	114 440
Magnesia	134 025	133 913	141 682	110 996	120 384
Yugoslavia					
Magnesia	5 895	7 365	16 027	12 646	(g) 6 197
South Africa (a)	* 3 500	* 3 600	* 3 200	* 2 400	* 1 500
Zimbabwe	25 099	25 479	...	29 738	...
Canada					
Magnesia	(e) 25 860	67 133	56 335	61 337	63 978
Mexico					
Magnesia	39 430	59 076	84 716	64 128	...
USA					
Magnesite	...	...	10 384	8 009	8 595
Magnesia	(d) 45 776	(d) 43 715	43 016	105 476	102 632
Brazil					
Magnesia	73 585	110 745	55 596	92 409	40 735
China	(a)* 582 300	(a)* 828 700	(a)* 953 600	1 305 566	1 540 389
Hong Kong (c)	25 638	42 105	28 609	13 143	8 049
India (b)					
Magnesite	508	533	...	70	1
Magnesia	1 318	4 220	...	4 158	3 363
Israel					
Magnesia	(a)* 30 300	31 260	37 881	43 627	...
Japan					
Magnesite	...	307	307	791	309
Magnesia	(d) 93 845	102 459	121 575	94 564	89 937

**Exports of Magnesite and Magnesia**

tonnes

Country	1987	1988	1989	1990	1991
Korea, Dem. P.R. of (a)	* 217 100	* 265 200	* 191 700	* 193 400	* 183 600
Singapore	480	1 561	337	1 010	590
of which: Re-exports	123	261	205	138	112
Australia (f)	1 931	2 706	5 322	3 350	5 115

## Note(s):

- (1) The term 'magnesia', as used here, includes dead-burned, sintered and caustic-burned (caustic calcined) material
- (a) BGS estimates, based on known imports into certain countries
- (b) Years ended 31 March following that stated
- (c) Re-exports
- (d) Including magnesite
- (e) Imports into the USA
- (f) Years ended 30 June of that stated
- (g) Data for the Federal Republic of Yugoslavia only



## Imports of Magnesite and Magnesita

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Magnesite	7 778	16 323	15 186	22 406	29 771
Magnesia	121 753	148 654	141 713	130 355	143 188
Belgium-Luxembourg					
Magnesite	447	823	2 867	1 738	959
Magnesia	18 363	21 514	29 963	27 835	27 114
Denmark					
Magnesite	31	1 315	2 259	5 730	7 218
Magnesia	10 180	14 148	22 414	9 746	9 222
France					
Magnesite	117	5 844	987	1 368	745
Magnesia	195 559	208 410	217 807	206 689	209 522
Germany, Federal Republic of					
Magnesite	6 089	18 405	10 417	18 598	15 609
Magnesia	362 024	440 801	494 566	508 324	526 083
Greece					
Magnesite	3 275	43 214	80 301	92 623	57 401
Magnesia	8 658	17 442	1 465	1 420	6 185
Irish Republic					
Magnesite	0	16 448	25 310	30 643	23 503
Magnesia	35 623	10 923	12 050	15 197	11 521
Italy					
Magnesite	12 965	29 313	29 137	16 640	16 891
Magnesia	82 722	77 492	94 558	86 147	93 468
Netherlands					
Magnesite	2 582	12 284	4 061	2 743	4 167
Magnesia	59 406	75 357	89 672	107 093	101 936
Portugal					
Magnesite	165	356	1 032	1 466	1 589
Magnesia	2 850	2 612	2 789	1 996	2 606
Spain					
Magnesite	14	41	913	883	372
Magnesia	58 940	63 963	80 214	77 236	73 124
Austria					
Magnesite	118	590	594	607	148
Magnesia	108 534	136 281	142 720	134 806	145 167
Bulgaria (b)	* 8 200	* 7 100	* 7 100	* 17 200	* 2 100
Finland					
Magnesite	...	1 254	1 525	956	1 520
Magnesia	(d) 5 225	5 473	6 270	6 192	5 053
German Democratic Republic (b)	* 31 000	* 35 100	* 34 400	* 33 900	—
Hungary					
Magnesia	91 480	80 606	76 494	50 729	...
Norway					
Magnesite	...	5 866	4 442	2 358	1 642
Magnesia	(d) 9 292	2 283	4 715	1 870	3 584
Poland					
Magnesia	251 748	253 417	164 065	174 000	...
Romania (b)	* 54 100	* 33 700	* 44 800	* 58 100	* 40 500
Soviet Union					
Magnesia	577 600	538 627	542 392	...	...
Sweden					
Magnesite	...	17 686	23 191	12 864	22 308
Magnesia	(d) 28 130	20 946	21 605	16 663	10 302
Switzerland					
Magnesite	37	1 053	438	368	379
Magnesia	6 565	5 416	6 037	5 967	5 813
Yugoslavia					
Magnesite	0	5	19 893	17 760	(e) 15 333
Magnesia	12 897	10 358	10 679	8 034	(e) 1 794
Algeria					
Magnesia	1 201	857	1 294	1 893	1 334
Egypt	8 484	34 312	21 386	...	...
Morocco					
Magnesia	164	171	204	185	128
South Africa					
Magnesite	26 101	28 144	27 437	35 108	21 000
Magnesia	80 299	57 083	67 917	79 649	80 000
Tunisia					
Magnesia	698	938	731	853	1 130

## Imports of Magnesite and Magnesia

tonnes

Country	1987	1988	1989	1990	1991
Canada					
Magnesite	...	28 851	125 657	96 714	71 341
Magnesia	72 757	110 169	86 166	99 827	87 006
Mexico					
Magnesia	...	14 861	20 576	23 939	...
USA					
Magnesite	3 011	8 170	8 372	1 957	1 956
Magnesia	244 112	272 934	290 302	243 932	258 126
Argentina					
Magnesia	20 159	24 428	20 766	15 855	17 200
Brazil					
Magnesia	745	1 089	1 852	1 657	2 572
Chile	10 146	9 857	(b)* 8 600	(b)* 9 100	(b)* 9 100
Peru					
Magnesia	8 183	7 128	3 599	...	1 477
Venezuela					
Magnesia	94 491	80 289	57 286	70 990	79 734
Bangladesh (a)	11 465	10 762	1 585	1 234	...
Hong Kong	28 322	47 463	30 370	14 808	10 592
India (c)					
Magnesite	13	34	...	7 304	2 142
Magnesia	36 779	69 106	...	72 284	77 319
Indonesia					
Magnesite	...	...	191	466	1 372
Magnesia	(d) 5 367	(d) 6 664	16 603	19 149	15 156
Israel (b)	* 1 200	* 3 200	* 2 400	* 1 200	* 2 200
Japan					
Magnesite	36 202	12 199	735	1 381	2 270
Magnesia	277 613	387 973	429 395	372 014	421 934
Korea, Republic of					
Magnesite	4 700	3 870	489	2 384	365
Magnesia	54 509	85 371	91 281	80 494	97 192
Malaysia					
Magnesite	9 730	11 696	13 840	...	16 254
Pakistan (a)					
Magnesite	382	940	...	488	...
Magnesia	278	589	...	700	...
Philippines	29 268	24 143	14 211	9 050	13 464
Singapore	1 781	8 397	25 020	16 007	21 035
Taiwan					
Magnesite	...	...	4 491	123	237
Magnesia	(d) 38 113	(d) 66 069	51 080	60 921	79 350
Thailand					
Magnesite	19 176	18 229	28 127	20 563	18 852
Magnesia	2 874	3 332	3 586	4 515	6 817
Australia					
Magnesite (a)	...	14 307	18 335	16 926	8 942
Magnesia (a)	(d) 14 647	2 414	3 389	935	10 191
New Zealand (a)					
Magnesite	...	3 962	6 633	3 779	991
Magnesia	(d) 2 201	3 727	6 681	5 436	4 706

## Note(s):

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

(a) Years ended 30 June of that stated

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

(c) Years ended 31 March following that stated

(d) Including magnesite

(e) Data for the Federal Republic of Yugoslavia only

## Production of Mica

Country	1987	1988	1989	1990	1991
France (e)	9 300	* 9 000	* 8 000	* 7 000	* 6 000
Portugal (a)	160	...	...	...	...
Spain (e)	370	2 233	951	* 900	* 900
Norway (b)	* 4 000	* 4 000	* 4 500	* 4 800	* 4 200
Soviet Union	* 50 000	* 50 000	* 50 000	* 45 000	* 40 000
Yugoslavia	887	807	794	802	(g)* 700
Madagascar	402	693	1 182	721	1 900
Morocco	1 060	* 1 500	* 1 500	* 1 500	* 1 500
South Africa	970	1 669	1 708	1 765	1 883
Zimbabwe	801	1 368	1 471	1 801	506
Canada	13 200	14 148	16 100	15 988	* 16 000
Mexico	3 419	6 228	4 510	5 863	7 222
USA (d) (e)	145 650	129 900	119 142	108 845	102 830
Argentina	791	960	327	...	...
Brazil	2 400	2 031	3 390	* 5 000	* 5 000
China (c)	* 18 800	* 12 200	* 20 200	* 25 000	* 23 000
India	10 547	7 533	7 307	6 682	* 6 700
Iran (f)	2 420	1 167	2 294	1 352	4 135
Malaysia	—	1 065	2 251	3 341	4 281
Sri Lanka	1 228	1 981	2 510	1 797	1 402
Taiwan	787	4 387	4 290	4 946	8 596
Australia	106	3 584	...	...	...
World total	267 000	257 000	256 000	247 000	240 000

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

(a) Exports

(b) Crude only

(c) Conservative BGS estimates, based on exports

(d) Sold or used by producers

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

(f) Years ended 20 March following that stated

(g) Excluding data from August to December for the Republic of Croatia

## Mica

**Exports of Mica**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Unmanufactured	23	50	68	0	81
Ground	2 560	4 262	4 951	4 981	5 902
Waste	1 727	80	103	81	156
Belgium-Luxembourg	12	928	521	5 165	487
France					
Unmanufactured	2 542	763	1 578	1 229	580
Ground	4 492	6 651	6 827	7 142	7 246
Germany, Federal Republic of					
Unmanufactured	15	55	4	13	26
Ground	1 327	1 232	1 327	1 398	1 711
Italy					
Unmanufactured	107	134	(c) 430	(c) 392	48
Ground	134	649	...	...	190
Netherlands					
Unmanufactured	1 016	473	464	989	866
Ground	655	524	819	996	1 198
Portugal	160	...	...	...	...
Spain	21	529	751	1 189	944
Austria	371	651	616	671	833
Finland					
Unmanufactured	(c) 1 315	—	674	54	—
Ground	...	1 976	2 875	3 689	4 133
Norway	1 916	1 946	2 241	2 414	2 077
Sweden	38	60	15	15	85
Switzerland	89	142	133	131	46
Turkey	121	34	118	4 544	127
Madagascar	653	...	684	2 038	493
Morocco	2 230	1 862	1 121	700	942
South Africa	1 105	851	884	1 060	831
Zimbabwe					
Ground	468	814	...	708	...
Canada	(d) 7 947	8 775	12 859	12 182	13 362
USA					
Unmanufactured	913	1 181	1 351	794	1 152
Ground	4 301	5 412	3 745	4 342	3 430
Brazil	1 484	1 734	1 202	1 516	1 903
China	(a)* 18 800	(a)* 12 200	(a)* 20 200	24 879	23 020
India (b)					
Block	383	407	...	264	268
Splittings	2 842	3 731	...	2 283	2 578
Condenser films	14	28	...	34	58
Waste	10 288	15 151	...	8 199	3 254
Japan	318	529	577	683	711
Malaysia	1 797	2 422	2 650	3 465	3 058
Singapore	298	377	350	290	306
of which: Re-exports	298	377	350	289	306
Sri Lanka	1 309	1 805	2 691	1 288	839
Taiwan	394	183	307	273	187

## Note(s):

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

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

(b) Years ended 31 March following that stated

(c) Including ground

(d) Imports into the USA and Japan

## Imports of Mica

Country	1987	1988	1989	1990	1991
United Kingdom					
Unmanufactured	515	57	42	150	73
Ground	5 524	3 471	4 245	3 784	2 609
Waste	13 904	10 186	16 357	16 886	13 885
Belgium-Luxembourg					
Unmanufactured	5 023	...	...	...	...
Ground	939	1 169	1 374	1 589	1 869
Denmark	206	238	197	228	221
France					
Unmanufactured	3 989	3 306	4 440	3 082	3 239
Ground	876	919	1 416	1 580	1 695
Germany, Federal Republic of					
Unmanufactured	2 860	1 698	1 541	1 600	2 107
Ground	11 911	13 919	15 000	14 949	15 507
Greece	597	522	590	557	355
Irish Republic	127	207	686	507	484
Italy					
Unmanufactured	265	204	95	224	158
Ground	863	1 577	1 383	1 659	1 484
Netherlands					
Unmanufactured	1 594	785	726	936	542
Ground	1 181	1 357	1 888	2 405	1 597
Portugal	160	156	218	216	95
Spain	1 506	1 550	1 555	1 854	1 889
Austria	221	426	401	370	280
Czechoslovakia (c)	* 1 500	* 1 500	...	* 700	...
Finland	304	590	244	346	291
German Democratic Republic	820	628	920	...	—
Norway					
Unmanufactured	347	130	123	157	74
Waste	1 535	3 097	2 398	4 524	2 915
Poland	729	1 643	893	...	...
Soviet Union (c)	* 2 300	* 300	* 150	* 1 700	* 500
Sweden	434	398	510	574	746
Switzerland	726	856	925	566	505
Turkey	9	7	6	3	2 009
Yugoslavia	336	101	72	102	(d) 4
Egypt	14	95	22	...	...
South Africa	493	687	1 283	697	740
Canada	2 204	1 815	2 512	2 340	1 201
Jamaica	162	108	162	153	...
Mexico	57	154	207	280	...
USA					
Block	42	183	158	381	127
Splittings	786	1 317	1 380	1 204	1 244
Ground	5 673	7 780	8 904	9 142	9 722
Other unmanufactured	4 195	4 431	4 266	4 065	3 681
Colombia	82	112	132	98	196
Venezuela	429	492	420	318	435
Hong Kong	57	68	317	904	315
Indonesia	237	440	493	814	543
Iran (a)	150	755	...	22	...
Japan					
Block	3 648	90	248	672	4 890
Splittings	2 824	4 944	6 333	6 787	7 112
Waste	3 504	6 269	4 565	4 929	3 521
Other unmanufactured	7 251	9 819	13 107	15 005	18 842
Korea, Republic of	1 084	1 926	2 122	2 508	3 095
Malaysia	352	3 114	329	...	260
Philippines	134	139	204	129	176
Saudi Arabia	654	—	302	281	158
Singapore	382	1 010	951	1 353	1 443

## Mica

**Imports of Mica**

tonnes

Country	1987	1988	1989	1990	1991
Taiwan					
Unmanufactured	251	208	149	407	274
Ground	572	680	843	709	903
Thailand	274	319	542	595	510
Australia (b)	655	641	1 546	937	527
New Zealand (b)	£119 000	£122 000	£122 000	£146 000	£130 000

## Note(s):

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

- (a) Years ended 20 March following that stated
- (b) Years ended 30 June of that stated
- (c) BGS estimates, based on known exports from certain countries
- (d) Data for the Federal Republic of Yugoslavia only

## Production of Phosphate Rock

tonnes

Country	1987	1988	1989	1990	1991
Finland	553 279	583 542	563 934	546 134	472 459
Soviet Union	* 33 200 000	* 34 000 000	* 34 514 000	* 35 082 000	* 29 994 000
Sweden	227 844	73 713	70 962	6 645	—
Turkey	19 197	74 230	84 810	86 788	* 90 000
Algeria	1 209 000	1 331 000	1 223 600	1 128 000	1 090 000
Egypt	580 061	207 698	216 107	886 911	* 900 000
Morocco	21 270 000	25 015 000	18 067 000	21 189 400	17 813 700
Senegal					
Phosphate rock	1 780 836	2 327 262	2 272 600	2 147 000	1 702 121
Aluminium phosphate (a)	79 136	417 090	157 600	* 140 000	55 190
South Africa	2 623 100	2 850 200	2 962 900	3 164 800	3 180 100
Tanzania	18 348	14 741	10 556	26 000	2 419
Togo	2 968 635	3 312 773	3 484 237	2 995 490	2 964 642
Tunisia	6 215 000	6 027 000	6 610 360	6 258 514	6 352 000
Zimbabwe	154 827	125 156	133 791	147 767	116 938
Mexico	688 973	835 093	655 477	604 818	416 426
Netherlands Antilles (b)	22 291	21 931	15 738	4 180	9 522
USA	40 954 000	45 389 000	49 817 000	46 343 000	48 096 000
Brazil (d)	5 433 175	4 647 875	3 699 131	* 3 000 000	* 3 300 000
Chile					
Phosphate rock	10 389	9 161	14 354	13 986	13 338
Guano	5 685	4 052	3 127	1 452	1 308
Colombia	29 800	30 000	30 000	31 000	31 516
Peru	60 713	13 465	* 30 000	* 30 000	* 30 000
Venezuela	98 265	83 604	174 198	138 391	161 472
China	14 866 000	16 600 000	21 760 000	21 550 000	* 22 000 000
Christmas Island (b) (c)	836 000	—	—	33 600	132 300
India	679 419	738 877	703 716	674 000	561 000
Indonesia	2 592	411	11 000	1 600	6 384
Iraq	* 1 100 000	* 1 270 000	* 1 140 000	* 900 000	* 400 000
Israel	2 731 000	2 648 000	2 761 000	2 482 000	2 267 000
Jordan	6 845 400	5 628 200	6 635 600	5 748 100	4 460 800
Korea, Dem. P.R. of	* 500 000	* 500 000	* 500 000	* 500 000	* 550 000
Pakistan	72 782	40 880	12 285	30 000	18 985
Philippines					
Phosphate rock	5 824	7 104	4 000	2 963	21 000
Guano	935	1 406	48 000	1 000	11 689
Sri Lanka	21 305	23 104	29 257	32 564	19 693
Syria	1 986 000	2 186 000	2 256 000	1 633 000	1 359 000
Thailand	4 502	8 348	6 584	9 547	5 936
Vietnam	225 000	221 000	232 000	260 000	* 275 000
Australia	11 294	13 000	8 000	16 000	3 000
Nauru (b)	1 375 496	1 540 379	1 186 820	926 200	530 100
World total	149 000 000	159 000 000	162 000 000	159 000 000	149 000 000

(a) Including lime phosphates

(b) Exports

(c) Including phosphate dust

(d) Including beneficiated and directly shipped material

## Phosphates

**Exports of Phosphate Rock**

tonnes

Country	1987	1988	1989	1990	1991
Belgium-Luxembourg	30 822	19 305	19 342	16 438	15 241
Denmark	10 467	1 449	1 910	1 294	3 091
France	4 065	4 459	12 863	2 660	1 511
Germany, Federal Republic of	2 989	5 189	5 090	5 040	9 517
Netherlands	137 637	158 586	194 541	211 330	159 236
Finland	1 894	2 807	15 430	22 545	—
Soviet Union (b)	* 3 216 000	* 2 582 000	* 2 712 000	* 1 957 000	* 1 128 000
Sweden	142 096	72 363	80 328	12 354	1 659
Algeria	855 520	744 177	297 957	851 433	1 043 611
Egypt	68 650	122 254	246 000	297 200	164 000
Morocco	13 061 333	14 260 343	12 426 000	11 672 000	9 143 199
Senegal					
Calcium phosphate	845 789	(c) 1 846 500	(c) 1 396 449	(c) 1 209 432	(c) 1 304 100
Aluminium phosphate	52 284	...	...	...	...
South Africa	1 061 400	1 268 000	1 094 200	1 217 100	1 165 500
Togo	2 646 070	3 312 773	3 347 147	2 783 495	3 074 395
Tunisia	1 241 277	1 114 055	1 082 386	601 821	421 285
Netherlands Antilles	22 291	21 931	15 738	4 180	9 522
USA	8 454 000	8 092 000	8 323 000	6 959 000	5 749 000
China	109 657	158 200	194 479	344 648	533 866
Christmas Island (a)	846 800	—	—	33 600	132 300
Israel	2 369 093	1 915 000	1 946 000	1 501 000	* 1 400 000
Jordan	5 543 685	5 726 740	6 356 840	4 871 123	4 245 700
Malaysia	4 777	6 726	2 078	...	937
Singapore (d)	898	743	163	5 348	595
Syria	1 514 336	1 881 000	1 729 000	1 326 721	1 246 000
Australia (e)	15 203	7 302	54	17	4
Nauru	1 375 496	1 540 379	1 186 820	926 200	530 100

(a) Including phosphate dust

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

(c) Including aluminium phosphate

(d) Re-exports

(e) Years ended 30 June of that stated



## Imports of Phosphate Rock

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	758 084	746 823	602 426	548 126	340 846
Belgium-Luxembourg	2 522 224	2 386 939	2 279 182	2 211 516	2 162 072
Denmark	234 464	270 370	219 203	172 960	* 125 000
France	3 754 538	3 672 788	3 578 361	3 270 709	3 084 720
Germany, Federal Republic of	1 444 894	1 157 569	1 208 100	902 915	704 070
Greece	795 412	308 123	451 232	713 185	663 077
Irish Republic	2 813	1 495	6 128	4 507	4 262
Italy	1 302 576	1 162 063	1 056 869	851 157	587 416
Netherlands	2 212 428	2 459 808	2 366 965	2 235 549	2 028 363
Portugal	324 888	262 847	237 725	169 350	160 412
Spain	2 832 571	2 870 591	2 421 726	2 088 262	1 998 050
Albania	103 500	99 300	98 300	101 500	24 200
Austria	350 134	328 113	426 191	440 217	296 957
Bulgaria	520 900	732 600	643 000	335 400	181 400
Czechoslovakia (a)	255 000	146 000	199 000	92 000	31 000
Finland	136 200	149 900	121 800	112 200	54 000
German Democratic Republic (a)	368 300	394 000	423 900	* 140 000	—
Hungary	712 200	544 221	523 211	328 149	...
Norway	475 426	512 188	599 961	620 089	697 599
Poland	3 482 000	3 401 000	3 319 000	1 463 000	604 400
Romania (a)	867 100	873 100	833 200	* 495 000	* 200 000
Sweden	739 838	693 305	714 696	649 904	379 254
Switzerland	5 237	2 193	3 312	2 040	446
Turkey	813 582	995 330	808 922	730 319	743 785
Yugoslavia	1 373 803	1 741 304	1 234 726	1 066 386	(d) 512 717
Ivory Coast	...	4 646	...	...	...
South Africa	250 650	404 787	296 801	124 682	...
Tanzania	...	25 000	...	...	...
Zimbabwe	6 747	—	...	—	...
Canada	1 968 225	2 157 426	1 846 917	1 258 290	1 078 689
Cuba	10 000	5 000	5 000	8 200	12 700
Mexico	1 345 432	1 489 631	1 456 615	2 278 380	1 630 230
USA	466 562	675 626	709 564	456 761	552 119
Brazil	152 675	142 340	146 349	186 745	212 533
Chile	15 929	18 275	26 508	16 897	34 357
Colombia	47 838	43 696	37 703	49 960	56 668
Uruguay	89 700	77 149	72 200	56 236	42 141
Venezuela	54 926	68 365	68 130	75 206	76 510
Bangladesh (b)	95 006	87 547	107 200	120 103	110 800
China	186 794	194 647	211 046	203 882	354 545
India (c)	1 819 319	2 017 431	2 431 200	2 681 911	2 428 436
Indonesia	1 195 638	1 035 831	886 342	898 852	1 585 622
Japan	2 159 958	1 821 007	1 590 053	1 543 302	1 455 907
Korea, Dem. P.R. of	90 000	132 000	31 000	36 400	21 000
Korea, Republic of	1 702 440	1 653 005	1 544 445	1 559 966	1 309 706
Lebanon	...	119 500	85 000	134 800	158 600
Malaysia	384 588	359 420	376 161	380 000	412 020
Pakistan (b)	115 573	278 845	238 300	279 564	256 500
Philippines	1 034 936	717 016	780 371	834 369	929 045
Saudi Arabia	4 298	4 869	2 134	3 878	2 433
Singapore	3 445	2 358	725	10 199	611
Sri Lanka	18 718	10 500	14 000	16 405	5 003
Taiwan	361 188	368 630	391 353	420 425	348 656
Australia	1 666 215	2 082 000	1 761 000	1 092 000	394 000
New Zealand (b)	338 178	563 310	489 350	708 618	543 688

(a)  $P_2O_5$  content

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

(d) Data for the Federal Republic of Yugoslavia only

## Potash

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

Country	1987	1988	1989	1990	1991
United Kingdom					
Chloride	450 345	483 662	486 501	513 634	520 575
France					
Potassic salts	1 538 700	1 502 450	1 195 400	1 395 000	1 217 000
Germany, Federal Republic of					
Potassic salts	2 199 000	2 290 000	2 182 000	2 216 000	3 708 000
Italy					
Potassic salts	177 274	195 500	207 630	95 460	* 44 100
Spain					
Potassic salts	838 439	855 466	842 399	685 700	585 200
German Democratic Republic					
Potassic salts	4 222 000	4 203 000	3 852 000	* 3 200 000	—
Soviet Union	10 900 000	11 300 000	10 232 000	9 088 000	8 509 600
Canada					
Chloride	7 398 906	8 310 586	7 333 499	6 989 481	7 405 575
USA					
Potassic salts	1 262 000	1 521 000	1 595 000	1 713 000	1 749 000
Brazil					
Chloride	37 311	54 121	96 945	65 735	100 000
Chile					
Chloride	—	* 5 300	* 17 900	* 25 500	* 33 000
Nitrate	* 23 100	* 36 000	* 37 000	* 40 900	* 41 000
China	* 40 000	* 40 000	50 700	46 100	60 000
Israel					
Chloride	1 253 000	1 244 000	1 338 000	1 311 000	1 270 000
Jordan	734 000	785 000	793 000	841 600	818 400
World total	31 100 000	32 800 000	30 300 000	28 200 000	26 100 000

# Exports of Potash

Potash

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Chloride	327 485	434 640	367 140	384 505	529 875
Other potassic fertilisers	1 594	1 967	2 060	1 493	740
Potassic chemicals	6 214	5 020	3 294	6 932	7 323
Belgium-Luxembourg					
Fertiliser salts	1 024	530	945	674	743
Sulphate (b)	* 365 300	* 278 200	* 213 200	* 221 800	* 271 400
Chloride	107 714	55 921	192 384	224 280	174 627
Other potassic fertilisers	5 130	3 942	6 941	9 723	12 610
Potassic chemicals	1 994	2 737	1 083	626	206
France					
Sulphate	334	833	2 651	1 454	1 792
Chloride	419 134	513 901	340 128	311 105	239 739
Other potassic fertilisers	19 445	16 863	13 454	13 243	1 844
Potassic chemicals	5 476	8 745	996	518	31 807
Germany, Federal Republic of					
Fertiliser salts	47 958	43 017	43 546	45 668	85 355
Potassic fertilisers	2 297 189	2 317 394	2 378 355	2 540 235	4 845 376
Potassic chemicals	39 174	43 393	46 344	42 629	36 799
Greece					
Potassic fertilisers (a)	8 082	33	1 660	0	—
Italy					
Sulphate	56 733	74 397	131 932	92 078	7 851
Other potassic fertilisers	1 904	2 060	3 372	1 431	721
Potassic chemicals	2 969	3 182	2 755	5 419	7 175
Netherlands					
Sulphate (a)	296	409	512	569	1 610
Chloride (a)	44 039	63 055	77 261	74 179	49 099
Potassic chemicals	3 603	4 434	4 715	5 649	6 846
Portugal					
Potassic fertilisers	186	35	223	10 105	1 104
Spain					
Sulphate	58 479	48 325	34 665	71 557	24 750
Chloride	627 730	627 743	528 856	595 951	457 416
Potassic chemicals	8 423	5 197	10 407	8 333	6 802
Czechoslovakia					
Potassic chemicals (b)	* 1 600	* 900	* 400	* 500	* 1 600
German Democratic Republic					
Fertiliser salts (a)	2 894 000	2 832 000	2 556 000	2 381 500	—
Poland					
Potassic chemicals	4 268	4 055	3 612	...	...
Romania					
Potassic chemicals (b)	* 25 300	* 7 200	* 7 000	* 2 200	* 1 400
Soviet Union					
Fertiliser salts	5 412 162	5 830 462	5 315 000	5 480 000	(f) 4 573 000
Sweden					
Sulphate	5	11 877	33 498	55 362	98 650
Switzerland					
Potassic chemicals	844	1 594	905	1 000	1 693
Yugoslavia					
Potassic chemicals	882	3 517	4 210	4 206	(e) 1 728
Canada					
Chloride	10 983 658	12 674 202	10 914 791	11 494 339	10 557 861
Other potassic fertilisers	...	45 074	60 892	274 321	70 401
Potassic chemicals	(d) 7 127	15 611	18 931	10 124	25 981
USA					
Sulphate	414 830	382 027	448 880	561 900	509 700
Chloride	511 590	400 831	496 575	445 800	730 600
Potassic chemicals	22 868	30 306	129 375	62 081	106 770
Chile					
Fertiliser salts	94 478	131 190	121 148	137 724	133 043
Potassic chemicals	...	...	60 555	111 207	129 702
China					
Potassic chemicals (b)	* 6 100	* 6 900	* 19 400	* 5 300	* 5 700
Hong Kong					
Potassic chemicals (c)	1 721	16 505	3 467	1 493	2 875

## Exports of Potash

tonnes

Country	1987	1988	1989	1990	1991
<b>Israel</b>					
Chloride (b)	* 1 405 700	* 1 408 500	* 1 388 000	* 1 467 400	* 1 227 400
Other potassic fertilisers (b)	* 177 200	* 179 200	* 140 300	* 119 700	* 125 100
Potassic chemicals	(b)* 124 700	218 462	249 027	228 144	...
<b>Japan</b>					
Potassic fertilisers	384	1 187	1 350	1 074	1 022
Potassic chemicals	10 485	19 790	21 830	17 390	17 299
<b>Jordan</b>					
Fertiliser salts	1 243 928	1 300 411	1 257 895	1 403 358	1 412 000
<b>Korea, Republic of</b>					
Sulphate	19 493	44 800	46 020	89 123	30 517
Chloride	21 679	10 500	2 260	21	—
Potassic chemicals	9 292	13 802	8 862	15 669	20 658
<b>Singapore</b>					
Sulphate	1 918	3 004	10 157	6 857	10 798
of which: Re-exports	1 918	2 944	10 156	6 838	10 778
Chloride	12 267	85 064	94 091	107 358	58 966
of which: Re-exports	12 265	85 058	94 070	105 606	58 671
Other potassic fertilisers	125 807	137 753	14 969	4 770	4 868
of which: Re-exports	125 607	136 996	14 959	4 768	1 726
<b>Taiwan</b>					
Potassic fertilisers	34 511	52 024	48 267	80 895	71 744
Potassic chemicals	1 063	1 636	3 301	6 589	3 949

## Note(s):

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

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

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

(c) Re-exports

(d) Imports into the USA

(e) Data for the Federal Republic of Yugoslavia only

(f) Data for the Russian Federation only

## Imports of Potash

Country	1987	1988	1989	1990	1991
<b>United Kingdom</b>					
Fertiliser salts	25 912	28 038	17 274	19 605	16 413
Chloride	521 274	570 686	452 657	...	...
Other potassic fertilisers	7 834	23 796	15 521	46 105	44 848
Potassic chemicals	30 146	32 623	36 166	36 718	38 896
<b>Belgium-Luxembourg</b>					
Fertiliser salts	38 646	30 540	29 796	32 899	29 455
Sulphate	48 693	34 222	53 406	84 139	109 280
Chloride	1 308 403	1 229 633	1 251 317	1 427 117	1 292 291
Other potassic fertilisers	22 912	30 132	19 781	29 500	25 069
Potassic chemicals	12 351	12 268	13 229	15 859	19 165
<b>Denmark</b>					
Fertiliser salts	2 667	3	* 20	26	24
Sulphate	39 109	31 178	22 800	18 208	17 497
Chloride	240 420	229 558	239 907	269 454	190 538
Potassic chemicals	7 140	8 409	7 616	7 729	8 432
<b>France</b>					
Fertiliser salts	84 235	58 260	74 040	85 922	79 037
Sulphate	162 211	106 118	109 575	112 096	125 542
Chloride	1 115 054	1 012 242	1 290 689	1 110 814	1 274 356
Other potassic fertilisers	44	32 236	27 467	23 720	25 145
Potassic chemicals	29 118	29 826	34 641	34 674	35 076
<b>Germany, Federal Republic of</b>					
Chloride	149 060	179 316	131 851	113 229	86 939
Potassic chemicals	18 840	28 037	27 937	34 004	43 416
<b>Greece</b>					
Sulphate	159 971	86 495	107 978	38 582	161 107
Potassic chemicals	18 371	10 191	9 644	12 173	19 205
<b>Irish Republic</b>					
Sulphate	3 600	2 097	5 011	3 989	1 165
Chloride	297 680	219 477	253 195	225 690	221 953
Other potassic fertilisers	548	400	1 622	3 395	233
<b>Italy</b>					
Fertiliser salts	4 632	1 587	1 725	427	504
Sulphate	77 050	75 561	44 134	114 265	114 158
Chloride	666 059	655 647	702 553	592 539	566 542
Other potassic fertilisers	21 295	39 008	25 768	29 579	33 555
Potassic chemicals	30 418	35 356	34 696	36 727	32 633
<b>Netherlands</b>					
Fertiliser salts (a)	654	708	768	682	374
Sulphate (a)	41 337	20 173	20 096	15 480	35 016
Chloride (a)	285 553	302 227	340 581	324 576	262 473
Other potassic fertilisers (a)	—	12 946	10 478	9 993	12 382
Potassic chemicals	44 357	52 506	54 401	49 116	51 172
<b>Portugal</b>					
Sulphate	2 573	...	...	2 217	3 053
Chloride	78 043	(e) 85 414	(e) 81 160	64 524	69 660
Potassic chemicals	3 961	...	...	5 548	4 684
<b>Spain</b>					
Sulphate	3 500	1 271	4 369	12 718	11 113
Chloride	25 532	39 016	27 765	52 930	53 119
Other potassic fertilisers	1 735	6 245	8 341	6 075	12 519
Potassic chemicals	25 783	31 030	47 690	45 816	61 572
<b>Austria</b>					
Fertiliser salts	10 424	11 842	16 647	16 730	13 959
Sulphate	20 416	15 286	16 319	16 668	15 980
Chloride	163 225	197 176	165 486	170 116	166 429
Other potassic fertilisers	7 829	4 875	5 014	4 075	5 238
Potassic chemicals	7 136	7 459	6 137	6 372	7 066
<b>Bulgaria</b>					
Fertiliser salts (c)	* 142 300	* 183 400	* 223 200	...	...
<b>Czechoslovakia</b>					
Potassic fertilisers (a)	551 000	641 000	557 000	470 000	95 000
<b>Finland</b>					
Chloride (c)	* 212 100	* 209 800	* 241 000	* 186 300	* 255 700
Other potassic fertilisers	182	106	111	107	215
Potassic chemicals	6 278	7 197	9 542	7 767	5 502
<b>Hungary</b>					
Fertiliser salts	2 257	2 132	...	...	...
Potassic fertilisers	1 080 930	1 356 158	879 990	680 948	...
Potassic chemicals	1 509	1 562	1 420	...	...

## Potash

## Imports of Potash

tonnes

Country	1987	1988	1989	1990	1991
<b>Iceland</b>					
Sulphate	5 041	1 000	2 076	1 468	120
Chloride	4 120	5 850	7 127	5 549	5 953
<b>Norway</b>					
Sulphate	92 449	124 196	123 606	138 965	166 147
Chloride	212 012	227 477	293 756	305 288	303 395
Other potassic fertilisers	1 066	1 496	536	514	1 015
Potassic chemicals	2 189	1 959	2 570	2 122	2 310
<b>Poland</b>					
Chloride	17 350	18 475	17 242	...	...
Other potassic fertilisers	2 496 000	2 532 000	2 055 000	1 166 000	* 360 000
Potassic chemicals	5 283	5 721	5 976	...	...
<b>Romania</b>					
Fertiliser salts (a)	352 100	398 600	327 400	299 500	25 600
<b>Sweden</b>					
Fertiliser salts	1 998	4 934	6 309	5 720	1 050
Sulphate	...	30 830	10 535	34 590	55 796
Chloride	514	141 911	153 799	177 540	161 749
Other potassic fertilisers	1 644	869	1 196	2 069	2 487
Potassic chemicals	4 485	4 897	4 153	4 884	3 906
<b>Switzerland</b>					
Sulphate	...	5 320	6 079	5 088	6 296
Chloride	...	51 315	52 569	51 509	51 220
Other potassic fertilisers	68 464	7 911	5 380	5 434	5 604
Potassic chemicals	13 415	15 217	14 871	14 205	14 206
<b>Turkey</b>					
Fertiliser salts	16 881	13 517	...	...	...
Sulphate	8 563	14 919	14 245	20 565	17 803
Other potassic fertilisers	33 519	45 439	66 448	84 783	76 325
Potassic chemicals	7 975	7 725	5 946	10 304	7 997
<b>Yugoslavia</b>					
Sulphate	17 138	32 017	6 217	14 052	(f) 2 937
Chloride	523 319	606 000	436 001	398 739	(f) 182 099
Potassic chemicals	141 134	7 570	7 777	6 871	(f) 1 097
<b>Algeria</b>					
Sulphate	102 669	99 148	48 275	51 400	...
Potassic chemicals	603	695	2 139	558	41
<b>Cameroon</b>					
Potassic fertilisers	41 155	* 9 200	* 5 800	* 18 800	* 13 000
<b>Egypt</b>					
Potassic fertilisers	31 713	* 9 000	* 46 000	* 46 300	* 44 000
<b>Gabon</b>					
Potassic fertilisers	...	* 1 400	* 1 800	* 1 400	...
<b>Ivory Coast</b>					
Sulphate	...	1 370	...	...	...
Chloride	...	36 944	...	...	...
<b>Kenya</b>					
Potassic fertilisers	1 076	3 724	2 200	3 700	1 700
<b>Liberia</b>					
Potassic fertilisers (a)	1 200	1 700	2 000	—	—
<b>Madagascar</b>					
Potassic fertilisers	4 664	* 3 000	7 688	19 371	2 395
<b>Mauritius</b>					
Potassic fertilisers	27 605	17 445	36 039	24 988	* 12 500
<b>Morocco</b>					
Sulphate	34 710	59 815	45 961	50 969	42 211
Chloride	61 176	61 117	21 723	36 256	21 314
Potassic chemicals	971	1 060	1 375	608	1 946
<b>Nigeria</b>					
Potassic fertilisers (a)	5 400	31 700	41 400	58 400	65 500
<b>Reunion</b>					
Potassic fertilisers	5 240	1 600	4 800	2 400	100
<b>Senegal</b>					
Potassic fertilisers	6 447	13 472	11 953	16 200	12 600
<b>South Africa</b>					
Potassic fertilisers	220 115	245 435	649 553	211 448	* 210 000
Potassic chemicals	7 039	28 353	31 427	18 363	...

# Imports of Potash

Potash

tonnes

Country	1987	1988	1989	1990	1991
Tunisia					
Potassic fertilisers	3 501	45 500	11 132	56 598	19 587
Potassic chemicals	599	599	296	661	709
Zimbabwe					
Sulphate	20 740	5 876	...	20 396	...
Chloride	47 685	15 903	(e)* 50 000	47 234	(e)* 65 000
Belize					
Potassic fertilisers	2 044	2 122	2 199	...	* 500
Canada					
Sulphate	11 814	53 799	39 759	86 877	65 360
Chloride	967	3 765	4 553	7 382	7 737
Other potassic fertilisers	51 503	1 877	1 885	1 912	4 644
Potassic chemicals	10 159	13 160	17 307	21 253	18 604
Costa Rica					
Potassic fertilisers	57 564	61 727	50 811	85 141	82 372
Cuba					
Sulphate	22 000	20 000	20 000	...	...
Chloride	352 000	323 000	394 000	* 345 000	...
Dominican Republic					
Potassic fertilisers	* 25 600	17 276	32 100	25 089	23 800
El Salvador					
Potassic fertilisers	6 381	7 206	7 451	...	3 043
Guatemala					
Potassic fertilisers	16 808	10 632	39 403	31 073	40 307
Honduras					
Potassic fertilisers	3 757	28 706	10 557	...	39 549
Jamaica					
Potassic fertilisers	391	11 472	447	400	...
Martinique					
Potassic fertilisers	4 561	10 008	9 192	18 365	13 765
Mexico					
Sulphate	4 156	31 745	24 253	19 825	...
Chloride	77 436	123 777	85 940	77 700	73 400
Nicaragua					
Potassic fertilisers	* 4 000	* 10 000	* 13 000	* 3 000	3 480
Panama					
Potassic fertilisers	2 485	7 918	16 982	17 939	7 159
Trinidad & Tobago					
Potassic fertilisers	1 281	1 583	3 461	...	1 242
USA					
Fertiliser salts	20 100	36 905	6 949	1 302	532
Sulphate	57 635	90 787	64 215	55 361	59 239
Chloride	6 613 676	6 795 910	5 497 763	6 707 720	6 904 942
Other potassic fertilisers	296	3 122	834 723	355 682	210 320
Potassic chemicals	40 588	30 231	155 457	59 125	64 584
Argentina					
Sulphate	3 852	6 448	1 412	5 325	* 5 000
Chloride	16 799	19 073	11 172	12 167	* 12 000
Potassic chemicals	7 808	7 269	...	...	...
Brazil					
Sulphate	46 964	48 100	40 096	22 572	45 120
Chloride	2 402 789	2 145 575	1 866 803	1 710 222	* 1 900 000
Potassic chemicals	7 625	12 488	16 344	12 255	13 892
Chile					
Sulphate	26 953	29 348	22 312	14 806	18 664
Chloride	43 237	143 893	139 822	135 069	142 163
Colombia					
Sulphate	19 091	15 447	16 272	21 358	10 139
Chloride	228 206	241 791	239 050	341 698	247 232
Potassic chemicals	...	1 814	2 167	1 808	* 1 500
Ecuador					
Chloride	19 272	26 768	17 152	30 713	40 209
Other potassic fertilisers	6 944	382	2 192	5 154	3 231
Guyana					
Potassic fertilisers	* 3 000	* 3 000	* 4 000	* 3 000	...

## Potash

## Imports of Potash

tonnes

Country	1987	1988	1989	1990	1991
Peru					
Sulphate	8 349	6 827	...	—	3
Chloride	45 678	17 811	(e) 22 300	1 637	2 638
Potassic chemicals	1 653	1 096	1 029	819	665
Uruguay					
Potassic fertilisers	5 310	6 307	17 754	12 936	6 252
Venezuela					
Sulphate	56 341	26 416	36 917	51 946	...
Chloride	84 013	124 309	104 997	41 825	(e)* 80 000
Potassic chemicals	1 794	2 351	2 541	1 262	...
Bangladesh (d)					
Potassic fertilisers	54 408	66 946	67 624	50 427	...
China					
Potassic fertilisers	1 786 720	2 243 896	1 477 092	2 792 648	2 935 655
Cyprus					
Potassic fertilisers	1 239	...	115	410	332
Hong Kong					
Potassic chemicals	2 181	3 581	3 838	2 172	3 874
India (b)					
Chloride	814 346	1 078 921	...	1 615 426	1 399 328
Other potassic fertilisers	231 562	176 589	...	232 257	75 000
Potassic chemicals	2 544	1 864	...	886	2 256
Indonesia					
Fertiliser salts	0	2	10 500	151 633	46 194
Sulphate	5 307	1 400	104 629	26 325	4 210
Chloride	206 641	509 804	259 600	417 635	279 843
Other potassic fertilisers	45	12 053	—	—	156
Potassic chemicals	2 323	3 036	4 928	5 398	5 293
Japan					
Sulphate	222 776	236 268	222 314	190 373	218 671
Chloride	1 142 162	1 041 940	947 907	944 421	1 037 536
Other potassic fertilisers	74 872	66 528	83 344	64 608	83 776
Potassic chemicals	11 799	16 644	18 052	17 680	26 860
Jordan					
Potassic fertilisers	—	3 424	...	300	590
Korea, Dem. P.R. of					
Potassic fertilisers (c)	* 11 000	* 31 600	...	...	...
Korea, Republic of					
Chloride	697 864	662 936	679 718	570 899	602 086
Potassic chemicals	9 142	6 223	10 572	9 132	7 648
Malaysia					
Sulphate	9 861	28 678	3 349	...	17 226
Chloride	291 726	24 653	24 700	...	55 400
Other potassic fertilisers	310 158	771 110	607 285	...	758 623
Pakistan (d)					
Potassic chemicals	1 956	2 448	...	1 444	...
Philippines					
Sulphate	19 543	99 586	4 875	29 715	38 135
Chloride	148 489	93 266	122 062	146 070	234 075
Other potassic fertilisers	2 105	698	—	1 180	560
Potassic chemicals	2 538	3 191	3 829	5 226	5 717
Saudi Arabia					
Sulphate	14 239	25 139	7 855	50 585	27 371
Other potassic fertilisers	34 661	30 614	8 198	11 569	10 649
Singapore					
Sulphate	3 800	3	14 420	10 373	12 958
Chloride	12 037	90 434	66 266	84 344	60 456
Other potassic fertilisers	112 024	179 043	918	24 856	24 491
Sri Lanka					
Chloride	55 600	58 502	...	52 302	16 008
Other potassic fertilisers	45 599	62 253	...	19 465	12 596
Syria					
Potassic fertilisers	20 277	* 62 500	...	* 87 000	* 40 000
Taiwan					
Chloride	178 217	227 858	244 952	257 242	329 675
Potassic chemicals	16 101	16 616	9 745	6 041	6 301



Potash

tonnes

**Imports of Potash**

Country	1987	1988	1989	1990	1991
<b>Thailand</b>					
Sulphate	19 035	14 501	7 504	16 154	20 002
Chloride	6 960	60 703	76 226	106 228	91 160
Other potassic fertilisers	63 194	10 818	0	0	0
Potassic chemicals	7 543	9 714	7 813	11 203	16 758
<b>Australia</b>					
Sulphate (d)	6 886	15 636	16 234	11 815	17 946
Chloride (d)	219 782	261 056	282 640	275 948	228 750
Other potassic fertilisers (d)	3 534	634	559	1 976	737
Potassic chemicals (d)	8 988	15 292	12 164	16 511	15 913
<b>Fiji</b>					
Potassic fertilisers	2 692	4 686	...	...	...
<b>New Zealand (d)</b>					
Sulphate	617	1 343	1 686	4 171	2 269
Chloride	94 883	64 094	101 877	147 491	135 695
Other potassic fertilisers	2 776	41 801	325	680	0
Potassic chemicals	1 277	1 936	23 018	1 781	2 032

Note(s):

- (1) So far as possible the term 'potassic chemicals', as used in this table, relates to items 522.64, 523.3,4,5 and 7 of the S.I.T.C. (Rev.3) and includes hydroxide, carbonate, chlorate, nitrate and sulphate
- (a) K<sub>2</sub>O content
- (b) Years ended 31 March following that stated
- (c) BGS estimates, based on known exports from certain countries
- (d) Years ended 30 June of that stated
- (e) Including sulphate
- (f) Data for the Federal Republic of Yugoslavia only

## Rare Earths

**Production of Rare Earth Minerals**

tonnes

Country	1987	1988	1989	1990	1991
Soviet Union					
Monazite (a)	...	...	* 1 500	* 1 500	* 1 500
Madagascar					
Bastnaesite	* 10	* 10	* 10	* 10	* 10
South Africa					
Monazite	* 1 200	* 1 200	* 1 200	1 317	* 1 300
Zaire					
Monazite	97	168	175	124	* 120
USA					
Bastnaesite (a)	16 710	11 533	20 787	22 713	16 465
Monazite (a) (b)	* 450	* 450	* 450	* 2 100	* 1 500
Brazil					
Monazite	4 332	2 817	1 910	* 2 000	* 2 000
China (a)	15 100	29 640	25 220	16 480	16 150
India					
Monazite (d)	* 4 000	* 4 000	* 4 300	* 4 500	* 4 500
Malaysia					
Monazite	2 908	2 920	2 948	3 323	1 981
Xenotime	31	47	131	165	5
Sri Lanka					
Monazite	100	* 200	* 200	* 200	* 200
Thailand					
Monazite	458	590	631	377	134
Xenotime	30	101	35	14	3
Australia					
Monazite	12 813	10 897	13 000	6 000	6 000
World total (c)	82 200	94 800	104 500	89 400	75 600
World total (REO content)	* 49 300	* 56 800	* 62 600	* 53 500	* 45 300

## Note(s):

- (1) With the exception of the data for the Soviet Union, USA and China, figures in this table refer to gross tonnage of rare earth concentrates
- (2) Rare earth minerals are believed to be produced, on a small scale, in Indonesia, Democratic P.R. of Korea and Mozambique

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

(b) Nominal capacity

(c) Expressed as grossed up weight of concentrates produced

(d) Years ended 31 March following that stated

## Exports of Rare Earths

Country	1987	1988	1989	1990	1991
United Kingdom					
Cerium compounds	351	582	607	679	466
Other rare earth compounds	59	86	70	102	145
Ferro-cerium & other pyrophoric alloys	6	121	54	10	113
Metals	64	28	100	84	42
France					
Ferro-cerium & other pyrophoric alloys	124	98	124	103	108
Metals	131	30	1	42	24
Germany, Federal Republic of					
Rare earth compounds	214	223	210	249	328
Ferro-cerium & other pyrophoric alloys	85	94	131	189	173
Metals	14	6	12	6	9
Italy					
Metals	138	780	22	42	36
Austria					
Cerium compounds	...	576	522	697	590
Other rare earth compounds	...	1 740	1 059	1 071	957
Metals	351	430	358	273	470
Norway					
Rare earth compounds	...	1 353	549	598	114
Soviet Union					
Rare earth compounds (b)	* 400	* 1 000	* 1 000	* 1 400	* 2 000
Metals (b)	...	* 200	* 300	* 400	* 500
South Africa (a)					
Rare earth compounds	£200	£2 100	£6 200	£7 900	...
USA					
Ores & concentrates	4 534	7 360	...	...	* 800
Cerium compounds	...	...	1 437	1 730	1 378
Other rare earth compounds	...	...	3 375	2 230	2 161
Ferro-cerium & other pyrophoric alloys	72	89	* 31	83	83
Metals	...	...	426	211	59
Brazil					
Rare earth compounds	523	780	799	246	...
Ferro-cerium & other pyrophoric alloys	324	260	198	44	...
Metals	103	107	187	234	...
China					
Rare earth compounds	(b)* 6 000	(b)* 7 400	(b)* 6 400	3 093	4 671
Ferro-cerium & other pyrophoric alloys	(b) * 300	* 200	* 200	* 200	* 150
Metals	(b)* 250	(b)* 420	(b)* 520	1 327	2 393
Hong Kong					
Ferro-cerium & other pyrophoric alloys (c)	140	112	97	116	88
Japan					
Cerium compounds	...	482	903	648	396
Other rare earth compounds	...	322	165	154	199
Ferro-cerium & other pyrophoric alloys	25	...	...	...	...
Malaysia					
Ores & concentrates	1 024	173	660	212	—
Thailand					
Ores & concentrates	428	165	488	220	—
Ferro-cerium & other pyrophoric alloys	0	37	54	18	11
Australia					
Ores & concentrates	10 491	10 000	20 000	11 000	9 000

Note(s):

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

## Rare Earths

**Imports of Rare Earths**

tonnes

Country	1987	1988	1989	1990	1991
<b>United Kingdom</b>					
Cerium compounds	240	655	355	269	315
Other rare earth compounds	884	215	169	323	366
Ferro-cerium & other pyrophoric alloys	4	111	384	23	41
Metals	57	54	77	22	78
<b>Belgium-Luxembourg</b>					
Cerium compounds	127	92	249	249	342
Other rare earth compounds	12	3	41	3	44
Ferro-cerium & other pyrophoric alloys	8	49	26	45	38
Metals	32	54	45	147	54
<b>Denmark</b>					
Ferro-cerium & other pyrophoric alloys	15	16	9	6	5
<b>France</b>					
Cerium compounds	167	661	356	638	740
Other rare earth compounds	1 798	3 012	2 599	364	999
Ferro-cerium & other pyrophoric alloys	62	57	37	37	627
Metals	188	228	291	302	243
<b>Germany, Federal Republic of</b>					
Cerium compounds	1 133	1 246	1 131	1 577	1 746
Other rare earth compounds	851	1 611	1 503	1 871	1 400
Ferro-cerium & other pyrophoric alloys	17	23	45	30	16
Metals	138	143	117	163	154
<b>Italy</b>					
Ferro-cerium & other pyrophoric alloys	8	29	22	24	39
Metals	67	70	61	59	26
<b>Netherlands</b>					
Cerium compounds	1 382	351	112	395	435
Other rare earth compounds	1 389	1 090	2 902	2 651	2 578
Ferro-cerium & other pyrophoric alloys	11	25	29	44	21
Metals	14	1	4	12	0
<b>Spain</b>					
Rare earth compounds	272	280	248	257	186
Ferro-cerium & other pyrophoric alloys	47	48	46	41	43
Metals	14	12	17	68	129
<b>Austria</b>					
Cerium compounds	...	1 510	1 531	1 200	504
Other rare earth compounds	...	179	121	15	23
Metals	2	111	245	255	995
<b>Norway</b>					
Rare earth compounds	...	56	70	48	9
Metals	...	282	257	248	75
<b>Turkey</b>					
Rare earth compounds	33	123	126	230	87
<b>Yugoslavia</b>					
Ferro-cerium & other pyrophoric alloys	3	191	409	300	(b) 75
Metals	...	66	61	1	(b) —
<b>South Africa</b>					
Rare earth compounds (a)	£83 000	£80 000	£140 000	£136 000	...
<b>Canada</b>					
Cerium compounds	...	201	278	311	303
Other rare earth compounds	...	240	158	255	649
<b>USA</b>					
Ores & concentrates	1 122	1 924	774	800	...
Cerium compounds	209	695	251	359	545
Other rare earth compounds	313	234	9 295	6 504	7 962
Ferro-cerium & other pyrophoric alloys	96	108	84	93	93
Metals	186	198	294	183	226
<b>Argentina</b>					
Rare earth compounds	41	67	...	...	...
<b>Brazil</b>					
Cerium compounds	247	262	127	207	...
Other rare earth compounds	15	14	96	356	...

## Imports of Rare Earths

Country	1987	1988	1989	1990	1991
Hong Kong					
Ferro-cerium & other pyrophoric alloys	217	178	170	228	189
Indonesia					
Rare earth compounds	58	21	27	26	11
Ferro-cerium & other pyrophoric alloys	22	17	107	...	...
Japan					
Cerium compounds	260	3 089	3 520	2 349	2 832
Other rare earth compounds	8 674	11 466	8 192	6 544	7 637
Ferro-cerium & other pyrophoric alloys	52	...	...	...	...
Metals	278	468	337	180	436
Korea, Republic of					
Cerium compounds	158	2 300	621	604	452
Other rare earth compounds	25	249	54	74	107
Ferro-cerium & other pyrophoric alloys	39	25	17	30	...
Metals	19	35	4	121	9
Malaysia					
Ores & concentrates	878	62	143	...	830
Saudi Arabia					
Ferro-cerium & other pyrophoric alloys	40	45	37	43	488
Singapore					
Ferro-cerium & other pyrophoric alloys	75	41	...	...	...
Taiwan					
Rare earth compounds	...	...	498	340	442
Ferro-cerium & other pyrophoric alloys	22	24	31	34	32
Metals	34	31	2	56	52
Thailand					
Ferro-cerium & other pyrophoric alloys	75	19	40	70	73

## Note(s):

- (1) Rare earths are here taken to include yttrium and scandium  
(a) Values shown are for the common customs area  
(b) Data for the Federal Republic of Yugoslavia only

## Salt

## Production of Salt

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Rock salt	1 855 000	876 845	1 184 000	1 102 000	1 635 000
Brine salt	1 554 000	1 425 551	1 344 000	1 341 000	1 319 800
Salt in brine (a)	3 672 000	3 827 138	4 228 000	3 991 000	3 874 000
Denmark (m)	536 951	548 085	551 871	522 206	550 150
France					
Rock salt	930 000	* 900 000	* 900 000	* 800 000	* 800 000
Salt in brine	3 663 000	3 973 000	4 322 000	4 022 000	4 130 000
Sea salt	1 627 000	1 435 000	1 132 000	1 591 000	1 388 000
Germany, Federal Republic of					
Rock salt	7 256 000	6 251 000	5 611 000	4 910 000	4 762 000
Brine salt	913 000	946 000	941 000	785 000	778 000
Salt in brine	5 395 544	5 379 475	5 386 147	5 242 186	5 161 212
Greece	141 548	181 324	148 265	182 470	128 845
Italy					
Rock salt & brine salt	3 687 660	3 609 095	3 500 512	3 752 003	3 500 000
Sea salt	1 120 000	970 000	700 000	700 000	700 000
Netherlands	3 979 000	3 693 000	3 756 000	3 653 000	3 417 000
Portugal					
Rock salt	525 055	530 047	583 671	646 422	622 495
Sea salt	177 723	138 784	* 150 000	* 130 000	* 130 000
Spain					
Rock salt	2 250 606	2 455 002	2 496 441	* 2 200 000	* 2 200 000
Sea salt	848 426	1 298 984	593 798	* 900 000	* 900 000
Other salt	95 652	124 126	132 508	* 100 000	* 100 000
Albania					
Rock salt	76 260	75 353	88 478	85 342	52 000
Sea salt	116 818	123 740	120 019	151 157	...
Austria					
Rock salt	1 350	1 020	1 361	1 236	1 252
Salt in brine	180 000	255 000	251 000	288 000	277 000
Evaporated salt	483 624	412 929	396 485	386 188	459 250
Bulgaria	* 92 000	* 91 000	77 500	166 445	* 150 000
Czechoslovakia	71 710	72 880	73 051	76 140	77 316
Finland	2 945	4 861	5 917	9 023	5 187
German Democratic Republic	3 087 200	3 277 800	3 172 300	* 2 600 000	—
Poland					
Rock salt	1 231 000	1 247 000	994 000	556 000	556 000
Other salt	4 944 000	4 932 000	3 676 000	3 499 000	3 284 000
Romania	5 395 000	5 353 000	5 038 000	5 400 000	* 5 400 000
Soviet Union	15 400 000	14 800 000	15 000 000	14 700 000	* 14 000 000
Switzerland	330 735	264 709	198 608	209 812	302 173
Turkey					
Rock salt	50 392	67 265	79 606	76 340	...
Sea salt	490 206	402 743	528 827	504 160	...
Other salt	660 967	888 429	1 130 684	1 308 462	(l) 1 700 000
Yugoslavia					
Rock salt	153 067	126 650	133 597	99 747	(p)* 130 000
Sea salt	67 672	58 286	50 376	71 345	(p)* 50 000
Other salt	282 650	200 276	184 461	204 213	(p)* 217 000
Algeria					
Brine salt & sea salt	232 900	232 000	228 400	224 600	211 073
Angola	65 000	55 000	* 70 000	* 70 000	* 70 000
Cape Verde Islands	* 5 000	3 000	* 3 000	1 140	* 1 500
Egypt	1 054 760	922 308	805 840	1 013 230	* 1 000 000
Ethiopia (d)	167 745	174 848	187 867	* 180 000	* 170 000
Ghana	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Kenya	72 269	94 682	103 220	102 100	72 449
Libya	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Madagascar	42 339	52 658	57 508	* 55 000	* 50 000
Mali	* 4 500	* 4 500	* 5 000	* 5 000	* 5 000
Mauritania	* 5 500	* 5 500	* 5 500	* 5 500	* 5 500
Mauritius (c)	7 500	7 000	7 000	7 000	7 000
Morocco	130 946	139 212	89 075	124 909	130 000
Mozambique	* 30 000	* 37 500	* 40 000	* 40 000	* 40 000
Namibia	130 041	149 317	142 102	157 224	141 368
Senegal	34 100	26 800	161 300	90 800	60 700
Somalia	* 2 000	* 2 000	* 2 000	* 1 500	* 500
South Africa	705 531	678 225	692 391	728 110	664 624
Sudan	83 939	91 000	90 000	95 000	75 000

## Production of Salt

Country	1987	1988	1989	1990	1991
Tanzania	41 124	30 023	20 010	39 315	64 419
Tunisia (c)	425 000	450 000	480 000	402 000	431 000
Bahamas (k)	1 164 088	1 236 012	1 008 483	1 140 143	1 319 713
Canada					
Rock salt	6 670 863	7 126 762	7 548 732	7 704 499	8 615 755
Other salt (e)	3 458 190	3 560 418	3 609 679	3 486 886	3 255 104
Costa Rica	12 650	27 000	* 30 000	23 000	* 25 000
Cuba	230 500	200 300	206 100	* 200 000	* 200 000
Dominican Republic	55 000	37 532	30 258	11 339	12 000
El Salvador (c)	36 188	32 591	30 238	31 584	30 351
Guatemala (c)	46 000	43 100	42 600	43 600	34 500
Honduras	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Mexico	6 198 833	6 788 359	6 702 605	7 135 121	7 532 421
Netherlands Antilles (k)	305 877	236 717	149 854	190 057	252 237
Nicaragua (c)	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Panama (c)	17 164	22 934	17 989	22 206	25 903
USA (f)					
Rock salt	10 854 000	11 703 000	12 644 000	13 055 000	11 064 000
Salt in brine	16 442 000	17 782 000	16 509 000	17 724 000	18 640 000
Evaporated salt	5 809 000	5 841 000	6 095 000	6 136 000	6 198 000
Argentina	950 478	1 245 709	1 185 458	* 1 200 000	842 800
Brazil					
Rock salt	951 645	1 365 857	1 369 009	1 033 000	...
Sea salt	3 600 000	3 020 000	2 355 000	4 170 000	(1)* 5 000 000
Chile	865 168	1 043 397	903 932	1 834 971	1 676 253
Colombia					
Rock salt	204 665	209 099	190 380	208 697	218 736
Sea salt	450 404	473 482	469 875	478 150	482 360
Peru	444 894	125 500	* 200 000	* 200 000	* 200 000
Venezuela (c)	* 500 000	* 365 000	439 400	430 000	293 386
Afghanistan (g)	* 10 000	* 10 000	* 10 000	* 10 000	* 12 000
Bangladesh (j)	416 000	409 000	449 000	217 000	331 000
Cambodia	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
China	17 640 000	22 640 000	28 290 000	20 230 000	24 100 000
India					
Rock salt	970	4 357	2 640	* 2 700	* 2 700
Sea salt	9 900 000	* 9 200 000	* 9 600 000	* 9 500 000	* 9 500 000
Indonesia	* 600 000	* 600 000	* 600 000	* 600 000	* 610 000
Iran (g)	811 217	814 842	989 932	848 098	800 000
Iraq	* 70 000	300 000	* 300 000	* 300 000	* 300 000
Israel	302 700	386 300	495 900	426 000	1 115 000
Japan (i)	1 397 000	1 363 000	1 366 684	1 377 300	1 380 000
Jordan (b)	18 000	38 000	57 000	55 000	5 000
Korea, Dem. P.R. of	* 570 000	* 570 000	* 570 000	* 580 000	* 580 000
Korea, Republic of	664 000	1 020 000	830 000	617 000	* 600 000
Kuwait	35 279	31 753	30 431	25 487	—
Laos	* 12 700	* 30 000	7 950	* 8 000	* 8 000
Lebanon	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
Mongolia	* 16 000	* 16 000	* 16 000	* 17 000	* 17 000
Myanmar (b) (c) (h)	256 680	245 930	256 850	* 260 000	* 260 000
Nepal (n)	2 000	6 000	7 200	6 900	7 300
Pakistan					
Rock salt	515 782	509 000	721 053	763 046	769 051
Sea salt	302 486	207 200	* 210 000	* 210 000	...
Philippines	466 427	492 080	479 599	490 407	492 859
Sri Lanka	115 274	101 590	150 223	53 088	52 938
Syria	81 000	127 000	137 950	127 172	* 127 000
Taiwan	99 943	111 341	169 982	82 820	195 319
Thailand					
Rock salt	3 268	5 670	15 384	119 179	124 500
Other salt	* 165 000	* 165 000	* 165 000	* 100 000	* 100 000
Vietnam	847 300	850 500	644 600	543 300	* 550 000
Yemen, Republic of (o)	218 500	* 220 000	* 220 000	220 000	250 000

## Salt

**Production of Salt**

tonnes

Country	1987	1988	1989	1990	1991
Australia	6 486 000	6 979 000	7 069 000	7 227 000	7 737 000
New Zealand	67 000	45 000	76 000	80 000	* 80 000
World total	178 100 000	184 500 000	187 900 000	182 000 000	182 500 000

## Note(s):

- (1) This table does not include production of refined salt
- (2) Salt is known to be produced in many countries for which statistics are not available. Among these are Martinique and Nigeria
- (a) Used for purposes other than salt-making
- (b) Brine salt
- (c) Sea salt
- (d) Years ended 6 July of that stated
- (e) Including salt in brine
- (f) Sold or used by producers
- (g) Years ended 20 March following that stated
- (h) Years ended 31 March following that stated
- (i) Government licensed plants
- (j) Years ended 30 June of that stated
- (k) Exports
- (l) Salt; all forms
- (m) Sales
- (n) Years ended 15 July of that stated
- (o) Yemen Arab Republic and People's Dem. Rep. of Yemen were unified on 22 May 1990 as the Republic of Yemen
- (p) Excluding data from August to December for the Republic of Croatia



## Exports of Salt

Country	1987	1988	1989	1990	1991
United Kingdom	404 587	293 028	285 296	325 542	198 613
Belgium-Luxembourg	83 597	77 614	80 847	81 418	89 171
Denmark	240 652	301 736	311 931	305 011	301 911
France	600 747	514 074	529 287	936 060	799 506
Germany, Federal Republic of	2 146 283	2 061 264	2 001 650	2 167 794	3 315 346
Irish Republic	1 234	754	1 595	1 554	1 701
Italy	613 394	358 371	81 885	170 784	224 277
Netherlands	2 658 571	2 776 934	2 815 205	2 662 295	3 085 450
Portugal	35 383	19 894	22 134	28 454	18 436
Spain	435 014	297 257	291 031	78 718	109 360
Albania	...	49 000	33 000	46 000	...
Austria	2 727	—	—	—	—
German Democratic Republic	1 653 000	1 826 000	1 772 000	...	—
Norway	1 798	1 427	2 505	2 309	2 027
Poland	364 239	424 837	366 242	...	...
Romania (a)	* 842 000	* 793 100	* 727 100	* 581 500	* 418 900
Soviet Union	451 609	344 909	299 156	344 678	...
Sweden	1 681	1 793	1 878	1 985	1 478
Turkey	17 386	20 312	4 368	2 368	31 316
Algeria	4 942	9 202	9 620	11 647	16 160
Egypt	180 276	122 017	131 775	...	...
Ethiopia	8 819	79	...	...	...
Kenya	20 974	48 239	...	...	...
Madagascar	8 289	...	12 548	8 141	10 387
Morocco	60 905	17 050	5 680	4 959	4 002
Namibia	118 604	133 894	185 328	153 371	103 312
Senegal	99 350	85 148	108 477	110 139	...
South Africa	81 715	79 404	76 748	91 049	56 169
Tanzania	2 164	7 140	5 606	...	...
Tunisia	340 702	295 682	483 450	399 488	350 048
Bahamas	1 164 088	1 236 012	1 008 483	1 141 914	1 319 713
Canada	1 960 130	3 038 462	2 137 512	1 912 161	2 783 021
El Salvador	4 486	...	...	...	...
Jamaica	2 347	3 377	3 369	3 793	...
Mexico	4 994 844	5 098 127	5 526 458	5 722 364	6 076 852
Netherlands Antilles	305 877	236 717	149 854	190 057	252 237
USA	501 311	855 718	1 429 638	2 266 152	1 816 635
Argentina	130 608	24 340	172 646	191 290	...
Brazil	27 416	24 018	13 069	12 196	56 883
Chile	826 387	654 577	699 674	1 201 421	1 012 187
Colombia	...	23 100	72 683	21 592	14 706
China	1 069 088	382 177	370 634	480 974	212 403
Hong Kong (c)	614	1 756	4 745	6 151	7 009
India (b)	187 692	494 418	...	403 882	406 164
Iran (e)	30 847	11 840	16 907	44 442	...
Israel (a)	* 33 100	* 10 500	* 19 000	* 18 100	* 23 000
Japan	717	656	1 036	1 320	1 509
Jordan	305	—	18 338	13 090	8 633
Korea, Republic of	49 967	14 467	24 157	40 464	59 621
Malaysia	1 245	1 233	2 698	...	1 628
Pakistan (d)	16 495	32 127	20 039	22 644	...
Saudi Arabia	6 507	12 189	11 653	3 831	1 849
Singapore	9 663	13 707	18 170	16 084	13 628
of which: Re-exports	8 961	12 442	17 252	14 436	12 911
Taiwan	3 418	4 800	6 834	8 000	9 000
Thailand	60 579	41 139	17 857	31 091	55 375
Yemen, People's Dem. Rep. of	17 000	...	...	...	...
Australia	* 5 500 000	6 206 000	6 194 000	6 466 000	7 061 000
New Zealand (d)	3 891	3 444	1 897	3 055	4 095

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

(b) Years ended 31 March following that stated

(c) Re-exports

(d) Years ended 30 June of that stated

(e) Years ended 20 March following that stated

## Salt

## Imports of Salt

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	222 668	162 057	140 042	166 797	164 101
Belgium-Luxembourg	1 295 472	1 061 158	1 110 538	960 257	998 749
Denmark	297 250	171 772	132 127	128 161	193 426
France	169 382	181 248	169 210	182 412	198 176
Germany, Federal Republic of	867 951	872 680	745 482	764 171	929 790
Greece	133 334	40 636	74 180	75 299	71 312
Irish Republic	105 570	94 940	107 767	121 234	130 336
Italy	882 193	707 861	646 571	680 046	576 459
Netherlands	285 188	247 647	220 405	264 166	424 538
Portugal	33 520	117 078	95 018	104 417	75 943
Spain	12 128	7 882	77 430	199 198	95 456
Austria	643	179	171	216	250
Czechoslovakia (a)	* 148 700	* 139 000	* 140 600	...	* 537 100
Faeroe Islands	17 983	38 648	27 875	15 993	20 234
Finland	586 315	645 815	710 140	686 355	477 639
Greenland	3 921	3 590	4 958	5 024	3 914
Hungary	696 629	664 982	581 791	471 362	...
Iceland	103 353	67 924	130 608	90 765	68 650
Malta	£58 100	£139 000	£81 500	£135 900	£177 500
Norway	596 368	470 547	491 912	511 753	557 491
Sweden	1 157 390	1 342 487	1 100 235	932 959	894 245
Switzerland	3 282	4 082	3 027	3 162	3 238
Turkey	428	12 126	9 265	18 072	5 352
Yugoslavia	329 870	255 730	268 962	251 300	(d) 127 917
Botswana	10 385	10 937	7 861	...	...
Burkina Faso	21 643	24 455	16 063	23 890	...
Burundi	17 892	6 209	13 663	7 843	17 363
Cameroon	41 262	...	38 833	...	...
Central African Republic	...	...	5 809	2 700	3 887
Congo	3 779	5 028	14 000	23 000	23 000
Egypt	812	137	485	...	...
Gabon	...	...	...	5 162	...
Ivory Coast	...	34 042	...	...	...
Liberia	3 615	...	...	...	...
Mali	19 804	55 396	39 440	...	...
Mauritius	622	972	1 028	598	...
Niger	24 427	17 480	...	...	...
Nigeria	453 959	...	...	...	...
Reunion	2 030	3 093	...	2 599	...
Rwanda	10 037	10 892	16 958	17 629	...
Seychelles	386	575	459	460	353
South Africa	91 321	88 177	165 308	143 076	121 000
Tanzania	10 834	2 623	297	...	...
Togo	1 988	4 776	9 999	15 415	...
Zaire	40 048	37 965	...	...	...
Zambia	764	12 409	58 823	885	...
Zimbabwe	48 329	55 466	...	54 415	...
Bahamas	1 648	2 063	4 287	5 122	1 229
Barbados	1 954	2 141	...	...	2 676
Belize	462	621	621	671	* 700
Canada	1 112 100	1 275 663	2 360 908	2 095 067	1 202 752
Dominica	659	577	639	732	872
Grenada	485	433	491	496	425
Guadeloupe	2 410	2 527	2 309	2 041	2 333
Guatemala	594	2 315	...	893	2 891
Jamaica	23 667	18 225	22 231	15 162	...
Martinique	2 380	2 376	2 290	2 594	2 542
Mexico	538	1 062	7 376	...	...
Netherlands Antilles	1 367	520	332	627	604
Panama	554	193	278	663	1 098
St. Lucia	797	777	1 590	...	...
Trinidad & Tobago	23 453	...	...	16 863	13 892
USA	7 165 810	4 950 341	5 519 290	5 969 601	6 161 315
Brazil	1 231 510	47 743	401 050	226 023	59 112
French Guiana	429	503	444	542	497
Paraguay	2 011	1 774	395	1 125	1 329
Suriname	1 710	3 963	2 341	2 885	...
Uruguay	63 841	72 292	78 706	67 816	75 052

## Imports of Salt

Country	1987	1988	1989	1990	1991
Abu Dhabi	2 308	2 016	...	1 627	999
Bahrain	1 887	2 802	2 242	2 418	...
Bangladesh (b)	165 960	219 990	376 423	116 985	...
Brunei	1 511	...	...	...	...
Cyprus	5 351	...	4 352	5 250	6 642
Hong Kong	129 938	131 362	156 456	148 674	143 578
India (c)	11 081	10 645	...	18 215	14 558
Indonesia	85 463	757	175 767	349 042	330 107
Japan	6 830 128	7 229 250	7 703 070	7 920 433	7 854 886
Jordan	742	331	697	184	286
Korea, Dem. P.R. of (a)	* 224 700	* 155 600	* 133 200	* 249 100	* 129 100
Korea, Republic of	1 102 538	1 053 486	1 038 719	1 080 843	1 275 010
Kuwait	7 083	8 583	7 752	...	1 945
Macao	2 273	2 135	3 265	3 571	2 745
Malaysia	175 315	210 759	230 224	...	227 084
Oman	6 039	16 700	17 964	17 562	...
Philippines	93 052	52 620	208 540	111 265	80 931
Qatar	3 135	3 747	3 384	3 157	5 805
Saudi Arabia	10 694	24 868	15 733	16 739	12 662
Singapore	47 136	66 068	67 459	87 370	70 482
Taiwan	596 704	781 925	851 667	942 384	855 840
Thailand	1 160	846	895	828	934
Australia	7 971	7 243	6 633	7 232	6 051
Fiji	3 497	3 226	...	...	...
New Caledonia	625	649	846	551	773
New Zealand (b)	94 298	69 877	67 550	64 397	14 248
Solomon Islands	1 475	1 070	775	815	1 170

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

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

(d) Data for the Federal Republic of Yugoslavia only

## Sillimanite

**Production of Sillimanite Minerals**

tonnes

Country	1987	1988	1989	1990	1991
France					
Andalusite	50 000	50 000	50 000	* 50 000	* 50 000
Spain					
Andalusite	3 916	3 360	3 765	* 3 600	* 3 600
Czechoslovakia	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Romania	* 70 000	* 70 000	* 70 000	* 70 000	* 70 000
Soviet Union					
Kyanite (a)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Sweden					
Kyanite	* 5 000	* 6 000	* 6 000	* 6 000	* 6 000
South Africa					
Andalusite	218 560	259 556	284 617	283 677	209 824
Sillimanite	1 243	781	170	256	422
Zimbabwe					
Kyanite	1 834	1 795	1 869	160	2 463
USA					
Kyanite (b)	* 90 000	* 90 000	* 100 000	* 100 000	* 85 000
Brazil					
Kyanite (d)	510	630	1 032	* 1 000	* 1 000
China	* 2 500	* 2 500	* 2 500	* 2 500	* 2 500
India					
Andalusite	482	—	—	—	—
Kyanite	37 382	35 773	39 489	38 851	30 020
Sillimanite	14 336	15 377	16 117	18 240	11 757
Australia					
Kyanite	1 079	* 500	* 500	* 750	* 800
Sillimanite (c)	77	64	* 80	* 100	* 100
World total	672 000	711 000	751 000	750 000	648 000

## Note(s):

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

(a) May include other sillimanite minerals

(b) Including related minerals

(c) Excluding sillimanite clay

(d) Including beneficiated and directly shipped material

## Exports of Sillimanite Minerals

Sillimanite

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Sillimanite minerals	4 362	5 618	6 274	4 816	3 156
Belgium-Luxembourg					
Sillimanite minerals	44	—	250	52	147
Denmark					
Sillimanite minerals	23	49	11	—	17
France					
Sillimanite minerals	29	46 525	49 764	47 654	43 301
Germany, Federal Republic of					
Sillimanite minerals					
Crude	2 015	...	...	...	...
Calcined	4 884	(a) 6 374	(a) 10 929	(a) 12 920	(a) 9 979
Italy					
Sillimanite minerals	1 431	1 337	1 007	...	725
Netherlands					
Sillimanite minerals					
Crude	1 815	...	...	...	...
Other	1 371	(a) 927	(a) 1 011	(a) 1 364	(a) 2 207
Austria					
Sillimanite minerals	20 735	1	10	0	21
Czechoslovakia					
Sillimanite minerals (b)	* 16 800	...	...	...	...
Sweden					
Sillimanite minerals	...	2 559	3 280	3 623	2 365
South Africa					
Andalusite	139 426	147 046	160 084	148 360	124 081
Sillimanite	979	935	181	368	740
USA					
Kyanite & related minerals	(b)* 61 700	(b)* 96 600	29 950	33 211	32 073
Brazil					
Kyanite	228	82	39	89	...
Japan					
Sillimanite minerals	(d) 10 362	5 207	4 925	5 159	5 512
Macao					
Sillimanite minerals	27 102	12 000	1 260	—	—
New Zealand (c)					
Sillimanite minerals	18 118	9 930	—	—	—

Note(s):]

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

(a) Including crude

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

(c) Years ended 30 June of that stated

(d) Including chamotte and dinas earth

## Sillimanite

**Imports of Sillimanite Minerals**

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Sillimanite minerals	48 717	52 694	87 871	58 219	51 390
Belgium-Luxembourg					
Sillimanite minerals					
Crude	1 320	...	...	...	...
Other	3 217	(b) 3 487	(b) 7 414	(b) 9 712	(b) 7 057
Denmark					
Sillimanite minerals	1 129	1 162	2 737	2 143	1 677
France					
Sillimanite minerals					
Crude	2 528	...	...	...	...
Other	3 207	(b) 5 331	(b) 7 105	(b) 8 098	(b) 7 333
Germany, Federal Republic of					
Sillimanite minerals					
Crude	30 583	...	...	...	...
Calcined	49 971	(b) 131 409	(b) 132 840	(b) 126 436	(b) 98 358
Greece					
Sillimanite minerals	811	2	—	—	18
Italy					
Sillimanite minerals					
Crude	13 509	...	...	...	...
Other	7 799	(b) 25 956	(b) 24 692	(b) 26 792	(b) 22 554
Netherlands					
Sillimanite minerals					
Crude	3 980	...	...	...	...
Other	1 037	(b) 5 636	(b) 8 485	(b) 6 278	(b) 6 988
Spain					
Sillimanite minerals	5 502	8 819	12 666	17 857	12 287
Austria					
Sillimanite minerals	76 969	2 213	3 338	2 534	2 230
Finland					
Sillimanite minerals	...	1 698	76	1 623	1 091
Norway					
Sillimanite minerals	(a) 322	377	437	450	2 452
Sweden					
Sillimanite minerals	...	394	2 267	965	962
Switzerland					
Sillimanite minerals	...	339	653	754	379
Yugoslavia					
Sillimanite minerals	...	7 248	4 400	1 485	(c) 463
Canada					
Sillimanite minerals	...	7 222	6 664	6 245	6 358
Mexico					
Mullite	1 524	2 055	1 939	2 231	...
USA					
Sillimanite minerals	...	...	10 862	18 104	5 601
Argentina					
Sillimanite minerals	131	191	...	...	...
Japan					
Sillimanite minerals	26 609	35 298	37 583	34 825	27 351
Mullite	(a) 20 195	762	2 000	9 489	12 336
Korea, Republic of					
Sillimanite minerals	5 582	4 830	11 713	12 994	11 768
Mullite	7 172	4 710	5 157	4 919	5 944
Australia					
Sillimanite minerals (d)	7 932	3 655	5 511	4 168	5 822

## Note(s):

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

(a) Including chamotte and dinas earth

(b) Including crude

(c) Data for the Federal Republic of Yugoslavia only

(d) Years ended 30 June of that stated

## Production of Sulphur and Pyrites

tonnes (sulphur content)

Country	1987	1988	1989	1990	1991
United Kingdom					
Recovered (c)	51 400	54 500	60 200	80 700	60 100
Recovered (d)	119 000	129 000	118 000	138 000	143 000
Belgium					
Recovered (c) (d)	* 300 000	* 310 000	* 320 000	* 310 000	* 300 000
Denmark					
Recovered (d)	10 568	13 571	18 842	12 118	6 264
France					
Recovered (d)	1 280 000	1 232 000	1 146 000	1 149 000	1 270 000
Germany, Federal Republic of					
Recovered (c)	* 300 000	* 310 000	* 315 000	* 320 000	* 300 000
Recovered (d)	* 1 239 000	* 1 157 000	* 1 157 000	* 1 195 000	* 1 205 000
Recovered (e)	* 285 000	* 280 000	* 310 000	* 300 000	* 300 000
Greece					
Pyrites (45%)	67 037	58 558	57 150	41 347	35 332
Recovered (d)	* 140 000	* 190 000	* 190 000	* 190 000	* 200 000
Italy					
Pyrites (43%)	306 905	307 646	323 409	310 243	212 000
Recovered (d)	* 250 000	* 310 000	* 315 000	* 297 000	* 315 000
Sulphur ore	2 674	...	...	...	...
Netherlands					
Recovered (c) (d)	* 211 000	* 215 000	* 260 000	285 000	* 290 000
Portugal					
Pyrites (44%)	122 787	110 367	90 752	61 072	6 000
Recovered	* 5 000	* 5 000	* 3 000	* 3 000	* 4 000
Spain					
Pyrites (47%)	1 010 528	1 055 670	878 917	748 000	580 000
Recovered (c) (d) (e)	* 235 000	* 120 000	* 120 000	* 110 000	* 110 000
Austria					
Recovered	41 394	47 548	49 134	* 42 000	* 39 000
Anhydrite	13 091	—	—	—	—
Bulgaria					
Pyrites (42%)	* 80 000	* 70 000	* 70 000	* 70 000	* 70 000
Recovered	* 65 000	* 60 000	* 60 000	* 60 000	* 60 000
Czechoslovakia					
Pyrites (42%)	* 60 000	* 60 000	* 50 000	* 50 000	* 50 000
Recovered	38 023	50 287	60 182	55 570	54 628
Sulphur ore	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Finland					
Pyrites (44%)	273 260	270 570	345 240	290 157	249 721
Recovered (c)	317 357	* 240 000	* 180 000	* 237 000	* 227 000
Recovered (d)	51 656	39 485	32 949	37 101	31 164
German Democratic Republic					
Recovered	* 315 000	* 315 000	* 290 000	* 265 000	—
Hungary					
Pyrites	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Recovered	* 10 000	* 10 000	* 10 000	* 10 000	18 785
Norway					
Pyrites (50%)	177 843	153 233	120 141	151 682	152 959
Recovered (c) (d)	* 95 000	* 90 000	* 88 000	* 90 000	* 90 000
Poland					
Frasch (g)	4 966 000	5 000 000	4 864 000	4 660 364	3 934 531
Recovered (c)	* 170 000	* 150 000	* 150 000	* 140 000	* 140 000
Recovered (d)	* 35 000	* 30 000	* 20 000	* 20 000	* 20 000
Anhydrite	* 22 000	* 20 000	* 20 000	* 10 000	* 10 000
Romania					
Pyrites (42%)	* 150 000	* 150 000	* 150 000	* 74 000	* 36 000
Recovered	* 130 000	* 120 000	* 120 000	* 110 000	* 101 000
Soviet Union					
Pyrites (46%)	2 150 000	* 2 150 000	* 2 150 000	* 1 900 000	* 1 700 000
Frasch	* 1 100 000	* 1 100 000	* 1 100 000	* 1 000 000	* 900 000
Recovered (c)	* 1 250 000	* 1 375 000	* 1 350 000	* 1 200 000	* 1 100 000
Recovered (d)	* 2 850 000	* 3 740 000	* 2 950 000	* 2 925 000	* 2 600 000
Sulphur ore	* 2 400 000	* 2 400 000	* 2 350 000	* 2 000 000	* 1 800 000
Sweden					
Pyrites (48%)	205 706	170 424	144 074	120 873	42 700
Recovered (c)	* 130 000	* 125 000	* 125 000	* 125 000	* 120 000
Sulphur ore	38 792	33 282	42 295	41 930	* 40 000
Turkey					
Pyrites (45%)	22 035	75 387	* 96 000	* 90 000	* 93 000
Recovered (d) (e)	* 20 000	* 21 000	* 62 000	* 70 000	* 90 000
Sulphur ore	33 642	28 196	27 455	25 618	* 25 000

## Sulphur and Pyrites

## Production of Sulphur and Pyrites

tonnes (sulphur content)

Country		1987	1988	1989	1990	1991
Yugoslavia						
Pyrites	(42%)	255 723	359 562	292 543	219 240	200 000
Recovered (c) (d)		* 178 000	* 173 000	* 179 000	* 178 000	* 162 000
Algeria						
Recovered (d)		* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Egypt						
Recovered (d)		10 000	* 10 000	* 10 000	* 10 000	* 10 000
Libya						
Recovered (d)		* 14 000	* 14 000	* 15 000	* 15 000	* 15 000
Namibia						
Pyrites	(50%)	60 130	113 341	98 266	69 463	63 560
South Africa						
Pyrites	(48%)	467 531	504 743	460 974	451 584	292 539
Recovered (d) (h)		* 110 000	* 120 000	(i) 224 465	(i) 236 792	(i) 228 145
Recovered (c)		105 080	111 508	...	...	...
Zaire						
Recovered (c)		* 35 000	* 32 000	* 29 000	* 20 000	* 16 000
Zambia						
Pyrites	(43%)	19 406	28 817	25 056	30 063	33 285
Recovered		* 87 000	* 81 000	* 75 000	* 71 000	* 70 000
Zimbabwe						
Pyrites	(42%)	19 575	16 657	19 976	28 035	29 337
Recovered		* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Canada						
Recovered (c)		785 000	879 000	836 000	899 000	872 000
Recovered (d)		7 322 791	8 106 641	6 868 930	6 873 495	6 180 049
Cuba						
Recovered (d)		* 5 000	* 5 000	* 5 000	* 5 000	* 4 000
Mexico						
Frasch		1 805 560	1 628 054	1 531 314	1 440 580	1 040 268
Recovered (c)		* 154 000	* 240 000	* 286 000	* 290 000	* 290 000
Recovered (d)		500 911	510 160	555 039	701 113	754 097
Netherlands Antilles						
Recovered (d)		* 30 000	20 685	20 205	19 469	25 513
Trinidad & Tobago						
Recovered (d)		* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
USA						
Pyrites (a)	(40%)	173 000	3 000	4 000	4 000	4 000
Frasch		3 202 000	3 174 000	3 888 000	3 726 000	2 869 000
Recovered (c)		1 003 000	1 125 000	1 190 000	1 294 000	1 302 000
Recovered (d)		6 161 000	6 444 000	6 510 000	6 536 000	6 645 000
Bolivia (f)						
Sulphur ore		8 746	6 733	8 167	2 101	2 795
Brazil						
Pyrites		82 446	108 895	77 461	51 859	64 000
Recovered (c)		153 038	152 013	163 981	165 891	* 180 000
Recovered (d)		77 322	61 396	60 121	58 322	* 60 000
Chile						
Recovered (c)		119 000	131 000	180 000	187 000	278 000
Sulphur ore (b)		37 048	37 649	15 963	28 582	16 884
Colombia						
Recovered (d)		10 203	8 233	8 700	* 8 000	9 308
Sulphur ore		41 490	42 617	41 722	39 686	46 563
Ecuador						
Recovered (d)		* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Sulphur ore		* 4 500	* 4 500	* 4 300	* 4 000	* 4 000
Peru						
Recovered (c)		* 66 000	* 66 000	* 66 000	* 66 000	* 66 000
Venezuela						
Recovered (d)		* 125 000	* 125 000	* 125 000	* 125 000	* 125 000
Abu Dhabi						
Recovered (d)		* 105 000	* 110 000	* 80 000	* 90 000	* 110 000
Bahrain						
Recovered (d)		47 500	47 690	* 48 000	* 48 000	38 000
China						
Pyrites	(45%)	* 3 700 000	* 3 900 000	* 4 270 000	4 400 000	4 752 000
Recovered		* 500 000	* 550 000	* 600 000	* 650 000	* 650 000
Sulphur ore		* 300 000	* 300 000	* 300 000	* 320 000	* 320 000
Cyprus						
Pyrites	(44%)	50 355	49 784	25 944	—	—



## Production of Sulphur and Pyrites

tonnes (sulphur content)

Country		1987	1988	1989	1990	1991
India						
Pyrites (37%)		10 910	10 973	14 381	21 000	41 000
Recovered (c)		* 120 000	* 125 000	* 125 000	* 125 000	* 125 000
Indonesia						
Sulphur ore		3 941	4 321	3 939	3 628	* 4 000
Iran						
Recovered (c)		* 20 000	* 25 000	* 40 000	* 45 000	* 50 000
Recovered (d)		* 240 000	* 206 000	* 460 000	* 635 000	* 650 000
Iraq						
Frasch		* 707 000	* 958 000	* 960 000	* 800 000	* 400 000
Recovered (d)		* 250 000	* 227 000	* 370 000	* 260 000	* 30 000
Israel						
Recovered (d)		40 200	68 300	67 600	* 64 000	* 66 000
Japan						
Pyrites (49%)		78 957	70 915	62 268	53 363	54 000
Recovered (c) (g)		1 249 623	1 267 934	1 384 318	1 336 000	* 1 400 000
Recovered (d)		1 020 000	1 093 000	1 176 000	1 268 000	* 1 300 000
Korea, Dem. P.R. of						
Pyrites (40%)		* 200 000	* 200 000	* 200 000	* 200 000	* 210 000
Recovered (c)		* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Korea, Republic of						
Recovered (c)		* 55 000	* 55 000	* 55 000	* 55 000	* 55 000
Recovered (d)		* 35 000	* 35 000	* 36 000	* 36 000	* 37 000
Kuwait						
Recovered (d)		310 000	360 000	375 000	300 000	30 000
Oman						
Recovered (c) (d)		* 47 000	* 47 000	* 57 000	* 66 000	* 70 000
Pakistan						
Recovered		* 26 000	* 25 000	* 25 000	* 25 000	* 26 000
Philippines						
Pyrites (46%)		47 299	174 491	164 000	134 000	150 000
Recovered (c)		* 140 000	* 150 000	* 185 000	* 185 000	* 150 000
Qatar						
Recovered (d)		53 300	* 55 000	* 52 000	* 52 000	* 53 000
Saudi Arabia						
Recovered (d)		1 432 000	1 378 000	1 423 000	1 435 000	* 1 450 000
Singapore						
Recovered (d)		* 50 000	* 50 000	* 55 000	* 60 000	* 65 000
Syria						
Recovered (d)		* 40 000	* 40 000	* 40 000	29 652	* 29 000
Taiwan						
Recovered		89 082	86 541	76 060	95 533	125 819
Australia						
Recovered (c)		536 244	* 560 000	* 560 000	...	...
Recovered (d)		8 500	* 9 000	* 10 000	* 10 000	* 10 000
Total Pyrites		9 800 000	10 200 000	10 200 000	9 600 000	9 100 000
Total Frasch		11 800 000	11 900 000	12 300 000	11 600 000	9 100 000
Total Recovered		33 500 000	35 800 000	34 700 000	35 000 000	33 700 000
Total Sulphur ore		2 900 000	2 900 000	2 800 000	2 500 000	2 300 000
World total (all forms)		58 000 000	60 700 000	60 000 000	58 700 000	54 200 000

## Note(s):

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

(a) Including hydrogen sulphide and liquid sulphur dioxide

(b) Including caliche at 45% S content

(c) From smelter gases

(d) From petroleum refining and/or natural gas

(e) Other

(f) Exports

(g) Including S content of sulphur ore

(h) Including production from synthetic fuels

(i) Including recovered from smelter gases

## Sulphur and Pyrites

## Exports of Sulphur and Pyrites

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Sulphur					
Crude	2 857	3 325	3 931	3 863	3 440
Sublimed & precipitated	169	1 089	1 353	2 184	1 583
Belgium-Luxembourg					
Pyrites	130	265	245	206	166
Sulphur					
Crude	32 078	19 883	27 217	29 325	16 549
Sublimed & precipitated	292	85	59	34	112
Denmark					
Sulphur					
Crude	4 209	7 750	8 853	3 379	5 155
Sublimed & precipitated	2 415	2 254	34	67	—
France					
Sulphur					
Crude	472 083	537 359	417 132	501 702	365 575
Refined	2 258	9 424	7 391	7 472	5 068
Sublimed & precipitated	2 793	556	356	430	588
Germany, Federal Republic of					
Pyrites	1 400	1 318	1 499	1 274	991
Sulphur					
Crude	764 327	697 106	626 088	718 606	682 649
Sublimed & precipitated	200	235	315	8 546	302
Greece					
Sulphur	7 063	743	8 266	302	6 962
Italy					
Pyrites	4 883	5 351	5 780	5 752	5 230
Sulphur					
Crude	450	954	4 178	27 521	33 478
Sublimed & precipitated	49	279	481	238	1 855
Netherlands					
Sulphur	95 299	92 946	144 210	148 042	135 135
Spain					
Pyrites	248 457	162 984	86 121	13 651	7 685
Sulphur					
Crude	10 774	29 485	47 370	44 846	62 137
Sublimed & precipitated	47	39	85	1 690	1 689
Albania					
Pyrites	(c)* 14 500	62 000	11 000	(c)* 15 000	...
Finland					
Pyrites (c)	* 161 500	* 288 900	* 383 400	* 351 900	* 331 900
Hungary					
Sulphur	20 174	34 508	38 081	17 000	...
Norway					
Pyrites	108 080	92 688	24 090	48 565	69 528
Sulphur					
Crude	739	800	—	10	1
Sublimed & precipitated	2 799	1 124	99	3 664	5 865
Poland					
Sulphur	3 856 000	3 878 000	3 636 000	3 815 000	2 861 000
Soviet Union					
Pyrites	309 000	246 000	161 000	174 000	...
Sulphur (c)	* 41 500	* 59 200	* 42 200	* 2 500	* 2 500
Sweden					
Pyrites	58 654	4	76	93	100
Sulphur					
Crude	18 969	15 597	36 528	38 299	29 757
Sublimed & precipitated	82	2 363	3 077	841	643
Switzerland					
Sulphur					
Crude	16 877	12 389	14 331	15 791	28 975
Sublimed & precipitated	28	1	6	7	2
Yugoslavia					
Pyrites	65 467	36 928	30 212	32 724	(f) 20 196
Namibia					
Pyrites (e)	...	...	89 820	84 097	...
South Africa					
Sulphur	1 041	24 852	19 449	17 412	15 861

## Exports of Sulphur and Pyrites

tonnes

Country	1987	1988	1989	1990	1991
Canada					
Pyrites	—	4 585	10 540	119 722	3
Sulphur	6 571 800	7 381 005	5 516 208	6 057 556	5 303 666
Mexico					
Sulphur	1 444 615	1 738 934	1 208 901	1 330 909	1 335 874
Netherlands Antilles					
Sulphur	23 000	20 685	20 205	19 469	25 513
USA					
Sulphur					
Crude	(d) 1 215 832	(d) 1 223 357	684 777	688 963	943 166
Refined	...	...	159 712	111 694	89 942
Sublimed & precipitated	...	...	191 743	128 493	258 788
Bolivia					
Sulphur	8 790	6 767	8 269	2 310	2 952
Colombia					
Sulphur	4 495	2 666	843	3 482	2 359
Venezuela					
Sulphur	20 033	...	...	16 712	...
Bahrain					
Sulphur	44 843	13 468	36 244	39 906	...
China					
Pyrites	130 315	200 507	230 312	207 079	195 388
Sulphur					
Crude	44 622	32 664	8 451	85	486
Sublimed & precipitated	(c)* 4 900	(c)* 500	(c)* 200	6	316
Cyprus					
Pyrites	21 905	...	—	1 630	—
Iran					
Sulphur (c)	* 46 000	* 73 400	* 50 900	* 251 400	* 149 900
Japan					
Sulphur					
Crude	138 133	170 366	262 621	385 385	358 370
Sublimed & precipitated	1 692	2 294	1 656	1 532	1 579
Korea, Republic of					
Sulphur	4 960	5 191	5 605	6 400	5 589
Saudi Arabia					
Sulphur					
Crude	169 196	148 727	580 942	639 395	452 219
Sublimed & precipitated	371 948	831 785	410 921	1 012 604	1 055 731
Singapore					
Sulphur					
Crude	(a) 24 815	(a) 26 925	(a) 21 342	35 729	18 848
Sublimed & precipitated	22 207	23 408	11 719	19 981	11 626
Taiwan					
Sulphur					
Crude	599	227	146	94	350
Sublimed & precipitated	274	76	9	26	78
Thailand					
Sulphur					
Crude	2 635	592	133	1 824	766
Sublimed & precipitated	27	45	—	35	16
Australia					
Sulphur (b)	32 706	46 010	558	1 149	1 541

(a) Re-exports

(b) Years ended 30 June of that stated

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

(d) Including refined, sublimed and precipitated

(e) S content

(f) Data for the Federal Republic of Yugoslavia only

## Sulphur and Pyrites

## Imports of Sulphur and Pyrites

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Pyrites	12 830	13 020	8 928	14 325	8 373
Sulphur					
Crude	618 984	682 897	641 460	470 862	439 315
Sublimed & precipitated	379	910	1 103	376	117
Belgium-Luxembourg					
Pyrites	296 979	223 932	147 738	85 356	78 625
Sulphur					
Crude	414 213	449 888	434 603	447 778	436 148
Sublimed & precipitated	2 298	1 788	848	390	638
Denmark					
Sulphur					
Crude	48 289	72 813	72 551	52 867	27 386
Sublimed & precipitated	142	87	43	41	65
France					
Pyrites	1 328	1 317	1 188	2 865	840
Sulphur					
Crude	642 767	746 655	628 330	651 213	526 822
Refined	2 959	11 957	8 594	10 769	32 708
Sublimed & precipitated	137	535	604	353	348
Germany, Federal Republic of					
Pyrites	150 525	159 233	65 176	84 310	120 976
Sulphur					
Crude	214 142	176 187	131 334	97 648	68 160
Sublimed & precipitated	1 434	1 009	924	5 891	506
Greece					
Pyrites	3 803	10 588	5	9	1
Sulphur					
Crude	151 689	79 573	94 693	90 179	187 196
Sublimed & precipitated	33	122	3	15	75
Irish Republic					
Sulphur					
Crude	318	295	274	381	480
Sublimed & precipitated	39	85	15	31	28
Italy					
Pyrites	102 513	118 589	88 116	94 974	47 463
Sulphur					
Crude	283 843	264 903	186 303	174 421	191 412
Sublimed & precipitated	1 202	1 111	1 434	1 415	1 036
Netherlands					
Pyrites	302	411	491	1 203	463
Sulphur					
Crude	237 546	171 058	199 528	188 336	130 343
Sublimed & precipitated	248	398	377	278	154
Portugal					
Sulphur	22 842	17 913	16 828	14 830	16 566
Spain					
Sulphur					
Crude	42 825	54 839	39 662	51 343	47 418
Sublimed & precipitated	51	59	99	1 316	49
Austria					
Pyrites	655	746	800	819	642
Sulphur					
Crude	82 590	87 996	84 879	59 329	48 268
Sublimed & precipitated	238	242	190	2 657	374
Bulgaria					
Pyrites (a)	* 190 000	* 77 000	...	...	...
Sulphur (a)	* 53 000	* 61 000	* 37 000	...	...
Czechoslovakia					
Sulphur	488 000	486 000	419 000	396 000	199 000
Finland					
Sulphur					
Crude	17 951	42 256	54 016	21 197	7 395
Sublimed & precipitated	20	11	12	14	2
German Democratic Republic					
Sulphur (a)	* 138 000	* 134 000	* 135 000	...	—

## Imports of Sulphur and Pyrites

tonnes

Country	1987	1988	1989	1990	1991
Hungary					
Pyrites	53 995	28 362	19 000	20 000	...
Sulphur	158 061	183 662	155 076	47 573	19 000
Norway					
Pyrites	—	29 164	68 173	19 340	30
Sulphur					
Crude	3 371	3 503	3 473	3 652	2 981
Sublimed & precipitated	30	42	528	106	485
Romania					
Sulphur	418 300	356 300	347 200	262 000	167 000
Soviet Union					
Sulphur (a)	* 983 300	* 748 000	* 1 321 400	* 1 029 700	* 1 111 900
Sweden					
Pyrites	65 914	125 817	188 101	225 251	167 760
Sulphur					
Crude	7 885	8 171	5 574	5 416	5 757
Sublimed & precipitated	8 402	7 935	11 315	10 803	7 680
Switzerland					
Pyrites	146	218	202	212	209
Sulphur					
Crude	57 173	54 829	59 932	56 164	51 381
Sublimed & precipitated	146	78	43	52	37
Turkey					
Pyrites	72 135	64 185	38	15 053	4 604
Sulphur					
Crude	108 254	139 115	126 749	160 873	123 525
Sublimed & precipitated	59	46	6 746	304	344
Yugoslavia					
Pyrites	451	30 455	10 774	3 633	(d) 8 743
Sulphur					
Crude	129 365	203 568	138 545	140 056	(d) 2 332
Refined	2 481	6 775	5 596	4 746	(d) 1 903
Sublimed & precipitated	130	175	73	50	(d) 181
Algeria					
Sulphur					
Crude	126 888	80 020	89 824	48 285	71 949
Sublimed & precipitated	4 104	0	1	1	900
Egypt					
Sulphur					
Crude	110 312	164 873	136 878	...	...
Sublimed & precipitated	38	481	14 421	...	...
Ethiopia					
Sulphur	70	2	716	1 601	...
Gabon					
Sulphur	5 000	4 000	4 000	2 200	2 000
Kenya					
Sulphur					
Crude	6 480	684	5 000	5 000	...
Sublimed & precipitated	1 368	1 323	...	...	...
Morocco					
Sulphur	2 042 825	2 924 965	1 095 286	2 739 592	2 228 027
Niger					
Sulphur	11 208	20 614	18 600	23 800	18 000
Nigeria					
Sulphur	4 174	6 000	2 000	5 000	19 000
Senegal					
Sulphur	149 584	155 000	157 636	237 204	269 000
South Africa					
Pyrites	196	60	70	154	...
Sulphur					
Crude	605 563	1 013 582	274 687	328 334	195 000
Sublimed & precipitated	56	91	451	444	...
Tanzania					
Sulphur	4 878	678	3 062	11 000	9 000
Tunisia					
Sulphur	1 119 864	1 305 036	1 234 789	1 286 606	1 154 746
Zimbabwe					
Sulphur	29 575	30 426	20 000	19 903	23 000

## Sulphur and Pyrites

**Imports of Sulphur and Pyrites**

tonnes

Country	1987	1988	1989	1990	1991
Canada					
Pyrites	...	5 970	4 588	2 860	6 710
Sulphur					
Crude	24 712	32 217	18 311	13 247	9 026
Sublimed & precipitated	...	2 314	1 845	1 620	1 268
Cuba					
Sulphur	156 873	166 275	154 191	* 50 000	* 150 000
El Salvador					
Sulphur	1 154	8 949	228	2 127	4 296
Guatemala					
Sulphur	5 154	951	1 749	1 951	1 156
Jamaica					
Sulphur	3 005	3	3 286	6 010	3 000
Mexico					
Sulphur					
Crude	448 566	604 144	284 990	517 155	378 000
Sublimed & precipitated	75	1 133	288	372	...
Nicaragua					
Sulphur	1 000	1 000	1 000	...	250
USA					
Pyrites	32 501	11 435	29 007	32 061	2 046
Sulphur					
Crude	1 599 125	1 995 524	2 240 139	2 557 272	3 013 412
Sublimed & precipitated	...	...	19 503	13 870	7 840
Argentina					
Sulphur	105 896	53 882	50 663	82 034	* 100 000
Brazil					
Sulphur					
Crude	1 189 846	1 145 282	1 093 351	723 508	1 065 652
Sublimed & precipitated	747	138	91	71	87
Chile					
Sulphur	71 499	69 540	51 154	64 854	40 459
Colombia					
Sulphur	25 740	25 984	31 904	34 975	35 024
Ecuador					
Sulphur	1 378	1 367	502	265	1 914
Paraguay					
Sulphur	1 095	1 593	1 200	1 504	2 517
Peru					
Sulphur	4 947	6 271	3 000	3 649	3 360
Suriname					
Sulphur	1 064	784	781	851	...
Uruguay					
Sulphur	15 350	21 848	18 700	14 000	13 723
Venezuela					
Sulphur	268	82	6 127	164	252
Bangladesh (b)					
Sulphur	27 998	18 593	21 196	43 057	31 000
China					
Sulphur	31	20 598	126 553	92	26 290
Cyprus					
Sulphur	2 384	2 200	2 298	1 758	1 356
Hong Kong					
Sulphur					
Crude	294	345	344	623	881
Sublimed	434	262	849	574	572
India (c)					
Sulphur					
Crude	1 148 785	1 298 963	1 630 000	1 199 153	1 082 155
Sublimed & precipitated	679	1 362	...	1 275	1 115
Indonesia					
Sulphur					
Crude	33 620	61 970	49 605	143 192	320 052
Sublimed & precipitated	345 495	283 607	249 029	117 131	22 653

## Imports of Sulphur and Pyrites

tonnes

Country	1987	1988	1989	1990	1991
Israel					
Sulphur	250 950	253 316	143 832	47 566	...
Japan					
Pyrites	205 020	259 652	327 863	317 550	321 293
Sulphur	68	2 305	287	939	453
Jordan					
Sulphur					
Crude	168 387	267 996	89 249	38 410	281 154
Sublimed & precipitated	20 723	—	—	62 444	22 720
Korea, Republic of					
Sulphur					
Crude	520 997	585 328	554 925	517 345	472 320
Sublimed & precipitated	1 902	2 531	2 830	1 766	1 253
Kuwait					
Sulphur	419 396	—	764 058	147 426	...
Malaysia					
Sulphur					
Crude	1 631	4 025	6 709	8 000	23 990
Sublimed & precipitated	20 349	15 297	27 873	...	8 534
Pakistan (b)					
Sulphur					
Crude	41 035	36 396	44 000	27 154	31 000
Sublimed & precipitated	810	113	...	—	...
Philippines					
Sulphur					
Crude	17 233	8 564	30 357	10 070	10 982
Sublimed & precipitated	1 704	14 062	2 897	10 215	4 079
Singapore					
Sulphur					
Crude	168	308	174	235	919
Sublimed & precipitated	216	192	127	195	101
Sri Lanka					
Sulphur					
Crude	1 203	712	...	525	1 024
Sublimed & precipitated	640	153	...	666	697
Syria					
Sulphur	99 351	28 000	22 500	39 000	...
Taiwan					
Sulphur					
Crude	17 893	59 160	93 505	114 827	129 775
Sublimed & precipitated	153 152	199 815	152 578	116 400	96 207
Thailand					
Sulphur					
Crude	46 703	23 148	2 403	12 648	4 130
Refined	12 310	81 898	71 444	69 780	92 744
Sublimed & precipitated	224	187	205	255	198
Australia					
Sulphur	379 560	555 678	416 000	312 000	62 000
New Zealand (b)					
Sulphur					
Crude	78 208	125 304	97 261	156 722	83 775
Sublimed & precipitated	687	105	52	128	129

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

(b) Years ended 30 June of that stated

(c) Years ended 31 March following that stated

(d) Data for the Federal Republic of Yugoslavia only

## Talc

## Production of Talc

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	12 529	14 182	15 413	14 781	10 818
France	329 000	320 000	258 000	287 000	310 000
Germany, Federal Republic of	19 800	19 500	20 500	21 400	22 700
Greece	9 507	1 587	10 518	1 114	1 012
Italy	150 718	159 603	145 888	151 566	162 000
Portugal	7 702	7 187	8 063	8 162	8 719
Spain	75 307	68 979	71 660	* 75 000	* 70 000
Austria	129 959	132 974	133 078	133 971	161 425
Finland	417 687	457 410	473 056	273 214	261 350
Hungary	1 685	1 326	1 041	675	625
Norway	* 100 000	* 100 000	* 100 000	* 100 000	* 80 000
Romania	* 65 000	* 50 000	45 638	* 40 000	* 40 000
Soviet Union	* 530 000	* 530 000	* 530 000	* 500 000	* 450 000
Sweden	16 981	16 550	17 975	15 021	20 000
Turkey	* 15 000	5 397	6 280	5 557	6 122
Yugoslavia	30 993	29 204	26 614	20 069	(e)* 17 000
Egypt	6 105	7 268	6 526	6 340	9 091
South Africa					
Talc	8 005	10 111	11 596	11 179	8 235
Wonderstone (pyrophyllite)	3 467	3 162	3 942	2 759	4 448
Zambia	258	73	144	160	89
Zimbabwe	516	356	1 513	1 767	1 676
Canada	160 000	134 000	150 000	148 000	123 000
Mexico	17 469	13 645	13 908	13 590	14 368
USA					
Talc	1 080 000	1 136 347	1 171 871	1 185 142	1 037 196
Pyrophyllite	83 000	97 000	81 301	82 025	...
Argentina					
Talc	27 103	26 108	26 658	* 26 000	20 700
Pyrophyllite	1 260	671	1 310	* 1 300	* 1 200
Brazil					
Talc (b)	423 425	339 077	445 329	(d)* 300 000	(d)* 300 000
Pyrophyllite (b)	51 114	60 070	46 186	...	...
Chile	980	1 070	835	898	548
Colombia	11 927	10 353	9 196	10 390	11 773
Peru	1 907	10 650	* 9 000	* 9 000	* 10 100
Uruguay	1 648	1 460	* 1 500	1 411	* 1 400
Venezuela	* 32 000	* 32 000	* 32 000	...	...
China	* 1 000 000	* 1 000 000	2 056 400	2 545 000	* 2 600 000
India					
Pyrophyllite	51 724	64 923	94 264	* 80 000	84 577
Steatite	359 448	417 493	414 268	406 000	424 000
Iran (a)	* 31 000	29 261	11 039	31 087	6 676
Japan					
Talc	55 899	49 797	55 665	61 550	65 633
Pyrophyllite	939 165	949 973	922 213	890 168	903 823
Korea, Dem. P.R. of	* 100 000	* 100 000	* 100 000	* 170 000	* 170 000
Korea, Republic of					
Talc	161 052	146 478	162 098	181 660	170 563
Pyrophyllite	690 819	673 776	770 298	657 611	573 208
Nepal (c)	3 359	4 430	6 726	1 798	3 500
Pakistan	23 278	39 402	38 290	30 177	33 643
Taiwan	22 102	21 603	22 559	22 123	18 518
Thailand	41 850	42 128	47 041	33 650	48 535
Australia					
Talc	206 865	201 740	* 200 000	200 000	210 000
Pyrophyllite	6 036	4 030	* 4 000	5 000	6 000
World total	7 500 000	7 500 000	8 800 000	8 800 000	8 600 000

(a) Years ended 20 March following that stated

(b) Including beneficiated and directly shipped material

(c) Years ended 15 July of that stated

(d) Including pyrophyllite

(e) Excluding data from August to December for the Republic of Croatia



## Exports of Talc

Country	1987	1988	1989	1990	1991
United Kingdom	2 354	1 978	1 844	1 774	1 925
Belgium-Luxembourg	53 838	64 113	66 483	59 074	67 865
France	111 685	126 413	146 352	147 109	156 799
Germany, Federal Republic of	8 991	6 482	8 366	7 353	7 278
Greece	329	259	167	646	637
Italy	40 473	42 394	41 797	42 144	38 219
Netherlands	12 066	12 810	18 491	19 449	25 858
Spain	31 875	17 213	14 321	10 330	7 531
Austria	120 177	115 565	116 949	119 546	125 532
Czechoslovakia (a)	* 6 700	* 6 300	* 5 600	* 5 100	...
Finland	75 867	72 537	90 635	105 782	(a)* 77 800
Norway	45 100	41 090	44 292	43 570	33 926
Sweden	13 916	14 879	17 205	12 160	17 388
Switzerland	144	146	147	179	153
Turkey	334	651	135	84	125
Egypt	345	528	285	...	...
Canada	(d) 35 232	45 925	43 740	40 119	34 325
USA	283 693	382 557	321 060	200 276	178 711
Brazil	3 454	3 851	895	1 598	1 957
China	637 896	746 197	943 381	869 855	948 296
Hong Kong (c)	25 204	50 559	50 991	42 136	41 623
India (b)	23 331	15 629	...	14 402	15 308
Japan	2 654	2 658	2 476	3 160	3 547
Jordan	6 357	70	—	1 178	20
Korea, Dem. P.R. of (a)	* 19 800	* 21 100	* 15 200	* 12 600	* 11 900
Korea, Republic of					
Talc	36 580	36 073	34 182	33 055	21 392
Pyrophyllite	—	221 903	259 580	256 058	257 321
Singapore	890	2 182	1 890	1 358	895
of which: Re-exports	863	2 169	1 869	1 240	812
Taiwan	357	246	290	1 741	1 028
Thailand	3 488	1 709	4 999	3 074	7 216
Australia (e)	145 945	165 211	136 519	169 558	168 835

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

(b) Years ended 31 March following that stated

(c) Re-exports

(d) Imports into the USA

(e) Years ended 30 June of that stated

## Talc

## Imports of Talc

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	70 675	60 243	73 588	83 413	85 361
Belgium-Luxembourg	83 766	100 218	83 241	91 722	82 132
Denmark	9 870	10 364	12 426	10 279	10 268
France	23 331	22 992	25 979	25 377	24 490
Germany, Federal Republic of	155 536	173 702	194 995	197 506	219 661
Greece	2 739	2 614	3 141	2 622	3 797
Irish Republic	1 654	1 647	1 646	1 117	1 757
Italy	32 429	36 134	45 074	45 699	34 025
Netherlands	59 100	78 801	81 808	73 985	73 791
Portugal	7 757	10 208	9 434	11 952	10 859
Spain	19 971	28 341	27 695	32 505	41 725
Austria	10 698	8 179	12 980	9 953	10 832
Czechoslovakia (a)	* 2 300	* 900	* 700	* 1 100	* 600
Finland	440	568	612	458	340
German Democratic Republic (a)	* 1 800	* 1 700	* 3 000	* 2 300	—
Hungary	5 334	6 433	5 973	4 375	...
Norway	6 207	11 192	6 613	9 462	13 050
Poland	25 424	30 083	22 905	...	...
Soviet Union (a)	* 1 000	* 3 000	* 3 500	* 19 500	* 10 100
Sweden	31 426	32 668	33 923	25 276	26 668
Switzerland	15 059	13 734	15 072	15 261	14 510
Turkey	505	689	608	1 322	1 235
Yugoslavia	4 377	5 099	4 389	4 360	(c) 1 322
Algeria	956	1 835	623	342	612
Egypt	1 570	1 617	4 511	...	...
Ivory Coast	...	1 505	...	...	...
Kenya	4 670	5 309	...	...	...
Morocco	1 417	1 914	1 481	1 566	2 045
South Africa	5 490	4 500	3 972	4 654	...
Tunisia	1 191	1 222	1 262	1 146	1 231
Canada	49 515	39 640	49 373	44 978	44 996
Costa Rica	991	873	1 144	1 235	1 097
El Salvador	515	421	526	452	437
Guatemala	197	296	290	357	501
Honduras	226	231	313	...	288
Jamaica	449	636	...	758	...
Mexico	93 406	107 618	110 013	97 178	103 763
Panama	254	374	367	435	574
Trinidad & Tobago	592	2 813	604	...	629
USA	55 607	83 375	76 531	63 255	68 383
Argentina	1 049	778	386	432	...
Chile	* 10 000	16 216	11 707	...	3 021
Colombia	1 981	2 101	2 197	2 273	1 506
Ecuador	618	676	756	972	...
Peru	1 070	619	166	278	454
Venezuela	14 877	12 680	1 671	2 870	10 169
Bangladesh (b)	2 384	4 001	3 496	3 438	...
China	(a)* 1 100	(a)* 1 300	(a)* 1 100	207	289
Cyprus	595	...	368	356	515
Hong Kong	30 312	49 804	51 514	52 127	40 782
Indonesia	17 464	28 569	27 744	43 770	28 890
Israel (a)	* 1 500	* 200	* 1 000	* 2 500	* 2 000
Japan	579 171	660 570	763 535	666 040	698 683
Jordan	471	395	1 074	1 105	940
Korea, Republic of	63 937	97 976	123 409	1 721 903	178 349
Malaysia	6 796	13 757	22 715	...	18 142
Pakistan (b)	13 635	1 564	...	783	...
Philippines	8 464	9 800	10 234	11 103	11 392
Saudi Arabia	3 004	3 538	4 445	5 227	5 752
Singapore	5 163	7 127	6 508	6 119	7 164
Sri Lanka	1 467	1 777	...	2 059	1 246

Talc  
tonnes

## Imports of Talc

Country	1987	1988	1989	1990	1991
Syria	3 318	...	...	1 368	...
Taiwan	22 726	37 337	54 693	62 663	81 256
Thailand	26 518	29 962	33 626	36 612	37 078
Australia (b)	182	312	578	631	529
New Zealand (b)	2 217	1 945	1 586	1 491	1 571

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

(b) Years ended 30 June of that stated

(c) Data for the Federal Republic of Yugoslavia only

## Titanium

**Production of Titanium Minerals**

tonnes

Country	1987	1988	1989	1990	1991
Portugal Ilmenite	141	59	111	43	* 40
Norway Ilmenite	852 323	898 035	929 830	788 522	625 416
Soviet Union Ilmenite	* 455 000	* 460 000	* 460 000	* 430 000	* 400 000
Rutile	* 10 000	* 10 000	* 10 000	* 9 500	* 9 000
Sierra Leone Ilmenite	5 600	42 118	62 310	54 639	60 371
Rutile	113 111	126 332	128 198	144 401	154 800
South Africa (c)	317 000	* 350 000	415 000	403 000	484 000
Canada (a) Ilmenite (b)	* 3 000 000	* 2 800 000	* 3 400 000	* 3 200 000	* 2 000 000
USA Ilmenite	* 240 000	* 240 000	* 240 000	* 240 000	* 240 000
Rutile	* 25 000	25 000	25 000	29 000	27 000
Brazil Ilmenite	169 303	142 167	144 212	114 117	* 120 000
Rutile	392	1 514	2 613	1 814	* 2 000
China Ilmenite	* 145 000	* 150 000	271 000	184 000	* 185 000
India Ilmenite	* 140 000	* 140 000	* 160 000	* 160 000	* 160 000
Rutile	* 7 000	* 5 000	* 5 000	* 5 000	* 5 000
Malaysia Ilmenite	509 202	486 305	520 127	501 585	308 061
Sri Lanka Ilmenite	128 500	97 085	101 354	74 350	62 823
Rutile	7 200	13 759	5 589	7 580	3 085
Thailand Ilmenite	26 278	16 455	16 955	10 554	17 071
Leucoxene	800	1 798	30	120	4
Australia Ilmenite	1 498 087	1 610 000	1 696 000	1 602 000	1 476 000
Rutile	246 263	231 000	243 000	245 000	193 000
Leucoxene	11 290	12 946	18 000	19 000	20 000
World total Ilmenite (Wt. of concs)	8 100 000	8 200 000	9 100 000	8 500 000	7 000 000
Rutile (Wt. of concs)	460 000	464 000	484 000	500 000	470 000
All forms (TiO <sub>2</sub> content)	* 4 063 000	* 4 110 000	* 4 598 000	* 4 309 000	* 3 727 000

## Note(s):

- (1) The figures in this table refer to gross tonnage of titanium concentrates
- (2) Some ilmenite is converted to synthetic rutile in Australia, India, Japan, Taiwan and USA
- (a) Canada produces some ilmenite which is sold as such and not processed into slag, but tonnages are small
- (b) Processed into slag. In 1991 Canada produced 701 000 tonnes (80% TiO<sub>2</sub>)
- (c) Ti content of titanium minerals and slag

## Exports of Titanium

Country	1987	1988	1989	1990	1991
United Kingdom					
Ilmenite	16 187	33	1	33	—
Metal	2 036	3 089	4 592	4 702	3 846
Oxides	158 537	165 607	169 012	144 693	171 552
Belgium-Luxembourg					
Metal	213	243	293	250	225
Oxides	71 343	100 548	108 579	96 997	109 956
France					
Titanium minerals	1 785	481	4 735	38	867
Metal	881	2 143	3 115	2 725	1 940
Oxides	156 571	160 887	167 340	147 471	167 779
Germany, Federal Republic of					
Ilmenite	348	1 112	1 380	288	741
Other titanium minerals	3 494	2 634	3 467	2 828	2 157
Metal	1 415	2 370	3 778	2 240	2 113
Oxides	235 606	236 833	229 693	187 494	220 186
Italy					
Titanium minerals	31	1 280	440	10 589	22
Metal	156	454	900	693	939
Oxides (b)	* 23 000	* 29 400	* 36 800	* 25 000	* 26 200
Netherlands					
Ilmenite	3 087	2 426	1 975	1 689	1 618
Other titanium minerals	64 248	52 808	46 833	28 637	27 786
Metal	48	104	289	176	167
Oxides	33 891	40 508	41 526	28 639	(f) 1 046
Spain					
Oxides	26 836	21 943	23 811	17 441	17 226
Czechoslovakia					
Oxides (b)	* 3 500	* 2 500	* 3 700	* 3 400	* 5 400
Finland					
Oxides (b)	* 52 800	* 55 000	* 58 200	* 49 500	* 43 100
Norway					
Titanium minerals	715 915	692 879	678 364	576 419	387 682
Oxides (b)	* 14 900	* 12 900	* 18 800	* 13 400	* 18 500
Soviet Union					
Metal (b)	* 700	* 3 200	* 5 100	* 1 900	* 2 800
Sweden					
Metal	402	445	536	768	451
Oxides	651	637	426	925	1 787
Switzerland					
Metal	...	174	235	256	355
Oxides	(f) 128	918	1 566	766	595
Yugoslavia					
Oxides	19 794	20 932	22 410	15 358	(a) —
Sierra Leone					
Rutile	115 000	114 000	140 000	142 000	143 900
South Africa					
Titanium minerals (b)	...	* 55 500	* 91 500	* 103 700	* 114 100
Titanium slag (b)	...	* 379 400	* 494 000	* 426 000	* 528 000
Canada					
Titanium minerals & slag (b)	* 1 058 700	* 1 172 900	* 1 169 600	* 949 800	* 752 100
Metal	(d) 493	440	480	1 038	681
Oxides	(d) 15 905	32 470	44 536	48 039	48 243
Mexico					
Oxides	...	20 547	21 111	25 472	...
USA					
Titanium minerals	4 024	10 162	20 138	20 060	28 960
Metal	10 899	11 162	13 695	16 011	12 420
Oxides	120 896	123 326	213 566	270 943	190 360
Brazil					
Titanium minerals	6 600	...	2 643	2 690	597
China					
Metal	(b)* 400	(b)* 900	(b)* 800	634	115
Oxides	(b)* 10 400	(b)* 25 400	(b)* 23 400	11 870	12 806
Hong Kong					
Oxides (c)	4 784	13 210	14 544	8 698	9 030
India (e)					
Ilmenite	42 352	119 108	...	82 430	98 150

## Titanium

**Exports of Titanium**

tonnes

Country	1987	1988	1989	1990	1991
Japan					
Metal	7 073	10 759	13 584	13 188	8 551
Oxides	78 441	81 495	86 433	90 979	92 568
Korea, Republic of					
Titanium minerals	43 593	147 350	146 708	136 440	111 135
Oxides	3 215	3 921	5 936	5 952	6 521
Malaysia					
Ilmenite	302 587	367 363	352 192	203 504	202 743
Singapore					
Oxides	1 461	2 683	3 452	1 542	18 595
of which: Re-exports	1 189	2 623	3 131	1 233	3 130
Sri Lanka					
Ilmenite	105 000	94 700	115 300	205	20
Rutile	—	5 982	4 500	6 760	140
Taiwan					
Oxides	12	501	767	4 900	2 259
Thailand					
Ilmenite	31 658	2 909	40 474	13 033	14 168
Australia					
Ilmenite	1 045 497	1 046 000	1 001 000	1 041 000	977 000
Rutile	256 781	238 000	252 000	186 000	175 000
Leucoxene	10 685	12 976	23 000	26 000	11 000
Oxides	(b)* 28 900	(b)* 26 500	(g) 38 673	(g) 67 129	(g) 56 415

## Note(s):

- (1) So far as possible, the term 'oxides', as used in this table, includes oxides and oxide based pigments classified under Standard International Trade Classification (Revision 3) items 522.56 and 533.1
- (2) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) Data for the Federal Republic of Yugoslavia only
- (b) BGS estimates, based on known imports into certain countries
- (c) Re-exports
- (d) Imports into the USA
- (e) Years ended 31 March following that stated
- (f) Excluding oxide based pigments
- (g) Years ended 30 June of that stated

## Imports of Titanium

Country	1987	1988	1989	1990	1991
United Kingdom					
Ilmenite	293 474	299 561	380 392	247 902	197 930
Other titanium minerals	122 735	157 342	108 965	126 713	98 686
Titanium slag	37 666	47 825	46 483	55 930	57 866
Metal	12 626	16 686	15 967	17 840	13 043
Oxides	37 193	41 452	48 560	38 818	46 502
Belgium-Luxembourg					
Ilmenite	67 450	72 379	78 549	48 900	68 835
Other titanium minerals	65 255	29 728	36 592	56 806	18 398
Metal	877	1 640	1 162	789	691
Oxides	33 859	35 655	45 800	40 997	49 136
Denmark					
Oxides	11 632	13 389	15 224	12 085	12 031
France					
Ilmenite	62 971	101 730	61 493	46 628	36 093
Other titanium minerals	132 942	144 675	139 535	151 715	79 224
Titanium slag	115 508	120 457	167 709	110 535	139 624
Metal	2 638	3 716	6 017	5 288	3 566
Oxides	48 200	60 241	66 233	60 023	69 876
Germany, Federal Republic of					
Ilmenite	465 354	449 361	459 017	494 344	398 534
Other titanium minerals	18 075	20 988	16 955	22 798	16 589
Titanium slag	239 572	244 726	255 792	262 990	247 401
Metal	3 126	5 185	6 616	5 986	4 299
Oxides	97 672	121 803	138 118	120 096	133 197
Greece					
Oxides	9 200	10 149	14 507	12 172	14 526
Irish Republic					
Oxides	1 791	1 553	1 419	1 315	1 194
Italy					
Ilmenite	119 145	46 967	45 208	...	25
Other titanium minerals	6 105	1 602	4 878	985	4 066
Titanium slag	77 930	84 753	120 460	81 687	61 867
Metal	3 409	3 858	3 494	3 961	3 273
Oxides	62 446	71 264	83 575	67 266	76 226
Netherlands					
Ilmenite	5 204	4 766	2 062	3 420	10 136
Other titanium minerals	59 251	75 071	34 939	56 579	47 760
Titanium slag	46 919	46 157	50 197	—	—
Metal	344	353	771	787	474
Oxides	32 187	43 856	50 163	53 018	46 443
Portugal					
Oxides	12 193	8 189	5 383	12 817	13 480
Spain					
Ilmenite	133 841	138 556	140 167	94 142	110 629
Other titanium minerals	2 100	4 269	1 815	2 331	3 575
Metal	449	533	806	1 508	1 535
Oxides	13 839	19 636	27 492	24 915	32 400
Austria					
Metal	...	2 613	2 074	641	312
Oxides	12 708	15 793	18 267	14 294	13 877
Bulgaria					
Titanium minerals (b)	* 3 800	* 3 000	* 3 100	* 1 900	* 1 300
Oxides (b)	* 1 800	* 2 100	* 2 200	* 500	* 400
Czechoslovakia					
Oxides (b)	* 3 200	* 3 000	* 2 900	* 2 000	* 1 900
Finland					
Titanium minerals (b)	* 48 900	* 43 100	* 22 000	* 46 100	* 52 400
Oxides	3 580	2 330	3 027	3 717	3 934
German Democratic Republic					
Oxides (b)	* 22 400	* 25 100	* 25 000	* 15 100	—
Norway					
Oxides	7 309	7 693	9 287	7 801	7 544
Romania					
Titanium minerals (b)	* 8 600	* 4 800	* 8 200	* 3 200	* 1 900
Oxides (b)	* 2 800	* 2 000	* 2 600	* 6 000	* 1 100
Soviet Union					
Titanium minerals (b)	* 3 000	* 34 000	* 24 400	* 12 000	* 6 400
Oxides (b)	* 11 600	* 15 300	* 16 500	* 11 700	* 10 600

## Titanium

## Imports of Titanium

tonnes

Country	1987	1988	1989	1990	1991
Sweden					
Titanium minerals	2 405	1 376	1 809	1 203	663
Metal	500	551	1 007	1 134	691
Oxides	25 532	26 731	28 290	25 572	25 713
Switzerland					
Oxides	(a) 2 004	18 552	22 088	17 470	17 190
Turkey					
Titanium minerals	4 527	3 219	1 576	3 208	4 456
Oxides	22 198	15 873	17 919	23 367	23 752
Yugoslavia					
Titanium minerals	48 463	46 058	52 518	23 701	(h) —
Oxides	4 570	5 014	5 744	3 604	(h) 934
Algeria					
Oxides	12 206	7 821	8 654	11 628	7 932
Egypt					
Oxides	1 085	2 296	2 148	...	...
Kenya					
Oxides	785	524	...	...	...
Morocco					
Oxides	3 716	3 517	2 418	2 423	4 600
South Africa					
Oxides	786	1 384	1 020	729	...
Zimbabwe					
Oxides	1 192	...	...	...	...
Canada					
Titanium minerals (g)	19 311	32 061	58 246	27 523	43 304
Metal	392	1 637	2 621	2 541	1 614
Oxides	30 618	22 412	21 046	18 194	30 558
Mexico					
Ilmenite	44 562	29 101	60 531	121 952	...
Rutile sand	1 484	2 064	1 413	1 509	...
USA					
Ilmenite	308 524	418 976	459 403	374 725	240 897
Rutile (c)	225 650	260 087	264 895	274 605	263 188
Titanium slag	418 633	434 645	386 146	373 409	385 236
Metal	3 984	6 648	7 769	5 608	4 389
Oxides	174 290	185 758	166 378	147 592	165 974
Argentina					
Titanium minerals	1 780	2 015	1 032	...	...
Brazil					
Ilmenite	10 000	50 000	105 000	25 000	* 50 000
Rutile	3 026	3 491	3 006	1 706	1 443
Oxides	17 274	17 516	34 316	22 602	21 005
Chile					
Oxides	4 530	3 883	4 797	4 834	5 313
Colombia					
Oxides	...	8 193	8 972	8 643	8 742
Uruguay					
Oxides	5 958	3 881	...	...	1 047
Venezuela					
Oxides	19 751	18 602	6 136	10 380	15 765
China					
Metal	(b)* 300	(b)* 300	(b)* 500	80	399
Oxides	(b)* 19 400	(b)* 16 100	19 214	27 319	25 176
Hong Kong					
Oxides	11 308	20 906	24 014	16 046	18 233
India (d)					
Oxides	13 137	10 315	...	17 002	8 476
Indonesia					
Oxides	14 182	12 088	18 055	22 277	22 499
Iran (f)					
Oxides	2 529	3 098	4 341	...	...
Israel					
Oxides	...	4 904	3 563	3 575	...



## Imports of Titanium

Country	1987	1988	1989	1990	1991
Japan					
Titanium minerals	570 377	642 209	616 090	757 595	576 003
Titanium slag	88 387	...	...	...	...
Metal	...	924	1 062	786	1 084
Oxides	45 677	48 980	71 306	65 170	61 061
Jordan					
Oxides	1 922	2 203	1 402	1 449	1 968
Korea, Republic of					
Rutile sand	6 822	6 940	6 806	8 068	7 431
Titanium minerals	57 096	55 177	62 102	31 804	92 054
Metal	341	486	757	1 633	1 592
Oxides	28 688	37 048	41 785	40 686	45 895
Malaysia					
Titanium minerals	3 759	20 662	5 399	...	23 058
Oxides	8 755	10 299	15 980	...	19 172
Pakistan (e)					
Oxides	3 416	3 677	...	5 070	...
Philippines					
Titanium minerals	1 305	1 550	1 535	1 427	1 007
Oxides	10 537	7 934	14 945	12 852	12 033
Saudi Arabia					
Oxides	5 775	6 427	5 102	7 125	7 977
Singapore					
Oxides	8 508	11 100	14 976	5 784	14 726
Taiwan					
Titanium minerals	...	...	19 096	18 617	20 014
Oxides	47 505	48 703	56 933	56 878	67 250
Thailand					
Rutile	1 400	2 033	3 230	3 222	3 889
Other titanium minerals	—	141	1 043	2 575	5 184
Oxides	2 210	15 122	21 884	20 952	24 759
Australia					
Titanium minerals (e)	...	...	33 146	22 033	38
Oxides (e)	964	1 202	1 369	2 153	1 506
New Zealand (e)					
Oxides	8 192	6 505	6 839	8 015	6 428

## Note(s):

- (1) Significant quantities of titanium slag are traded, but it is not always possible to identify this material in national trade accounts
- (2) So far as possible, the term 'oxides', as used in this table, includes oxides and oxide based pigments classified under Standard International Trade Classification (Revision 3) items 522.56 and 533.1
- (3) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
  - (a) Excluding oxide based pigments
  - (b) BGS estimates, based on known exports from certain countries
  - (c) Including synthetic rutile
  - (d) Years ended 31 March following that stated
  - (e) Years ended 30 June of that stated
  - (f) Years ended 20 March following that stated
  - (g) Ti content
  - (h) Data for the Federal Republic of Yugoslavia only

## Zirconium

**Production of Zirconium Minerals**

tonnes

Country	1987	1988	1989	1990	1991
Soviet Union	* 85 000	* 85 000	* 85 000	* 85 000	* 65 000
South Africa (a)	* 140 000	* 130 000	* 150 000	* 170 000	* 240 000
USA	* 90 000	114 651	118 388	102 073	103 140
Brazil (b)	18 140	28 029	32 970	16 907	* 20 000
China	* 15 000	* 15 000	17 889	16 542	* 16 500
India	* 10 000	* 15 000	* 17 200	* 18 000	* 18 200
Malaysia	17 828	25 671	18 704	4 279	5 579
Sri Lanka	2 500	...	21 983	19 727	26 123
Thailand	1 532	5 098	1 496	490	2 573
Australia	456 590	479 000	511 000	437 000	288 000
World total	837 000	917 000	975 000	870 000	785 000

## Note(s):

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

(a) Including baddeleyite ( $ZrO_2$ )

(b) Including caldasite rock containing zircon and baddeleyite

**Exports of Zirconium**

Country	1987	1988	1989	1990	1991
United Kingdom					
Concentrates	376	345	844	888	1 357
Metal	92	94	216	143	56
Belgium-Luxembourg					
Concentrates	28	509	678	626	144
Metal	25	273	21	31	45
France					
Concentrates	967	3 291	3 286	857	816
Germany, Federal Republic of					
Concentrates	15 287	7 913	5 139	2 821	1 879
Metal	75	78	59	97	82
Italy					
Concentrates	11 137	9 325	5 648	4 301	4 827
Metal	144	230	786	553	1 223
Netherlands					
Concentrates	23 788	14 742	15 552	24 263	21 041
Spain					
Concentrates	135	641	1 264	1 425	32
Zirconium sand	1 677	6 095	1 470	1 601	2 061
Sweden					
Metal	101	82	89	109	101
South Africa					
Concentrates (a)	* 99 500	* 134 800	* 142 600	* 122 000	* 139 100
USA					
Concentrates	20 103	22 966	50 621	31 280	31 490
Metal	1 297	1 288	1 375	1 318	1 415
Brazil					
Concentrates	4	527	9 364	4 051	4 002
Malaysia					
Concentrates	11 930	28 263	15 073	3 249	4 698
Australia					
Concentrates	465 003	464 000	474 000	332 000	324 000

## Note(s):

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

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

## Zirconium

## Imports of Zirconium

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom					
Concentrates	37 308	43 411	55 228	35 685	36 388
Metal	314	159	253	140	122
Belgium-Luxembourg					
Concentrates	2 522	3 719	2 227	1 756	1 142
Metal	208	198	181	189	212
France					
Concentrates	49 120	45 761	52 164	49 714	46 167
Metal	255	306	193	296	208
Germany, Federal Republic of					
Concentrates	58 895	...	...	...	...
Metal	425	402	415	468	418
Italy					
Concentrates	78 234	82 863	84 814	56 399	85 198
Metal	31	285	210	63	200
Netherlands					
Concentrates	29 927	27 707	45 304	52 737	52 198
Portugal					
Concentrates	2 285	2 780	1 270	1 795	1 828
Spain					
Concentrates	35 300	42 646	39 765	29 594	41 226
Zirconium sand	4 600	6 200	9 372	9 171	9 951
Austria					
Concentrates	...	1 836	1 821	1 606	1 434
Bulgaria					
Concentrates (a)	* 2 500	* 1 200	* 1 300	* 1 300	* 500
Czechoslovakia					
Concentrates (a)	* 2 400	* 1 500	* 800	* 250	* 230
Finland					
Concentrates	1 519	—	2 589	1 001	1 721
German Democratic Republic					
Concentrates (a)	* 800	* 1 600	* 1 400	* 1 500	—
Soviet Union					
Concentrates (a)	* 11 300	* 8 200	* 9 000	* 8 200	* 2 700
Sweden					
Concentrates	1 139	232	32	117	79
Metal	253	262	269	300	525
Turkey					
Concentrates	757	620	370	613	61
Zirconium sand	5 252	5 719	...	...	...
Canada					
Concentrates	...	7 623	10 426	9 841	7 102
Metal	269	282	296	289	270
Mexico					
Zirconium sand	770	8 467	9 889	5 644	...
USA					
Concentrates	67 918	76 332	73 129	26 783	34 688
Metal	382	356	500	410	520
Argentina					
Concentrates	178	119	...	...	...
Zirconium sand	3 174	3 660	4 494	...	...
Brazil					
Concentrates	7 173	15 058	8 909	2 016	3 768
Japan					
Concentrates	177 474	197 592	172 848	119 008	148 343
Metal	415	510	641	683	676
Korea, Republic of					
Concentrates	19 002	24 430	21 813	24 515	21 445
Malaysia					
Concentrates	880	710	3 146	...	2 075
Philippines					
Zirconium sand	593	589	579	490	511

**Imports of Zirconium**

Country	1987	1988	1989	1990	1991
Taiwan					
Concentrates	...	...	26 078	7 064	8 004
Zirconium sand	1 829	6 732	6 617	6 008	8 297
Thailand					
Concentrates	561	—	1 658	1 108	1 904

## Note(s):

- (1) Metal traded in ferro-alloy form is included under Iron, Steel and Ferro-alloys
- (a) BGS estimates, based on known exports from certain countries

## Other Mineral Commodities

**Production of Beryl**

tonnes

Country	1987	1988	1989	1990	1991
Portugal	35	4	* 4	* 4	* 4
Soviet Union	* 2 000	* 2 000	* 2 000	* 1 600	* 1 300
Madagascar	0	15	30	3	* 3
Zambia	1 131	1 343	880	1 633	863
Zimbabwe	85	32	46	28	29
USA	5 499	5 313	4 592	4 548	4 339
Argentina	46	39	89	* 85	* 80
Brazil	904	913	800	* 850	* 850
China	* 1 350	* 1 350	* 1 350	* 1 400	* 1 400

## Note(s):

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

**Production of Borates**

tonnes

Country	1987	1988	1989	1990	1991
Finland	8 125	10 727	9 355	11 790	2 952
Soviet Union	* 200 000	* 200 000	* 200 000	* 180 000	* 160 000
Turkey	980 150	1 230 828	1 136 000	1 198 730	1 117 483
USA (a)	1 256 000	1 149 000	1 114 000	1 094 000	1 240 000
Argentina	184 796	269 574	261 308	* 260 000	115 600
Bolivia	—	586	9 609	3 076	7 932
Chile	13 438	32 122	130 512	131 753	97 135
Peru	14 295	* 15 000	25 000	20 000	26 000
China (b)	* 95 000	* 95 000	* 74 000	* 75 000	* 76 000

## Note(s):

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

(a) Sold or used by producers

(b) B<sub>2</sub>O<sub>3</sub> equivalent

**Production of Nepheline Syenite**

tonnes

Country	1987	1988	1989	1990	1991
Norway	244 789	244 665	249 295	305 000	...
Soviet Union	1 660 000	1 640 000	1 697 000	* 1 650 000	...
Canada	508 000	547 000	552 000	535 000	484 000

## Production of Perlite

tonnes

Country	1987	1988	1989	1990	1991
Greece	569 183	573 253	607 486	* 620 000	* 650 000
Italy	* 70 000	* 70 000	* 71 000	* 71 000	* 70 000
Czechoslovakia (a)	42 305	43 390	45 396	41 702	40 719
Hungary	112 410	120 562	108 678	95 572	87 750
Soviet Union	* 600 000	* 600 000	* 600 000	* 550 000	* 500 000
Turkey	143 958	154 231	132 941	138 510	* 165 000
Mexico	39 428	39 169	37 354	42 439	48 134
USA	706 000	753 000	655 000	659 000	761 000
Argentina	...	...	...	27 000	25 200
Japan	* 190 000	* 200 000	* 202 000	* 203 000	* 203 000
Philippines	34 298	3 170	* 3 600	3 150	2 894
Australia	5 054	4 736	* 5 000	* 5 000	* 5 000
New Zealand	—	2 938	2 500	1 972	1 674

## Note(s):

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

(a) Expanded

## Production of Strontium Minerals

tonnes

Country	1987	1988	1989	1990	1991
United Kingdom	22 655	25 553	20 885	24 734	2 000
Italy	177	—	—	—	—
Spain	28 867	45 631	35 134	80 352	* 80 000
Turkey	49 000	* 60 000	* 90 000	* 95 000	* 65 000
Algeria	* 5 400	* 5 400	* 5 400	* 5 400	* 5 400
Mexico	47 739	51 626	67 658	66 254	62 180
Argentina (a)	1 349	2 241	1 193	* 1 200	* 1 200
Cyprus	6 300	—	—	—	—
Iran (b)	20 066	39 194	56 849	34 140	28 500
Pakistan	1 114	941	966	1 786	1 472

## Note(s):

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

(a) May contain unbeneficiated material

(b) Years ended 20 March following that stated

## Other Mineral Commodities

**Production of Vermiculite**

tonnes

Country	1987	1988	1989	1990	1991
Soviet Union	* 97 000	* 97 000	97 000	* 95 000	* 85 000
Egypt	317	236	102	28	519
Kenya	3 887	2 765	4 090	3 440	2 300
South Africa	228 863	209 177	224 500	220 311	214 656
Zimbabwe	325	884	1 498	2 135	2 319
Mexico	161	218	300	132	150
USA (a)	275 000	276 000	249 000	209 000	180 000
Argentina	18 612	19 300	590	* 10 000	* 10 000
Brazil (b)	16 825	26 903	20 523	* 25 000	* 20 000
India	2 439	4 052	2 764	1 769	1 768
Japan	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Australia	1 409	1 165	...	...	...

## Note(s):

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

(a) Sold or used by producers

(b) Including beneficiated and directly shipped material

**Production of Wollastonite**

tonnes

Country	1987	1988	1989	1990	1991
Finland	15 041	19 165	21 634	29 628	27 829
Mexico	10 993	10 506	10 618	11 442	13 604
USA	72 000	81 000	* 80 000	...	...
India	31 021	34 286	44 042	...	...

## Note(s):

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





