

World Mineral Production



1999–2003



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

BRITISH GEOLOGICAL SURVEY

1999–2003

WORLD MINERAL PRODUCTION

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This volume is dedicated to the memory of Janice Hillier, who, with meticulous skill and steadfast loyalty over three decades, always worked to maintain and enhance the quality of this publication.

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EXPLANATORY NOTES

Coverage

World Mineral Production covers the majority of economically important mineral commodities. For each commodity constant efforts are made to ensure that as many producing countries as possible are reported. For some commodities, where statistics on production are not publicly available, estimates are made. Users of this compilation are advised that more statistical information than can be included in a publication of this nature is held in the British Geological Survey files and is available for consultation. Historical data (1913-1970) can be obtained from the predecessors to this series entitled *World Mineral Statistics* and the *Statistical Summary of the Mineral Industry*.

Arrangement of countries

Countries are ordered alphabetically in geographical groupings as follows:

- Europe
- 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.

Metals

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

World totals

For certain minerals and metals no world total is shown due to the non-availability of certain individual country totals.

Exclusion of Warranty

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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.

Particular acknowledgement is made to the Mines Departments and other government agencies of many countries whose regular statements, yearbooks and other reports are worthy of direct consultations by readers in search of detail.

Specialist commodity organisations which have kindly allowed information to be reproduced include the International Copper Study Group, the International Lead and Zinc Study Group, the International Nickel Study Group and the International Fertilizer Industry Association Ltd. In a few instances, information on specific commodities has been obtained directly from company sources. The co-operation of other members of the International Consultative Group on Non-Ferrous Metal Statistics is also gratefully acknowledged.

Supplementary information is also obtained from publications dealing with a wider range of commodities such as Société de l'Industrie Minérale, *Annuaire Statistique Mondial des Minerais et Métaux*; Mining Journal, *Mining Annual Review*; World Bureau of Metal Statistics, *World Metal Statistics*; World Bureau of Metal Statistics, UBS Warburg and Enron Metals Limited, *Metallstatistik*; publications of the Interstate Statistical Committee of the CIS, the United States Geological Survey, and UN agencies.

Units

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

tonnes \times 0.9842 = long tons
tonnes \times 1.1023 = short tons
kilograms \times 2.2046 = pounds
kilograms \times 32.1507 = troy ounces
cubic metres \times 35.3147 = cubic feet
1 tonne of crude petroleum equals on average 7 barrels of crude petroleum.
1 flask mercury = 34.5 kilograms
1 metric ton unit = 10 kilograms

Symbols

... figures not available
0 quantity less than half unit shown
---- nil
* es timated
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STATISTICAL TABLES

Production of bauxite

tonnes

Country 1999		2000	2001	2002	2003
Albania	4 624	...	...	...	...
Bosnia & Herzegovina	...	20 700	77 000	113 000	162 000
France	170 000	185 000	174 000	170 000	168 000
Greece	1 882 505	1 965 561	2 047 255	2 492 000	2 418 000
Hungary	935 200	1 046 470	1 000 044	720 000	665 900
Russia	4 513 000	5 089 000	4 805 000	4 497 500	5 441 800
Serbia and Montenegro	503 434	630 000	630 000	611 500	540 051
Turkey	207 743	458 537	242 040	287 403	364 306
Ghana	355 261	503 824	692 620	683 654	494 716
Guinea	17 419 100	17 991 900	17 191 700	17 480 000	17 044 000
Mozambique	7 883	8 130	8 597	9 119	11 793
Jamaica	11 688 481	11 126 524	12 369 647	13 119 448	13 444 528
USA (b) (d)	*270 000	*200 000	*200 000	*200 000	*200 000
Brazil (c)	12 661 746	13 974 480	13 388 100	13 147 900	18 456 800
Guyana	2 359 272	2 689 451	2 011 301	1 639 266	1 715 705
Suriname	3 714 595	3 610 381	4 393 640	4 001 602	4 215 061
Venezuela	4 166 450	4 360 720	4 584 893	5 190 806	5 445 516
China	*7 100 000	*7 900 000	*8 650 000	*9 990 000	*10 989 000
India (f)	7 049 943	7 992 782	8 688 752	9 867 455	10 956 536
Indonesia	1 116 323	1 150 776	1 237 006	1 283 485	1 262 705
Iran (a)	461 639	485 130	283 877	323 600	245 000
Kazakhstan	3 606 500	3 729 600	3 685 100	4 376 700	4 737 100
Malaysia	222 724	123 270	64 161	39 975	5 732
Pakistan (e)	11 216	10 377	3 728	12 233	4 098
Vietnam	*30 000	16 000	20 000	*20 000	*20 000
Australia	48 416 000	53 802 000	53 799 000	54 135 000	55 602 000
World Total	129 000 000	139 000 000	140 000 000	144 000 000	155 000 000

Note(s):

(1) This table includes production of refractory bauxite

- (a) Years ended 20 March following that stated
- (b) Data for Alabama only
- (c) Including beneficiated and direct shipping ore
- (d) Years ended 30 September of that stated
- (e) Years ended 30 June of that stated
- (f) Years ended 31 March following that stated

Production of alumina

tonnes (Al₂O₃ content)

Country 1999		2000	2001	2002	2003
Azerbaijan	76 000	63 000	87 500	90 960	179 995
Bosnia & Herzegovina	37 000	219 400	100 000	—	61 000
France	472 000	508 000	*510 000	*500 000	*510 000
Germany	583 000	717 021	715 164	716 660	712 597
Greece	621 700	668 300	678 934	749 500	758 800
Hungary	295 000	357 100	330 000	293 700	*300 000
Irish Republic	1 395 735	1 410 674	1 448 730	1 400 000	1 500 000
Italy	973 000	1 022 000	993 000	1 010 000	1 021 000
Romania	277 388	416 587	319 403	361 047	332 852
Russia	2 687 000	2 865 000	3 046 400	3 130 884	3 230 478
Serbia and Montenegro	156 012	186 135	200 660	237 396	239 739
Spain	1 112 000	1 123 000	1 199 000	1 350 000	1 380 000
Turkey	159 122	155 448	145 993	152 869	160 675
Ukraine	1 230 200	1 365 000	1 343 400	1 350 900	1 434 050
United Kingdom	90 000	88 500	83 900	73 800	—
Guinea	568 479	540 922	674 300	669 835	723 026
Canada	1 069 800	1 023 000	1 036 000	1 125 400	*1 100 000
Jamaica	3 569 633	3 600 125	3 542 385	3 630 587	3 843 610
USA	*5 144 000	*4 786 000	*4 340 000	*4 338 000	*4 834 000
Brazil	3 515 100	3 754 100	3 519 700	3 855 400	4 713 800
Suriname	1 853 052	1 906 073	1 893 254	1 902 706	2 004 538
Venezuela	1 468 489	1 755 265	1 833 162	1 901 000	1 882 007
China	3 837 400	4 328 100	4 746 500	5 450 000	6 114 000
India	1 930 000	2 107 000	2 120 000	2 556 000	2 856 000
Iran	—	—	—	102 000	80 000
Japan	736 600	781 700	739 000	723 900	725 000
Kazakhstan	1 157 692	1 216 679	1 231 126	1 386 457	1 419 237
Australia	14 532 000	15 680 000	16 313 000	16 429 000	16 529 000
World Total	49 500 000	52 600 000	53 200 000	55 500 000	58 600 000

Note(s):

(1) Where possible figures in this table show the alumina equivalent (Al₂O₃) of total hydrate produced, whether or not calcined

Production of primary aluminium

tonnes

Country 1999		2000	2001	2002	2003
Azerbaijan	1 278	2	57	58	18 511
Bosnia & Herzegovina	70 000	94 751	96 000	103 500	110 600
France	455 100	441 100	461 000	463 000	444 000
Germany	633 803	643 545	651 592	652 845	660 783
Greece	159 900	162 600	162 000	163 900	166 400
Hungary	34 000	33 850	34 600	35 294	35 000
Iceland	221 434	225 721	242 526	263 700	265 900
Italy	187 200	189 800	187 500	190 400	191 400
Netherlands	287 388	301 689	293 068	284 364	282 800
Norway (a)	1 007 989	1 031 000	1 034 000	1 044 000	1 180 200
Poland	51 600	55 473	54 606	58 777	57 237
Romania	174 100	179 039	181 830	187 052	195 616
Russia	3 149 000	3 247 000	3 302 000	3 348 247	3 478 057
Serbia and Montenegro	80 916	95 465	108 123	111 919	116 744
Slovakia	105 200	109 000	110 062	111 600	132 089
Slovenia	77 200	75 600	76 632	87 600	109 800
Spain	375 500	365 700	376 400	380 100	389 100
Sweden	98 958	100 788	101 420	100 125	100 707
Switzerland	34 439	35 539	36 288	40 224	43 865
Turkey	61 705	61 501	61 730	62 501	63 140
Ukraine	115 425	119 290	121 034	112 459	113 640
United Kingdom	269 700	305 099	340 778	344 318	342 748
Cameroon	90 410	86 384	80 900	67 000	77 200
Egypt	186 700	188 900	190 800	195 000	194 600
Ghana	114 200	155 500	161 670	131 858	15 909
Mozambique	—	53 800	266 000	273 200	408 500
Nigeria	15 900	—	—	—	—
South Africa	689 230	673 486	662 497	706 916	738 000
Canada	2 389 834	2 373 460	2 582 746	2 708 910	2 791 915
Mexico	62 736	61 200	51 500	39 000	25 000
USA	3 778 600	3 668 400	2 637 000	2 707 000	2 703 300
Argentina	204 600	263 870	243 840	267 776	273 624
Brazil	1 249 600	1 271 400	1 132 000	1 318 400	1 380 600
Suriname	6 638	—	—	—	—
Venezuela	570 321	571 463	579 000	604 000	601 290
Bahrain	502 663	509 038	522 042	517 004	526 000
China	2 808 900	2 989 200	3 575 800	4 321 000	5 449 000
Dubai	440 700	536 000	536 000	538 000	560 000
India (b)	612 968	624 206	635 573	688 921	810 282
Indonesia	112 300	192 300	208 800	162 800	192 000
Iran (c)	137 422	141 494	148 844	*170 000	*170 000
Japan	10 904	6 536	6 632	6 413	6 463
Tajikistan	229 100	300 000	324 000	307 589	319 360
Australia	1 718 000	1 769 000	1 797 000	1 817 000	1 857 000
New Zealand	326 800	328 400	322 300	333 900	334 400
World Total	23 900 000	24 600 000	24 700 000	26 000 000	27 900 000

Note(s):

- (a) May include some super purity aluminium
- (b) Years ended 31 March following that stated
- (c) Years ended 20 March following that stated

Mine production of antimony

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Russia	4 356	8 000	4 152	*3 000	*3 000
Turkey	*20	*20 *20		*20 *20	
Morocco	250	— —		— —	
South Africa	5 278	5 064	5 476	5 746	5 310
Canada	425	433 278		173 105	
Guatemala	—	—	8 162	401	*400
Mexico	273	52	81	155	434
USA	450	*340 —		— —	
Bolivia	2 790	1 907	2 072	2 343	2 432
Peru (a)	255	461 274		352 616	
China	89 600	99 300	97 000	121 547	126 000
Kyrgyzstan	1 320	1 505	*2 200	*1 500	*1 200
Tajikistan	*1 800	*2 000	*2 500	*3 000	*3 000
Thailand	70	97 50		13 46	
Australia (b)	*2 500	*2 200	*1 800	*2 100	*2 000
World Total	109 000	121 000	124 000	140 000	145 000

Note(s):

(1) This table includes antimony content of antimonial lead alloys

(2) In addition to the countries listed, Afghanistan, Hungary and Iran are believed to produce antimony

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

(b) Years ended 30 June of that stated

Production of white arsenic

tonnes

Country 1999		2000	2001	2002	2003
Belgium	*1 500	*1 500	*1 000	*1 000	*1 000
France	*1 000	*1 000	*1 000	*1 000	*1 000
Germany	*200	*200 *100		*100 *100	
Russia	*1 500	*1 500	*1 500	*1 500	*1 500
Ghana	*7 000	*3 000	—	—	—
Namibia (a)	—	— 738		852 389	
Canada	*250	*250 *250		*250 *250	
Mexico	3 193	3 329	3 143	2 569	2 282
Bolivia	437	318 846		237 276	
Chile (c)	9 789	10 712	*10 000	*10 000	*10 000
Peru	1 611	2 495	1 958	1 613	*2 300
China	*16 000	*16 000	*16 000	*16 000	*16 000
Iran (b)	173	120	219	*200	*200
Japan	*40	*40 *40		*40 *40	
Kazakhstan	*1 500	*1 500	*1 500	*1 500	*1 500

Note(s):

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

(2) In addition to the countries listed, Argentina, Austria, Finland, Hungary, Morocco, Spain and United Kingdom are believed to produce arsenic

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

(b) Orpiment and realgar concentrates

(c) Exports

Production of asbestos

tonnes

Country 1999		2000	2001	2002	2003
Bulgaria	354	66 —		— —	
Greece	32 000	*10 000	*1 000	—	—
Russia	674 000	752 000	735 000	*775 000	*878 000
Serbia and Montenegro	361	563	194	372	111
Slovakia	2 000	— —		— —	
South Africa					
Chrysotile	18 836	18 782	13 393	13 311	—
Swaziland					
Chrysotile	22 912	12 690	—	—	—
Zimbabwe					
Chrysotile	87 872	151 954	118 969	167 954	130 000
Canada					
Chrysotile	340 000	307 000	262 000	216 000	174 000
USA (a)	7 190	5 260	5 260	2 720	—
Argentina	259	254 203		155 166	
Brazil	188 386	209 332	172 695	194 732	231 117
Colombia (c)	61 125	59 249	96 140	62 785	*60 000
China	329 000	276 000	257 581	*220 000	*210 000
India					
Amphibole (e)	18 550	15 397	11 148	14 139	10 340
Iran (d)	2 123	3 460	3 500	2 400	*2 400
Japan					
Chrysotile	1 052	... ..		... ..
Kazakhstan	139 300	233 200	271 200	291 200	353 000
Pakistan (b)	...	...	...	100	60
World Total	1 900 000	2 100 000	1 900 000	2 000 000	2 000 000

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 30 June of that stated

(c) Crude

(d) Years ended 20 March following that stated

(e) Years ended 31 March following that stated

Production of barytes

tonnes

Country 1999		2000	2001	2002	2003
Belgium	*30 000	*30 000	*30 000	*30 000	*30 000
Bulgaria	111 000	*120 000	*120 000	*110 000	*90 000
France	75 700	92 000	81 000	85 200	81 100
Georgia	—	416	1 093	1 042	...
Germany	118 489	111 790	108 111	100 993	109 506
Greece	*800	*800 *800		*800 *800	
Italy	24 557	11 262	10 809	10 215	12 214
Poland	—	—	—	2 708	3 030
Romania	4 632	4 266	2 851	100	—
Russia	*60 000	*60 000	*60 000	*60 000	*60 000
Slovakia	15 900	13 700	14 450	25 820	12 000
Spain	39 553	32 653	45 473	50 071	44 660
Turkey	150 058	120 893	102 323	106 943	119 648
United Kingdom	59 000	54 000	*66 000	*59 000	*57 000
Algeria	50 510	51 925	43 020	51 773	50 000
Morocco	328 945	343 557	467 056	487 626	356 394
Nigeria	...	*5 000	*5 000	*5 000	*15 000
South Africa	2 844	1 628	—	—	—
Tunisia	3 000	3 702	2 208	5 539	5 000
Zimbabwe	3 140	5 032	7 464	5 233	*4 500
Canada	123 000	15 000	27 000	15 000	24 000
Guatemala	75	113	700	...	...
Mexico	157 953	127 668	142 017	163 620	287 451
USA (b)	434 000	392 000	400 000	420 000	480 000
Argentina	4 365	5 472	6 955	3 048	3 261
Bolivia	6 005	3 050	6 253	1 556	1 851
Brazil (d)	40 824	54 100	54 790	53 098	57 452
Chile	823	1 026	584	384	229
Colombia	*900	*900	*900	*600	*2 400
Ecuador	2 532	1 476	1 181	...	2 139
Peru	3 512	11 403	11 031	3 806	2 906
Afghanistan	*2 000	*2 000	*2 000	*2 000	*2 000
China	1 715 740	3 024 030	3 985 200	2 700 000	3 100 000
India (a)	363 414	845 001	915 976	679 628	723 327
Iran (c)	165 520	200 015	238 257	193 579	*170 000
Kazakhstan	51 200	15 200	44 600	51 700	78 000
Korea, Dem. P.R. of	*70 000	*70 000	*70 000	*70 000	...
Laos	5 045	3 500	4 400	12 695	18 070
Malaysia	13 506	7 274	649	3 082	—
Myanmar (a)	27 679	32 669	*29 000	*18 000	*18 000
Pakistan (e)	16 845	22 432	25 831	19 480	40 745
Saudi Arabia	13 200	8 000	9 000	9 000	10 800
Thailand	76 092	56 180	23 559	137 500	115 600
Vietnam	...	40 000	50 000	58 500	81 500
Australia	*18 000	*14 000	*16 000	*19 000	*22 000
World Total	4 400 000	6 000 000	7 200 000	5 800 000	6 300 000

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) Years ended 30 June of that stated

Production of bentonite and fuller's earth

tonnes

Country 1999		2000	2001	2002	2003
Armenia					
Bentonite	3 493	2 807	995	328	642
Azerbaijan					
Bentonite	*1 000	—	—	1 500	19 900
Bosnia & Herzegovina					
Bentonite	*10 000	*10 000	*10 000	*10 000	*10 000
Bulgaria					
Bentonite	242 725	173 534	171 092	211 500	145 500
Croatia					
Bentonite	8 441	10 013	10 580	12 102	13 568
Cyprus					
Bentonite	177 000	167 000	127 000	128 400	144 859
Czech Republic					
Bentonite	160 000	280 000	224 000	174 000	199 000
Denmark					
Bentonite	...	...	12 166	14 539	16 303
Georgia					
Bentonite	9 891	7 084	*7 000	*7 000	*7 000
Germany					
Bentonite	476 580	464 616	447 913	495 310	478 796
Greece					
Bentonite	1 049 657	1 148 694	1 258 872	1 150 000	*1 200 000
Hungary					
Bentonite	61 928	5 120	30 441	3 700	...
Italy					
Bentonite	562 674	636 589	579 029	463 231	474 475
Fuller's earth	59 903	25 384	19 815	24 595	250
Macedonia					
Bentonite	*30 000	*30 000	*30 000	*30 000	*30 000
Poland					
Fuller's earth	5 000	4 000	...	...	...
Romania					
Bentonite	20 577	37 587	24 779	15 389	17 637
Russia					
Bentonite	*500 000	*500 000	*500 000	*500 000	*500 000
Slovakia					
Bentonite	64 390	77 000	73 000	65 500	74 700
Spain					
Bentonite	137 305	90 152	*120 000	123 457	103 174
Attapulгите	90 282	28 307	24 477	22 918	18 975
Sepiolite	508 655	596 324	*600 000	564 610	*620 000
Turkey					
Bentonite	899 614	636 273	674 178	559 224	831 146
Sepiolite	19 945	18 295	10 253	...	...
Ukraine					
Bentonite	*25 000	*25 000	*25 000	*25 000	*25 000
United Kingdom					
Fuller's earth (a)	74 500	65 500	52 000	44 200	33 900
Algeria					
Bentonite	15 491	22 708	21 282	30 699	28 064
Fuller's earth	2 489	3 431	3 254	3 521	*3 600
Morocco					
Bentonite	36 528	43 152	71 741	58 754	71 544
Fuller's earth (f)	21 956	30 665	40 664	43 243	14 944
Mozambique					
Bentonite	11 187	16 418	1 611	580	684
Senegal					
Attapulгите	139 300	148 700	121 100	176 454	176 857
South Africa					
Bentonite	49 300	90 129	108 306	98 313	145 060
Attapulгите	7 067	10 287	9 200	13 918	14 585

Production of bentonite and fuller's earth

tonnes

Country 1999		2000	2001	2002	2003
Guatemala					
Bentonite	4 301	3 317	18 469	12 415	...
Mexico					
Bentonite	208 611	269 730	415 133	488 215	464 056
Fuller's earth	47 522	51 685	148 194	147 064	152 917
Nicaragua					
Bentonite	5 280	6 490	*6 000	*6 000	...
USA					
Bentonite (c)	4 070 000	3 760 000	3 970 000	*3 790 000	*3 970 000
Fuller's earth (c)	2 560 000	2 910 000	2 890 000	*2 730 000	*2 730 000
Argentina					
Bentonite	128 809	125 686	135 450	120 006	128 406
Fuller's earth	*1 500	*1 500	*1 500	...	...
Brazil					
Bentonite	296 489	317 621	260 282	319 302	420 995
Chile					
Bentonite	1 104	1 314	1 695	632	748
Colombia					
Bentonite	*8 500	*8 500	*8 500	*8 500	*8 500
Peru					
Bentonite	19 659	21 059	18 217	20 760	14 980
China					
Bentonite	766 860	1 124 340	1 289 700	...	...
India					
Bentonite (b)	456 386	*500 000	*300 000	...	...
Fuller's earth (b)	138 287	*130 000	*150 000	...	...
Indonesia					
Bentonite	5 213	*5 000	*5 000	*5 000	*5 000
Iran					
Bentonite (d)	129 561	191 552	173 542	157 071	...
Japan					
Bentonite	428 247	415 115	405 738	437 772	425 945
Fuller's earth	134 890	124 671	120 522	117 099	...
Korea, Republic of					
Bentonite	112 258	67 652	116 098	89 905	...
Fuller's earth	35 246	28 400	38 378	18 757	...
Myanmar					
Bentonite (b)	1 066	998	978	*900	...
Pakistan					
Bentonite (e)	15 349	14 354	16 441	17 799	*17 000
Fuller's earth (e)	15 565	17 978	13 668	15 951	16 670
Philippines					
Bentonite	1 844	1 500	5 128	2 550	3 222
Thailand					
Bentonite	4 535	2 100	200	...	...
Turkmenistan					
Bentonite	*5 000	—	—	—	—
Uzbekistan					
Bentonite	*15 000	*15 000	*15 000	*15 000	*15 000

Production of bentonite and fuller's earth

tonnes

Country 1999		2000	2001	2002	2003
Australia					
Bentonite (e)	179 804	99 272	95 429	113 047	*135 000
Fuller's earth	10 240	11 860	13 194	11 926	11 187
New Zealand					
Bentonite	12 258	9 419	8 300	7 800	10 940
World Total Bentonite	11 400 000	11 400 000	11 800 000	11 400 000	12 000 000
World Total Fuller's Earth (g)	3 900 000	4 200 000	4 300 000	4 100 000	4 100 000

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 attapulgitite, a mineralogically distinct clay mineral but exhibiting similar properties
 - (4) In addition to the countries listed, Austria, Tanzania, Turkmenistan and Zimbabwe are believed to produce bentonite. France and Iran may produce fuller's earth
- (a) Saleable production based on data from producing companies
 - (b) Years ended 31 March following that stated
 - (c) Sold or used by producers
 - (d) Years ended 20 March following that stated
 - (e) Years ended 30 June of that stated
 - (f) Smectite
 - (g) Including attapulgitite and sepiolite

Production of beryl

tonnes

Country 1999		2000	2001	2002	2003
Russia	*1 000	*1 000	*1 000	*1 000	*1 000
Madagascar (a)	20	2	1	*1	*1
Mozambique	...	—	1	54	78
Zambia	7	7 7		7 7	
USA	5 070	4 510	2 480	1 970	2 100
Brazil	11	13 12		12 12	
China	...	... *400		*400 *400	
Kazakhstan (a)	220	431	737	...	...

Note(s):

- (a) Includes ornamental and industrial products

Mine production of bismuth

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Bulgaria	*40	*40 *40		*40 *40	
Romania	*40	*40 *40		*40 *40	
Russia	*50	*50 *50		*50 *50	
Canada	255	243 310		244 174	
Mexico	548	1 112	1 390	1 126	1 064
Peru	705	744 640		568 832	
China (a)	2 682	1 122	*1 250	*950	*1 000
Japan (b)	481	520 551		474 513	
Kazakhstan	...	241	252	161	*150
Tajikistan	*5	*5	*5	—	—
Australia	*100	*100 *100		*100 *100	
World Total	4 900	4 200	4 600	3 800	4 000

Note(s):

- (1) The figures in this table are in some instances derived from reported bismuth content of refined and impure metal plus recoverable in ores and concentrates exported
- (2) Production for some countries may include bismuth produced from imported ores but it is thought that any resulting duplication is insignificant in the countries shown
- (3) In addition to the countries listed, Brazil is believed to produce bismuth

(a) Exports of metal have always been higher than mine production in recent years

(b) Metal production

Production of borates

tonnes

Country 1999		2000	2001	2002	2003
Russia	*1 000 000	*1 000 000	*1 000 000	*1 000 000	*1 000 000
Turkey	1 504 000	1 402 000	1 399 000	1 328 000	1 324 000
USA (a)	1 220 000	1 070 000	1 050 000	1 050 000	1 150 000
Argentina	565 647	512 624	633 520	509 630	545 304
Bolivia	15 362	41 021	32 477	40 479	109 545
Chile	324 691	337 966	327 743	431 293	400 603
Peru	14 716	9 309	9 374	8 814	11 072
China	289 400	283 000	346 500	*283 000	*280 000
Iran (b)	1 920	2 754	2 890	2 074	3 000
Kazakhstan	*30 000	28 500	*30 000	27 100	*30 000

Note(s):

(a) Sold or used by producers

(b) Years ended 20 March following that stated

Production of bromine

kilograms

Country 1999		2000	2001	2002	2003
France	8 063 000	7 909 000	*8 000 000	*8 000 000	*8 000 000
Germany	*500 000	*500 000	*500 000	*500 000	*500 000
Italy	*300 000	*300 000	*300 000	*300 000	*300 000
Russia	*60 000	*60 000	*60 000	*60 000	*60 000
Spain	*100 000	*100 000	*100 000	*100 000	*100 000
Ukraine	2 559 000	1 284 000	...	...	...
United Kingdom	24 800 000	33 200 000	27 854 000	24 542 000	*25 000 000
USA (a)	239 000 000	228 000 000	212 000 000	222 000 000	216 000 000
China	*42 000 000	*42 000 000	*40 000 000	*42 000 000	*42 000 000
India	886 700	1 062 200	927 660	1 579 000	1 560 000
Israel	181 000 000	210 000 000	206 000 000	*206 000 000	*206 000 000
Japan	*20 000 000	*20 000 000	*20 000 000	*20 000 000	*20 000 000
Jordan				5 000	*20 000
World Total	519 000 000	544 000 000	517 000 000	526 000 000	521 000 000

Note(s):

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

Production of cadmium

tonnes

Country 1999		2000	2001	2002	2003
Belgium	1 235	1 148	1 236	117	—
Bulgaria	317	331 333		345 307	
Finland	696	683	604	400	—
France	195	160	176	154	—
Germany	703	458 539		422 640	
Italy	359	287	352	362	22
Macedonia	236	335 73		111 75	
Netherlands	730	655 455		485 495	
Norway	244	302 367		209 331	
Poland	—	6 330		440 375	
Russia	*900	*780 *620		*650 *650	
Turkey	64	— —		— —	
United Kingdom	547	503	425	292	22
Canada (a)	1 911	1 941	1 493	1 706	1 634
Mexico	1 275	1 268	1 421	1 382	1 590
USA (a)	1 185	1 890	*680	*700	*670
Argentina	—	— 34		— 25	
Brazil	*130	*135 *140		*170 *180	
Peru	466	483 456		422 529	
China	2 154	2 368	2 507	2 441	*2 500
India (b)	278	326 431		483 478	
Japan	2 567	2 472	2 460	2 444	2 509
Kazakhstan	(a) 1 246	257	170	479	795
Korea, Dem. P.R. of	*200	*200	*200	*200	*200
Korea, Republic of	1 791	1 911	1 879	1 827	2 175
Uzbekistan	*100	*100 *100		*100 *100	
Australia	462	525 416		524 673	
World Total	20 000	19 500	17 900	16 900	17 000

Note(s):

(1) Data in this table exclude secondary metal unless otherwise stated

(a) Including cadmium sponge and/or secondary metal

(b) Years ended 31 March following that stated

Production of chromium ores and concentrates

tonnes

Country 1999	2000	2001	2002	2003	
Albania	109 200	120 400	85 890	72 600	98 000
Finland	597 438	628 414	575 126	566 090	549 040
Russia	48 047	79 000	117 700	74 300	116 455
Turkey	1 014 544	545 725	454 549	326 390	229 294
Madagascar	—	131 293	23 637	11 000	45 040
South Africa	6 817 050	6 662 000	5 502 010	6 435 746	7 405 391
Sudan	48 000	28 500	20 500	14 000	37 000
Zimbabwe	653 479	668 043	722 625	725 822	666 357
Cuba	52 000	56 300	50 000	46 000	*50 000
Brazil (a)	357 141	421 290	*300 000	*200 000	*300 000
Afghanistan	4 318	5 345	5 682	—	—
China	220 540	208 000	181 900	164 200	197 800
India (e)	1 737 985	1 971 806	1 548 900	3 068 631	3 199 462
Indonesia	6 355	—	—	—	—
Iran (b) (c)	368 400	145 007	178 120	232 068	...
Kazakhstan	2 405 600	2 606 600	2 045 700	2 369 500	2 927 900
Myanmar (e)	*3 200	*3 000	*3 000	*3 000	*3 000
Oman	26 010	15 100	30 100	27 444	13 000
Pakistan (d)	16 279	24 473	21 535	16 679	30 657
Philippines (b)	17 530	20 920	27 926	22 000	26 000
United Arab Emirates	60 000	30 000	10 000	—	—
Vietnam	58 500	76 300	80 000	*80 000	*80 000
Australia	71 886	74 260	15 750	57 142	162 012
World Total	14 700 000	14 500 000	12 000 000	14 500 000	16 400 000

Note(s):

(1) In addition to the countries listed, Bulgaria, 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
- (d) Years ended 30 June of that stated
- (e) Years ended 31 March following that stated

Production of coal

tonnes

Country 1999	2000	2001	2002	2003
Albania				
Lignite	32 595	20 666	15 700	15 000
Austria				
Brown coal & lignite	1 137 388	1 254 605	1 193 970	1 298 652
Bosnia & Herzegovina				
Brown coal & lignite	7 260 000	8 900 000	9 792 000	*10 800 000
Bulgaria				
Anthracite & bituminous	123 200	118 200	115 000	122 000
Brown coal & lignite	25 734 000	26 182 769	26 095 516	26 433 500
Croatia				
Bituminous	15 311	—	—	—
Czech Republic				
Bituminous	17 227 000	17 028 000	14 808 000	14 097 000
Lignite	512 000	453 000	507 000	501 000
Brown coal	44 858 000	50 610 000	51 036 000	48 834 000
France				
Anthracite & bituminous	4 533 000	3 166 000	1 972 000	1 483 000
Lignite	558 000	296 000	324 000	147 000
Georgia				
Lignite	12 000	7 300	5 000	6 100
Germany				
Anthracite & bituminous	40 258 004	33 969 262	27 361 079	26 363 084
Brown coal	161 283 558	167 723 889	175 364 780	181 778 432
Greece				
Lignite	61 861 049	64 026 457	66 730 897	70 340 000
Hungary				
Bituminous	738 000	744 000	635 200	660 000
Lignite	7 702 000	7 862 000	8 043 062	7 573 971
Brown coal	6 477 000	5 670 000	5 392 000	4 530 000
Italy				
Lignite	80 000	120 000	130 000	100 000
Macedonia				
Lignite	7 300 000	7 500 000	8 000 000	8 000 000
Norway				
Bituminous (d)	403 940	631 926	1 787 784	2 131 691
Poland				
Bituminous	111 894 136	103 617 556	103 991 700	103 546 000
Lignite	60 838 707	59 505 486	59 557 400	58 209 600
Romania				
Anthracite & bituminous	3 742 000	4 042 000	4 033 000	*3 410 000
Brown coal & lignite	20 793 000	26 882 000	30 699 000	27 086 203
Russia				
Lignite	249 521 000	258 000 000	269 000 000	253 000 000
Serbia and Montenegro				
Bituminous	49 481	87 882	69 711	70 312
Lignite	30 037 930	33 638 291	31 789 143	32 936 248
Brown coal	413 289	398 438	375 620	422 661
Slovakia				
Brown coal	3 732 000	3 646 100	3 421 100	3 406 400
Slovenia				
Brown coal & lignite	4 562 000	4 479 300	4 133 000	4 684 710
Spain				
Anthracite	5 204 917	5 143 977	4 693 831	4 399 365
Bituminous	6 349 061	6 166 586	5 797 496	5 349 027
Sub-bituminous	3 707 095	3 630 805	3 456 000	3 537 710
Lignite	8 831 828	8 523 586	8 787 000	8 726 121
Turkey				
Anthracite	2 738 040	3 330 355	3 369 727	3 312 690
Bituminous	93 310	110 945	55 860	118 235
Lignite	66 706 450	61 314 974	58 172 982	49 626 612
Ukraine				
Bituminous	80 640 000	79 923 000	(i) 83 900 000	(i) 82 500 000
Lignite	1 184 000	1 067 000	...	...
United Kingdom				
Bituminous (g)	37 077 000	31 197 000	31 930 000	29 989 000

Production of coal

tonnes

Country 1999	2000	2001	2002	2003	
Botswana	945 316	946 900	930 374	953 081	822 780
Congo, Democratic Republic					
Bituminous	70 000	48 000	40 000	37 000	*35 000
Egypt	*250 000	*39 000	*58 000	*37 000	*35 000
Malawi	43 831	34 250	34 410	43 372	47 037
Morocco					
Anthracite	129 200	30 810	1 908	302	214
Mozambique					
Bituminous	8 573	16 115	27 600	43 512	36 742
Niger	168 466	158 200	163 275	182 916	188 915
Nigeria					
Sub-bituminous	20 000	10 000	10 000	10 000	*10 000
South Africa					
Anthracite	1 919 244	1 617 969	1 607 000	1 304 965	1 206 105
Bituminous	221 594 925	222 500 000	222 105 086	218 900 000	236 670 504
Swaziland					
Bituminous	426 299	378 043	*450 000	553 000	*550 000
Tanzania					
Bituminous	75 044	79 184	77 789	79 210	54 610
Zambia					
Bituminous	127 854	168 000	*150 000	*150 000	*150 000
Zimbabwe					
Bituminous	4 977 355	3 986 202	4 511 447	3 938 175	3 000 000
Canada					
Bituminous	36 537 653	33 804 234	34 140 918	29 715 000	26 618 000
Sub-bituminous	24 299 674	24 168 751	24 939 381	25 528 000	24 880 000
Lignite	11 659 351	11 190 106	11 390 275	11 365 000	10 665 000
Mexico					
Bituminous	13 302 345	14 287 138	12 176 884	11 405 034	11 305 023
USA					
Anthracite	4 325 000	4 148 000	(b) 1 760 000	(b) 1 240 000	(b) 1 169 000
Bituminous	545 882 000	520 974 000	(b) 554 563 000	(b) 519 012 000	(b) 507 278 000
Sub-bituminous	368 965 000	371 223 000	394 101 000	397 674 000	388 684 000
Lignite	79 123 000	77 620 000	72 615 000	74 807 000	73 116 000
Argentina					
Bituminous	353 839	246 000	149 851	56 324	...
Brazil					
Bituminous & lignite (e)	6 062 963	6 797 294	5 645 578	5 143 488	4 643 319
Chile					
Bituminous	82 240	110 039	123 320	129 939	136 495
Lignite	425 110	393 311	444 767	321 687	210 783
Colombia					
Bituminous	32 754 000	38 142 000	43 440 700	39 532 000	50 028 000
Peru					
Anthracite	1 488	16 625	20 093	22 085	15 688
Bituminous	*45 000	*45 000	*45 000	*45 000	*45 000
Venezuela					
Bituminous	6 594 611	7 880 516	7 685 476	8 097 016	7 033 729
Afghanistan					
Bituminous	*2 000	*2 000	*2 000	*2 000	*2 000
Bhutan	68 000	*67 000	*65 000	*65 000	...
China					
Anthracite	181 811 500	175 727 200	...	...	...
Bituminous	816 257 400	780 669 000	(i) 1 106 000 000	(g) 1 343 350 000	(i) 1 608 000 000
Lignite	45 566 300	42 773 600	...	50 000 000	...
India					
Bituminous (h)	304 103 000	313 696 000	327 787 000	341 272 000	361 168 000
Lignite (h)	22 124 000	22 947 000	24 813 000	26 018 000	27 958 000
Indonesia					
Anthracite & bituminous	73 648 000	76 465 000	91 928 000	103 130 000	114 600 000
Iran					
Bituminous (c)	1 775 174	1 991 865	2 017 998	2 075 619	...
Japan					
Bituminous	3 689 513	3 147 000	3 208 000	1 315 655	1 353 379

Production of coal

tonnes

Country 1999	2000	2001	2002	2003
Kazakhstan				
Bituminous	56 617 400	72 429 500	76 454 900	80 497 400
Lignite	1 760 200	2 442 900	2 680 300	4 219 500
Korea, Dem. P.R. of				
Anthracite	15 000 000	16 000 000	23 100 000	...
Lignite	5 500 000	6 500 000	7 436 000	...
Korea, Republic of				
Anthracite	4 197 000	4 150 000	3 817 000	3 298 000
Kyrgyzstan	417 000	424 900	475 000	411 300
Laos	538 816	184 169	122 942	212 819
Malaysia	308 502	382 942	545 845	174 800
Mongolia				
Anthracite & bituminous	1 423 500	1 437 300	1 492 400	...
Brown coal & lignite	3 528 500	3 562 700	3 707 600	...
Myanmar (h)	42 773	52 553	*41 000	*40 000
Pakistan (a) (j)	3 246 270	3 372 871	3 309 244	3 609 338
Philippines				
Bituminous	1 204 979	1 353 453	1 229 822	1 645 659
Taiwan				
Bituminous	91 674	83 380		
Tajikistan	16 600	20 700	27 500	23 600
Thailand				
Lignite	18 266 308	17 713 753	19 616 996	19 508 000
Uzbekistan				
Bituminous	89 100	91 500	91 700	80 000
Lignite	2 864 000	2 410 000	2 619 300	2 660 000
Vietnam				
Anthracite	9 600 000	11 600 000	13 000 000	15 400 000
Australia				
Bituminous (f)	232 860 000	244 840 000	266 710 000	272 560 000
Brown coal (j)	65 820 000	65 780 000	64 960 000	67 830 000
New Zealand				
Bituminous	1 620 866	1 792 784	1 896 771	2 268 900
Sub-bituminous	1 672 947	1 645 382	1 811 681	1 971 850
Lignite	211 917	147 469	202 944	218 200
World Total	4 323 000 000	4 308 000 000	4 551 000 000	4 792 000 000

Note(s):

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

(a) Including lignite

(b) Includes a small amount of refuse recovery

(c) Years ended 20 March following that stated

(d) Spitzbergen: not including production from mines controlled by the former Soviet Union

(e) Including beneficiated and directly shipped material

(f) Including sub-bituminous

(g) Including anthracite

(h) Years ended 31 March following that stated

(i) Coal; all forms

(j) Years ended 30 June of that stated

Mine production of cobalt

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Russia	*4 000	*4 100	*4 600	*4 200	4 654
Botswana	332	308 325		269 294	
Congo, Democratic Republic	*6 000	*7 000	*8 000	*8 000	*8 500
Morocco	882	1 001	1 337	1 335	1 391
South Africa	306	397	373	366	271
Zambia	3 946	3 342	4 665	6 144	6 620
Zimbabwe	129	79	96	74	*90
Canada	5 323	5 298	5 326	5 148	4 304
Cuba	2 600	2 900	3 200	*3 000	*3 000
Brazil	2 900	4 100	4 400	4 300	4 200
China	303	411	679	972	*1 000
Indonesia	*650	*650 *650		*650 *650	
Australia (a)	1 802	1 726	2 696	2 763	2 565
New Caledonia	2 803	2 620	3 540	2 698	*3 000
World Total	32 000	34 000	40 000	40 000	41 000

Note(s):

- (1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered
(2) Figures in this table relate where possible to cobalt recovered. The principal exceptions to this are Brazil and New Caledonia, the figures for which relate to cobalt in ore raised

(a) Years ended 30 June of that stated

Production of cobalt metal

tonnes

Country 1999		2000	2001	2002	2003
Belgium	*950	*1 110	*1 090	1 135	1 704
Finland	6 200	7 700	8 100	8 200	7 989
Norway	4 000	3 400	3 300	4 000	4 556
Russia	4 000	4 100	4 600	4 200	4 654
Congo, Democratic Republic (c)	5 180	4 320	3 199	2 149	1 200
Morocco	472	1 207	1 341	1 354	1 341
South Africa (b)	306	397	373	366	271
Uganda	77	411	512	*450	
Zambia	3 946	3 342	4 665	6 144	6 620
Canada (a)	4 196	4 364	4 378	4 625	4 233
Brazil	630	792	889	960	1 097
China	*1 200	*1 200	1 470	1 842	4 576
India	200	206 250		270 255	
Japan	221	311 350		354 379	
Australia	1 701	2 637	3 473	3 901	3 839
World Total	33 300	35 500	38 000	40 000	42 700

Note(s):

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

- (a) Including oxides
(b) Includes metal and metal contained in sulphate
(c) Excludes white alloy and matte which are believed to be further processed in Belgium and elsewhere

Mine production of copper

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Albania	869	—	—	—	—
Armenia	9 830	12 234	16 460	16 641	18 068
Bulgaria	87 500	93 200	97 100	84 400	80 240
Cyprus	5 006	5 200	4 600	3 700	2 500
Finland	10 500	11 500	11 600	14 400	14 900
Georgia	1 000	9 000	11 500	*13 000	14 700
Macedonia	10 200	10 000	6 800	5 600	700
Poland	463 200	454 100	474 000	502 800	503 544
Portugal	99 472	76 300	82 965	77 227	77 581
Romania	16 455	16 099	19 185	18 962	21 317
Russia	*535 000	*530 000	*540 000	621 000	630 000
Serbia and Montenegro	51 700	46 000	31 000	34 600	25 200
Spain	7 862	24 804	9 800	1 248	643
Sweden	71 160	77 765	74 269	71 991	83 143
Turkey	73 051	76 053	56 820	48 217	43 245
Botswana	20 960	18 722	19 209	21 590	24 289
Congo, Democratic Republic	33 000	33 000	34 100	28 000	*55 000
Morocco	7 123	6 528	5 357	4 994	4 818
Namibia	—	5 070	15 003	18 040	16 175
South Africa	162 900	147 600	141 900	90 000	91 100
Tanzania	—	—	2 645	2 700	2 200
Zambia	270 995	249 304	306 909	307 834	343 600
Zimbabwe	4 977	558	492	1 356	2 767
Canada	620 085	633 855	633 531	603 498	557 565
Cuba	1 090	1 346	*1 000	—	—
Mexico	381 184	364 566	371 123	329 574	355 653
USA	1 626 400	1 466 700	1 360 000	1 157 400	1 130 200
Argentina	210 126	145 197	191 667	204 027	199 020
Brazil	31 371	31 786	32 734	32 711	26 275
Chile	4 391 200	4 602 000	4 739 000	4 580 600	4 904 200
Colombia	*2 100	2 018	2 000	1 700	*1 500
Peru	536 387	553 924	722 035	843 213	842 578
China	520 100	592 600	587 000	568 000	604 000
India (a)	35 479	37 511	37 900	34 600	32 300
Indonesia	766 100	1 012 000	1 048 700	1 167 370	1 003 400
Iran	130 000	147 200	146 300	140 700	146 100
Japan	867	1 211	744	1 519	1 000
Kazakhstan	373 500	430 200	469 500	473 700	484 500
Korea, Dem. P.R. of	*10 000	*12 000	*12 000	*12 000	*12 000
Malaysia	4 600	—	—	—	—
Mongolia	128 210	125 868	134 974	134 700	131 600
Myanmar	26 736	26 711	26 300	27 500	27 900
Philippines	37 631	31 900	20 321	18 365	20 414
Saudi Arabia	821	837	1 000	600	800
Uzbekistan	66 000	*70 000	*70 000	*80 000	*80 000
Vietnam	700	2 400	1 600	1 100	1 200
Australia	741 000	832 000	896 000	879 000	830 000
Papua New Guinea	187 921	203 061	203 762	211 315	195 655
World Total	12 800 000	13 200 000	13 700 000	13 500 000	13 600 000

Note(s):

(a) Years ended 31 March following that stated

Smelter production of copper

tonnes

Country 1999		2000	2001	2002	2003
Armenia	5 000	6 000	7 056	6 502	6 259
Bulgaria	107 200	163 000	134 700	167 000	199 300
Finland	149 600	155 400	169 300	161 000	161 000
Germany	250 200	211 200	317 700	295 100	288 800
Norway	33 300	27 000	26 704	30 483	35 851
Poland	466 225	462 838	485 869	510 725	559 960
Romania	21 000	4 900	3 000	3 000	3 000
Russia	535 000	550 000	608 000	653 400	668 200
Serbia and Montenegro	44 900	33 800	24 000	30 000	9 000
Slovakia	2 050	—	—	—	—
Spain	292 773	289 957	280 015	298 057	290 282
Sweden	84 378	105 088	179 364	186 984	175 475
Turkey	22 900	22 500	23 751	19 375	14 426
Congo, Democratic Republic (a)	31 000	33 000	25 000	10 000	8 000
Morocco	—	—	—	2 000	2 500
Namibia	—	13 488	27 718	26 670	26 306
South Africa	149 300	140 000	117 200	117 000	112 000
Zambia (a)	217 600	180 000	215 000	253 500	250 000
Zimbabwe	7 000	2 000	—	—	—
Canada	550 171	543 593	601 359	513 934	430 116
Mexico	314 429	308 225	319 151	284 220	260 754
USA	1 087 400	861 700	834 100	683 300	538 700
Brazil	193 014	184 257	212 243	187 605	173 378
Chile	1 473 900	1 460 400	1 503 200	1 438 700	1 542 400
Peru	350 377	340 447	384 912	380 834	*370 000
China	837 000	1 013 900	1 145 100	1 187 000	1 307 400
India (c)	240 704	259 683	284 510	195 025	205 187
Indonesia	126 700	173 800	217 500	211 200	247 400
Iran (b)	131 764	155 856	152 704	150 000	*164 000
Japan	1 256 276	1 331 352	1 304 717	1 283 173	1 278 380
Kazakhstan	383 457	413 859	433 561	446 198	431 930
Korea, Dem. P.R. of	*10 000	*10 000	*10 000	*10 000	*10 000
Korea, Republic of	350 000	370 900	386 200	380 000	410 000
Oman	26 100	28 000	25 000	25 000	25 000
Philippines	148 000	150 000	165 000	165 800	227 900
Uzbekistan	61 000	69 000	81 300	57 000	57 000
Australia	344 000	391 000	455 000	458 000	435 000
World Total	10 300 000	10 500 000	11 200 000	10 800 000	10 900 000

Note(s):

(1) This table shows primary metal in the form of blister and anode produced from concentrates, and may include copper produced from scrap but this is excluded when it can be separately identified

(a) Including leach cathodes

(b) Years ended 20 March following that stated

(c) Years ended 31 March following that stated

Production of refined copper

tonnes

Country 1999		2000	2001	2002	2003
Austria	74 075	73 873	66 154	64 900	65 100
Belgium	388 000	423 000	424 000	422 500	423 000
Bulgaria	21 000	32 500	34 500	40 700	45 900
Cyprus	5 260	5 088	4 604	3 695	2 552
Finland	114 700	114 000	115 500	115 000	126 000
France	2 000	—	—	—	—
Germany	695 626	709 472	693 714	695 741	597 531
Italy	28 500	33 000	30 200	32 400	26 700
Norway	33 300	25 300	26 700	30 600	35 852
Poland	470 494	486 002	498 451	508 674	529 616
Romania	20 983	15 303	17 654	11 453	16 672
Russia	780 000	842 000	894 500	855 100	824 000
Serbia and Montenegro	49 902	45 632	32 365	35 897	14 029
Slovakia	1 988	—	10 584	6 989	600
Spain	304 617	315 734	290 630	312 145	293 495
Sweden	113 960	133 118	216 237	224 402	214 181
Turkey	60 500	64 000	58 000	41 000	36 900
Ukraine	—	—	—	10 000	20 000
United Kingdom	50 334	—	—	—	—
Congo, Democratic Republic	29 000	29 000	—	—	—
South Africa	116 400	106 400	107 000	92 000	89 300
Zambia	268 400	226 169	307 904	347 235	360 100
Zimbabwe	14 500	14 400	5 300	5 400	5 000
Canada	548 563	551 393	567 720	494 522	454 866
Mexico	344 200	343 200	354 200	319 200	310 000
USA	2 118 700	1 802 100	1 800 600	1 511 900	1 306 400
Argentina	*16 000	*16 000	*16 000	*16 000	*16 000
Brazil	193 014	184 257	212 243	187 605	173 378
Chile	2 666 400	2 668 300	2 882 200	2 850 100	2 901 900
Peru	436 339	451 728	471 875	501 791	517 000
China	1 174 200	1 371 100	1 523 300	1 632 500	1 836 000
India (b)	226 999	259 683	335 769	378 850	395 959
Indonesia	90 800	158 400	212 500	192 400	223 300
Iran (a)	154 232	181 238	181 526	*180 000	*163 000
Japan	1 341 549	1 437 351	1 425 691	1 401 079	1 430 365
Kazakhstan	361 890	394 723	425 670	452 989	432 401
Korea, Dem. P.R. of	*15 000	*15 000	*15 000	*15 000	*15 000
Korea, Republic of	448 034	470 956	476 094	499 116	509 970
Mongolia	...	...	1 476	1 500	1 300
Myanmar (b)	27 853	26 546	*25 000	*27 500	*27 900
Oman	17 171	24 281	24 200	24 000	17 100
Philippines	148 000	138 700	164 500	144 300	171 200
Uzbekistan	72 000	*75 000	75 500	77 100	77 000
Australia	437 000	509 000	583 000	568 000	*510 000
World Total	14 500 000	14 800 000	15 600 000	15 300 000	15 200 000

Note(s):

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

(2) In addition to the countries listed, Albania, Egypt and Mongolia produce refined copper

(a) Years ended 20 March following that stated

(b) Years ended 31 March following that stated

Production of diamond

carats

Country 1999		2000	2001	2002	2003
Russia	16 200 000	20 500 000	20 500 000	*20 000 000	*24 000 000
Angola	3 572 200	4 014 000	5 100 000	*5 700 000	*6 300 000
Botswana	21 263 000	24 635 000	26 190 000	28 368 000	30 412 000
Central African Republic	430 126	461 004	449 000	415 000	*400 000
Congo, Democratic Republic	22 000 000	16 500 000	19 637 000	21 985 000	29 000 000
Ghana	680 964	887 049	1 132 102	963 493	904 089
Guinea	382 743	368 599	*360 000	491 160	666 000
Ivory Coast	398 282	320 208	309 000	306 000	307 000
Lesotho	*1 500	*1 500	1 140	721	2 099
Liberia	*200 000	*170 000	155 000	80 000	60 000
Namibia	1 632 860	1 541 647	1 487 316	1 537 505	1 454 852
Sierra Leone	*600 000	*350 000	224 188	351 860	506 819
South Africa	10 014 815	10 789 976	11 162 630	10 882 614	12 673 379
Tanzania	234 800	354 388	254 271	239 761	232 273
Zimbabwe	42 578	23 028	—	—	—
Canada	2 492 807	2 533 750	3 685 173	4 975 021	11 200 393
Brazil	*900 000	*1 000 000	*700 000	*500 000	*400 000
Guyana	45 441	81 706	179 463	248 437	250 000
Venezuela	95 144	109 597	52 804	141 463	34 790
China	113 065	160 000	150 000	*150 000	*150 000
India (a)	40 956	57 407	81 436	84 407	71 259
Indonesia	*30 000	*30 000	*30 000	*30 000	*30 000
Australia	29 784 000	26 647 000	26 176 000	33 648 000	31 013 000
World Total	111 200 000	111 500 000	118 000 000	131 100 000	150 100 000

Note(s):

- (1) This table does not show production of synthetic diamond
- (2) So far as possible the amounts shown include estimates for illegal production

(a) Years ended 31 March following that stated

Production of diatomite

tonnes

Country 1999		2000	2001	2002	2003
Commonwealth of Independent States (f)	*80 000	*80 000	*80 000	*80 000	*80 000
Czech Republic	7 400	6 800	6 000	5 600	4 800
Denmark					
Moler (d)	164 000	189 000	192 000	211 000	221 000
France	*80 000	*75 000	*75 000	*75 000	*75 000
Hungary	1 240	1 878	1 323	1 656	*1 500
Iceland	28 299	27 614	30 434	26 494	27 693
Italy	*25 000	*25 000	*25 000	*25 000	*25 000
Macedonia	*5 000	*5 000	*5 000	*5 000	*5 000
Poland	1 240	*1 270	*1 000	*1 000	*700
Portugal	772	686	387	*400	*400
Romania	11 592	9 890	9 743	20 922	31 298
Spain (b)	51 897	66 770	70 000	53 558	55 000
Turkey	5 926	... ..		... ..
Algeria	2 563	2 979	2 863	3 185	2 335
Kenya	507	448 441		1 333 353	
Costa Rica	*18 000	34 704	26 350	26 400	25 000
Mexico	65 146	96 448	69 474	62 322	67 801
USA (c)	747 000	677 000	644 000	624 000	620 000
Argentina	34 056	17 663	17 090	23 314	24 946
Brazil (e)	9 223	11 242	*10 000	*10 000	*10 000
Chile	14 477	13 384	22 705	30 274	25 594
Colombia	*4 000	*4 000	*4 000	*4 000	*4 000
Peru	*35 000	*35 000	*35 000	*35 000	*35 000
China	82 170	83 300	124 100	*135 000	*140 000
Iran (a)	4 350	300	50	300	...
Japan	132 090	111 193	129 267	123 827	*125 000
Korea, Republic of	30 222	34 143	27 530	20 666	15 636
Saudi Arabia	1 000	1 000	1 000	1 000	1 000
Thailand	2 332	390	720	*1 000	1 000
Australia (g)	25 330	28 810	28 407	31 122	*27 000
World Total	1 670 000	1 650 000	1 640 000	1 640 000	1 660 000

Note(s):

(1) In addition to the countries listed, Egypt is believed to produce diatomite

(a) Years ended 20 March following that stated

(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

(f) Diatomite is produced in Armenia, Georgia and Russia but information is not available to provide estimates for individual countries

(g) Years ended 30 June of that stated

Production of feldspar

tonnes

Country 1999		2000	2001	2002	2003
Bulgaria	28 000	22 000	23 000	*24 000	*35 000
Czech Republic	244 000	337 000	373 000	401 000	421 000
Finland	43 827	38 609	36 145	39 552	59 362
France	640 000	642 000	720 000	659 000	670 500
Germany	278 953	322 116	302 650	243 368	233 028
Greece	78 500	94 700	126 400	*125 000	*125 000
Italy	2 493 846	2 851 289	3 240 457	3 159 569	2 972 187
Macedonia	11 275	10 057	20 449	*21 000	*20 000
Norway	72 777	72 000	79 510	75 184	70 000
Poland	105 300	95 588	145 980	209 226	276 264
Portugal	114 685	136 730	112 923	141 125	126 116
Romania	36 627	37 157	43 037	51 959	71 717
Russia	*45 000	*45 000	*45 000	*45 000	*45 000
Serbia and Montenegro	3 452	4 254	4 451	7 813	3 045
Spain	439 204	478 260	*520 000	548 964	550 000
Sweden	34 000	35 000	40 000	37 000	44 000
Turkey	1 369 655	1 150 706	1 510 293	1 766 387	1 862 310
United Kingdom (c)	2 448	3 645	2 995	1 896	1 309
Algeria	2 820	707	—	—	—
Egypt (d)	*330 000	*330 000	*300 000	*350 000	*350 000
Morocco	1 112	16 052	12 015	19 402	*20 000
South Africa	59 336	66 774	66 062	66 616	57 738
Zimbabwe	1 915	2 059	1 055	824	*400
Cuba	4 800	6 700	*7 000	*7 000	*7 000
Guatemala	17 072	17 804	6 809	13 044	...
Mexico	262 241	334 439	329 591	332 101	346 315
USA	*875 000	*790 000	*800 000	*790 000	*800 000
Argentina	62 926	59 466	48 522	82 642	88 427
Brazil (e)	150 492	148 515	*120 000	*100 000	*100 000
Chile	1 346	2 311	2 867	3 069	6 690
Colombia	*55 000	*55 000	*55 000	93 450	*100 000
Ecuador	33 142	47 041	60 688	31 254	34 379
Peru	1 594	5 642	4 253	6 018	7 349
Uruguay	1 556	2 493	3 522	1 550	2 450
Venezuela	125 000	129 529	142 425	146 619	149 450
China	*2 000 000	*2 000 000	*2 000 000	*2 000 000	*2 000 000
India (a)	194 158	179 046	228 735	239 093	307 965
Indonesia	23 236	*24 000	*24 000	*24 000	*24 000
Iran (b)	150 050	223 229	157 243	257 149	...
Japan (f)	982 820	1 035 050	1 333 441	1 143 618	*1 100 000
Jordan	1 000	11 112	611	530	13 057
Korea, Republic of	409 334	330 417	389 361	415 580	477 012
Malaysia	26 940	29 895	40 509	30 819	42 662
Myanmar	*12 000	*12 000	*12 000	*12 000	*12 000
Pakistan (d)	29 235	34 252	45 145	35 071	31 760
Philippines	16 909	6 500	33 122	32 874	34 456
Saudi Arabia	*21 000	21 100	27 500	30 470	*33 700
Sri Lanka	26 012	28 638	27 438	28 866	32 586
Taiwan	171	409	147		510
Thailand	626 415	542 991	710 543	783 733	*780 000
Uzbekistan	300	4 300	*4 300	*4 300	*4 300
Australia (d)	74 892	94 096	113 917	100 525	*120 000
World Total	12 500 000	13 000 000	14 000 000	14 500 000	15 000 000

Note(s):

(1) In addition to the countries listed, Ethiopia, Kenya, Namibia and Slovakia are believed to produce feldspar

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) China stone (f)

(d) Years ended 30 June of that stated

(e) Including beneficiated and directly shipped material

Including weathered granite feldspar

Production of fluorspar

tonnes

Country 1999		2000	2001	2002	2003
Bulgaria	...	200	300	—	—
France	105 800	114 400	123 000	122 000	90 000
Germany	28 260	31 124	30 381	34 429	33 289
Italy	46 916	67 768	70 160	53 260	26 387
Romania	*15 000	*15 000	*15 000	*15 000	*15 000
Russia	153 800	187 600	*200 000	*169 000	*170 000
Spain	148 238	140 466	134 039	141 434	131 718
Turkey	4 812	4 113	3 752	5 344	5 000
United Kingdom	*40 000	*36 000	*50 000	*53 000	*56 000
Egypt	*500	*500	304	502	*500
Kenya (d)	93 602	100 102	118 850	85 015	80 201
Morocco	83 100	76 991	96 500	94 910	81 225
Namibia	57 599	66 129	81 245	81 084	79 281
South Africa	217 540	212 709	286 387	227 000	235 000
Tunisia	520	—	—	—	—
Mexico	557 106	635 230	619 468	622 477	756 258
Argentina	12 704	11 229	9 075	5 168	5 530
Brazil (a)	44 926	44 046	43 734	47 899	56 346
China	*2 230 000	*2 240 000	*2 200 000	*2 150 000	*2 300 000
India (e)	48 072	7 035	20 766	13 023	9 013
Iran (b)	18 387	34 672	34 688	55 187	103 000
Korea, Dem. P.R. of	*25 000	*25 000	*25 000	*25 000	*25 000
Kyrgyzstan	2 997	3 000	1 175	2 656	3 973
Mongolia	153 693	198 541	199 105	185 100	196 000
Pakistan (c)	220	997	1 091	1 288	*1 000
Thailand	23 005	4 745	3 020	2 271	2 360
Vietnam	*3 000	*3 000	*3 000	*3 000	*3 000
World Total	4 100 000	4 300 000	4 400 000	4 200 000	4 500 000

Note(s):

- (1) In addition to the countries listed, Bulgaria and Tajikistan are believed to produce fluorspar
(2) In addition, the USA produced the following amounts of fluorspar equivalent in fluorosilicic acid derived from processing phosphate rock ('000 t): 1999: 122; 2000: 119; 2001: 104; 2002: 92; 2003: 94.

- (a) Including beneficiated and directly shipped material
(b) Years ended 20 March following that stated
(c) Years ended 30 June of that stated
(d) Exports
(e) Years ended 31 March following that stated

Production of germanium metal

tonnes

Country 1999		2000	2001	2002	2003
Ukraine	1	...	...	0	—
USA (a)	*20	*23 *20		*12 *12	
China	14	14	21	*20	*20
Japan	1	2 2		1 1	

Note(s):

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

- (a) Including production of secondary metal

Mine production of gold

kilograms (metal content)

Country 1999		2000	2001	2002	2003
Armenia	405	900	1 900	3 200	1 800
Bulgaria	1 524	1 720	1 700	2 612	2 142
Finland	2 770	1 600	1 700	1 300	*1 000
France	3 567	2 643	2 512	1 724	1 470
Georgia	1 587	2 110	1 880	2 880	2 390
Italy	894	820	522	631	*650
Poland (d)	489	367 349		296 356	
Romania	1 800	1 200	1 600	1 700	*1 700
Russia	125 870	142 500	152 641	168 393	170 068
Serbia and Montenegro (d)	1 260	1 121	—	858	363
Slovakia	363	306	157	77	79
Spain	5 203	4 304	4 277	5 559	5 362
Sweden	4 202	3 570	4 986	5 757	5 900
Turkey	*1 200	*500	*1 100	*4 500	*5 370
Ukraine	24	135	69	*70	*70
Algeria	...	...	—	369	365
Burkina Faso	886	589	209	390	*400
Burundi	—	—	415	483	*500
Cameroon	*1 000	*1 000	930	*1 000	*1 000
Congo, Democratic Republic	207	52	*50	*50	*50
Eritrea	534	264	107	—	9
Ethiopia (b)	2 928	3 206	3 862	3 670	3 875
Ghana	78 660	78 399	70 049	69 575	70 552
Guinea	11 710	15 748	16 256	16 700	16 226
Ivory Coast	2 967	3 444	4 700	*3 500	*400
Kenya (e)	990	1 243	1 545	1 477	1 543
Mali	23 688	28 717	42 288	56 028	45 528
Morocco (d)	*450	505	1 191	2 747	1 863
Namibia	2 005	2 455	2 852	2 847	2 508
Senegal	*550	*550 *550		550 *600	
South Africa	451 200	430 778	394 757	398 258	372 766
Sudan	5 565	5 773	5 438	5 258	*5 500
Tanzania	4 890	15 060	30 088	43 320	48 128
Uganda (e)	5 558	9 860	6 090	7 590	4 160
Zambia (c)	79	*100 *130		*150 *150	
Zimbabwe	27 114	22 007	18 478	15 669	12 564
Canada	157 755	155 538	160 200	152 059	141 548
Costa Rica	165	51	*100	*100	*100
Dominican Republic	651	...		...
Guatemala	4 449	4 500	*4 500	*4 500	*4 500
Honduras	879	878	3 553	4 026	3 167
Mexico	23 755	26 375	23 543	21 324	20 406
Nicaragua	4 448	3 672	3 840	3 494	3 029
Panama	*1 500	*1 500	*1 500	*1 500	*1 600
USA	341 481	353 437	335 000	298 000	277 000
Argentina	38 515	25 954	30 630	32 530	29 614
Bolivia	11 786	12 000	12 374	11 269	9 361
Brazil	51 422	50 393	42 884	41 730	40 438
Chile	48 069	54 143	42 673	38 688	38 954
Colombia	34 599	37 018	21 813	20 820	46 510
Ecuador	2 026	2 871	3 005	2 750	3 025
French Guiana	2 972	3 376	3 971	2 971	*3 000
Guyana	13 159	13 525	14 179	13 580	12 172
Peru	128 486	132 585	138 022	157 013	172 619
Uruguay	2 392	2 240	2 083	2 079	1 730
Venezuela	5 946	7 332	9 076	9 465	8 190
China (d)	165 680	176 910	181 870	202 000	210 100
India (a)	2 442	2 615	2 810	3 153	3 363
Indonesia	129 032	127 192	166 090	139 650	141 019
Iran (d)	760	765	770	650	*500
Japan	9 399	8 473	8 162	8 563	8 143
Kazakhstan (d)	9 655	11 529	15 226	10 959	9 906
Kyrgyzstan	20 200	22 000	24 670	17 000	22 476

Mine production of gold

kilograms (metal content)

Country 1999	2000	2001	2002	2003
Laos	—	—	—	5 300
Malaysia	3 449	4 026	3 970	4 739
Mongolia	10 038	11 485	12 092	*10 000
Myanmar (a) (d)	116	100	*100	*100
Oman	597	551	603	*100
Philippines	31 050	36 541	33 841	37 844
Saudi Arabia	4 579	3 637	2 500	8 500
Tajikistan	2 700	*2 700	*2 700	*2 700
Uzbekistan	88 100	87 500	85 400	86 000
Vietnam	1 900	*2 000	*3 000	*3 000
Australia	299 750	296 420	280 080	266 140
Fiji	3 881	3 842	4 907	3 829
New Zealand	8 577	9 880	9 850	9 305
Papua New Guinea	65 747	74 540	67 043	61 379
Solomon Islands	3 426	1 555	—	—
World Total	2 510 000	2 560 000	2 530 000	2 520 000

Note(s):

- (1) In several countries substantial amounts of gold produced in small operations are not recorded in the official statistics used when compiling this table
- (2) In addition to the countries listed, Botswana, Central African Republic, Gabon, Republic of Korea, Laos, Liberia, Madagascar, Mozambique, Niger, Nigeria, Rwanda, Sierra Leone and Taiwan produce less than 100 kg gold per year
- (3) Greece, Norway and Thailand are believed to produce gold

- (a) Years ended 31 March following that stated
- (b) Years ended 7 July of that stated
- (c) Contained in blister copper, refinery muds and electrolytic copper
- (d) Metal production
- (e) Exports

Production of graphite

tonnes

Country 1999		2000	2001	2002	2003
Austria (a)	2 635	669	116	—	—
Czech Republic	22 000	23 000	17 000	16 000	9 000
Germany	3 891	3 414	3 190	3 312	2 840
Norway	7 339	8 392	9 070	8 600	1 000
Romania	1 041	1 251	1 176	1 001	1 014
Russia	15 670	20 125	16 563	...	...
Sweden	4 504	5 602	1 035	—	—
Turkey	2 078	...	...	1 393	942
Ukraine	7 461	7 431	*7 500	*7 500	*7 500
Madagascar	14 516	40 328	2 013	*1 000	*2 000
Mozambique	4 007	—	—	—	—
Zimbabwe	12 321	11 838	12 117	9 700	*8 000
Canada	20 590	22 610	20 984	15 039	12 226
Mexico	27 781	30 330	21 442	14 065	8 730
Brazil (b)	53 503	71 208	60 666	60 922	70 739
China (d)	1 500 000	1 650 000	1 700 000	1 400 000	*1 400 000
India (a) (c)	108 826	124 790	105 814	106 060	86 668
Korea, Dem. P.R. of	*33 000	*30 000	*25 000	*25 000	*25 000
Korea, Republic of	62	65	238	94	58
Sri Lanka	4 592	5 902	6 585	3 619	3 387
World Total	1 850 000	2 060 000	2 010 000	1 690 000	1 660 000

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 beneficiated and directly shipped material
(c) Years ended 31 March following that stated
(d) Including 350000 tonnes of flake graphite in 2002

Production of gypsum

tonnes

Country 1999		2000	2001	2002	2003
Armenia	11 652	9 630	12 811	44 943	57 835
Austria					
Gypsum	898 830	825 077	790 478	847 117	889 727
Anhydrite	100 374	120 967	138 745	122 085	113 823
Azerbaijan	...	...	1 750	1 039	3 848
Bosnia & Herzegovina	*30 000	49 492	59 728	*65 000	*65 000
Bulgaria	148 748	169 571	166 838	156 400	165 500
Croatia	137 991	150 765	130 861	145 000	166 340
Cyprus	300 000	260 000	250 000	295 000	300 000
Czech Republic	136 000	82 000	24 000	108 000	104 000
France	*4 500 000	*4 500 000	*4 500 000	*3 500 000	*3 500 000
Georgia	6 414	4 082	15 408	8 127	8 500
Germany (a)	2 259 000	2 344 000	1 966 000	1 761 000	1 748 000
Greece	686 416	801 025	808 890	730 000	...
Hungary (a)	203 000	251 000	231 000	108 000	...
Irish Republic	*500 000	*500 000	*500 000	*500 000	*600 000
Italy	1 382 709	1 511 650	1 558 882	1 531 477	1 783 903
Latvia	100 000	100 000	*100 000	(a) 220 000	(a) 160 000
Macedonia	*30 000	*30 000	*30 000	*30 000	*30 000
Moldova	18 500	31 400	55 200	91 300	116 100
Poland					
Gypsum	925 707	998 628	793 684	866 674	1 030 693
Anhydrite	237 000	284 683	300 356	280 031	297 088
Portugal	569 519	698 673	787 646	579 143	...
Romania	*75 000	*75 000	*75 000	*75 000	*75 000
Russia	867 200	1 013 000	1 189 000	700 000	*700 000
Serbia and Montenegro	33 962	46 651	58 045	54 937	42 261
Slovakia (a)	117 000	108 000	168 800	121 680	93 800
Spain	9 213 589	9 929 478	*10 920 000	11 218 410	12 000 000
Switzerland	*300 000	*300 000	*300 000	*300 000	*300 000
Turkey	242 960	302 552	328 656	264 038	196 668
Ukraine	96 500	119 000	...	...	...
United Kingdom	*1 800 000	*1 500 000	*1 700 000	*1 700 000	*1 700 000
Algeria	...	...	646 000	741 000	*800 000
Egypt	...	...	126 615	119 453	...
Ethiopia (d)	35 983	46 798	50 500	22 500	48 058
Kenya	*10 000	8 416	8 200	*8 000	*8 000
Libya	*150 000	*150 000	*175 000	*150 000	*150 000
Mauritania	*100 000	*100 000	*100 000	*100 000	*100 000
Morocco	*450 000	*450 000	*450 000	*450 000	*400 000
Niger	1 502	1 474	3 205	17 652	17 851
Somalia	*1 500	*1 500	*1 500	*1 500	*1 500
South Africa	505 404	413 105	382 830	415 387	394 069
Sudan	11 144	13 808	2 422	*4 000	*4 000
Tanzania	21 195	60 000	72 000	78 650	*23 176
Tunisia	*100 000	*100 000	*100 000	*100 000	*100 000
Canada					
Gypsum	9 723 000	9 054 000	8 331 000	8 913 000	(a) 9 025 000
Anhydrite	163 325	178 145	75 753	93 239	...
Cuba	110 400	*110 000	*110 000	*110 000	*110 000
Dominican Republic	81 249	110 044	175 553	178 941	209 901
El Salvador	*6 000	*6 000	*6 000	*6 000	*6 000
Guatemala	110 173	212 109	96 817	94 411	...
Honduras	55 848	59 211	59 500	*60 000	...
Jamaica	235 990	330 441	320 323	164 880	248 558
Mexico	5 188 969	5 653 901	6 237 057	6 703 109	6 986 491
Nicaragua	26 880	28 170	34 369	28 153	...
USA	22 400 000	19 500 000	16 300 000	15 700 000	*16 000 000
Argentina	571 344	559 277	371 527	362 556	387 936
Brazil (e)	1 496 936	1 541 109	*1 500 000	*1 600 000	*1 500 000
Chile	886 294	375 847	516 876	609 550	662 259
Colombia	*560 000	*560 000	*560 000	*560 000	*560 000
Ecuador	1 456	1 043	834	4 730	5 203
Paraguay	*4 000	4 400	4 300	*4 300	...

Production of gypsum

tonnes

Country 1999		2000	2001	2002	2003
Peru	75 636	52 346	20 966	75 306	71 114
Venezuela	42 000	25 000	5 000	*10 000	...
Afghanistan	*3 000	*3 000	*3 000	*3 000	...
Bhutan	*54 000	*54 000	*55 000	*55 000	...
China	*6 700 000	*6 800 000	*6 800 000	*6 850 000	*6 900 000
India (f) (g)	3 247 009	2 644 415	2 879 344	2 672 244	2 880 670
Indonesia	5 707	5 000	6 000	6 000	...
Iran (c)	8 356 792	8 968 425	8 347 471	8 338 725	*8 400 000
Israel	140 000	130 000	133 000	131 000	...
Jordan	244 920	157 868	187 154	11 252	63 895
Laos	151 000	142 197	121 220	119 514	101 727
Lebanon	*1 600	*1 700	*1 600	*1 700	...
Mongolia	*25 000	*25 000	*25 000	*25 000	*25 000
Myanmar (f)	43 102	52 573	65 000	66 000	...
Oman	180 129	131 909	44 323	55 722	...
Pakistan (b)	244 538	334 441	391 728	402 600	424 107
Saudi Arabia	474 284	518 087	467 177	497 155	491 132
Syria	394 000	333 000	345 000	345 000	...
Taiwan	1 747	1 884	1 006	—	—
Thailand					
Gypsum	5 005 173	5 830 326	6 533 000	6 331 000	*6 500 000
Anhydrite	203 850	255 472	310 720	...	...
Turkmenistan	1 600	2 100	2 500	...	...
Uzbekistan	*80 000	*80 000	*80 000	*80 000	*80 000
Yemen, Republic of	103 000	*100 000	*100 000	*100 000	*100 000
Australia (b)	3 465 600	3 796 500	3 225 500	*4 300 000	*3 900 000
World Total	99 000 000	98 000 000	95 100 000	94 700 000	96 800 000

Note(s):

(1) Some countries produce large quantities of synthetic gypsum. Where possible, this output is excluded from the table.

- (a) Including anhydrite
- (b) Years ended 30 June of that stated
- (c) Years ended 20 March following that stated
- (d) Years ended 7 July of that stated
- (e) Including beneficiated and directly shipped material
- (f) Years ended 31 March following that stated
- (g) Including selenite

Production of iodine

kilograms

Country 1999		2000	2001	2002	2003
Azerbaijan (a)	5 000	2 000	...	...	...
Russia	25 000	24 000	46 000	*30 000	*30 000
USA	1 620 000	1 470 000	1 290 000	1 420 000	*1 750 000
Chile	9 317 000	10 474 000	11 355 000	11 648 000	15 580 000
China	*500 000	*500 000	*500 000	*500 000	*500 000
Indonesia	74 000	*75 000	*75 000	*75 000	*75 000
Japan	6 152 000	6 157 000	6 643 000	*6 500 000	6 500 000
Turkmenistan	153 000	*200 000	*200 000	*200 000	*300 000
Uzbekistan	*2 000	*2 000	*2 000	*2 000	*2 000
World Total	17 800 000	18 900 000	20 100 000	20 400 000	24 700 000

Note(s):

(a) Exports

Production of iron ore

tonnes

Country 1999	2000	2001	2002	2003	
Austria	1 747 000	1 855 000	1 839 141	1 935 500	2 118 737
Azerbaijan	...	...	...	4 000	3 000
Bosnia & Herzegovina	*150 000	*150 000	*150 000	*150 000	*150 000
Bulgaria	699 400	588 800	324 800	373 000	466 100
France	23 509	31 319	36 587	21 367	—
Germany (f) (i)	615 165	461 525	407 002	419 371	429 170
Macedonia	*15 000	*15 000	*15 000	*15 000	*15 000
Norway	520 000	470 000	395 000	490 000	410 000
Portugal (f)	11 733	11 800	—	—	—
Romania	131 000	116 000	133 000	117 700	104 300
Russia	82 200 000	87 100 000	82 800 000	84 200 000	91 800 000
Serbia and Montenegro	2 088	1 115	—	—	...
Slovakia	458 035	447 055	435 492	326 300	287 000
Spain	60 232	75 054	55 058	24 489	490
Sweden	18 853 000	20 557 000	19 486 000	20 281 000	21 498 000
Turkey	4 869 032	4 076 257	4 434 621	3 432 775	3 429 070
Ukraine	47 769 100	55 883 200	54 700 000	58 900 000	62 500 000
United Kingdom	*1 000	1 033	510	464	*500
Algeria	1 338 000	1 645 000	1 291 000	1 200 000	1 378 000
Egypt (d)	*2 700 000	*2 500 000	1 843 027	2 618 065	*2 900 000
Mauritania	11 042 000	11 069 000	10 300 000	9 600 000	10 100 000
Morocco	6 625	6 462	7 976	8 736	4 019
South Africa (c)	29 507 000	33 707 364	34 757 159	36 484 015	38 085 855
Tunisia	222 200	183 300	206 500	179 200	164 000
Zimbabwe	598 650	438 495	361 362	271 812	400 000
Canada (g)	31 594 000	36 740 000	29 152 000	28 704 000	33 097 000
Cuba (b)	69 500	101 500	...	...	...
Mexico	10 814 000	11 300 000	8 660 000	9 966 000	12 398 000
USA	57 749 000	63 089 000	46 192 000	51 570 000	50 000 000
Brazil (a)	194 485 974	212 559 898	201 400 000	214 600 000	234 500 000
Chile	8 345 035	8 728 927	8 834 152	7 268 803	8 011 023
Colombia	576 414	660 109	636 837	688 250	625 062
Peru	4 078 186	4 143 299	4 563 551	4 566 000	5 228 804
Venezuela	14 050 827	17 352 963	16 902 437	16 595 634	17 954 495
China	237 230 100	223 947 600	217 014 700	231 400 000	261 000 000
India (h)	74 946 000	80 762 000	86 226 000	99 072 000	120 601 000
Indonesia	584 428	489 126	469 400	378 500	245 400
Iran (e)	11 488 785	12 208 437	14 835 692	22 190 184	...
Kazakhstan	9 616 700	16 156 800	15 886 300	17 675 100	19 364 600
Korea, Dem. P.R. of	*1 000 000	*1 000 000	*1 000 000	...	...
Korea, Republic of	187 987	163 192	22 693	156 774	160 000
Malaysia (g)	337 462	258 573	376 476	404 350	596 612
Thailand	122 633	90	50	570 110	9 175
Australia	151 558 000	171 508 000	181 435 000	188 760 000	212 881 000
New Zealand	2 303 376	2 691 780	1 636 400	1 739 950	1 946 913
World Total	1 015 000 000	1 085 000 000	1 049 000 000	1 118 000 000	1 238 000 000

Note(s):

- (a) Including beneficiated and direct shipping ore
- (b) From nickel plant waste
- (c) Including by-product magnetite
- (d) Years ended 30 June of that stated
- (e) Years ended 20 March following that stated
- (f) Including manganiferous iron ore
- (g) Including by-product iron ore
- (h) Years ended 31 March following that stated
- (i) Used as aggregate in the construction industry

Production of pig iron

tonnes

Country 1999		2000	2001	2002	2003
Austria	3 926 094	4 332 786	4 392 878	4 607 000	4 677 000
Belgium	8 430 392	8 471 214	7 732 111	7 988 396	7 812 593
Bosnia & Herzegovina	*100 000	*100 000	*100 000	*100 000	*100 000
Bulgaria	1 152 000	1 220 000	1 211 000	1 072 000	1 100 000
Czech Republic	4 022 700	4 621 500	4 670 700	4 839 880	5 200 000
Finland	2 954 127	2 982 787	2 851 821	2 828 275	3 092 051
France	13 432 778	13 506 955	11 884 224	13 093 042	12 615 893
Germany	27 794 000	31 300 000	29 394 000	29 967 000	30 071 000
Hungary	1 309 584	1 340 353	1 225 714	1 334 000	1 333 000
Italy	10 603 000	11 195 000	10 581 000	9 746 000	10 123 000
Netherlands	5 307 000	4 970 000	5 305 000	5 367 000	5 846 000
Norway	70 000	70 000	70 000	108 000	*110 000
Poland	5 233 124	6 491 867	5 440 047	5 296 410	5 631 830
Portugal	389 000	382 000	82 000	—	—
Romania	2 969 467	3 065 788	3 242 994	3 979 346	4 101 492
Russia	41 913 000	46 456 000	47 457 000	49 161 000	51 235 000
Serbia and Montenegro	134 882	562 808	460 884	485 391	635 182
Slovakia	2 987 000	3 166 400	3 254 600	3 533 150	3 892 000
Spain	4 058 000	4 059 000	4 094 000	3 973 000	3 645 000
Sweden	3 330 000	3 270 000	3 725 000	3 815 000	3 816 000
Switzerland	*80 000	*80 000	*80 000	*80 000	*80 000
Turkey	5 181 000	5 333 000	5 289 000	5 003 000	5 706 000
Ukraine	23 009 800	25 698 700	26 364 000	27 634 000	29 574 000
United Kingdom	12 139 300	10 890 500	9 870 400	8 560 600	10 277 800
Algeria	782 895	750 384	794 715	960 000	*965 000
Egypt	2 690 000	3 100 000	3 530 000	3 630 000	3 950 000
Libya	1 302 000	1 490 000	1 060 000	1 161 000	1 300 000
Morocco	*15 000	*15 000	*15 000	*15 000	*15 000
South Africa	7 592 000	7 818 000	7 376 000	7 525 000	7 700 000
Tunisia	180 200	195 400	191 600	151 900	45 000
Zimbabwe	270 000	277 000	156 000	122 000	182 000
Canada	8 856 569	8 904 044	8 302 141	8 670 330	8 554 119
Mexico	10 878 132	10 444 728	8 037 183	8 570 500	9 656 000
Trinidad & Tobago	1 293 000	1 524 800	2 187 400	2 316 300	2 275 000
USA	47 940 000	49 450 000	42 250 000	40 700 000	40 854 000
Argentina	2 974 208	3 602 566	3 189 835	3 649 500	4 138 600
Brazil	24 948 500	28 135 000	27 731 000	30 055 000	32 449 000
Chile	1 029 522	1 023 695	897 000	963 900	987 800
Colombia	264 362	272 254	318 953	309 300	283 300
Paraguay	61 281	82 018	71 763	87 400	98 000
Peru	242 952	409 185	383 285	267 200	310 400
Venezuela	5 071 050	6 401 348	5 903 298	6 844 370	6 645 700
China	125 329 900	131 034 200	155 542 500	169 303 000	202 622 000
India	25 359 000	26 761 000	27 595 000	30 046 000	33 601 000
Indonesia	1 736 000	1 736 000	1 487 000	1 446 000	1 200 000
Iran (a)	6 397 584	6 679 088	7 142 340	*7 500 000	*7 200 000
Japan	74 519 916	81 070 748	78 835 836	80 979 161	82 090 744
Kazakhstan	3 438 100	4 010 300	3 906 500	4 008 947	4 136 820
Korea, Dem. P.R. of	*250 000	*250 000	*250 000	*250 000	*250 000
Korea, Republic of	23 329 000	24 937 000	25 898 000	26 570 000	27 314 000
Malaysia	950 000	1 240 000	1 020 000	1 060 000	1 600 000
Myanmar	*30 000	*40 000	*40 000	*40 000	*40 000
Pakistan	1 140 000	1 132 000	1 384 000	*1 000 000	*1 000 000
Qatar	666 000	620 962	733 549	752 000	776 000
Saudi Arabia	2 343 000	3 060 000	2 877 000	3 280 000	3 285 000
Taiwan	8 890 000	9 618 000	10 001 000	10 169 000	10 300 000
Vietnam	66 000	47 000	48 000	146 000	200 000

Production of pig iron

tonnes

Country 1999		2000	2001	2002	2003
Australia	7 468 000	*6 660 000	*7 300 000	*7 100 000	*8 000 000
New Zealand	620 000	603 000	646 000	617 000	700 000
World Total	579 500 000	617 000 000	625 900 000	652 800 000	705 400 000

Note(s):

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

(a) Years ended 20 March following that stated

Production of crude steel

tonnes

Country 1999		2000	2001	2002	2003
Albania	15 600	64 700	94 100	...	...
Austria	5 202 000	5 722 000	5 870 000	6 189 000	6 261 000
Belarus	1 449 000	1 623 000	1 611 000	1 607 000	1 694 000
Belgium	10 910 168	11 614 731	10 741 493	11 322 008	11 114 775
Bosnia & Herzegovina	60 000	77 000	84 000	70 000	80 000
Bulgaria	1 889 000	2 022 000	1 972 000	1 860 000	2 317 000
Croatia	77 213	70 999	57 993	33 851	43 380
Czech Republic	5 615 500	6 215 800	6 315 900	6 511 970	6 783 000
Denmark	727 000	803 000	746 000	392 000	—
Finland	3 955 658	4 096 389	3 938 122	4 002 914	4 765 243
France	20 199 977	20 742 738	19 190 552	20 258 473	19 757 864
Georgia	7 036	50	—	—	—
Germany	42 062 000	46 376 000	44 803 000	45 015 000	44 809 000
Greece	951 000	1 088 000	1 281 000	1 835 000	1 701 000
Hungary	1 919 739	1 969 821	2 064 507	2 138 146	1 984 000
Irish Republic	335 000	360 000	150 000	—	—
Italy	24 738 000	26 759 000	26 544 000	26 302 000	26 832 000
Latvia	482 000	500 292	515 000	507 000	546 000
Luxembourg	2 600 324	2 571 243	2 724 679	2 736 000	2 675 000
Macedonia	49 000	161 000	260 000	260 000	300 000
Moldova	796 300	908 000	967 000	514 000	850 000
Netherlands	5 947 000	5 492 000	5 902 000	6 117 000	6 561 000
Norway	610 000	679 000	635 000	694 000	703 000
Poland	8 853 211	10 498 262	8 809 211	8 367 434	9 107 384
Portugal	1 038 000	1 089 000	727 000	799 000	722 000
Romania	4 391 746	4 671 967	4 935 623	5 490 434	5 690 478
Russia	51 518 000	59 136 000	58 970 000	59 777 000	62 720 000
Serbia and Montenegro	226 240	682 362	510 675	595 547	722 376
Slovakia	3 533 600	3 733 200	3 988 600	4 275 470	4 549 208
Slovenia	405 000	519 000	462 000	481 000	541 000
Spain	14 882 000	15 874 000	16 504 000	16 408 000	16 407 000
Sweden	5 067 200	5 228 700	5 518 100	5 753 300	5 707 000
Switzerland	1 037 000	1 140 000	*1 100 000	*1 100 000	*1 100 000
Turkey	13 806 898	13 571 563	14 382 257	16 045 522	17 644 020
Ukraine	27 393 000	31 782 000	33 108 000	34 050 000	36 922 000
United Kingdom	16 283 700	15 154 600	13 542 700	11 667 100	13 268 000
Algeria	773 696	771 614	947 040	1 091 000	1 051 000
Egypt	2 627 000	2 838 000	3 799 000	4 316 000	4 398 000
Libya	966 000	1 055 000	846 000	886 000	1 007 000
South Africa	7 857 000	8 481 000	8 821 000	9 095 000	9 481 000
Tunisia	231 000	229 000	238 400	200 500	86 000
Zimbabwe	255 000	258 000	149 000	105 000	152 000
Canada	16 136 095	16 496 339	15 178 896	15 906 747	15 831 473
Cuba	302 700	327 300	269 600	264 100	210 000
Dominican Republic	42 893	35 801	32 521	60 956	...
El Salvador	33 501	40 506	38 502	48 832	56 900
Guatemala	...	167 000	202 000	216 000	226 000
Mexico	15 274 187	15 631 312	13 300 007	14 050 557	15 128 400
Trinidad & Tobago	723 900	743 700	668 300	816 900	896 000
USA	97 427 000	101 824 000	90 103 000	91 588 000	93 677 000
Argentina	3 805 205	4 479 204	4 112 501	4 363 367	5 033 200
Brazil	24 996 200	27 865 000	26 717 000	29 604 000	31 147 000
Chile	1 290 512	1 351 986	1 246 863	1 279 549	1 377 400
Colombia	534 038	659 882	638 259	662 859	668 400
Ecuador	53 000	58 483	59 732	67 233	79 800
Paraguay	55 689	76 784	70 664	79 984	91 000
Peru	558 697	750 682	689 790	611 363	668 400
Uruguay	45 404	38 102	30 890	34 400	40 500
Venezuela	3 261 365	3 834 575	3 812 664	4 163 855	3 930 300
China	123 954 100	127 236 100	151 634 400	181 552 000	220 115 000
Hong Kong	*100 000	*100 000	*100 000	*100 000	*100 000
India	24 296 000	26 924 000	27 291 000	28 814 000	31 779 000
Indonesia	2 890 749	2 848 099	2 780 607	2 461 856	2 042 233

Production of crude steel

tonnes

Country 1999		2000	2001	2002	2003
Iran (a)	6 304 366	6 614 519	6 937 108	*7 300 000	*7 900 000
Israel	*280 000	*280 000	*280 000	*280 000	*280 000
Japan	94 192 400	106 444 468	102 865 950	107 745 000	110 510 520
Jordan	...	144 447	164 376	*134 000	*135 000
Kazakhstan	4 105 100	4 799 000	4 691 000	4 866 000	5 069 400
Korea, Dem. P.R. of	*300 000	*300 000	*300 000	*300 000	*300 000
Korea, Republic of	41 042 412	43 107 123	43 852 192	45 389 834	46 309 629
Malaysia	2 770 000	3 650 000	4 100 000	4 721 800	3 960 000
Mongolia	13 100	13 000	...	...	...
Pakistan	*500 000	*500 000	*500 000	*500 000	*500 000
Philippines	530 000	426 000	500 000	550 000	500 000
Qatar	629 000	729 000	891 000	1 027 000	1 055 000
Saudi Arabia	2 610 000	2 981 000	3 413 000	3 570 000	3 944 000
Singapore	590 000	603 000	456 000	545 000	561 000
Syria	*70 000	*70 000	*70 000	*70 000	*70 000
Taiwan	15 437 755	16 895 545	17 261 119	18 230 450	18 832 365
Thailand	1 532 160	2 099 633	2 127 000	2 538 000	3 572 000
United Arab Emirates	*90 000	*90 000	*90 000	*90 000	*90 000
Uzbekistan	344 000	407 000	433 000	450 000	500 000
Vietnam	308 305	305 881	318 780	408 565	544 200
Australia	8 162 000	7 297 000	7 076 000	7 550 000	7 544 000
New Zealand	775 000	702 000	826 000	765 000	853 000
World Total	788 000 000	847 000 000	850 000 000	903 000 000	967 000 000

Note(s):

- (1) Unless otherwise indicated, these figures include production from scrap
- (2) Small amounts of steel are believed to be produced in Azerbaijan, DR Congo, Estonia, Ghana, Kenya, Mauritania, Morocco, Myanmar, Nigeria, Sri Lanka, Uganda

(a) Years ended 20 March following that stated

Production of ferro-alloys

tonnes

Country	1999	2000	2001	2002	2003
Albania					
Ferro-chrome	42 150	53 084	19 500	22 800	37 800
Austria					
Ferro-molybdenum	4 900	4 700	4 900	4 930	4 900
Ferro-nickel	2 600	3 300	2 600	2 150	2 000
Ferro-vanadium	6 400	5 900	5 800	5 500	5 400
Belgium					
Ferro-molybdenum	5 300	...	...	...	...
Ferro-vanadium	1 359	2 194	926	1 492	...
Bulgaria					
Ferro-silicon	*8 000	*8 000	*8 000	*8 000	*8 000
Croatia					
Ferro-chrome	—	15 753	361	—	—
Czech Republic					
Ferro-vanadium	*2 000	*2 000	*2 000	*2 000	*2 000
Finland					
Ferro-chrome & ferro-silico-chrome	256 290	260 605	236 000	248 000	250 000
France					
Ferro-manganese & spiegeleisen	419 672	409 169	414 200	416 569	...
Ferro-silico-manganese	55 000	32 773	65 248	66 215	...
Ferro-silicon	*110 000	*110 000	*100 000	*100 000	...
Silicon metal	80 000	94 127	89 896	84 768	...
Georgia					
Ferro-manganese	6 441	6 088	7 820	4 211	12 400
Ferro-silico-manganese	26 249	20 458	32 779	30 432	50 900
Other ferro-alloys	4 856	582	105	—	—
Germany					
Ferro-chrome	16 960	21 600	19 308	20 018	18 318
Other ferro-alloys	*30 000	*30 000	*30 000	*30 000	...
Silicon metal	21 855	27 119	28 379	26 049	28 663
Greece					
Ferro-nickel	59 545	81 662	88 755	*96 000	*90 000
Iceland					
Ferro-silicon	70 100	108 288	112 935	118 810	...
Italy					
Ferro-manganese	19 000	*40 000	*40 000	*40 000	*40 000
Ferro-silico-manganese	112 358	*100 000	*100 000	*100 000	*100 000
Silicon metal	6 257	9 590	—	—	—
Macedonia					
Ferro-alloys	78 009	57 842	27 287	...	...
Norway					
Ferro-chrome	159 714	153 500	82 600	61 100	—
Ferro-manganese	124 000	150 585	111 823	126 960	...
Ferro-silico-manganese	235 000	198 671	277 938	252 723	...
Ferro-silicon	354 281	450 364	427 590	359 944	...
Other ferro-alloys	49 000	54 639	47 600	48 500	...
Silicon metal	153 120	138 139	134 958	152 981	...
Poland					
Ferro-chrome	—	—	—	106	188
Ferro-manganese	57	0 497	—	602 979	—
Ferro-silico-manganese	10 000	18 997	20 007	7 338	*7 000
Ferro-silicon	62 481	55 969	48 608	41 759	92 687
Other ferro-alloys	2 700	4 174	4 039	4 200	4 210
Romania					
Ferro-manganese	25	1 989	384	—	—
Ferro-silico-manganese	550	62 320	71 921	84 720	141 899
Ferro-silicon	—	8 309	5 823	—	—
Russia					
Spiegeleisen	*7 000	*7 000	*7 000	*7 000	*7 000
Ferro-chrome	266 904	274 000	211 000	210 000	257 414
Ferro-silico-chrome	109 413	91 013	79 115	...	...
Ferro-manganese	*90 000	70 700	*70 000	*70 000	*70 000
Ferro-nickel	*33 000	*35 000	*30 000	*30 000	*30 000
Ferro-phosphorus	...	100 ...	...	...	...
Ferro-silicon	601 413	652 000	707 000	...	...
Other ferro-alloys	*40 000	*40 000	*35 000	*35 000	*35 000
Silicon metal	*40 000	*40 000	*40 000	*30 000	*21 000

Production of ferro-alloys

tonnes

Country 1999		2000	2001	2002	2003
Slovakia					
Ferro-chrome	6 986	17 658	5 968	5 695	1 924
Ferro-silico-manganese	37 000	52 141	46 288	62 084	*55 000
Ferro-silicon	70 000	59 443	55 577	35 920	*32 000
Other ferro-alloys	...	50 508	46 357	24 657	*20 000
Slovenia					
Ferro-chrome	560	— —		— —	
Ferro-silicon	*8 000	*9 000	*9 000	*9 000	*12 000
Spain					
Ferro-chrome	935	905 —		— —	
Ferro-manganese	10 000	26 815	24 804	33 218	...
Ferro-silico-manganese	95 000	128 197	102 110	103 494	...
Ferro-silicon	42 000	50 071	53 427	56 994	...
Silicon metal	28 000	28 215	29 114	26 071	...
Sweden					
Ferro-chrome	128 269	106 399	107 036	118 800	106 100
Ferro-silicon	21 440	18 948	21 197	21 500	17 200
Turkey					
Ferro-chrome	123 905	97 240	50 735	11 200	35 393
Ferro-silico-chrome	6 340	7 170	5 895	7 245	6 805
Ferro-silicon	620	— —		— —	
Ukraine					
Spiegeleisen		5 400	*5 000	*5 000	*5 000
Ferro-manganese	257 300	338 100	*335 000	*335 000	*335 000
Ferro-silico-manganese	498 905	684 040	*685 000	*686 000	*686 000
Ferro-nickel	...	10 800	41 000	31 000	52 000
Ferro-silicon	243 600	323 417	*325 000	*326 000	*326 000
Egypt					
Ferro-silicon (a	*55 000	*55 000	*55 000	*55 000	*55 000
Other ferro-alloys (a	...	...	7 912	16 679	*20 000
South Africa					
Ferro-chrome	2 155 202	2 574 264	2 141 008	2 351 122	2 823 341
Ferro-manganese	527 106	527 106	523 844	618 954	*615 000
Ferro-silico-manganese	307 545	310 400	259 176	315 802	*312 000
Ferro-silicon	105 998	108 513	107 557	141 700	*160 000
Ferro-vanadium	*9 000	*11 000	*11 000	*11 000	*18 000
Silicon metal	35 797	40 264	39 440	42 500	*43 000
Zimbabwe					
Ferro-chrome	248 395	246 324	249 841	258 164	261 095
Ferro-silico-chrome	24 760	19 631	16 848	...	...
Canada					
Ferro-niobium	3 500	3 300	4 600	5 100	5 000
Ferro-silicon	*70 000	*70 000	*70 000	*70 000	*70 000
Silicon metal	*30 000	*30 000	*30 000	*30 000	*30 000
Dominican Republic					
Ferro-nickel	63 760	72 488	54 784	59 365	69 545
Mexico					
Ferro-manganese	79 567	90 501	60 014	38 532	...
Ferro-silico-manganese	113 916	107 922	74 290	73 263	...
USA					
Ferro-silicon	325 000	250 000	191 000	182 000	...
Silicon metal	186 000	175 000	131 000	108 000	...
Argentina					
Ferro-manganese	*2 000	—	—	—	...
Ferro-silico-manganese	*10 000	4 900	5 150	*5 000	...
Ferro-silicon	2 600	2 500	2 740	*2 500	...
Other ferro-alloys	13 900	16 900	9 925	*10 000	...
Silicon metal	*8 000	*8 000	*8 000	*8 000	...

Production of ferro-alloys

tonnes

Country	1999	2000	2001	2002	2003
Brazil					
Ferro-chrome	78 874	134 562	84 428	123 175	171 257
Ferro-silico-chrome	11 910	7 790	5 899	10 522	8 151
Ferro-silico-magnesium	9 882	9 658	11 032	14 552	14 040
Ferro-manganese	85 260	121 277	96 016	156 435	176 735
Ferro-silico-manganese	148 384	171 304	180 235	182 731	216 658
Ferro-nickel	19 807	19 315	17 966	19 874	19 378
Ferro-niobium	28 557	27 359	37 411	36 450	37 303
Ferro-silicon	200 833	189 935	159 345	145 910	156 824
Silicon metal	136 572	166 344	112 123	133 390	180 937
Chile					
Ferro-chrome	*2 000	*2 000	*2 000	...	...
Ferro-manganese	2 833	4 011	1 975	...	...
Ferro-silico-manganese	2 048	1 802	153	...	...
Ferro-molybdenum	2 079	1 454	*1 400	1 450	...
Ferro-silicon	1 000	*1 000	*1 100	*1 100	...
Colombia					
Ferro-nickel	65 900	64 500	89 400	102 300	111 300
Venezuela					
Ferro-manganese	10 694	15 655	12 715	*12 000	...
Ferro-silico-manganese	47 635	69 735	56 640	*55 000	...
Ferro-nickel		3 200	27 033	28 000	...
Ferro-silicon	55 505	86 188	85 708	87 528	...
Bhutan					
Ferro-silicon	*18 000	*15 000	*16 000	...	...
China					
Ferro-chrome	289 778	395 000	340 637	332 011	534 842
Ferro-silico-chrome	50 400	50 000	59 859	43 492	97 552
Ferro-manganese	940 900	940 000	947 300	(c) ...	...
Ferro-silico-manganese	...	...	(c) ...	(c) ...	...
Ferro-molybdenum	2 141	167	(c) ...	(c) ...	...
Ferro-rare earth	8 980	2 951	(c) ...	(c) ...	...
Ferro-silicon	1 118 900	1 390 000	1 384 900	(c) ...	...
Ferro-titanium	3 642	34	(c) ...	(c) ...	...
Ferro-tungsten	9 430	8 253	(c) ...	(c) ...	...
Ferro-vanadium	18 767	9 940	(c) ...	(c) ...	...
Other ferro-alloys	1 354 000	1 233 000	1 799 000	4 465 000	...
Silicon metal	*350 000	*400 000	*400 000	*500 000	*600 000
India					
Ferro-aluminium (b)	...	1 510	1 743	2 000	5 169
Ferro-chrome (b)	298 807	382 339	302 109	380 528	525 824
Ferro-silico-magnesium (b)	2 310	2 460	2 385	6 369	6 289
Ferro-manganese (b)	136 416	170 362	206 624	236 676	248 388
Ferro-silico-manganese (b)	232 611	276 008	235 730	304 212	380 316
Ferro-molybdenum (b)	1 693	1 881	2 152	3 114	2 949
Ferro-silicon (b)	56 286	67 349	76 209	81 955	68 844
Ferro-vanadium (b)	735	674 644		914 769	
Indonesia					
Ferro-manganese	*12 000	*12 000	*12 000	*12 000	*12 000
Ferro-silico-manganese	*7 000	*7 000	*7 000	*7 000	*7 000
Ferro-nickel	46 030	50 500	51 510	44 000	44 700
Iran					
Ferro-chrome (d)	12 485	10 900	9 400	15 000	*17 000
Ferro-silicon (d)	34 680	49 529	37 000	41 700	...
Japan					
Ferro-chrome	119 777	130 074	111 167	91 937	19 427
Ferro-manganese	315 152	337 694	368 293	356 717	371 831
Ferro-silico-manganese	65 744	72 092	66 257	74 171	61 618
Ferro-molybdenum	3 391	3 699	3 485	2 375	2 691
Ferro-nickel	332 293	367 181	367 739	370 973	369 099
Ferro-silicon	1 452	—	—	—	—
Ferro-tungsten	43	42	109	9	12
Ferro-vanadium	3 349	4 108	3 613	3 592	3 491
Other ferro-alloys	6 077	7 171	5 733	6 376	3 813

Production of ferro-alloys

tonnes

Country 1999		2000	2001	2002	2003
Kazakhstan					
Ferro-chrome	731 563	799 762	761 901	835 743	993 007
Ferro-silico-chrome	49 282	55 634	79 746	108 028	98 134
Ferro-silico-manganese	78 495	102 719	141 776	163 725	178 924
Ferro-silicon	140 263	133 269	145 780	126 968	127 161
Other ferro-alloys	...	630	1 730	986	...
Korea, Dem. P.R. of					
Ferro-alloys	*10 000	*10 000	*10 000	*10 000	*10 000
Korea, Republic of					
Ferro-manganese	140 208	146 373	143 525	137 000	141 000
Ferro-silico-manganese	116 091	103 522	101 877	94 000	—
Other ferro-alloys	4 639	4 676	4 452	—	—
Taiwan					
Ferro-silicon	3 212	2 975	1 181	—	—
Australia					
Ferro-manganese (a)	106 006	98 421	124 586	73 523	104 022
Ferro-silico-manganese (a)	101 455	115 585	120 758	138 938	130 568
Silicon metal	*30 000	*30 000	*30 000	*30 000	*30 000
New Caledonia					
Ferro-nickel	157 592	151 049	153 012	162 973	167 208

Note(s):

- (a) Years ended 30 June of that stated
- (b) Years ended 31 March following that stated
- (c) Included with 'other ferro-alloys'
- (d) Years ended 20 March following that stated

Production of kaolin

tonnes

Country 1999		2000	2001	2002	2003
Austria	30 759	25 066	20 047	21 212	...
Belgium	*300 000	*300 000	*300 000	*300 000	*300 000
Bosnia & Herzegovina	*3 000	*3 000	*3 000	*3 000	*3 000
Bulgaria	144 341	*150 000	*140 000	*150 000	*120 000
Czech Republic (h)	520 000	564 000	562 000	562 000	582 000
France	328 000	385 000	377 000	339 000	323 000
Germany (g)	691 195	714 936	696 832	740 821	738 123
Greece	64 931	54 226	60 075	*60 000	*60 000
Italy	295 871	284 148	295 263	174 990	224 755
Poland (k)	80 300	90 139	103 220	89 372	106 761
Portugal	213 796	162 674	148 706	147 448	...
Romania	25 456	18 942	21 867	22 517	21 724
Russia	40 600	45 000	*45 000	*45 000	*45 000
Serbia and Montenegro	40 321	39 475	60 900	95 622	99 460
Slovakia	22 930	21 000	34 730	24 600	24 800
Spain (k)	326 803	353 355	*400 000	419 483	450 000
Turkey	449 954	390 830	505 773	372 344	370 455
Ukraine	221 526	172 800	...	...	...
United Kingdom (a) (l)	2 303 602	2 376 057	2 204 156	2 162 815	2 097 137
Algeria	16 833	11 616	13 356	9 505	19 258
Burundi	1 597	1 500	—	—	—
Egypt	290 000	290 000	112 947	115 315	...
Eritrea	1 138	943	...	120	140
Ethiopia (c)	681	1 654	1 790	3 534	3 088
Kenya	192	793	700	*700	*700
Nigeria	138 000	165 765	32 090	52 352	57 587
South Africa	123 200	89 242	83 500	91 456	86 365
Cuba	10 400	9 700	...	...	...
Mexico	489 993	532 268	681 709	745 498	798 407
USA (e)	9 160 000	8 800 000	8 110 000	*8 010 000	*8 010 000
Argentina	52 665	34 023	42 659	36 259	*40 000
Brazil (b)	1 652 997	1 827 826	*1 900 000	*2 000 000	*2 300 000
Chile	4 361	6 445	5 300	6 164	11 500
Ecuador	20 652	11 022	8 818	8 483	9 332
Paraguay	*66 500	*66 500	*66 500	*66 700	...
Peru	1 332	6 165	5 532	1 934	2 653
Venezuela	12 000	*10 000	*10 000	*10 000	...
China	1 332 000	1 450 000	*1 500 000	*1 500 000	*1 600 000
India (i) (j)	168 618	179 274	187 232	204 694	204 933
Indonesia	21 389	*15 000	*15 000	*15 000	...
Iran (m)	529 767	635 693	760 615	592 803	...
Israel	20 000	13 000	—	—	—
Japan	53 092	25 912	17 240	11 756	12 409
Jordan	34 040	36 794	24 124	...	...
Kazakhstan	*20 000	*20 000	*20 000	*20 000	*20 000
Korea, Republic of	672 824	705 145	850 360	1 054 543	*1 100 000
Malaysia	213 973	233 885	381 594	323 916	425 942
Pakistan (d)	64 692	63 494	12 980	55 584	...
Philippines	5 465	1 510	5 111	*5 000	...
Saudi Arabia	7 500	7 500	7 740	7 920	8 100
Sri Lanka	12 573	12 230	9 403	8 613	9 073
Taiwan	75 784	38 606	28 921	18 403	22 448
Thailand (h)	127 770	221 062	181 583	130 282	...
Uzbekistan (i)	*15 000	*150 000	*150 000	*150 000	*150 000
Vietnam	*398 000	*520 000	*600 000	*600 000	...

Production of kaolin

tonnes

Country 1999		2000	2001	2002	2003
Australia (d) (f)	201 000	223 000	232 000	228 000	280 000
New Zealand	16 686	16 310	15 620	17 250	14 780
World Total	22 100 000	22 600 000	22 200 000	22 000 000	22 700 000

Note(s):

(1) In addition to the countries listed, Colombia, Denmark, Dem. P. R. of Korea and Lebanon are believed to produce kaolin

- (a) Sales
- (b) Including beneficiated and directly shipped material
- (c) Years ended 7 July of that stated
- (d) Years ended 30 June of that stated
- (e) Sold or used by producers
- (f) Excluding New South Wales
- (g) Washed and dried
- (h) Beneficiated
- (i) Beneficiated; excludes directly used natural kaolin
- (j) Years ended 31 March following that stated
- (k) Washed
- (l) Dry weight
- (m) Years ended 20 March following that stated

Mine production of lead

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Bulgaria	13 800	13 700	18 500	19 800	19 950
Finland	130	380 —		— —	
Greece	19 699	15 554	26 588	29 300	2 000
Irish Republic	39 200	57 500	44 500	41 700	50 300
Italy	6 500	3 300	2 700	3 200	2 700
Macedonia	27 000	24 000	20 000	15 000	2 600
Poland	62 900	51 200	52 600	56 600	54 700
Romania	17 489	18 750	19 676	17 500	18 102
Russia	14 000	14 000	14 000	19 000	25 000
Serbia and Montenegro	8 631	3 790	4 291	4 355	4 567
Spain	28 715	51 793	35 573	6 171	1 765
Sweden	116 393	106 584	85 975	42 954	50 962
Turkey	14 225	15 888	17 884	17 277	17 446
United Kingdom	1 000	*1 000	*800	*700	*700
Algeria	760	510	560	690	—
Morocco	80 000	82 147	76 748	62 417	39 387
Namibia	9 886	9 797	12 827	12 088	16 112
South Africa	80 191	75 262	50 771	49 444	39 941
Tunisia	6 300	6 200	6 942	5 081	*5 000
Canada	162 180	148 769	153 932	97 178	81 268
Honduras	5 226	4 805	6 750	8 128	9 014
Mexico	125 656	137 975	118 247	138 707	139 348
USA	520 165	464 700	466 400	450 600	460 200
Argentina	14 256	14 115	12 334	12 011	12 079
Bolivia	10 153	9 523	9 090	9 268	9 353
Brazil	10 281	8 832	10 725	9 253	10 652
Chile	608	785	1 193	2 895	1 697
Peru	271 782	270 576	289 546	297 704	308 874
China	548 900	659 500	676 000	640 700	*800 000
India (a)	37 700	34 600	32 600	37 800	46 700
Iran	14 400	17 200	11 800	12 000	*12 000
Japan	6 064	8 669	5 516	5 758	5 700
Kazakhstan	34 200	39 300	37 500	45 500	38 200
Korea, Dem. P.R. of	*26 000	*22 000	*17 000	*15 000	*20 000
Korea, Republic of	1 800	2 700	1 000	28	—
Myanmar	1 800	1 200	900	*900	*500
Tajikistan	*2 000	*2 000	*2 000	—	—
Thailand	9 500	9 900	300	2 600	—
Australia	677 000	651 000	759 000	694 000	688 000
World Total	3 000 000	3 100 000	3 100 000	2 900 000	3 000 000

Note(s):

(a) Years ended 31 March following that stated

Production of refined lead

tonnes

Country 1999		2000	2001	2002	2003
Austria	23 773	23 773	23 666	*23 000	*20 000
Belgium	110 000	119 000	100 000	88 000	65 000
Bulgaria	81 600	84 100	83 000	71 000	74 000
Czech Republic	27 017	28 700	30 500	*30 500	*30 000
France	275 400	263 200	231 400	203 400	91 000
Germany	352 772	386 658	373 397	379 784	356 692
Greece	*6 000	*6 000	*6 000	*6 000	*6 000
Irish Republic	13 000	8 500	9 800	6 600	7 800
Italy	215 800	233 900	226 500	196 000	214 100
Macedonia	19 738	22 939	19 737	*19 700	6 400
Netherlands	*18 000	21 000	20 000	18 000	17 000
Poland	63 985	55 900	66 000	65 800	74 300
Portugal	*6 000	*6 000	*6 000	*6 000	*6 000
Romania	17 462	23 555	26 900	28 000	*28 000
Russia	55 260	51 501	60 000	54 000	*60 000
Serbia and Montenegro	—	1 242	—	200	493
Slovenia	15 700	15 300	15 400	15 400	15 000
Spain	96 000	120 000	121 600	115 552	102 000
Sweden	78 853	78 068	75 608	63 451	73 340
Switzerland	9 173	10 007	10 250	8 700	9 600
Turkey	9 000	*9 000	*9 000	*9 000	*9 000
Ukraine	9 902	15 034	12 800	12 800	*20 000
United Kingdom	347 317	327 904	366 305	374 646	356 242
Algeria	6 200	5 700	6 100	6 000	*6 000
Kenya	*1 000	*1 000	*1 000	*1 000	*1 000
Morocco	65 209	66 812	58 178	71 840	61 473
Nigeria	*5 000	*5 000	*5 000	*5 000	*5 000
South Africa	52 000	46 000	55 000	61 000	67 000
Zimbabwe	*2 000	*1 000	*1 000	—	—
Canada	266 415	284 333	230 928	251 560	223 216
Mexico	199 000	232 900	233 300	218 200	238 000
Trinidad & Tobago	*1 000	*1 000	*1 000	*1 000	*1 000
USA (b)	1 447 000	1 457 000	1 376 000	1 364 000	1 381 000
Argentina	25 695	35 700	35 433	43 600	41 311
Brazil (c)	52 000	50 000	47 000	50 000	50 000
Colombia	*11 000	*10 000	*9 000	*9 000	*9 000
Peru	111 276	116 412	121 181	119 588	112 289
Venezuela	25 000	25 000	25 000	25 000	25 000
China	918 400	1 099 900	1 195 400	1 324 700	1 577 600
India	60 500	57 400	74 400	74 200	77 500
Indonesia	18 000	18 000	18 000	17 000	18 000
Iran	42 000	42 000	44 000	39 000	48 000
Israel	13 000	13 000	20 000	22 000	*25 000
Japan	293 525	311 562	302 387	280 341	295 148
Kazakhstan	158 890	205 501	158 700	162 200	140 700
Korea, Dem. P.R. of	14 000	10 000	7 000	7 000	7 000
Korea, Republic of	190 405	219 123	211 010	230 000	220 000
Malaysia	33 000	32 000	38 000	40 000	57 000
Myanmar (a)	1 717	1 100	1 800	2 000	2 000
Pakistan	*3 000	*3 000	*3 000	*2 000	*2 000
Philippines	24 000	25 000	26 000	*26 000	*27 000
Saudi Arabia	19 000	18 000	16 000	17 000	25 000
Taiwan	44 400	41 800	40 000	40 000	40 000
Thailand	26 766	27 193	30 000	43 000	45 000
United Arab Emirates	2 000	2 000	2 000	2 000	2 000

Production of refined lead

tonnes

Country 1999		2000	2001	2002	2003
Australia	272 000	251 000	270 000	302 000	309 000
New Zealand	10 000	10 000	10 000	10 000	10 000
World Total	6 300 000	6 600 000	6 600 000	6 700 000	6 800 000

Note(s):

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

- (a) Years ended 31 March following that stated
- (b) Excluding Pb content of primary antimonial lead
- (c) Including scrap for direct use

Production of lithium minerals

tonnes

Country 1999		2000	2001	2002	2003
Portugal					
Lepidolite	14 862	9 352	11 571	16 325	24 606
Zimbabwe	36 671	37 914	36 103	29 320	24 000
Canada	*22 500	*22 500	*22 500	*22 500	*22 500
USA (a)	1 500	*1 500	*1 500	*1 500	*1 500
Argentina (b) (c)	4 387	5 276	4 512	5 635	7 600
Brazil					
Petalite	442	1 077	187	—	—
Spodumene	10 629	9 796	8 897	12 046	9 755
Chile (c)	30 231	35 869	31 320	35 242	41 667
China	46 198	31 967	34 276	*34 000	*35 000
Australia					
Spodumene (d)	75 824	64 983	56 370	101 212	*110 000
World Total (Li content)	*11 300	*12 100	*11 000	*12 500	*14 100

Note(s):

(1) In addition to the countries listed, Russia also produces lithium minerals

- (a) Li content
- (b) Chloride
- (c) Carbonate
- (d) Years ended 30 June of that stated

Production of magnesite

tonnes

Country 1999		2000	2001	2002	2003
Austria	748 635	725 832	680 534	728 235	766 525
Greece	495 144	442 785	483 296	*500 000	*500 000
Netherlands (f)	220 000	233 000	250 000	226 000	260 000
Poland	38 800	26 140	22 200	22 100	27 200
Russia	2 400 000	2 500 000	2 600 000	2 600 000	*2 600 000
Serbia and Montenegro	30 642	40 925	36 173	25 247	17 488
Slovakia	826 902	1 000 211	961 212	929 630	993 900
Spain	505 209	534 234	598 000	637 024	517 030
Turkey	1 724 744	2 673 525	2 738 086	3 044 440	3 224 278
South Africa	63 700	63 000	36 500	87 200	*85 000
Zimbabwe	5 356	4 029	2 466	2 546	*2 000
Canada (b)	*165 000	*165 000	*165 000	*165 000	*165 000
Argentina	43 509	37 773	35 242	29 956	...
Brazil (c)	282 145	279 876	265 749	269 222	*269 000
Colombia	*10 500	*10 500	*10 500	*10 500	*10 500
China	*9 500 000	*10 000 000	*10 000 000	*10 000 000	*10 000 000
India (e)	325 764	317 765	282 943	278 267	322 540
Iran (a)	154 631	113 040	113 434	69 683	...
Korea, Dem. P.R. of	*800 000	*650 000	*650 000	*450 000	...
Pakistan (d)	2 175	2 697	5 795	5 936	3 435
Philippines	*700	410	4 094	3 604	3 798
Australia	280 363	349 538	599 994	483 838	472 668
World Total	18 600 000	20 200 000	20 500 000	20 600 000	20 800 000

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 30 June of that stated
- (e) Years ended 31 March following that stated
- (f) Chloride produced from solution mining

Production of primary magnesium metal

tonnes

Country 1999		2000	2001	2002	2003
France	16 200	16 500	4 800	2 000	—
Norway	40 800	41 400	40 700	3 100	—
Russia	35 200	35 500	*35 000	*35 000	*30 000
Serbia and Montenegro	1 203	1 270	203	—	*500
Canada	(a) *64 000	(a) *64 000	*65 000	*70 000	*50 000
USA	75 000	94 000	50 000	20 000	10 000
Brazil	7 968	5 723	5 500	4 500	4 000
China	120 700	142 100	199 700	231 700	354 000
India	*1 000	*500	*500	*500	*200
Israel	24 300	31 700	34 000	28 000	28 000
Kazakhstan (b)	11 031	10 380	16 455	17 858	14 164

Note(s):

- (a) Capacity
- (b) Not marketed as metal but used in titanium production

Production of manganese ore

tonnes

Country 1999	2000	2001	2002	2003
Bulgaria	—	1 515	4	...
Georgia (c)	54 900	63 100	98 300	173 700
Hungary	41 000	41 000	43 000	48 000
Italy	972	1 038 803	867 763	
Romania	*60 000	27 080	73 276	*75 900
Turkey	29 000	23 300	20 000	18 000
Ukraine (c)	1 984 800	2 740 600	2 710 000	*2 700 000
Gabon	1 908 000	1 743 000	1 791 000	2 000 000
Ghana	638 937	895 669	1 076 666	1 135 828
Morocco	29 150	25 830	13 757	18 064
South Africa				
Metallurgical	3 092 784	3 613 154	3 239 903	3 302 129
Chemical	29 210	22 273	26 241	19 516
Mexico	458 946	418 300	261 284	233 025
				*225 000
Brazil (b)	1 699 618	2 179 480	*2 200 000	*2 700 000
Chile	40 505	41 716	31 320	12 195
				19 641
China	3 186 000	3 514 000	4 306 800	*4 500 000
India (a)	1 585 726	1 595 458	1 587 305	1 678 372
Iran (d)	96 883	110 917	140 418	123 148
Kazakhstan	944 000	1 201 900	1 386 500	1 834 500
				2 361 000
Australia	1 900 000	1 613 000	1 977 000	2 190 000
				2 555 000
World Total	17 800 000	19 900 000	21 000 000	22 600 000
				24 300 000

Note(s):

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

- (a) Years ended 31 March following that stated
(b) Including beneficiated and direct shipping ore
(c) Marketable
(d) Years ended 20 March following that stated

Production of mercury

kilograms

Country 1999	2000	2001	2002	2003
Finland	55 000	76 100	71 200	50 600
Spain	433 000	236 600	524 000	726 139
				745 000
Algeria	240 327	215 625	320 091	307 119
Morocco	*10 000	*10 000	*10 000	*10 000
				175 570
Mexico	*15 000	*15 000	*15 000	*15 000
USA	*15 000	*15 000	*15 000	*15 000
				15 000
Chile (a)	*25 000	*25 000	*25 000	*25 000
				*25 000
China	195 000	203 000	193 000	*435 000
Kyrgyzstan	645 900	550 000	574 400	478 000
Tajikistan	*35 000	*40 000	*40 000	*20 000
				*610 000
				370 000
				*30 000
World Total	1 700 000	1 400 000	1 800 000	2 100 000
				2 000 000

Note(s):

(1) Several countries are believed to have unrecorded production of mercury from copper electrowinning processes

- (a) From copper solvent extraction and electrowinning processes

Production of mica

tonnes

Country 1999		2000	2001	2002	2003
Finland	8 470	10 035	8 983	7 170	9 337
France (e)	19 000	21 000	15 000	17 000	...
Russia	*10 000	*10 000	*10 000	*10 000	*10 000
Serbia and Montenegro	229	1 727	303	426	185
Spain (e)	9 362	10 086	9 874	11 783	11 800
Madagascar	54	67	90	45	*45
Morocco	210	1 897	—	—	—
South Africa	1 010	676	937	821	980
Zimbabwe	499	273 —	—	— —	—
Canada	*30 000	*30 000	*30 000	*30 000	*30 000
Mexico	971	1 658	648	456	506
USA (d) (e)	95 400	101 000	97 800	81 100	78 600
Argentina	3 097	4 665	2 110	1 770	1 894
Brazil	*5 000	*4 000	*4 000	*4 000	*4 000
China (c)	*40 700	*43 300	*52 200	*54 000	*66 200
India (b)	3 386	4 117	6 095	3 575	4 201
Iran (f)	1 470	4 562	4 615	2 406	...
Korea, Republic of (a)	24 734	65 295	109 339	29 870	33 645
Malaysia (g)	3 675	3 835	4 107	3 669	3 609
Sri Lanka	1 425	1 491	1 161	1 161	1 674
Taiwan	6 966	6 862	9 733	6 595	3 237
Australia	1 016	749	959	605	636
World Total	270 000	330 000	370 000	270 000	280 000

Note(s):

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

(a) Mainly sericite

(b) Years ended 31 March following that stated

(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) Sericite

Mine production of molybdenum

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Armenia	2 756	3 082	2 943	2 883	2 763
Russia	4 800	3 700	4 800	4 800	4 800
Canada	5 932	7 457	8 233	8 043	9 575
Mexico	7 961	6 886	5 518	3 428	3 524
USA	42 400	40 900	37 600	32 000	33 500
Chile	27 270	33 639	33 492	29 467	33 375
Peru	5 472	7 205	8 351	8 319	9 020
China	29 745	28 755	28 201	39 089	32 000
Iran (a)	2 600	2 000	2 600	2 400	2 400
Kazakhstan	155	215 94		46 53	
Kyrgyzstan	242	*250 *250		*250 *250	
Mongolia	1 954	1 336	1 423	1 590	*1 600
Uzbekistan	*500	348	580	*500	*500
World Total	132 000	136 000	134 000	133 000	133 000

Note(s):

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

(a) Years ended 20 March following that stated

Production of nepheline syenite

tonnes

Country 1999		2000	2001	2002	2003
Norway	304 592	330 000	330 362	330 461	332 000
Russia (b)	859 000	814 000	960 000	...	...
South Africa (a)	82 000	...	...	...	...
Canada	678 000	721 000	708 000	715 000	713 000

Note(s):

(a) Mostly used as aggregate

(b) Nepheline concentrates

Mine production of nickel

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Finland	730	3 347	2 000	2 500	2 700
Greece	16 556	23 365	20 742	22 700	21 400
Macedonia	100	—	—	—	—
Norway	2 965	2 536	2 800	2 052	—
Russia	261 800	266 000	272 800	267 300	*300 000
Turkey	—	—	—	—	640
Ukraine	—	—	*1 500	*2 000	*2 000
Botswana	22 898	21 446	22 454	23 896	27 400
South Africa (a)	36 200	36 614	36 443	38 546	40 842
Zimbabwe	9 593	5 968	8 009	7 835	9 500
Canada	186 236	190 793	194 058	189 297	162 756
Cuba	63 900	68 500	73 400	*72 200	*72 000
Dominican Republic	39 997	39 943	33 419	37 399	45 406
Brazil	43 784	45 317	45 456	44 928	45 160
Colombia	39 274	58 927	53 000	58 200	70 800
Venezuela	—	2 472	9 700	15 500	17 200
China	49 500	50 300	51 000	53 700	61 100
Indonesia	89 100	98 200	102 100	123 000	143 000
Kazakhstan	3	284	—	—	—
Philippines	12 389	20 200	27 176	24 234	23 400
Australia	119 600	165 700	205 000	207 800	191 000
New Caledonia	109 509	126 041	112 460	99 871	112 013
World Total	1 104 000	1 226 000	1 274 000	1 293 000	1 348 000

Note(s):

(a) Includes metal and metal content of sulphate and concentrates

Smelter/refinery production of nickel

tonnes

Country 1999		2000	2001	2002	2003
Austria	1 500	1 300	1 300	*1 500	*1 500
Finland	52 800	54 429	54 600	55 300	50 989
France	11 700	12 300	13 036	11 444	11 370
Greece	13 462	17 126	17 675	19 230	*18 000
Macedonia	—	—	3 000	5 100	5 600
Norway	74 100	58 700	68 200	68 500	77 183
Russia	238 000	242 000	248 000	243 000	260 000
Ukraine	—	700	2 500	6 000	10 000
United Kingdom	38 086	37 980	33 800	33 800	26 800
South Africa	32 600	36 600	36 500	38 500	40 800
Zimbabwe	19 800	19 600	19 500	18 900	12 700
Canada	124 260	134 225	140 591	144 476	124 418
Cuba	37 510	39 511	40 700	39 500	40 100
Dominican Republic	24 456	27 829	21 662	23 303	27 227
Brazil	22 931	23 253	22 431	23 687	24 564
Colombia	28 341	27 737	38 446	43 987	47 870
Venezuela	—	—	9 700	15 500	17 200
China	44 400	50 900	49 700	52 400	64 711
Indonesia	9 225	10 111	10 300	8 800	8 900
Japan	134 700	160 700	153 600	157 900	165 100
Australia	83 600	112 200	129 000	132 200	129 000
New Caledonia	45 289	43 914	45 912	48 650	50 666
World Total	1 037 000	1 111 000	1 160 000	1 192 000	1 215 000

Note(s):

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

Production of perlite

tonnes

Country 1999		2000	2001	2002	2003
Armenia	90 000	140 000	16 618	147 242	175 990
Bulgaria	12 700	16 700	12 300	10 500	16 800
Georgia	*5 000	*5 000	*5 000	*5 000	*5 000
Greece	777 898	817 825	840 660	*850 000	*850 000
Hungary	140 787	151 069	89 900	72 196	...
Italy	*60 000	*60 000	*60 000	*60 000	*60 000
Russia	*45 000	*45 000	*45 000	*45 000	*45 000
Slovakia	19 460	17 022	14 910	18 635	15 000
Turkey	147 818	149 426	154 515	151 902	136 683
Ukraine	*25 000	*25 000	*25 000	*25 000	*25 000
South Africa	*1 200	*1 200	*1 200	*1 200	*1 200
Mexico	61 596	68 702	80 297	85 703	*90 000
USA	711 000	672 000	588 000	521 000	493 000
Argentina	21 008	17 521	17 916	17 152	19 725
China	*450 000	*500 000	*550 000	*600 000	...
India (a)	383	274 176		283 279	
Iran (b)	15 069	28 000	20 000	20 000	*20 000
Japan	*260 000	*250 000	*250 000	*250 000	*240 000
Philippines	22 500	4 600	61 300	8 500	15 200
Thailand	6 050	5 600	8 500	7 600	...
Australia (c)	3 886	6 675	6 214	8 300	9 440
New Zealand	*2 000	*2 000	*3 000	*3 000	*5 000

Note(s):

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

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) Years ended 30 June of that stated

Production of crude petroleum

tonnes

Country 1999		2000	2001	2002	2003
Albania	268 000	314 000	329 000	355 817	359 253
Austria	962 393	970 513	957 472	941 011	*930 000
Azerbaijan	13 800 000	14 000 000	14 909 100	15 333 500	15 981 100
Belarus	1 840 000	1 851 000	1 852 000	1 846 000	1 820 000
Bulgaria	38 700	42 456	33 888	33 000	27 900
Croatia	1 292 665	907 154	1 120 797	1 108 434	1 052 121
Czech Republic	176 000	168 000	178 000	253 000	310 000
Denmark	14 931 000	17 753 000	17 378 000	18 494 000	18 318 000
France	1 539 131	1 417 568	1 382 646	1 316 890	1 219 000
Georgia	91 300	109 500	98 800	73 900	139 700
Germany	2 740 073	3 119 592	3 444 298	3 768 054	3 799 864
Greece	*300 000	256 000	188 109	*190 000	...
Hungary	1 272 140	1 130 850	1 058 060	1 049 770	1 133 000
Italy	5 049 417	4 570 574	4 122 131	5 394 197	5 529 871
Lithuania	...	...	470 000	433 700	382 800
Netherlands	2 534 710	2 350 758	2 263 590	3 073 924	3 076 398
Norway	149 782 000	160 804 000	162 099 000	157 847 000	153 508 000
Poland	424 806	652 696	767 004	727 973	764 806
Romania	6 140 000	6 042 000	6 011 000	5 810 000	5 662 000
Russia	305 000 000	323 000 000	348 000 000	380 000 000	421 000 000
Serbia and Montenegro	704 838	804 768	746 056	681 544	670 745
Slovakia	60 270	56 940	54 115	51 921	47 953
Spain	304 292	226 422	344 074	326 197	326 170
Turkey	2 938 479	2 747 630	2 551 647	2 440 202	2 375 082
Ukraine	3 797 900	3 692 900	3 700 000	3 700 000	4 000 000
United Kingdom	129 155 000	118 064 000	109 491 000	108 021 000	98 997 000
Algeria	56 231 000	58 585 000	57 147 000	61 487 000	*68 450 000
Angola	36 700 000	36 825 000	36 469 000	44 600 000	43 600 000
Cameroon	4 800 000	4 500 000	4 100 000	3 700 000	3 500 000
Chad	—	—	—	—	2 100 000
Congo	12 775 737	12 667 606	12 108 033	*11 500 000	*10 800 000
Congo, Democratic Republic	12 500 000	13 370 000	13 180 000	12 550 000	11 670 000
Egypt	38 000 000	37 000 000	32 552 000	34 925 000	*35 000 000
Equatorial Guinea	5 000 000	5 600 000	9 000 000	11 700 000	12 300 000
Gabon	17 000 000	16 400 000	15 000 000	14 700 000	12 000 000
Ghana	300 000	350 000	450 000	*450 000	...
Ivory Coast	1 373 000	1 606 000	*2 600 000	*2 500 000	...
Libya	62 028 000	64 919 000	63 777 000	*61 550 000	69 000 000
Morocco	11 300	13 000	10 100	12 800	*12 500
Nigeria	87 877 000	101 299 000	99 523 000	88 874 000	106 859 000
South Africa	1 012 000	1 128 000	1 025 000	1 025 000	*780 000
Sudan	3 100 000	8 600 000	10 400 000	11 500 000	12 600 000
Tunisia	3 938 000	3 700 000	3 343 900	3 475 600	3 100 000
Barbados	97 113	76 895	63 642	53 612	...
Canada	101 744 300	106 982 100	108 815 100	*120 000 000	*127 000 000
Cuba	2 136 300	2 620 800	2 773 400	3 533 400	3 664 000
Guatemala	1 177 413	1 050 092	1 067 317	1 248 953	1 252 104
Mexico	155 047 000	160 786 000	166 732 000	168 800 000	*178 600 000
Trinidad & Tobago	6 439 502	6 153 729	5 840 504	6 731 294	6 914 300
USA	292 727 000	289 790 000	288 745 000	286 007 000	285 600 000
Argentina	42 423 518	40 994 335	41 445 316	40 242 083	39 307 638
Bolivia	1 355 157	1 282 403	1 449 570	1 438 604	1 551 000
Brazil	58 310 277	65 360 000	68 440 000	76 990 000	79 200 000
Chile	335 558	297 247	351 688	306 839	191 271
Colombia	42 041 092	35 527 000	31 158 988	29 806 000	27 907 653
Ecuador	19 011 567	20 390 618	20 570 265	19 943 629	21 417 133
Peru	5 219 862	4 902 588	4 784 726	4 773 299	4 501 500
Suriname	700 000	720 000	764 000	733 000	690 000
Venezuela	160 175 000	165 156 000	159 941 000	158 609 000	*150 000 000
Bahrain	1 870 000	1 870 000	1 860 000	1 870 000	1 870 000
Brunei	9 700 000	10 300 000	10 100 000	10 200 000	10 300 000
China (a)	160 215 400	162 620 300	164 931 400	168 900 000	169 300 000
India (d)	31 949 000	32 426 000	32 032 000	33 044 000	33 380 000

Production of crude petroleum

tonnes

Country 1999		2000	2001	2002	2003
Indonesia	68 395 000	64 207 000	61 266 000	56 785 000	57 506 000
Iran	176 200 000	187 500 000	182 600 000	166 800 000	190 100 000
Iraq	133 906 000	138 357 000	127 698 000	104 696 000	67 874 000
Israel	4 100	3 400	3 300	3 900	...
Japan	666 000	675 000	678 000	653 000	757 000
Jordan	2	13 083	1 600	1 500	1 400
Kazakhstan	30 130 400	35 316 800	40 090 600	47 270 700	51 389 600
Kuwait (c)	98 300 000	104 000 000	101 900 000	91 800 000	110 200 000
Kyrgyzstan	77 000	77 100	75 500	75 500	68 500
Malaysia	33 000 000	32 500 000	31 800 000	33 300 000	35 200 000
Mongolia	10 000	9 000	10 000	19 000	...
Myanmar	490 000	580 000	734 000	858 000	...
Oman	45 049 000	47 675 000	47 500 000	44 500 000	40 700 000
Pakistan (b)	2 665 000	2 719 000	2 811 000	3 093 000	3 128 000
Philippines	43 000	57 000	65 000	277 000	...
Qatar	36 000 000	38 700 000	38 400 000	35 100 000	41 200 000
Saudi Arabia (c)	419 100 000	450 600 000	434 100 000	417 300 000	474 800 000
Syria	28 800 000	27 400 000	29 000 000	28 400 000	29 500 000
Taiwan	43 000	33 900	40 500	46 600	41 700
Tajikistan	20 000	20 000	20 000	20 000	20 000
Thailand	4 500 000	5 800 000	6 100 000	6 900 000	8 600 000
Turkmenistan	7 159 800	7 181 000	8 343 000	9 000 000	10 400 000
United Arab Emirates	107 700 000	117 300 000	113 500 000	100 400 000	117 800 000
Uzbekistan	8 100 000	7 500 000	7 256 000	7 200 000	7 100 000
Vietnam	15 200 000	16 300 000	16 700 000	16 900 000	*17 600 000
Yemen, Republic of	18 770 000	20 720 000	22 300 000	21 800 000	21 400 000
Australia	27 000 000	37 000 000	34 000 000	33 000 000	27 000 000
New Zealand	1 811 700	1 608 000	1 508 800	1 363 600	*1 000 000
Papua New Guinea	4 100 452	3 257 077	2 693 749	2 120 985	2 235 000
World Total	3 348 000 000	3 488 000 000	3 467 000 000	3 441 000 000	3 596 000 000

Note(s):

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

- (a) Including oil from shale and coal
- (b) Years ended 30 June of that stated
- (c) Including shares of production from the Neutral Zone
- (d) Years ended 31 March following that stated

Production of natural gas

million m³

Country 1999		2000	2001	2002	2003
Albania	13	11 10		10 12	
Austria	1 741	1 805	1 954	2 015	2 029
Azerbaijan	5 997	5 643	5 535	5 144	5 128
Belarus	256	257 255		246 254	
Bulgaria	27	12 21		11 11	
Croatia	1 567	1 768	2 009	2 122	2 190
Czech Republic	143	118	101	91	131
Denmark	7 741	8 000	8 200	8 169	6 900
France	1 940	1 883	1 809	1 751	1 520
Georgia	—	80 40		17 18	
Germany	22 932	21 576	21 545	21 422	22 092
Greece	...	36	32	*35	...
Hungary	3 562	3 349	3 286	3 130	3 010
Irish Republic	1 366	1 187	816	839	640
Italy	17 635	16 447	15 560	14 942	13 735
Netherlands	71 702	69 158	74 323	71 786	69 114
Norway	48 479	49 748	53 895	65 501	72 905
Poland	4 757	4 956	5 179	5 263	5 315
Romania	14 617	14 607	14 090	13 227	12 640
Russia	563 000	555 000	551 000	555 400	578 600
Serbia and Montenegro	679	729	506	400	364
Slovakia	219	203 212		212 201	
Slovenia	5 700	6 800	6 100	5 704	4 926
Spain	148	179 557		553 600	
Turkey	...	493 266		242 276	
Ukraine	18 092	17 884	18 300	18 700	19 200
United Kingdom	105 049	114 880	112 768	109 867	108 091
Algeria	81 425	83 244	78 240	80 367	82 829
Angola	560	580 530		620 900	
Egypt	14 700	18 000	18 304	19 605	17 680
Equatorial Guinea	83	98	790	1 050	...
Gabon	100	100 100		100 125	
Ivory Coast	1 395	1 323	1 230	1 382	1 285
Libya	5 200	5 880	6 180	6 210	6 400
Morocco	44	50	50	49	*49
Nigeria	6 950	12 460	15 680	15 120	19 200
South Africa	*2 000	*2 000	*2 000	*1 000	...
Tunisia	300	2 000	2 530	2 386	2 700
Canada	195 733	201 569	204 571	208 000	200 475
Cuba	460	574	595	585	...
Mexico	36 150	35 820	35 310	35 310	36 400
Trinidad & Tobago	9 423	9 758	14 023	17 127	25 774
USA (c)	533 300	543 200	555 500	537 000	541 000
Argentina	37 616	41 229	40 813	40 311	45 048
Bolivia	2 612	3 597	5 275	6 421	7 398
Brazil	6 700	7 200	7 600	9 200	10 100
Chile	2 957	2 702	2 684	2 543	2 181
Colombia	5 200	5 900	6 100	6 200	6 100
Peru	678	612 629		687 759	
Venezuela	27 410	27 924	29 593	28 415	29 400
Afghanistan	*2 500	*2 500	...	...	...
Bahrain	8 782	8 951	9 263	9 405	11 799
Bangladesh	7 781	9 412	10 573	11 087	11 926
Brunei	11 300	11 600	11 300	11 120	12 024
China	25 198	27 226	30 344	31 900	34 100
India (b)	26 885	27 860	28 037	29 964	30 932
Indonesia	70 960	68 365	66 300	70 350	72 600
Iran	56 755	60 147	69 145	75 000	79 000
Iraq	3 180	3 150	2 760	2 360	1 560
Japan	2 280	2 453	2 436	2 495	2 836
Jordan	282	287 257		256 288	

Production of natural gas

million m3

Country 1999		2000	2001	2002	2003
Kazakhstan	6 585	8 228	4 950	6 018	7 557
Kuwait (a)	8 688	9 600	9 500	8 000	8 900
Kyrgyzstan	25	32 33		30 27	
Malaysia	40 846	45 136	46 945	48 308	50 810
Myanmar	2 600	4 400	6 200	6 500	6 900
Oman	5 500	8 700	14 000	15 000	16 500
Pakistan (d)	21 095	23 173	24 786	26 158	28 107
Qatar	22 050	24 900	27 000	29 500	30 800
Saudi Arabia (a)	46 200	49 810	53 690	57 320	60 060
Syria	3 900	3 900	6 000	5 700	5 300
Taiwan	856	747 849		887 831	
Tajikistan	40	40 50		30 30	
Thailand	19 263	20 075	19 611	20 450	21 299
Turkmenistan	22 943	47 153	51 270	*53 500	*59 100
United Arab Emirates	38 990	38 380	39 360	43 390	44 400
Uzbekistan	55 600	56 400	57 400	*57 400	*57 300
Vietnam	1 100	1 600	1 700	2 000	2 000
Australia	30 755	31 165	32 482	32 606	33 180
New Zealand	5 559	5 918	6 253	5 936	4 486
Papua New Guinea	135	143	142	105	142
World Total	2 417 000	2 504 000	2 562 000	2 592 000	2 666 000

Note(s):

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

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

(b) Years ended 31 March following that stated

(c) Dry gas

(d) Years ended 30 June of that stated

Production of phosphate rock

tonnes

Country 1999	2000	2001	2002	2003	
Finland	734 068	751 291	767 020	799 814	799 339
Russia	10 560 000	10 540 000	10 488 000	10 763 000	11 050 000
Algeria	1 095 000	877 000	939 000	741 000	905 000
Burkina Faso	...	...	1 010	2 350	*2 000
Egypt	1 017 900	1 095 900	779 445	1 218 561	2 183 200
Morocco	22 767 000	19 658 000	20 724 000	21 806 000	22 877 000
Senegal					
Phosphate rock	1 796 900	1 837 000	1 708 000	1 551 900	1 762 900
Aluminium phosphate (a)	64 356	23 710	20 610	1 557	3 516
South Africa	2 956 806	2 796 225	2 419 941	2 803 265	2 642 970
Tanzania	7 250	5 100	4 000	*7 650	3 738
Togo	1 714 500	1 370 100	1 061 600	1 280 600	1 471 200
Tunisia	8 006 300	8 301 200	8 105 900	7 735 100	7 889 900
Zimbabwe	84 763	77 662	86 611	84 926	*90 000
Canada	...	486 000	780 000	1 003 000	980 500
Mexico	950 649	1 052 464	787 283	4 764	5 500
USA	40 600 000	38 600 000	31 900 000	36 100 000	35 000 000
Brazil (d)	4 343 638	4 725 106	4 700 000	5 100 000	5 800 000
Chile	20 408	18 524	18 977	19 541	21 300
Colombia	43 148	42 615	*43 000	51 160	...
Peru	9 038	5 581	4 825	45 252	11 610
Venezuela	366 000	389 000	398 955	390 342	260 008
China	29 117 700	22 475 800	24 371 100	*26 000 000	*27 500 000
Christmas Island (b) (c) (e)	700 000	612 000	568 000	517 000	586 000
India (f)	1 203 282	1 264 035	1 251 553	1 212 834	1 757 849
Iran	...	...	213 338	303 000	224 000
Iraq	*300 000	*200 000	*100 000	*100 000	—
Israel	3 836 000	3 914 000	3 511 000	3 468 000	3 208 000
Jordan	6 013 610	5 458 260	5 764 307	7 123 887	6 649 696
Kazakhstan	650 000	610 000	971 700	1 197 800	1 260 300
Korea, Dem. P.R. of	*70 000	*100 000	*100 000	*100 000	*100 000
Pakistan (e)	3 456	5 208	—	1 362	2 562
Sri Lanka	30 258	34 443	35 770	38 775	40 171
Syria	2 084 000	2 166 000	2 043 000	2 483 200	2 414 000
Thailand	3 880	3 260	2 359	4 000	3 000
Uzbekistan	139 200	169 800	225 000	426 000	433 400
Vietnam	710 000	791 000	683 000	787 800	823 400
Australia	1 250	977 146	1 894 495	2 026 971	2 286 247
Nauru (b) (e)	648 500	650 791	449 190	161 950	112 900
World Total	143 000 000	132 000 000	128 000 000	137 000 000	141 000 000

Note(s):

(1) In addition to the countries listed, Indonesia is believed to produce phosphate rock

(a) Including lime phosphates

(b) Exports

(c) Including phosphate dust

(d) Including beneficiated and directly shipped material

(e) Years ended 30 June of that stated

(f) Years ended 31 March following that stated

Mine production of platinum group metals

kilograms (metal content)

Country 1999		2000	2001	2002	2003
Russia					
Platinum (a)	14 000	35 800	40 400	30 500	32 700
Palladium (a)	171 100	161 700	135 000	60 000	92 000
Other platinum metals	*13 400	*14 100	*14 500	*14 500	*14 600
South Africa					
Platinum	121 304	114 459	129 746	133 796	148 348
Palladium	58 164	55 818	62 142	64 244	70 946
Other platinum metals	37 011	36 493	36 859	41 545	46 856
Zimbabwe					
Platinum	390	504	435	2 053	*4 400
Palladium	278	360	313	1 728	*3 170
Other platinum metals	30	40	35	416	*760
Canada					
Platinum	5 400	6 000	8 100	9 500	7 200
Palladium	8 500	9 500	12 800	15 100	11 500
Other platinum metals	700	600	900	1 000	800
USA					
Platinum	2 920	3 110	3 760	4 390	4 170
Palladium	9 800	10 260	12 600	14 810	14 000
Colombia	488	339	674	661	1 393
Australia					
Platinum	90	171 174		122 133	
Palladium	816	812 828		811 477	
World Total	444 000	450 000	459 000	395 000	453 000

Note(s):

- (1) Wherever possible, figures relate to quantities of platinum group metals thought to be recovered from ores originating in the country stated
- (2) Figures for metal production are only given for countries where recovery is thought to be based predominantly on domestic materials or on imported materials which have not been recorded as mine production elsewhere in the table
- (3) In addition to the countries listed, Bulgaria, China, Ethiopia, Indonesia and Philippines are believed to produce platinum group metals

(a) Sales from mine production and stocks

Production of potash

tonnes (K₂O content)

Country 1999		2000	2001	2002	2003
Belarus	4 553 000	3 786 000	4 495 000	3 791 000	4 229 000
France					
Potassic salts	311 300	321 000	244 000	128 000	—
Germany					
Potassic salts	3 543 360	3 407 467	3 548 665	3 471 763	3 563 332
Russia	4 050 000	3 716 000	4 257 600	4 431 600	4 653 300
Spain					
Chloride	549 516	521 984	470 933	406 571	505 527
Ukraine	...	84 700	74 300	*60 000	*60 000
United Kingdom					
Chloride	494 700	600 800	531 900	540 100	621 400
Canada					
Chloride	8 304 000	9 202 000	8 181 000	8 515 000	9 140 000
USA					
Potassic salts	1 200 000	1 300 000	1 200 000	1 200 000	1 100 000
Brazil					
Chloride	336 623	351 748	318 585	337 266	394 652
Chile					
Chloride	*345 000	*360 000	*420 000	*420 000	*420 000
Nitrate	*49 000	*53 000	*57 000	...	...
China	218 000	275 000	395 000	*430 000	*440 000
Israel					
Chloride	1 701 600	1 747 800	1 774 400	1 918 400	1 958 400
Jordan	1 080 114	1 161 593	1 177 521	1 173 614	1 176 600
World Total	26 800 000	26 900 000	27 100 000	26 900 000	28 300 000

Production of rare earth minerals

tonnes

Country 1999		2000	2001	2002	2003
USA					
Bastnaesite (a)	*5 000	*5 000	*5 000	*5 000	—
China (a)	80 500	75 500	94 500	...	132 500
India					
Monazite (b)	1 698	1 890	2 651	2 856	*2 900
Malaysia					
Monazite	1 147	818	643	441	795

Note(s):

- (1) With the exception of the data for USA and China, figures in this table refer to gross tonnage of concentrates
- (2) In addition to the countries listed, rare earth minerals are believed to be produced in Brazil, Indonesia, Democratic P.R. of Korea, Republic of Korea, Mozambique, Nigeria, the former Soviet Union and Vietnam

- (a) REO content. Assumed to be 60% of concentrates produced
- (b) Years ended 31 March following that stated

Production of salt

tonnes

Country 1999		2000	2001	2002	2003
Albania					
Sea salt	24 689	20 596	25 783	22 746	21 448
Armenia	26 955	30 030	28 766	30 330	31 854
Austria					
Rock salt	1 481	1 280	1 384	1 491	1 610
Salt in brine	570 000	640 000	646 000	641 634	723 286
Azerbaijan	2 978	3 801	3 734	5 380	7 645
Belarus	...	...	1 052 000	1 369 000	1 543 000
Bosnia & Herzegovina	...	325 200	439 106	...	...
Bulgaria	1 300 000	1 700 000	1 931 000	1 800 000	1 882 000
Croatia	18 373	33 668	32 585	30 483	32 533
Denmark	558 000	586 500	587 000	*590 000	...
France					
Rock salt	634 000	536 000	596 000	434 000	320 000
Brine salt	1 438 000	1 476 000	1 452 000	1 456 000	1 409 000
Salt in brine	4 051 000	3 306 000	4 023 000	4 056 000	4 351 000
Sea salt	1 115 000	1 294 000	1 536 000	848 000	1 302 000
Other salt	270 000	—	—	—	—
Germany					
Rock salt	7 221 000	5 360 000	5 326 000	6 134 000	6 178 000
Brine salt	1 184 000	1 206 000	1 211 000	1 249 000	1 123 000
Salt in brine	5 589 000	6 023 000	6 196 000	6 310 000	6 668 000
Greece	176 867	244 709	208 776	126 118	192 000
Italy					
Rock salt & brine salt	3 338 162	3 332 901	3 301 173	3 342 992	2 922 251
Netherlands	5 400 000	5 564 000	5 717 000	5 773 000	5 980 000
Poland					
Rock salt	923 200	841 340	786 609	838 858	847 880
Brine salt	2 487 700	2 652 042	2 688 929	2 719 131	2 790 996
Portugal					
Rock salt	558 807	584 516	625 785	604 969	602 035
Sea salt	90 675	74 027	76 653	40 139	86 603
Romania	2 196 915	2 307 806	2 225 052	2 257 886	2 415 274
Russia	3 180 000	3 170 000	*2 800 000	*2 800 000	*2 800 000
Serbia and Montenegro					
Rock salt	8 444	10 182	8 624	13 334	15 413
Sea salt	17 066	32 246	26 383	3 787	36 469
Slovakia	119 000	121 700	123 000	97 400	133 100
Slovenia	*5 000	5 000	2 000	5 200	3 632
Spain					
Rock salt	2 425 338	2 328 464	2 319 800	2 559 760	2 562 832
Sea salt	1 400 152	1 436 345	1 420 000	1 234 679	1 250 000
Other salt	95 346	105 187	100 000	97 945	100 000
Switzerland	541 000	452 000	384 000	400 000	459 000
Turkey					
Rock salt	89 377	84 080	46 362	55 305	10 205
Sea salt	618 856	592 283	522 364	411 646	556 652
Other salt	1 437 894	1 450 008	1 202 025	1 729 686	1 675 915
Ukraine	2 185 300	2 286 500	*2 300 000	*2 300 000	*2 300 000
United Kingdom					
Rock salt	*1 500 000	*1 700 000	*1 900 000	*1 500 000	*1 700 000
Brine salt	*1 200 000	*1 100 000	*1 100 000	*1 000 000	*1 000 000
Salt in brine (a)	*3 000 000	*3 000 000	*3 000 000	*3 200 000	*3 200 000
Algeria					
Brine salt & sea salt	163 748	183 723	195 000	238 000	241 000
Angola	*30 000	*30 000	*30 000	*30 000	*30 000
Benin (c)	*15 000	*15 000	*15 000	*15 000	*15 000
Botswana	233 069	184 800	178 646	315 259	229 432
Burkina Faso	*6 000	*6 000	*6 000	*6 000	*6 000
Cape Verde	*2 000	*2 000	*2 000	*2 000	*2 000
Djibouti	127 283	135 933	173 099	162 266	*175 000
Egypt (j)	*1 200 000	*1 200 000	1 434 000	1 341 000	...
Eritrea	9 368	47 498	77 835	116 268	52 414
Ethiopia (d)	56 400	56 400	61 000	61 000	61 000
Ghana	*50 000	*50 000	68 076	99 593	*120 000
Guinea	*15 000	*15 000	*15 000	*15 000	*15 000

Production of salt

tonnes

Country 1999		2000	2001	2002	2003
Kenya (h)	44 886	16 359	5 664	18 848	21 199
Libya	*30 000	*40 000	*40 000	*40 000	*40 000
Madagascar	26 000	26 000	26 000	26 000	*13 000
Mali	*6 000	*6 000	*6 000	*6 000	*6 000
Mauritania	*6 000	*6 000	*6 000	*6 000	*6 000
Mauritius (c)	7 435	6 000	*6 000	*6 000	...
Morocco	156 158	162 385	233 816	266 903	236 443
Mozambique	*82 000	*7 000	*10 000	*80 000	*80 000
Namibia	503 479	543 218	564 841	411 852	661 374
Niger	*2 000	*2 000	*2 000	*2 000	*2 000
Senegal	145 000	124 000	141 000	*160 000	*150 000
Sierra Leone	1 300	4 083	2 889	1 821	1 004
Somalia	*1 000	*1 000	*1 000	*1 000	*1 000
South Africa	358 584	345 632	356 582	428 887	437 896
Sudan	117 148	86 599	77 783	...	...
Tanzania	35 893	70 000	65 000	71 200	...
Tunisia (c)	455 000	620 000	712 400	615 800	700 000
Uganda	*5 000	*5 000	*5 000	*5 000	*5 000
Bahamas	1 162 241	1 073 413	987 703	1 074 352	*1 000 000
Canada					
Rock salt	9 997 353	9 298 285	11 503 494	10 158 045	11 722 207
Other salt (e)	2 680 416	2 695 422	2 189 514	2 114 417	1 993 863
Costa Rica	*37 000	*37 000	*37 000	*37 000	*37 000
Cuba	159 100	177 000	*180 000	*180 000	...
Dominican Republic					
Rock salt	10 000	12 221	*12 000	29 560	...
Sea salt	*50 000	*50 000	*50 000	*50 000	...
El Salvador (c)	33 634	32 444	31 609	31 552	31 366
Guatemala (c)	*50 000	*50 000	*50 000	*50 000	*50 000
Honduras	*25 000	*25 000	*25 000	*25 000	*25 000
Mexico	8 235 621	8 884 370	8 501 137	7 801 948	7 546 987
Netherlands Antilles	405 814	292 867	395 195	380 805	...
Nicaragua (c)	15 619	16 100	17 710	23 023	...
Panama (c)	6 312	11 392	24 422	15 553	13 171
USA					
Rock salt (f)	14 700 000	13 600 000	14 600 000	11 400 000	(k) 38 600 000
Salt in brine (f)	22 700 000	22 500 000	20 400 000	19 300 000	...
Evaporated salt (f)	6 980 000	7 140 000	7 210 000	6 960 000	...
Argentina	1 263 423	1 348 514	1 269 814	1 080 396	1 156 023
Brazil					
Rock salt	1 430 041	1 448 000	*1 200 000	*1 300 000	*1 400 000
Sea salt	4 528 000	4 626 000	4 370 000	4 835 000	5 144 000
Chile	6 074 426	5 082 911	5 989 416	3 502 613	6 213 473
Colombia					
Rock salt	156 933	177 687	184 278	191 553	199 360
Sea salt	304 433	282 189	351 046	335 783	247 900
Peru	230 393	247 619	418 954	278 948	187 416
Venezuela (c)	*350 000	*350 000	*400 000	*400 000	...
Afghanistan	*13 000	*13 000	*13 000	*13 000	...
Bangladesh (j)	...	39 376	39 839	40 575	41 787
Cambodia	50 000	25 000	11 000	72 500	36 000
China	31 166 000	35 182 800	34 547 500	32 835 000	*34 000 000
India					
Rock salt	3 000	2 600	2 500	1 900	1 000
Sea salt	9 775 700	11 219 100	10 295 000	14 366 400	11 787 300
Other salt	4 674 000	4 429 600	3 986 500	3 510 900	3 093 900
Indonesia	*680 000	*680 000	*680 000	*680 000	*680 000
Iran (g)	1 263 397	1 320 668	1 537 527	1 510 867	...
Iraq	*300 000	*300 000	*300 000	*300 000	...
Israel	538 000	526 000	537 000	580 000	...
Japan (i)	1 327 000	1 374 000	1 358 000	1 282 000	1 263 000
Jordan (b)	404 776	344 094	321 000	406 652	...
Kazakhstan	36 534	36 283	274 497	173 564	282 389

Production of salt

tonnes

Country 1999		2000	2001	2002	2003
Korea, Dem. P.R. of	*500 000	*500 000	*500 000	*500 000	*500 000
Korea, Republic of	*800 000	*800 000	*800 000	*800 000	...
Kuwait	38 745	36 800	...	...	...
Laos	3 194	3 637	2 635	5 410	16 130
Lebanon	*4 000	*4 000	*4 000	*4 000	*4 000
Mongolia	*100 000	*100 000	*100 000	*100 000	*100 000
Myanmar (b) (c)	*35 000	*35 000	*35 000	*35 000	*35 000
Oman	11 230	11 700	13 983	14 410	...
Pakistan					
Rock salt (j)	1 019 044	1 359 776	1 261 141	1 423 478	1 426 067
Sea salt (j)	16 429	12 006	12 750	16 185	15 902
Philippines (c)	704 347	589 528	236 987	460 983	429 160
Saudi Arabia					
Rock salt & brine salt	484 000	409 000	547 800	547 000	547 000
Sri Lanka	96 709	70 107	130 272	73 784	81 791
Syria	104 000	106 000	*106 000	*106 000	*106 000
Taiwan	294 284	273 374	252 555	247 895	178 826
Tajikistan	*40 000	*40 000	*40 000	*40 000	*40 000
Thailand					
Rock salt	739 502	792 250	852 565	*850 000	*850 000
Other salt	*100 000	*100 000	*100 000	*100 000	*100 000
Turkmenistan	223 095	201 000	218 000	*215 000	...
Uzbekistan	*60 000	*60 000	*60 000	*60 000	*60 000
Vietnam	653 000	590 000	575 000	*580 000	...
Yemen, Republic of	*149 000	*150 000	*150 000	*150 000	*150 000
Australia (l)	9 888 000	8 847 000	9 244 000	9 884 000	10 427 000
New Zealand	29 000	130 350	31 315	130 985	...
World Total	210 200 000	211 200 000	212 100 000	206 900 000	212 500 000

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 7 July of that stated
- (e) Including salt in brine
- (f) Sold or used by producers
- (g) Years ended 20 March following that stated
- (h) Lake salt
- (i) Years ended 31 March following that stated
- (j) Years ended 30 June of that stated
- (k) Salt; all forms
- (l) Excluding Victoria and the Northern Territory

Production of selenium metal

tonnes

Country 1999		2000	2001	2002	2003
Belgium	*200	*200 *200		*200 *200	
Finland	37	37 42		37 52	
Germany	*100	*100 *100		*100 *100	
Poland	67	65 65		68 78	
Russia	40	41 48		60 81	
Serbia and Montenegro	26	21	14	17	7
Sweden	74	104	88	118	...
Zambia	12	10	13	*11	*10
Canada	359	335 238		175 253	
Chile (a)	70	47	84	...	...
Peru	23	21 16		21 24	
China	*65	*65 *65		*65 *65	
India (b)	6	10	10	6	2
Japan	546	612 735		752 734	
Kazakhstan	*40	*40 *40		*40 *40	
Philippines	35	38	43	*40	*40
Uzbekistan	*20	*20 *20		*20 *20	

Note(s):

(1) In addition to the countries listed, Australia, the Republic of Korea and Zimbabwe are believed to produce selenium metal

(a) Exports

(b) Years ended 31 March following that stated

Production of sillimanite minerals

tonnes

Country 1999		2000	2001	2002	2003
France					
Andalusite	57 000	63 000	61 000	59 000	*63 000
Spain					
Andalusite	*240	*260 *250		*250 *250	
South Africa					
Andalusite	136 949	182 674	193 225	165 087	220 000
Zimbabwe					
Kyanite	5 038	10 970	9 682	5 657	4 000
USA					
Kyanite (b)	90 000	90 000	90 000	90 000	90 000
Brazil					
Kyanite (a)	171	*200 *200		*200 *200	
China					
Andalusite	...	15 000	20 000	...	...
Kyanite	...	50 720	27 700	...	...
Sillimanite	...	20 800	163 100	...	...
India					
Kyanite (c)	6 191	4 733	4 225	5 327	8 101
Sillimanite (c)	14 933	15 498	14 720	13 290	19 692
Australia					
Sillimanite	274	110	70	233	206

Note(s):

- (1) A number of other countries produce sillimanite minerals but details of output are not reported
(2) In addition to the countries listed above as producing sillimanite minerals, synthetic mullite is known to be produced in Denmark, France, Hungary, Japan, former Yugoslavia, United Kingdom and the USA

- (a) Including beneficiated and directly shipped material
(b) Including related minerals
(c) Years ended 31 March following that stated

Mine production of silver

kilograms (metal content)

Country 1999	2000	2001	2002	2003
Armenia	—	—	5 500	*4 000
Bulgaria	58 726	54 534	60 000	*60 000
France	1 140	723 929	709 495	
Greece	38 976	30 644	74 800	79 200
Irish Republic	10 400	16 700	7 500	8 500
Italy	*2 000	*1 000	*1 000	*1 000
Macedonia	*10 000	*10 000	*10 000	*10 000
Poland	1 160 355	1 164 700	1 232 300	1 296 000
Portugal	26 450	20 430	23 100	19 500
Romania	*18 000	*18 000	*18 000	*18 000
Russia (a)	380 000	*400 000	*400 000	*700 000
Serbia and Montenegro (a)	7 643	9 068	5 745	6 838
Spain	117 735	114 537	55 000	12 792
Sweden	341 584	328 737	306 029	320 823
Turkey	*90 000	193 000	188 000	124 000
Algeria	*1 500	*1 500	*1 500	*1 500
Ethiopia (b)	689	1 018	3 545	900
Ghana	4 000	2 100	1 900	2 129
Morocco	277 900	289 000	280 700	276 800
Namibia	—	9 300	20 400	43 600
South Africa	151 959	144 100	109 600	113 108
Tanzania	...	...	6 861	6 690
Tunisia	4 000	3 700	3 650	*3 000
Zambia	6 076	*6 000	*6 000	*6 000
Zimbabwe	5 396	3 799	3 449	3 219
Canada	1 246 357	1 212 386	1 320 030	1 407 558
Dominican Republic	3 140	...	...	...
Honduras	46 473	52 485	46 760	52 796
Mexico	2 466 981	2 620 495	2 759 985	2 746 989
Nicaragua	1 780	1 589	2 532	2 198
Panama	*2 000	*2 000	*2 000	*2 000
USA	1 950 900	1 980 100	1 740 000	1 421 000
Argentina	73 785	78 271	152 802	125 878
Bolivia	422 540	433 590	409 720	460 900
Brazil	10 000	10 000	10 000	10 000
Chile	1 380 711	1 242 194	1 348 667	1 210 473
Colombia	7 593	7 970	7 242	6 986
Peru	2 231 390	2 437 706	2 673 834	2 686 563
China	1 378 714	1 569 145	2 013 250	*2 200 000
India (c)	53 641	46 150	57 675	59 502
Indonesia	292 331	314 032	348 332	289 450
Iran	21 400	*20 000	*20 000	*23 000
Japan	93 441	103 587	82 452	103 203
Kazakhstan (a)	645 609	895 077	943 027	855 612
Korea, Dem. P.R. of	*50 000	*50 000	*50 000	*50 000
Laos	—	—	—	—
Malaysia	2 744	4	3	—
Mongolia	*21 000	*21 000	*21 000	*21 000
Myanmar (a) (c)	2 159	2 019	*700	*700
Philippines	18 214	23 569	29 590	8 810
Saudi Arabia	10 472	9 390	10 000	10 000
Uzbekistan	61 100	*60 000	*60 000	*60 000

Mine production of silver

kilograms (metal content)

Country 1999	2000	2001	2002	2003	
Australia	1 715 000	2 059 000	1 970 000	2 077 000	1 868 000
Fiji	2 159	1 475	2 109	1 901	1 247
New Zealand	24 308	22 886	27 118	28 725	29 932
Papua New Guinea	66 542	79 197	69 368	63 349	*65 000
Solomon Islands	2 138	*700	—	—	—
World Total	17 019 000	18 179 000	18 984 000	18 847 000	18 825 000

Note(s):

(1) Countries producing less than 1000 kg per year include the Republic of Korea and Oman

(a) Smelter and/or refinery production

(b) Years ended 7 July of that stated

(c) Years ended 31 March following that stated

Production of natural sodium carbonate

tonnes

Country 1999	2000	2001	2002	2003	
Botswana	233 643	191 000	251 231	283 197	234 520
Ethiopia (a)	4 409	3 805	7 543	3 843	*4 000
Kenya	245 680	238 190	297 780	304 110	352 560
USA	10 200 000	10 200 000	10 300 000	10 500 000	10 600 000
Pakistan	3 748	3 075	3 513	3 669	...

Note(s):

(a) Years ended 7 July of that stated

Production of strontium minerals

tonnes

Country 1999	2000	2001	2002	2003	
Spain	123 457	158 590	164 030	171 293	152 383
Turkey	60 540	24 150	63 635	*70 000	*70 000
Morocco	—	7 539	1 879	3 780	2 700
Mexico	164 682	157 420	145 789	94 015	130 329
Argentina (a)	2 141	4 656	2 440	3 106	3 323
China	...	...	...	...	*180 000
Pakistan (c)	634	1 079	—	416	402

Note(s):

(1) In addition to the countries listed, Iran, Germany and Poland are believed to produce strontium minerals

(a) May contain unbeneficiated material

(c) Years ended 30 June of that stated

Production of sulphur and pyrites

tonnes (sulphur content)

Country 1999		2000	2001	2002	2003
Austria					
Recovered (d)	49 753	50 377	50 135	54 925	51 221
Belarus					
Recovered (d)	12 944	19 142	21 653	28 162	22 292
Belgium					
Recovered (c) (d)	408 000	410 000	368 000	359 000	383 000
Bulgaria					
Pyrites	20 000	—	—	—	—
Recovered (c)	131 000	209 000	203 000	245 000	260 000
Recovered (d)	30 000	30 000	30 000	30 000	30 000
Croatia					
Recovered (d)	15 000	9 000	7 000	7 069	7 471
Czech Republic					
Recovered (d)	45 000	45 000	40 000	40 000	45 000
Denmark					
Recovered (d)	3 729	4 041	3 981	4 386	4 751
Finland					
Pyrites	370 000	360 000	260 000	235 000	276 200
Recovered (c)	299 000	283 000	227 000	308 000	305 000
Recovered (d)	42 000	46 000	46 000	55 000	60 000
France					
Recovered (d)	825 000	801 600	840 000	795 600	710 400
Recovered (e)	*250 000	*250 000	*260 000	229 000	196 000
Germany					
Recovered (c)	84 400	80 128	80 000	46 000	—
Recovered (d)	1 696 353	1 611 792	1 640 000	1 657 200	1 619 900
Recovered (e)	42 440	42 518	40 000	41 900	43 900
Greece					
Recovered (d)	148 000	150 000	153 000	157 000	162 000
Hungary					
Recovered (d)	36 383	34 082	43 000	52 000	51 000
Italy					
Recovered (c)	193 000	203 000	203 000	142 000	119 000
Recovered (d)	485 000	490 000	540 000	560 000	565 000
Lithuania					
Recovered (d)	25 000	28 000	47 000	49 824	48 515
Macedonia					
Recovered (c)	29 000	26 000	26 000	26 000	26 000
Netherlands					
Recovered (c)	129 000	123 000	126 000	124 000	131 000
Recovered (d)	445 000	428 000	384 000	373 000	408 000
Norway					
Recovered (c)	*95 000	*90 000	*95 000	95 000	100 000
Recovered (d)	12 000	18 000	18 000	19 000	20 000
Poland					
Frasch	1 175 000	1 369 259	942 252	760 320	762 689
Recovered (c)	277 800	*278 600	*280 000	*275 000	*280 000
Recovered (d)	73 500	16 483	27 602	22 777	23 384
Portugal					
Recovered	32 000	28 000	35 000	28 000	27 000
Romania					
Pyrites	48 127	9 883	1 835	—	—
Recovered	41 000	35 000	41 000	29 000	49 000
Russia					
Pyrites	307 000	404 000	324 000	261 000	326 000
Recovered (d)	4 443 284	4 948 298	5 239 515	5 615 000	5 816 000
Recovered (e)	510 000	438 000	458 000	458 000	523 000
Sulphur ore	6 151	9 630	13 216	...	...
Serbia and Montenegro					
Recovered (c)	46 000	46 000	75 000	82 000	83 000
Slovakia					
Recovered (c)	5 000	5 000	5 000	5 000	5 000
Recovered (d)	24 000	51 000	57 000	61 000	60 000
Spain					
Pyrites	391 130	94 222	89 796	—	—
Recovered (c)	455 000	454 000	461 000	544 000	560 000
Recovered (d)	110 000	115 000	135 000	140 000	145 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country 1999		2000	2001	2002	2003
Sweden					
Recovered (c)	65 000	*95 000	*160 000	*180 000	*180 000
Recovered (d)	56 989	58 521	54 530	51 065	62 454
Turkey					
Pyrites	91 000	45 000	26 000	34 000	63 000
Recovered (d) (e)	122 000	118 000	126 000	123 000	123 000
Ukraine					
Sulphur ore	79 979	88 000	126 000	124 000	142 000
United Kingdom					
Recovered (c)	26 600	51 400	62 400	66 400	4 800
Recovered (d)	136 000	140 000	111 000	125 000	115 000
Algeria					
Recovered (d)	16 000	12 000	7 000	19 000	19 000
Egypt					
Recovered (d)	...	60 000	3 000	78 000	*70 000
Libya					
Recovered (d)	*13 000	*13 000	*15 000	*15 000	*15 000
Namibia					
Pyrites	—	6 000	34 491	1 874	17 145
South Africa					
Pyrites	141 427	145 650	150 184	183 004	175 621
Recovered (a) (c) (d)	122 782	157 169	238 128	316 219	438 271
Zambia					
Pyrites	26 000	21 000	25 000	—	—
Recovered (c)	52 000	52 000	52 000	52 000	52 000
Zimbabwe					
Pyrites	23 300	29 000	21 700	19 000	19 000
Canada					
Recovered (c)	1 159 812	1 159 162	1 124 000	1 109 000	969 000
Recovered (d)	8 812 609	8 679 770	8 223 000	8 088 000	8 027 000
Cuba					
Recovered (d)	*5 000	*5 000	*5 000	*5 000	*5 000
Mexico					
Recovered (c)	474 000	474 000	572 000	588 000	539 000
Recovered (d)	856 000	851 000	878 000	887 000	1 048 000
Netherlands Antilles					
Recovered (d)	34 000	38 000	36 000	25 000	23 000
Trinidad & Tobago					
Recovered (d)	8 400	14 900	24 400	...	...
USA					
Frasch	1 780 000	900 000	—	—	—
Recovered (c)	1 320 000	1 030 000	982 000	772 000	683 000
Recovered (d)	8 360 000	8 590 000	8 480 000	8 510 000	8 910 000
Argentina					
Recovered (c)	23 000	23 000	23 000	23 000	23 000
Brazil					
Pyrites	23 232	23 720	24 468	22 620	19 246
Recovered (c)	217 119	217 238	280 079	284 184	285 821
Recovered (d)	57 962	81 762	80 125	77 185	90 332
Chile					
Recovered (c)	1 037 000	1 096 000	1 160 000	1 231 000	1 373 000
Colombia					
Recovered (d)	*16 000	*16 000	15 465	23 880	23 660
Sulphur ore	89 024	91 996	69 344	60 162	73 020
Ecuador					
Recovered (d)	17 200	20 800	*20 700	...	...
Sulphur ore	*4 000	*4 000	*4 000	...	...
Peru					
Recovered (c)	*60 000	*60 000	*60 000	*60 000	*60 000
Venezuela					
Recovered (d)	350 000	320 000	340 000	570 000	560 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country 1999		2000	2001	2002	2003
Abu Dhabi					
Recovered (d)	1 089 000	1 122 000	1 488 000	1 900 000	1 925 000
Bahrain					
Recovered (d)	67 230	73 060	70 884	71 000	63 507
China					
Pyrites	3 130 000	4 010 000	3 678 000	3 240 000	3 050 000
Recovered	1 716 000	1 797 000	2 391 000	2 400 000	2 637 000
Sulphur ore	240 000	250 000	260 000	450 000	700 000
India					
Pyrites (f)	2 100	—	...	...	...
Recovered (c)	261 000	359 000	458 000	458 000	539 000
Recovered (d) (e)	101 000	376 000	526 000	326 000	451 000
Indonesia					
Recovered (c)	154 000	212 000	212 000	196 000	212 000
Recovered (d)	10 000	60 000	70 000	95 000	95 000
Sulphur ore	3 450	*3 500	*3 600	*3 600	...
Iran					
Recovered (d)	963 000	963 000	880 000	1 200 000	1 310 000
Iraq					
Recovered (d)	300 000	300 000	300 000	300 000	150 000
Israel					
Recovered (d)	31 000	38 000	35 000	36 000	45 000
Japan					
Pyrites	41 000	—	—	—	—
Recovered (c) (g)	1 513 000	1 567 000	1 519 000	1 592 000	1 528 000
Recovered (d)	2 060 000	2 072 000	2 424 389	1 865 424	1 952 000
Kazakhstan					
Recovered (c)	245 000	294 000	310 000	261 000	327 000
Recovered (d)	1 111 000	1 244 700	1 469 400	1 600 000	1 615 000
Korea, Dem. P.R. of					
Pyrites	21 000	18 000	18 000	18 000	18 000
Recovered (c)	16 000	16 000	16 000	16 000	16 000
Korea, Republic of					
Recovered (c)	528 000	572 000	665 000	753 000	747 000
Recovered (d)	630 000	679 000	690 000	687 000	757 000
Kuwait					
Recovered (d)	639 000	512 000	524 000	634 000	714 000
Oman					
Recovered (d)	*30 000	*30 000	*30 000	*30 000	*30 000
Pakistan					
Recovered (b)	21 166	22 812	17 428	22 580	19 401
Philippines					
Recovered (c)	133 000	134 000	145 000	154 000	137 000
Recovered (d)	20 000	20 000	25 000	30 000	30 000
Qatar					
Recovered (d)	155 000	190 868	220 624	250 000	300 000
Saudi Arabia					
Recovered (d)	1 939 758	2 101 391	2 345 000	2 364 000	2 400 000
Singapore					
Recovered (d)	261 000	265 000	230 000	180 000	180 000
Syria					
Recovered (d)	30 000	30 000	30 000	30 000	30 000
Taiwan					
Recovered	194 811	205 588	223 659	212 343	225 006
Thailand					
Recovered (c)	46 000	46 000	46 000	46 000	46 000
Recovered (d)	180 000	180 000	195 000	170 000	170 000
Turkmenistan					
Sulphur ore	5 405	3 709	5 628	...	...
Uzbekistan					
Recovered (c)	163 000	163 000	163 000	163 000	163 000
Recovered (d)	283 000	285 000	310 000	360 000	410 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country 1999		2000	2001	2002	2003
Australia					
Recovered (c)	441 000	654 000	817 000	899 000	863 000
Recovered (d)	25 000	30 000	45 000	60 000	60 000
Total pyrites	4 600 000	5 200 000	4 700 000	4 000 000	4 000 000
Total frisch	3 000 000	2 300 000	900 000	800 000	800 000
Total recovered	50 400 000	51 900 000	54 300 000	55 400 000	56 800 000
Total sulphur ore	400 000	500 000	500 000	700 000	900 000

Note(s):

- (a) Including production from synthetic fuels
- (b) Years ended 30 June of that stated
- (c) From metal sulphide processing
- (d) From petroleum refining and/or natural gas
- (e) Other
- (f) Years ended 31 March following that stated
- (g) Including S content of sulphur ore

Production of talc

tonnes

Country 1999		2000	2001	2002	2003
Austria	129 576	133 060	137 776	138 195	137 596
Finland	509 000	502 000	476 620	477 229	501 658
France	405 300	409 000	417 000	359 000	394 000
Germany	*15 000	*15 000	*9 000	*8 000	3 859
Greece	2 860	2 300	2 073	...	...
Italy	123 503	121 068	126 868	125 040	122 849
Macedonia	*1 000	*1 000	*1 000	*1 000	*1 000
Norway	26 758	26 660	24 626	23 564	...
Portugal	9 554	9 895	8 362	1 328	...
Romania	8 229	7 850	7 270	7 310	10 082
Russia	107 690	105 549	111 645	*100 000	*100 000
Slovakia	1 900	1 800	2 600	2 290	4 200
Spain	117 581	115 154	119 000	108 312	101 739
Sweden	19 000	20 000	14 000	20 000	7 000
Turkey					
Pyrophyllite	48 358	54 278	...	...	...
United Kingdom	6 256	4 832	4 947	6 194	6 494
Egypt (d)	*35 000	*35 000	36 827	45 529	*40 000
Morocco					
Talc	2 975	4 069	5 844	6 708	1 959
Pyrophyllite	11 680	24 359	21 042	33 686	28 338
South Africa	7 873	5 600	3 030	2 511	6 719
South Africa					
Pyrophyllite	13 277	11 989	14 047	15 587	14 350
Zimbabwe	1 081	989	1 273	1 024	*700
Canada	78 000	86 000	45 000	93 000	95 000
Mexico	18 981	20 569	77 650	111 622	114 870
USA	925 000	851 000	863 000	828 000	869 000
Argentina					
Talc	8 971	6 730	7 267	6 177	6 000
Pyrophyllite	3 400	3 877	2 155	2 341	2 505
Brazil					
Talc (b)	216 454	309 963	370 500	*390 000	*400 000
Agalmatolite (b)	105 306	131 784	*130 000	...	...
Pyrophyllite (b)	11 451	*10 000	*10 000	...	...
Chile	2 231	2 421	4 177	3 537	4 374
Colombia	*15 000	*15 000	*15 000	*15 000	*15 000
Peru					
Talc	12 085	9 668	11 165	10 685	10 791
Pyrophyllite	*8 000	*8 000	8 069	9 514	12 291
Uruguay	2 905	2 093	1 695	816	1 095
Venezuela	*32 000	*32 000	*32 000	*32 000	*32 000
Bhutan	*3 400	*3 700	*3 800	*3 900	*3 900
China	1 136 000	1 975 070	2 555 500	*2 600 000	*2 600 000
India					
Pyrophyllite (e)	106 268	148 346	150 345	147 233	167 159
Steatite (e)	557 112	595 724	578 857	688 135	730 462
Iran (a)	44 136	58 971	65 779	60 872	...
Japan					
Talc	20 875	19 260	18 478	22 142	21 754
Pyrophyllite	437 834	433 411	403 137	416 188	408 435
Korea, Dem. P.R. of	*120 000	*120 000	*120 000	*110 000	*110 000
Korea, Republic of					
Talc	15 313	11 344	47 712	37 863	47 911
Pyrophyllite	754 657	917 972	1 101 825	889 961	912 285
Nepal (c)	6 257	5 852	3 923	2 621	6 905
Pakistan (d)	42 339	47 977	50 733	53 572	65 813
Taiwan	1 816	— 130		27 466	
Thailand					
Talc	4 960	7 390	6 838	1 702	*1 700
Pyrophyllite	38 053	46 011	59 602	103 496	*103 000

Production of talc

tonnes

Country 1999	2000	2001	2002	2003
Australia				
Talc (d)	190 037	178 545	173 446	165 980
Pyrophyllite (d)	347	1 727	—	*1 000
World Total	6 500 000	7 700 000	8 500 000	8 700 000

Note(s):

- (a) Years ended 20 March following that stated
- (b) Including beneficiated and directly shipped material
- (c) Years ended 15 July of that stated
- (d) Years ended 30 June of that stated
- (e) Years ended 31 March following that stated

Production of tantalum and niobium minerals

tonnes

Country 1999		2000	2001	2002	2003
Burundi					
Columbite-tantalite	42	31	123	72	24
Ethiopia					
Tantalite (a)	50	66 47		55 58	
Mozambique					
Tantalite	...	—	27	47	189
Nigeria					
Tantalite	*25	*25 *25		*25 *25	
Rwanda					
Columbite-tantalite	147	561	241	96	70
Uganda					
Columbite-tantalite	—	3 11		6 16	
Zimbabwe					
Columbite-tantalite	3	4	23	26	4
Canada					
Pyrochlore	5 800	6 000	7 800	*8 200	*8 100
Tantalite	173	190 277		177 203	
Brazil					
Pyrochlore	(b) 42 100	63 117	*70 000	*70 000	*70 000
Columbite-tantalite	*2 400	4 012	*4 200	*3 900	*4 000
Djalmaite	23	84 ...		... ..
China					
Columbite-tantalite	201	217	357	...	...
Malaysia					
Struverite	675	969	8 430	2 298	2 619
Australia					
Tantalite	1 300	1 800	2 700	4 200	*3 400
World Total concentrates	52 900	77 100	94 300	89 500	89 100
Nb content	*20 700	*30 100	*33 700	*33 800	*33 700
Ta content	*1 540	*2 410	*3 620	*3 500	*3 200

Note(s):

- (1) Niobium and tantalum minerals are believed to be produced in Democratic Republic of the Congo, French Guiana, Ivory Coast, Russia and Zambia. Minor quantities are produced in Bolivia.
- (2) The figures in this table refer to gross tonnage of tantalum and niobium concentrates
- (3) Niobium and tantalum are also recovered from tin slags. This source is particularly important in the case of tantalum and in recent years is believed to have accounted for over 60% of all tantalum recovered
- (4) No detailed information on the production of tantalum bearing tin slags is available but the major producer is Thailand and small amounts from Australia, Brazil, Nigeria, Portugal, and D R Congo

(a) Years ended 7 July of that stated

(b) Data for Minas Gerais only

Production of tellerium metal

tonnes

Country 1999		2000	2001	2002	2003
Canada	64	53 51		39 40	
USA	50	50 50		50 50	
Peru	17	22 19		22 26	
Japan	35	36 39		29 33	

Note(s):

- (1) In addition to the countries listed, Australia, Germany and the Commonwealth of Independent States are believed to produce tellurium metal

Mine production of tin

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Portugal	2 163	1 246	1 201	345	203
Russia	5 200	6 600	5 500	7 200	*7 000
Nigeria	2 208	2 760	2 870	728	801
Rwanda	359	400 169		197 200	
Bolivia	12 417	12 503	12 039	13 210	16 386
Brazil	13 200	13 773	13 048	11 584	12 200
Peru (a)	30 618	37 410	38 182	38 815	40 202
China	80 100	99 400	93 000	*81 000	*99 000
Indonesia	47 754	51 629	56 286	78 567	64 026
Kazakhstan	*500	*500 23		24 13	
Laos	540	560 570		430 420	
Malaysia	7 339	6 307	4 972	4 215	3 358
Myanmar	*130	*180	*80	...	...
Thailand	2 450	1 700	1 720	972	721
Vietnam	*4 500	*4 500	*4 500	*4 500	*4 600
Australia	10 040	9 106	9 983	7 078	3 819
World Total	220 000	249 000	244 000	248 000	253 000

Note(s):

(a) Recoverable

Smelter production of tin

tonnes

Country 1999		2000	2001	2002	2003
Russia	4 000	5 200	5 069	5 115	4 000
Nigeria	100	— —		— —	
Mexico	1 262	1 204	1 789	1 756	1 769
Bolivia (a)	11 166	9 353	11 292	10 976	9 823
Brazil	12 787	13 823	12 109	11 538	10 583
Peru	17 342	17 357	25 070	32 953	39 181
China	90 800	110 200	104 900	75 100	100 047
India	*3 600	*3 600	*3 600	*3 600	*3 600
Indonesia	48 340	46 432	53 470	58 800	62 500
Malaysia	28 913	26 228	30 417	30 887	18 211
Thailand	17 306	17 076	22 387	17 500	15 200
Vietnam	1 693	1 803	1 700	1 400	1 300
Australia	586	733	1 094	791	597
World Total	238 000	253 000	273 000	250 000	267 000

Note(s):

(a) Refined, including alloys

Production of titanium minerals

tonnes

Country 1999		2000	2001	2002	2003
Norway					
Ilmenite	579 623	690 900	777 000	837 000	859 000
Ukraine					
Ilmenite	536 542	576 749	*600 000	*550 000	*600 000
Rutile	110 951	132 517	*150 000	*100 000	*100 000
Egypt					
Ilmenite	...	66 000	66 000	69 000	...
South Africa					
Ilmenite (b)	*1 870 000	*1 853 000	*1 751 000	*1 649 000	*1 581 000
Rutile	*123 000	*123 000	*122 000	*140 000	*120 000
Canada					
Ilmenite (a) (b)	*2 500 000	*2 400 000	*2 700 000	*2 400 000	*2 200 000
USA	*600 000	400 000	500 000	400 000	500 000
Brazil					
Ilmenite	234 209	284 983	...	...	...
Rutile	3 388	3 139	*3 000	2 645	*3 000
China					
Ilmenite	*400 000	*600 000	*650 000	*800 000	*830 000
India					
Ilmenite (c)	388 271	429 707	450 678	*510 000	*550 000
Rutile (c)	17 505	18 974	17 817	*18 000	*17 000
Korea, Republic of					
Ilmenite	203 413	168 664	161 988	142 726	...
Malaysia					
Ilmenite	127 695	124 801	129 750	106 198	95 148
Rutile	...	...	...	7 059	18 472
Vietnam					
Ilmenite	*120 000	*130 000	*170 000	*170 000	*320 000
Australia					
Ilmenite	1 936 000	2 146 000	2 019 000	2 092 000	2 006 000
Rutile	182 000	207 000	207 000	219 000	173 000
Leucoxene	33 000	37 000	30 000	38 000	57 000
World Total					
Ilmenite (wt of concs)	9 600 000	9 900 000	10 200 000	10 000 000	10 000 000
Rutile (wt of concs)	437 000	485 000	500 000	487 000	431 000
All forms (TiO ₂ content)	* 4 800 000	* 5 100 000	* 5 200 000	* 5 100 000	* 5 200 000

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 2003 South Africa produced an estimated 930000 tonnes (85% TiO₂) and Canada produced an estimated 820000 tonnes (80-95% TiO₂)

(c) Years ended 31 March following that stated

Mine production of tungsten

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Austria	1 218	1 237	1 384	1 332	1 381
Portugal (c)	435	743 700		693 715	
Russia (c)	*3 500	*3 500	*3 500	*3 400	*3 900
Rwanda	54	144	142	153	*150
Uganda	0	—	14	52	2
Canada	—	—	—	2 295	3 654
Bolivia	334	393 532		376 441	
Brazil (a)	13	18	22	24	17
China	20 200	23 453	27 473	33 500	34 700
Korea, Dem. P.R. of	*500	*500	*500	*600	*600
Kyrgyzstan	*100	*100 *100		*100 *100	
Malaysia	...	—	268	—	...
Mongolia	27	52	63	35	*40
Myanmar (b)	87	74	48	*30	*30
Thailand (c)	28	28 47		— 19	
Uzbekistan	*200	192	260	...	...
World Total	26 700	30 400	35 100	42 900	46 000

Note(s):

- (a) Mainly scheelite
- (b) Including tungsten content of tin-wolframite concentrates
- (c) Wolframite and scheelite

Mine production of uranium

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Czech Republic	605	498	490	477	458
France	438	319	194	12	—
Portugal	10	13	4	2	—
Romania	*100	*50 85		90 90	
Russia	*2 000	*2 000	*2 500	*2 900	*3 150
Spain	255	251	0	0	—
Ukraine	*500	*500 *750		*800 *800	
Gabon	294	— —		— —	
Namibia	2 687	2 713	2 237	3 369	2 661
Niger	2 916	2 898	2 919	3 076	3 143
South Africa	919	861	903	846	758
Canada	8 214	10 683	12 487	11 607	10 371
USA	1 773	1 522	1 015	902	788
Argentina	8	— —		— —	
Brazil	—	50	58	270	310
China	*500	*500 *665		*730 *750	
India	*200	*200 *230		*230 *230	
Kazakhstan	1 367	1 752	2 050	2 800	3 300
Pakistan	*23	*23 *46		*38 *45	
Uzbekistan	2 130	2 350	1 962	1 860	1 770
Australia	5 997	7 588	7 652	7 146	7 633
World Total	30 900	34 800	36 200	37 200	36 300
World Total (U ₃ O ₈ equivalent)	36 500	41 100	42 700	43 900	42 800

Note(s):

(1) Excluding uranium production from decommissioning operations in France, Germany and Spain

Mine production of vanadium

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Russia	*7 000	*7 000	*8 000	*8 000	*8 500
South Africa	17 612	18 021	18 184	25 227	*17 700
China	*10 400	*12 000	*12 000	*13 200	*13 200
Kazakhstan	*1 000	*1 000	*1 000	*1 000	*1 000
Australia	—	1 510	2 494	3 146	389
World Total	36 000	39 500	41 700	50 600	40 800

Note(s):

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

Production of vermiculite

tonnes

Country 1999		2000	2001	2002	2003
Russia	*25 000	*25 000	*25 000	*25 000	*25 000
Egypt (c)	...	...	270	380	*400
Kenya	164	124	—	—	—
South Africa	217 820	208 835	160 265	210 297	182 802
Uganda	—	—	100	664	1 724
Zimbabwe	12 844	16 215	9 104	21 494	20 016
USA (a)	*175 000	*150 000	*150 000	...	*100 000
Argentina	*2 800	*2 800	1 110	1 050	1 124
Brazil (b)	40 045	31 676	21 000	23 000	26 000
China	*40 000	*40 000	*40 000	*50 000	*50 000
India (d)	3 123	5 003	5 097	5 499	3 264
Iran	...	...	3 255	2 845	...
Japan	*15 000	*15 000	*15 000	*15 000	*15 000
Australia (c)	10 490	11 750	12 038	6 696	13 436

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

(c) Years ended 30 June of that stated

(d) Years ended 31 March following that stated

Production of wollastonite

tonnes

Country 1999		2000	2001	2002	2003
Finland	13 883	17 000	18 399	17 400	17 300
Namibia	347	406 284	—	742 497	—
South Africa	200	—	—	...	...
Mexico	44 126	30 836	39 830	42 756	51 944
USA	...	*130 000	*130 000	*150 000	...
China	391 060	427 540	839 200	...	...
India (a)	117 094	121 891	136 420	178 298	150 804

Note(s):

(1) In addition to the countries listed, Japan, Kazakhstan, Dem P R of Korea, Morocco, Pakistan and Turkey are believed to produce wollastonite

(a) Years ended 31 March following that stated

Mine production of zinc

tonnes (metal content)

Country 1999		2000	2001	2002	2003
Bulgaria	10 600	10 100	10 600	12 900	13 000
Finland	19 600	16 100	20 100	34 100	38 800
Georgia	*1 000	*1 000	*1 000	—	—
Greece	17 943	16 834	31 737	35 000	3 000
Irish Republic	200 200	263 000	298 100	276 700	419 000
Macedonia	21 000	25 000	20 000	20 000	—
Poland	154 800	156 900	152 700	152 100	154 277
Romania	26 536	27 452	29 786	25 400	23 464
Russia	132 000	136 000	157 000	167 000	170 000
Serbia and Montenegro	3 615	3 266	5 988	6 273	5 618
Spain	154 062	202 360	165 568	69 926	15 138
Sweden	174 448	176 788	156 334	148 620	185 884
Turkey	57 000	48 000	36 000	33 100	33 600
Algeria	5 200	5 500	5 700	4 500	1 450
Congo, Democratic Republic	*1 000	200	*700	—	—
Morocco	111 703	105 082	89 631	90 513	68 912
Namibia	37 140	32 937	37 622	41 042	58 052
South Africa	69 733	62 703	61 221	64 173	41 239
Tunisia	48 900	41 200	40 098	35 692	38 000
Canada	1 020 982	1 002 242	1 064 744	916 220	788 328
Honduras	40 996	43 064	48 485	46 339	43 766
Mexico	362 807	392 791	428 828	446 104	413 991
USA	852 200	851 900	842 100	780 000	738 200
Argentina	34 192	34 858	39 703	37 325	29 839
Bolivia	146 144	149 134	141 983	141 708	145 490
Brazil	98 590	100 254	111 432	136 339	152 823
Chile	32 263	31 403	32 762	36 161	33 051
Peru	899 524	910 303	1 056 629	1 221 830	1 372 790
China	1 476 000	1 780 300	1 693 200	1 624 100	*1 800 000
India (a)	194 100	198 800	214 600	262 100	318 300
Iran	98 000	102 000	105 000	121 000	111 000
Japan	63 254	63 480	47 892	41 581	47 800
Kazakhstan	270 300	322 100	344 700	392 400	393 200
Korea, Dem. P.R. of	*37 000	*34 000	*28 000	*32 000	*42 000
Korea, Republic of	9 800	11 500	5 100	99	—
Laos	—	—	11 500	540	1 200
Myanmar	300	400 500	—	500 500	—
Saudi Arabia	3 161	3 047	*3 000	1 200	900
Thailand	18 600	16 400	8 900	15 200	14 800
Vietnam	*18 000	22 000	32 000	42 000	45 000
Australia	1 162 000	1 419 000	1 517 000	1 469 000	1 479 000
World Total	8 100 000	8 800 000	9 100 000	8 900 000	9 200 000

Note(s):

(a) Years ended 31 March following that stated

Production of slab zinc

tonnes

Country 1999		2000	2001	2002	2003
Belgium	232 400	263 800	256 400	238 700	244 400
Bulgaria	84 000	84 000	88 000	83 000	86 800
Finland	225 200	222 900	248 800	235 300	265 900
France	318 400	318 100	328 900	333 300	257 000
Germany	360 823	356 516	361 348	378 561	388 131
Italy	145 300	170 300	178 600	175 800	123 100
Macedonia	49 608	62 922	15 093	*15 100	*10 000
Netherlands	222 552	216 768	204 794	203 460	224 000
Norway	143 976	138 390	144 620	145 000	143 000
Poland	178 900	173 000	174 700	158 900	154 200
Portugal	*4 000	*4 000	*4 000	*4 000	*4 000
Romania	28 695	51 929	47 200	48 000	*48 000
Russia	231 310	241 025	249 000	257 000	*270 000
Serbia and Montenegro	700	8 300	13 467	1 478	62
Spain	383 000	391 000	443 000	512 000	530 000
Turkey	27 000	—	—	—	—
United Kingdom	132 800	99 600	99 600	99 600	16 600
Algeria	31 709	26 335	26 000	33 900	32 200
Namibia	—	—	—	—	47 400
South Africa	108 000	103 250	109 000	111 000	114 000
Zambia	—	—	—	2 000	1 000
Canada	776 927	779 892	661 172	793 410	761 199
Mexico	218 913	235 073	303 810	302 122	320 400
USA	371 300	370 700	310 700	294 400	302 600
Argentina	43 443	39 269	42 907	41 797	42 360
Brazil	194 010	198 777	204 037	254 700	264 500
Peru	196 978	199 813	201 498	170 491	*200 000
China	1 703 200	1 957 000	2 037 600	2 155 100	2 292 000
India	189 000	204 000	234 000	248 000	280 000
Iran (a)	29 724	53 000	73 000	81 000	*101 000
Japan	633 383	654 384	644 358	639 925	651 246
Kazakhstan	248 754	262 570	277 073	286 454	294 965
Korea, Dem. P.R. of	*40 000	*37 000	*31 000	*34 000	*45 000
Korea, Republic of	425 965	474 829	503 315	605 990	644 218
Thailand	97 292	101 142	104 300	105 100	113 900
Uzbekistan	53 000	72 500	80 100	78 900	*80 000
Australia	349 000	498 000	561 000	572 000	560 000
World Total	8 500 000	9 100 000	9 300 000	9 700 000	9 900 000

Note(s):

(a) Years ended 20 March following that stated

Production of zirconium minerals

tonnes

Country 1999		2000	2001	2002	2003
Russia (a)	6 200	6 300	*6 500	*6 500	*6 500
Ukraine	*25 000	*30 000	*33 600	*34 300	*35 000
South Africa	*320 000	*325 000	*262 000	*420 000	*410 000
USA	*190 000	*180 000	*170 000	*130 000	*150 000
Brazil (a)	27 048	28 335	17 031	29 342	26 059
China	1 850	29 898	25 594	*20 000	*20 000
India	*19 000	*19 000	*19 000	*19 000	*20 000
Indonesia	*250	*250 *250		*250 *250	
Malaysia	1 763	3 642	3 768	5 293	3 456
Vietnam (b)	*4 400	*7 200	*8 000	*10 800	*21 300
Australia	359 000	374 000	393 000	413 000	462 000
World Total	956 000	1 004 000	939 000	1 088 000	1 155 000

Note(s):

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

(a) Including caldasite rock containing zircon and baddeleyite

(b) Conservative BGS estimates, based on exports

