

World Mineral Production



2013–2017



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BRITISH GEOLOGICAL SURVEY

WORLD MINERAL PRODUCTION 2013–17

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BRITISH GEOLOGICAL SURVEY

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PREFACE

Welcome to the latest edition of World Mineral Production, which includes global mineral production data for 2017 and is a continuation of the dataset that began in 1913.

This publication is compiled from a comprehensive database, maintained by the British Geological Survey, through which we aim to provide a reliable, comprehensive and continuous set of data covering most of the minerals that enter international trade. In this volume we have set out the production figures by country for more than 70 mineral commodities, over the five-year period from 2013 to 2017. The objective of this series remains to present the latest production information obtained from official bodies in individual countries, although other sources are also used to ensure completeness and accuracy. The cooperation afforded to the British Geological Survey by numerous national and international organisations is gratefully acknowledged.

Overall the changes in production for most minerals between 2016 and 2017 are modest, with increases or decreases generally less than 10%. The two most notable exceptions to this are the production of lithium (an increase of 75%) and diamonds (up 20%). For lithium, this is almost certainly a result of rising demand in connection with lithium-ion batteries for modern technology and electrically-powered vehicles. New lithium mines opened in 2017 in Canada (Whabouchi) and Australia (Mount Marion). In addition the Mount Catlin mine, also in Australia, was reopened. Significantly, and for the first time in many years, the quantity of lithium obtained from minerals in 2017 was larger than that obtained from brines.

The increase in global diamond production was due in large part to significant increases from Lesotho (where the quantity of carats produced increased by more than 200% in 2017 compared to 2016), Canada (an increase of 115%) and Australia (up 49%). In Lesotho this represents both new mines coming on stream and the discovery of some very large gem quality diamonds. The world's largest diamond producer, however, remains Russia with 29% of the global total, followed by Botswana (16% of the total), although the latter's output was only narrowly larger than that of Canada (with 15% of the total).

There is continuing interest and concern surrounding the worldwide security of supply of certain minerals. As before,

particular interest focusses on the so called 'critical' minerals, i.e. those elements that are essential for new and/or green technologies. New policies and programmes of supporting research have continued to be developed across the entire worldwide supply chain, with the common aims of diversifying the supply base (which includes, looking at novel primary resources types, particularly those in frontier environments), as well as improving resource efficiency and developing alternatives for the most constrained elements. Recent research by BGS has demonstrated that trends in supply diversity over time are more informative than simply examining a 'snapshot' for a single year and consequently statistical information over long time periods, such as the dataset underpinning this volume, remain important (Brown, 2018, <https://doi.org/10.1016/j.resourpol.2018.05.007>).

There is a growing interest in raw materials required to support decarbonisation of the global economy. Certain metals and minerals, such as lithium, cobalt, nickel, manganese and graphite, which are used in lithium-ion batteries, have received particular attention as governments across the world seek to secure supplies for their industries. In Europe, for example, the European Battery Alliance, launched in late 2017, aims to create a competitive manufacturing value chain for battery cells in Europe (https://ec.europa.eu/growth/industry/policy/european-battery-alliance_en).

During the past year, the BGS has continued to be involved with many European partners in several minerals-related research projects. These include some which have recently ended [e.g. Global Material Flows and Demand-Supply Forecasting for Mineral Strategies (MinFuture; <http://minfuture.eu/>)] and others which are ongoing [e.g. New geomodels to explore deeper for High-Technology critical raw materials in Alkaline rocks and Carbonatites (HiTech AlkCarb; <http://www.bgs.ac.uk/hiTechAlkCarb/>), Solution for Critical Raw Materials – a European Expert Network (SCRREEN; <http://screen.eu/>) and Optimising quality of information in raw materials data collection across Europe (ORAMA)].

As always, I would welcome any comments and suggestions that you have relating to this volume, which might help us to meet your ongoing needs.

John N Ludden
Chief Executive

British Geological Survey
Keyworth
Nottingham

February 2019

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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 (from 1913 for many commodities) can be obtained from the predecessors to this series entitled *World Mineral Statistics* and the *Statistical Summary of the Mineral Industry*. Copies of these publications are available in the World Archive section of the website: www.mineralsUK.com.

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

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 and imported materials, whether primary or secondary, but exclude remelted material wherever possible.

World totals

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

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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 Barytes Association. The International Fertilizer Industry Association Ltd provided data for 2013 only. 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.

Appendix 2 contains a fuller list of organisation to whom acknowledgement is made.

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

Symbols

...	figures not available
0	quantity less than half unit shown
—	nil
*	estimated
BGS	British Geological Survey

STATISTICAL INFORMATION

Production of bauxite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bosnia & Herzegovina	657 115	605 215	787 409	738 609	740 384
Croatia	8 220	9 150	11 900	9 780	12 200
France (a)	100 000	71 000	* 70 000	* 70 000	* 70 000
Greece	1 844 000	1 876 000	1 831 000	1 880 000	1 927 000
Hungary	93 700	14 400	8 300	16 700	4 000
Montenegro	61 154	155 153	50 369	* 516 200	927 847
Russia	5 322 000	5 589 000	5 398 000	5 432 000	5 523 000
Turkey	795 562	1 091 442	1 050 000	989 200	1 000 800
Ghana	826 994	798 114	1 014 605	1 143 676	1 476 966
Guinea (b)	20 349 000	20 170 000	20 692 000	26 917 000	47 009 000
Mozambique	6 190	3 324	4 985	1 451	3 182
Sierra Leone	616 000	1 161 705	1 334 046	1 368 531	1 787 700
Tanzania	39 977	25 641	205	73	12
Dominican Republic	769 530	1 749 308	1 724 162	7 318	—
Jamaica	9 435 214	9 676 697	9 628 824	8 540 130	8 244 628
USA (c)(d)	122 702	133 266	483 695	272 908	352 096
Brazil (e)	33 903 800	36 313 200	37 063 900	37 699 608	38 122 500
Colombia	1 108	601	861	693	2 400
Guyana	1 713 242	1 563 563	1 526 467	1 479 090	1 459 223
Suriname	2 670 680	2 707 719	1 865 148	—	—
Venezuela	2 346 160	2 315 787	991 810	* 300 000	* 200 000
China	50 339 383	59 212 401	60 787 599	66 157 689	* 65 000 000
India (f)	22 319 148	22 493 671	28 123 789	24 745 487	22 312 681
Indonesia	57 023 774	2 556 429	* 611 000	* 1 485 000	* 3 700 000
Iran (g)	903 559	748 297	840 681	868 255	796 451
Kazakhstan	5 192 800	4 515 600	4 682 600	4 801 300	4 843 200
Malaysia	208 770	(h)* 3 500 000	(h)* 27 700 000	(h)* 6 670 000	(h)* 810 000
Pakistan (i)	25 288	31 156	24 689	57 024	75 375
Saudi Arabia	1 044 360	2 076 000	2 174 000	3 843 000	3 708 000
Vietnam	482 000	1 100 000	* 1 123 000	* 1 523 000	* 2 672 000
Australia	81 119 334	78 632 393	80 909 703	83 517 042	89 420 589
Fiji	564 777	489 476	120 726	59 500	* 60 000
Solomon Islands	—	* 40	* 280 000	* 230 000	* 1 500 000
World total	300 900 000	261 400 000	292 900 000	281 300 000	303 800 000

Note(s)

(1) This table includes production of refractory bauxite.

(2) In addition to the countries listed, some bauxite continues to be produced in Mexico but it is all used as construction aggregates and figures are not reported.

(a) For non-metallurgical uses

(b) No adjustment has been made for moisture content

(c) Data for Alabama only

(d) Years ended 30 September of that stated

(e) Including beneficiated and direct shipping ore

(f) Years ended 31 March following that stated

(g) Years ended 20 March following that stated

(h) Conservative BGS estimate based on reported exports

(i) Years ended 30 June of that stated

Production of alumina

tonnes (Al₂O₃ content)

Country	2013	2014	2015	2016	2017
Bosnia & Herzegovina	175 961	170 646	250 845	187 515	247 449
France	430 000	400 000	432 000	* 500 000	* 500 000
Germany	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
Greece	665 512	674 040	674 420	693 460	695 400
Hungary	* 81 100	* 1 000	—	—	—
Ireland, Republic of	1 867 848	1 876 851	1 897 616	1 898 054	1 880 057
Romania	391 000	362 627	404 825	467 031	472 606
Russia	2 659 000	2 572 000	2 593 000	2 682 000	2 822 000
Spain	1 573 000	1 517 000	1 633 000	1 579 000	1 588 000
Turkey	* 186 000	* 190 000	* 190 000	* 190 000	* 190 000
Ukraine	1 493 000	1 455 000	1 481 000	1 510 000	1 676 000
Canada	1 554 604	1 562 559	1 560 932	1 566 467	1 564 135
Jamaica	1 854 910	1 850 960	1 864 645	1 865 278	1 782 373
USA	4 324 000	4 461 000	4 234 000	2 360 000	* 1 500 000
Brazil	9 942 100	10 404 000	10 451 500	10 885 500	11 014 400
Suriname	1 149 392	1 149 388	779 660	—	—
Venezuela	579 874	660 195	459 488	300 000	* 200 000
China	47 749 600	52 399 100	58 978 355	60 906 000	69 017 000
India (a)	3 779 301	4 024 215	4 172 293	4 576 239	4 674 000
Indonesia	—	—	69 869	* 495 000	* 686 000
Iran (b)	249 000	251 000	241 000	235 000	240 200
Japan	* 270 000	* 116 000	* 19 000	* 17 000	* 13 000
Kazakhstan	1 590 000	1 628 252	1 448 280	1 745 801	1 771 428
Saudi Arabia	—	23 000	846 000	1 429 000	1 484 000
Vietnam	214 000	485 000	* 486 000	* 635 000	* 1 027 000
Australia	21 528 263	20 494 595	20 097 181	20 680 826	20 485 770
World total	105 300 000	109 700 000	116 300 000	118 400 000	126 500 000

Note(s)

- (1) Where possible figures in this table show the alumina equivalent (Al₂O₃) of total hydrate produced, whether or not calcined.
- (2) The figures in this table represent alumina produced from bauxite. Alumina-rich materials can also be derived from salt slags formed during the production of secondary aluminium.

- (a) Years ended 31 March following that stated
- (b) Years ended 20 March following that stated

Production of primary aluminium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Azerbaijan	53 290	50 357	53 303	36 811	26 851
Bosnia & Herzegovina	157 191	131 238	118 253	106 649	125 536
France	343 000	415 000	415 000	424 600	430 000
Germany	492 368	530 683	541 379	546 806	549 995
Greece	169 480	173 260	179 993	181 189	181 630
Iceland	784 132	698 765	724 704	700 080	759 988
Montenegro	47 951	42 767	42 499	38 915	39 379
Netherlands	81 000	800	28 200	36 300	* 30 000
Norway	1 172 900	1 182 000	1 224 000	1 247 000	1 253 000
Romania	250 200	263 098	271 356	272 507	282 074
Russia	3 724 000	3 488 000	3 529 000	3 561 000	3 584 000
Slovakia	163 000	167 767	171 328	173 600	173 500
Slovenia	84 035	84 400	83 800	84 365	84 424
Spain	* 250 000	* 230 000	* 360 000	* 360 000	* 360 000
Sweden	131 000	113 000	116 000	124 000	123 000
Turkey	32 200	30 400	60 000	79 000	76 000
United Kingdom	45 000	41 000	48 000	46 000	48 000
Cameroon	75 000	93 000	* 65 000	* 66 000	* 67 000
Egypt (a)	318 459	333 178	279 365	355 000	279 100
Ghana	36 600	38 100	33 800	33 000	40 500
Mozambique	562 000	566 900	558 386	571 125	577 495
Nigeria	2 000	—	—	—	—
South Africa	822 000	745 000	695 000	701 000	716 000
Canada	2 967 364	2 858 238	2 880 035	3 208 707	3 211 882
USA	1 946 000	1 710 400	1 586 500	818 430	740 884
Argentina	434 758	442 719	430 388	424 996	433 391
Brazil	1 304 100	962 000	772 200	793 000	801 700
Venezuela	171 717	138 334	125 537	* 147 000	136 000
Bahrain	912 700	931 427	960 643	971 420	981 016
China	26 534 000	28 316 671	31 518 147	32 698 082	32 273 000
India (b)	1 667 300	2 026 803	2 354 949	2 896 629	3 400 618
Indonesia	256 602	264 474	257 149	245 483	218 816
Iran (c)	350 000	354 400	353 200	341 200	337 600
Japan	3 000	500	—	—	—
Kazakhstan	250 159	207 849	219 192	240 171	255 751
Malaysia	* 290 000	440 000	440 000	620 000	760 000
Oman	354 000	364 000	377 000	386 000	253 000
Qatar	634 351	640 153	637 900	643 500	650 000
Saudi Arabia	187 000	662 000	839 000	871 000	916 000
Tajikistan	216 369	121 261	139 123	129 300	103 000
United Arab Emirates	1 845 000	2 296 000	2 397 000	2 471 000	2 500 000
Vietnam	—	—	—	—	501 000
Australia	1 777 409	1 703 902	1 645 963	1 635 241	1 487 324
New Zealand	324 000	327 000	333 000	339 000	337 000
World total	52 200 000	54 200 000	57 900 000	59 600 000	60 100 000

Note(s)

(1) The figures in this table are for primary aluminium only. Aluminium can also be produced from secondary sources and may be recovered from salt slags.

(a) Years ended 30 June of that stated

(b) Years ended 31 March following that stated

(c) Years ended 20 March following that stated

Mine production of antimony

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Russia	* 6 520	* 6 400	7 420	6 620	6 120
Turkey	4 512	3 013	1 917	2 700	4 750
South Africa	2 332	816	400	* —	* —
Canada	177	5	1	0	0
Guatemala	159	—	—	25	—
Honduras	—	13	14	—	—
Mexico	294	266	90	166	240
Bolivia	5 053	4 186	3 843	2 669	2 844
Ecuador	—	—	—	—	579
Burma (a)	* 7 000	4 234	5 777	2 780	3 060
China	152 104	140 389	120 732	107 535	* 101 000
Iran	400	432	1 020	1 765	* 1 800
Kazakhstan	* 900	* 800	* 700	* 900	* 200
Kyrgyzstan	* 900	* 1 450	* 1 200	* 1 880	* 1 100
Laos	804	620	1 166	242	320
Pakistan (b)	89	127	114	21	15
Tajikistan	7 307	* 7 000	* 6 800	* 12 700	* 12 500
Thailand	488	706	* 700	32	—
Vietnam	990	1 098	219	229	243
Australia (b)	3 062	3 680	3 926	5 004	4 294
World total	193 000	175 000	156 000	145 000	139 000

Note(s)

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

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

Production of white arsenic

tonnes (metric)

Country	2013	2014	2015	2016	2017
Belgium	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Russia	* 1 500	* 1 500	* 1 500	* 1 500	* 1 500
Morocco	8 968	6 863	7 567	* 7 600	* 7 600
Namibia	1 520	1 980	1 960	* 1 900	* 700
Bolivia	120	52	38	38	* 40
Peru	* —	—	* —	23 252	22 319
China	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Japan	* 45	* 45	* 45	* 45	* 45

Note(s)

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

Production of asbestos

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia	* 900 000	* 800 000	650 375	691 712	710 248
Zimbabwe					
Chrysotile	377	—	—	—	—
Argentina	* 101	* 100	* —	* —	* —
Brazil	290 825	311 227	232 052	* 200 000	* 200 000
Colombia	8 691	8 946	13 240	10 465	4 423
China	* 280 000	* 250 000	* 210 000	* 200 000	* 200 000
India					
Amphibole (a)	172	—	—	—	—
Kazakhstan	243 300	213 100	179 800	192 500	192 700
World total	1 700 000	1 600 000	1 300 000	1 300 000	1 300 000

Note(s)

(1) In addition to the countries listed, asbestos may also be produced in Afghanistan, Dem. P.R. of Korea, Romania and Slovakia.

(a) Years ended 31 March following that stated

Production of barytes

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bulgaria	1 000	20 000	60 000	70 000	80 000
Georgia	—	500	500	400	400
Germany	45 446	87 585	45 311	49 373	34 177
Italy	* 3 500	* 3 500	* 3 500	* 3 000	* 3 000
Russia	* 180 000	* 220 000	361 000	434 000	221 000
Slovakia	24 000	21 000	20 000	25 000	15 690
Spain	3 000	3 000	3 000	3 000	3 000
Turkey	* 250 000	* 340 000	* 310 000	321 239	292 447
United Kingdom	* 30 000	* 44 000	* 50 000	* 56 000	* 55 000
Algeria	30 250	56 829	44 000	52 000	* 52 000
Egypt (a)	3 821	3 379	3 811	4 000	4 000
Morocco	1 094 500	1 006 600	1 212 130	676 940	818 016
Nigeria	* 6 000	* 6 000	* 6 000	* 20 000	* 20 000
Tunisia	5 300	9 800	10 000	10 000	—
Zimbabwe	300	300	500	200	200
Canada	22 000	35 000	32 000	32 000	32 000
Guatemala	343	43	544	500	43
Mexico	343 585	130 914	265 700	156 854	359 912
USA (b)	723 000	663 000	439 000	240 000	* 300 000
Argentina	25 744	16 300	* 17 000	* 17 000	* 17 000
Bolivia	30 476	26 240	46 732	16 632	* 16 000
Brazil	* 41 400	* 41 400	* 50 000	* 40 000	* 40 000
Colombia	5 483	4 688	4 003	3 068	1 721
Peru	52 491	106 071	28 407	7 953	9 182
Afghanistan	400	500	* 500	* 500	* 500
Burma (c)	31 295	23 060	2 836	3 215	2 186
China	3 500 000	4 100 000	3 500 000	3 100 000	3 600 000
India (c)	1 170 522	910 963	* 700 000	* 1 300 000	* 1 600 000
Iran (d)	435 798	440 741	340 318	399 750	* 400 000
Kazakhstan	530 200	200 000	210 000	190 000	160 000
Laos	27 000	46 000	92 000	82 000	77 000
Malaysia	500	14 456	16 600	16 600	16 600
Pakistan (a)	118 471	133 658	118 773	157 858	91 711
Saudi Arabia	30 000	32 000	43 000	—	—
Thailand	107 437	134 961	170 621	211 920	163 631
Vietnam	90 000	140 000	80 000	50 000	50 000
Australia	13 176	14 676	6 016	7 139	8 957
World total	9 000 000	9 000 000	8 300 000	7 800 000	8 500 000

Note(s)

(1) This table may include small quantities of witherite.

- (a) Years ended 30 June of that stated
- (b) Sold or used by producers
- (c) Years ended 31 March following that stated
- (d) Years ended 20 March following that stated

Production of bentonite and fuller's earth

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia					
Bentonite	15 387	798	1 592	5 543	11 724
Azerbaijan					
Bentonite	91 958	76 512	56 825	49 328	225 288
Bosnia & Herzegovina					
Bentonite (a)	18 808	80 952	67 261	102 858	92 344
Bulgaria					
Bentonite	—	41 100	61 600	37 100	54 100
Cyprus					
Bentonite	158 386	140 174	127 036	117 184	95 593
Czech Republic					
Bentonite	226 000	301 000	369 000	374 000	254 000
Denmark					
Bentonite	56 355	66 388	54 272	66 278	69 594
France					
Bentonite	23 111	11 607	36 403	42 567	24 497
Germany					
Bentonite	358 844	394 657	393 000	393 000	416 000
Greece					
Bentonite	1 000 000	1 011 480	1 123 320	883 220	1 087 800
Attapulgitite	32 400	45 000	108 000	44 500	54 280
Hungary					
Bentonite	7 397	10 463	11 290	16 006	* 16 000
Italy					
Bentonite	20 129	20 658	12 840	45 978	72 756
Macedonia					
Bentonite	18 520	11 691	9 012	1 968	912
Poland					
Bentonite	1 050	1 000	450	1 000	—
Romania					
Bentonite	24 127	18 583	19 355	26 758	33 777
Russia					
Bentonite	* 460 000	* 460 000	497 900	589 000	* 590 000
Slovakia					
Bentonite	184 000	205 000	205 000	158 000	226 082
Slovenia					
Bentonite	143	199	232	182	147
Spain					
Bentonite	102 726	105 627	100 604	155 038	177 565
Attapulgitite	26 764	26 798	26 188	28 809	58 952
Sepiolite	599 352	555 581	524 915	518 699	482 550
Turkey					
Bentonite	622 872	1 088 444	3 134 911	1 744 912	1 481 617
Sepiolite	59 426	53 110	28 804	56 038	15 624
Ukraine					
Bentonite	* 219 000	* 219 000	* 219 000	* 219 000	* 219 000
Algeria					
Bentonite	27 670	31 510	34 100	37 200	* 37 000
Angola					
Fuller's earth	98 084	* 98 000	* 98 000	* 98 000	* 98 000
Egypt					
Bentonite (b)	2 523	3 615	* 4 500	* 3 600	* 2 000
Kenya					
Bentonite	80	110	* 110	* 110	* 110
Morocco					
Bentonite	105 240	98 757	92 290	103 266	174 546
Fuller's earth (c)	59 000	73 500	* 84 570	* 80 000	* 80 000
Mozambique					
Bentonite	93	739	350	322	285
Senegal					
Attapulgitite	234 600	191 400	188 400	172 300	165 900
South Africa					
Bentonite	177 187	169 591	163 696	148 742	165 141
Attapulgitite	21 233	18 376	18 280	16 374	18 333

Production of bentonite and fuller's earth

tonnes (metric)

Country	2013	2014	2015	2016	2017
Canada					
Bentonite (d)	3 451	2 083	583	468	* —
Cuba					
Bentonite	335	700	500	389	589
Guatemala					
Bentonite	18 377	38 368	31 582	18 081	20 562
Mexico					
Bentonite	826 887	519 625	294 236	109 176	148 475
Fuller's earth	306 507	245 147	108 215	111 713	110 860
USA					
Bentonite (e)	4 350 000	4 800 000	4 010 000	* 3 600 000	* 3 700 000
Fuller's earth (e)	1 990 000	1 990 000	1 930 000	1 680 000	* 1 700 000
Argentina					
Bentonite	262 895	* 225 000	* 200 000	193 619	* 200 000
Bolivia					
Bentonite	182	886	1 023	525	* 800
Brazil					
Bentonite	403 351	405 169	517 607	* 500 000	* 500 000
Chile					
Bentonite	3 313	1 083	1 434	1 288	1 584
Colombia					
Bentonite	9 056	* 9 000	* 9 000	* 9 000	* 9 000
Peru					
Bentonite	47 743	37 375	21 341	19 410	756
Uruguay					
Bentonite	8 974	7 800	4 250	6 650	6 640
Burma					
Bentonite (f)	* 1 000	—	700	600	600
China					
Bentonite	* 4 500 000	* 5 000 000	* 5 600 000	* 5 600 000	* 5 600 000
India					
Bentonite (f)	* 1 305 000	* 1 371 000	* 1 457 000	* 1 745 000	* 1 700 000
Fuller's earth (f)	* 5 600	* 5 600	* 5 600	* 5 600	* 5 600
Indonesia					
Bentonite	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Iran					
Bentonite (g)	502 155	403 008	418 840	842 421	* 800 000
Iraq					
Bentonite	6 288	* 6 300	* 6 300	* 6 300	* 6 300
Japan					
Bentonite	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Korea (Rep. of)					
Bentonite	80 188	71 850	78 439	63 834	47 306
Fuller's earth	51 309	54 001	87 094	81 688	115 568
Pakistan					
Bentonite (b)	26 077	40 374	23 283	42 038	42 770
Fuller's earth (b)	4 259	6 397	8 005	13 740	18 185
Philippines					
Bentonite	3 329	3 369	3 477	3 361	2 620
Thailand					
Bentonite	150 000	—	—	—	—
Uzbekistan					
Bentonite	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Australia					
Bentonite (b)	* 105 900	* 66 300	* 70 600	* 91 500	* 117 000
Fuller's earth	10 543	10 176	16 216	12 200	11 871
New Zealand					
Bentonite	762	* 750	* 750	* 750	* 750
World total bentonite	17 000 000	18 000 000	20 000 000	18 600 000	18 900 000
World total fuller's earth (a)	3 500 000	3 400 000	3 200 000	2 900 000	2 900 000

See notes on the following page

Production of bentonite and fuller's earth

Note(s)

- (1) Bentonites consist of montmorillonite (one of the smectite group of clay minerals) and occur in two main varieties, calcium bentonite, the most commonly occurring, and sodium bentonite, industrially the more important.
 - (2) Calcium bentonite can be converted to sodium bentonite by a sodium-exchange process.
 - (3) In some countries, such as the United Kingdom, calcium bentonite is known as fuller's earth, a term which is also used to refer to attapulgite, a mineralogically distinct clay mineral but exhibiting similar properties.
 - (4) In addition to the countries listed, Vietnam may produce bentonite and Algeria, France, Iran and Japan may produce fuller's earth.
- (a) Including attapulgite and sepiolite
 - (b) Years ended 30 June of that stated
 - (c) Smectite
 - (d) Sales
 - (e) Sold or used by producers
 - (f) Years ended 31 March following that stated
 - (g) Years ended 20 March following that stated

Production of beryl

tonnes (metric)

Country	2013	2014	2015	2016	2017
Madagascar (a)	* 85	* 135	* 140	* 140	* 140
Mozambique	103	3	312	181	53
Zambia	5	4	7	5	* 33
USA (b)	5 910	6 900	5 100	3 870	* 4 000
China	* 1 100	* 1 200	* 1 200	* 1 200	* 1 200

Note(s)

- (a) Includes ornamental and industrial products
- (b) Includes bertrandite ore, calculated as equivalent to beryl containing 11% beryllium oxide

Mine production of bismuth

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Armenia	4	* 4	* 4	* 4	* 4
Bulgaria	3	—	—	—	—
Russia	* 45	* 45	* 45	* 45	* 45
Canada	35	3	2	2	2
Mexico	824	948	601	539	513
Bolivia	—	11	20	43	* 40
Peru (a)	* —	* —	* —	188	124
China	1 393	1 490	1 587	1 672	* 1 600
Japan (a)	485	582	568	409	489
Vietnam	—	646	1 510	* 1 700	* 1 800
World total	2 800	3 700	4 300	4 600	4 600

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.

(a) Metal production

Production of borates

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia	* 250 000	* 250 000	* 80 000	* 80 000	* 80 000
Turkey	1 748 231	3 143 175	2 180 976	2 070 257	2 494 627
USA (a)	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000
Argentina	426 000	* 600 000	* 480 000	* 520 000	* 519 000
Bolivia	164 803	168 187	166 451	199 924	* 174 000
Chile	580 528	496 533	517 584	558 854	607 076
Peru	224 454	239 725	662 709	33 792	—
China (b)	* 114 000	* 97 000	* 90 000	* 90 000	* 90 000
Iran (c)	2 330	1 383	675	—	* —
Kazakhstan	* 30 000	* 30 000	* 500 000	* 510 000	* 500 000

Note(s)

(a) Sold or used by producers

(b) B₂O₃ equivalent

(c) Years ended 20 March following that stated

Production of bromine

kilograms

Country	2013	2014	2015	2016	2017
Germany	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Ukraine	* 4 100 000	* 3 200 000	* 3 500 000	* 3 500 000	* 3 500 000
USA (a)	* 225 000 000	* 225 000 000	* 225 000 000	* 225 000 000	* 225 000 000
China	* 110 000 000	* 75 500 000	* 60 000 000	* 57 600 000	* 60 000 000
India (b)	2 131 260	2 196 270	2 439 390	2 717 210	* 2 700 000
Israel	172 341 000	173 796 000	115 583 000	161 986 000	180 000 000
Japan	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000
Jordan	* 80 000 000	* 100 000 000	* 100 000 000	* 100 000 000	* 100 000 000
Turkmenistan	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000

Note(s)

(1) In addition to the countries listed, Russia may produce some bromine.

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

(b) Years ended 31 March following that stated

Production of cadmium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bulgaria	411	382	344	362	333
Germany	* 400	* 400	* 400	* 400	* 400
Netherlands	* 610	* 620	* 620	* 620	* 620
Norway	* 310	* 310	* 310	* 335	416
Poland	460	628	383	319	309
Russia	900	* 1 200	* 1 300	* 1 600	* 1 700
Turkey	12	—	—	—	—
Canada (a)	1 313	1 187	1 159	2 305	1 802
Mexico	1 451	1 409	1 283	1 244	1 142
USA (a)	* 600	* 550	* 500	* 400	* 550
Argentina	28	30	39	30	* 30
Brazil	* 200	* 200	* 200	* 200	* 200
Peru	695	769	757	820	797
China	7 496	8 201	8 162	8 222	* 8 200
India (b)	228	69	—	35	47
Japan	1 821	2 039	2 188	1 989	2 142
Kazakhstan	1 335	1 633	1 475	2 682	* 1 500
Korea (Rep. of)	3 904	5 645	* 5 600	4 000	4 000
Korea, Dem. P.R. of	* 200	* 200	* 200	* 200	* 200
World total	22 400	25 500	24 900	25 800	24 400

Note(s)

(1) Data in this table excludes 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 (metric)

Country	2013	2014	2015	2016	2017
Albania	529 592	683 874	639 909	712 694	951 651
Finland (a)	981 752	1 034 750	946 188	1 070 281	972 028
Kosovo	8 950	12 700	—	—	—
Russia	360 000	380 000	503 000	485 000	520 000
Turkey	4 140 655	6 611 394	* 6 600 000	* 6 600 000	* 6 600 000
Madagascar	58 100	53 657	88 560	71 043	64 200
South Africa	13 644 699	14 037 722	15 684 481	14 705 180	16 586 863
Sudan	30 870	60 000	15 143	3 862	* 3 500
Zimbabwe	355 142	408 422	208 328	112 026	* 318 700
Brazil	485 951	716 674	527 000	* 500 000	* 500 000
Colombia	187	128	30	90	* 90
Afghanistan	5 040	6 369	* 6 400	* 6 400	* 6 400
China	* 105 000	* 24 000	* 20 000	* 20 000	* 20 000
India (b)	2 878 320	2 164 163	2 915 584	3 727 780	3 480 928
Iran (c)(d)	344 169	359 332	276 570	342 332	* 340 000
Kazakhstan	5 255 000	5 410 700	5 382 800	5 542 900	6 337 500
Oman	787 700	751 200	442 600	450 800	435 800
Pakistan	* 490 000	* 350 000	* 330 000	* 230 000	* 350 000
Philippines (c)	26 164	47 056	15 502	25 745	20 849
Vietnam	* 24 800	* —	* —	* —	* —
Australia	355 200	—	—	—	—
Papua New Guinea	9 270	16 817	* 20 597	* 16 795	26 642
World total	30 900 000	33 100 000	34 600 000	34 600 000	37 500 000

Note(s)

(a) Concentrates

(b) Years ended 31 March following that stated

(c) Including foundry sand and/or lumpy ore

(d) Years ended 20 March following that stated

Production of coal

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania					
Lignite	—	—	100	2 000	—
Bosnia & Herzegovina					
Brown coal & lignite	11 764 827	11 673 320	12 111 830	13 488 147	14 033 504
Bulgaria					
Anthracite & Bituminous	—	16 500	—	10	—
Lignite	26 459 300	29 127 500	33 773 000	29 294 200	32 136 500
Brown coal	2 301 500	2 228 800	2 165 100	2 140 000	2 451 500
Czech Republic					
Bituminous	8 610 000	8 341 000	7 640 000	6 074 000	4 870 000
Brown coal	40 585 000	38 348 000	38 251 000	38 646 000	39 310 000
Georgia	404 187	299 314	305 870	296 500	272 080
Germany					
Anthracite & Bituminous	8 260 000	8 340 000	6 650 000	4 079 000	3 900 000
Brown coal	182 995 337	178 154 848	178 065 353	171 546 550	171 286 000
Greece					
Lignite	55 500 000	50 411 000	46 308 120	32 674 790	37 802 600
Hungary					
Bituminous	—	11	5 687	748	...
Lignite	8 834 000	8 918 000	9 095 000	9 164 000	(a) 7 954 000
Brown coal	718 700	635 700	162 490	68 061	...
Kosovo					
Lignite	8 219 393	7 204 211	8 240 694	8 800 848	7 574 697
Macedonia					
Lignite	6 633 560	6 469 819	5 927 749	5 130 055	5 056 918
Montenegro					
Lignite	1 692 535	1 655 045	1 752 758	1 349 729	1 419 655
Norway					
Bituminous (c)	2 135 000	1 701 000	1 203 000	962 000	134 000
Poland					
Coking coal	12 115 000	12 288 000	12 985 000	13 204 000	12 482 000
Other bituminous coal	64 941 000	60 983 000	59 701 000	57 580 000	53 485 000
Lignite	66 139 000	64 002 000	63 135 000	60 273 000	63 060 000
Romania					
Anthracite & Bituminous	1 839 667	1 619 347	1 418 596	1 068 507	784 433
Lignite	22 902 291	23 144 539	25 245 677	22 054 017	27 938 951
Russia	347 000 000	356 000 000	372 000 000	385 000 000	410 000 000
Serbia					
Bituminous	160 000	121 000	123 000	105 000	* 100 000
Lignite (d)	39 752 741	29 340 000	37 308 043	(b) 38 744 000	(b)* 39 000 000
Brown coal	340 892	354 000	351 116	...	...
Slovakia					
Lignite	179 000	166 000	97 000	195 000	56 000
Brown coal	2 009 000	1 885 000	1 636 000	1 622 000	1 619 000
Slovenia					
Lignite	3 721 188	3 108 203	3 168 001	3 348 889	3 355 664
Brown coal	50 744	—	—	—	—
Spain					
Anthracite	759 930	1 263 585	1 113 336	736 035	370 445
Bituminous	1 814 328	1 343 617	610 395	365 872	791 303
Sub-bituminous	1 870 569	1 347 849	1 318 625	730 470	1 833 357
Turkey					
Anthracite	2 789 338	1 916 833	2 074 049	1 881 664	1 764 028
Lignite	63 323 865	66 207 010	58 730 170	77 896 048	84 303 492
Ukraine					
Bituminous	64 427 000	45 932 000	29 917 000	31 630 000	34 916 100
United Kingdom					
Bituminous (e)	12 673 000	11 648 000	8 598 000	4 178 000	3 041 000
Botswana	1 495 653	1 711 555	2 065 778	1 873 547	2 215 782
Congo, Democratic Republic					
Bituminous	4 000	5 600	6 900	8 200	* 8 000
Egypt (f)	6 385	9 387	—	—	—
Ethiopia					
Lignite	* 20 000	* 30 000	34 131	14 582	* 14 500
Malawi	67 024	63 673	58 774	43 338	45 230
Mozambique					
Bituminous	* 5 500 000	* 8 500 000	* 8 600 000	5 500 000	11 300 000

Production of coal

tonnes (metric)

Country	2013	2014	2015	2016	2017
Niger	241 792	255 936	221 024	246 631	233 792
Nigeria					
Sub-bituminous	40 360	46 000	47 000	46 000	* 46 000
South Africa					
Anthracite	3 621 283	3 516 573	3 395 505	2 612 215	2 886 078
Bituminous	252 660 850	257 881 954	248 680 484	248 399 455	249 456 924
Swaziland					
Anthracite	257 090	177 931	141 732	158 419	202 277
Tanzania					
Bituminous	84 772	246 128	257 321	276 030	563 053
Zambia					
Bituminous	175 994	158 757	103 439	126 050	70 808
Zimbabwe					
Bituminous	3 114 200	5 782 600	4 336 100	1 635 800	* 905 000
Canada	68 909 000	69 036 000	61 931 000	61 461 000	60 059 000
Mexico					
Bituminous	15 717 587	15 874 413	15 716 400	13 676 593	12 748 000
USA					
Anthracite (g)	1 944 097	1 766 289	1 944 000	1 510 000	1 734 000
Bituminous (g)	427 450 027	435 440 500	366 241 366	293 346 350	320 708 000
Sub-bituminous	393 978 539	397 912 999	380 577 606	299 591 410	318 877 000
Lignite	70 060 970	72 109 393	64 929 000	66 313 390	61 393 000
Argentina					
Bituminous	183 000	57 000	34 000	23 000	* 20 000
Brazil					
Bituminous & lignite (h)	8 009 895	7 696 154	6 353 656	6 800 000	* 6 800 000
Chile					
Bituminous	144 313	194 747	157 017	114 887	70 281
Lignite	2 758 131	3 973 438	3 004 709	2 410 284	2 425 109
Colombia					
Anthracite (i)	3 200	5 622	7 133	29 721	25 051
Coking coal	4 892 932	5 104 123	4 823 869	4 411 104	5 981 970
Other bituminous coal	81 040 114	83 677 949	81 723 769	86 582 319	84 542 025
Peru					
Anthracite & Bituminous	211 885	229 213	251 788	266 208	301 050
Venezuela					
Bituminous	1 229 309	800 640	801 697	900 000	500 000
Afghanistan (j)	1 347 000	1 517 400	1 364 800	1 698 200	2 191 400
Bangladesh (f)	854 804	942 796	675 776	1 021 638	1 160 658
Bhutan	77 744	121 891	85 164	117 783	161 527
Burma (k)	380 272	386 732	419 862	549 837	736 948
China	3 974 322 000	3 874 000 000	3 747 000 000	3 411 000 000	3 445 456 000
India					
Bituminous (k)	565 765 000	609 179 000	639 230 000	657 868 000	678 533 000
Lignite (k)	44 271 000	48 270 000	43 842 000	45 230 000	47 668 000
Indonesia					
Anthracite & Bituminous	474 371 369	458 096 707	461 566 080	456 197 775	461 248 184
Iran					
Bituminous (j)	1 183 000	1 375 000	1 339 000	1 340 000	1 496 000
Kazakhstan					
Bituminous	113 349 000	107 669 100	101 792 500	97 308 600	105 943 900
Lignite	6 511 000	6 893 500	5 525 700	5 750 400	5 173 600
Korea (Rep. of)					
Anthracite	1 814 000	1 748 000	1 764 000	1 727 000	1 485 000
Korea, Dem. P.R. of	* 29 942 000	* 30 831 000	* 27 500 000	* 31 060 000	* 31 000 000
Kyrgyzstan	1 407 900	1 777 400	1 869 900	* 1 869 900	* 1 870 000
Laos					
Anthracite	104 260	105 564	106 028	138 809	133 284
Lignite	403 925	26 320	4 464 068	13 097 121	13 439 492
Malaysia	2 907 963	2 667 764	2 559 444	2 414 765	2 988 212
Mongolia	33 341 000	24 449 000	23 979 000	35 096 500	49 480 200
Nepal					
Sub-bituminous (l)	14 084	8 151	7 399	2 900	7 270
Pakistan (m)(f)	2 813 079	3 340 192	3 407 659	3 749 312	3 953 992

Production of coal

tonnes (metric)

Country	2013	2014	2015	2016	2017
Philippines					
Bituminous	7 100 033	7 601 260	7 377 639	11 211 254	11 932 328
Tajikistan	515 600	878 100	1 041 900	1 361 400	1 760 100
Thailand					
Lignite	18 110 763	17 991 362	15 150 549	17 069 712	15 219 172
Uzbekistan					
Bituminous	199 000	408 000	367 000	360 000	* 360 000
Lignite	3 891 000	3 989 000	3 590 000	3 989 000	* 3 989 000
Vietnam					
Anthracite	41 064 000	41 086 000	41 664 000	38 527 000	38 237 000
Australia					
Bituminous (n)	411 313 000	441 519 000	441 086 000	443 449 000	435 889 000
Brown coal (f)	59 854 000	58 001 000	60 957 000	59 757 000	56 095 000
New Zealand					
Bituminous	2 279 300	1 948 000	1 399 800	1 205 400	1 212 100
Sub-bituminous	2 055 700	1 727 700	1 665 700	1 448 700	1 387 000
Lignite	290 400	316 700	324 100	313 000	319 500
World total	8 220 000 000	8 157 000 000	7 931 000 000	7 469 000 000	7 632 000 000

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.
 - (2) Data for coking coal is not always distinguished from other types of bituminous coal. The term "bituminous" in this table may include coking coal where the latter is not separately shown.
 - (3) Where no sub-commodity is shown the figures relate to all ranks of coal.
- (a) Coal; all forms
 - (b) Including brown coal
 - (c) Spitzbergen: not including production from mines controlled by Russia
 - (d) Excluding production in Kosovo
 - (e) Including anthracite
 - (f) Years ended 30 June of that stated
 - (g) Includes a small amount of refuse recovery
 - (h) Including beneficiated and directly shipped material
 - (i) May also include other types of coal
 - (j) Years ended 20 March following that stated
 - (k) Years ended 31 March following that stated
 - (l) Years ended 15 July of that shown
 - (m) Including lignite
 - (n) Including sub-bituminous

Mine production of cobalt

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Finland	2 061	2 104	2 119	2 260	* 2 300
Poland (a)	1 660	1 640	1 730	1 670	1 580
Russia (b)	2 368	2 302	2 040	3 092	2 077
Botswana	248	196	316	248	—
Congo, Democratic Republic	76 593	75 560	83 529	68 822	82 461
Madagascar	2 340	3 221	3 920	3 370	2 840
Morocco (b)	1 353	1 391	1 722	2 081	1 924
South Africa (b)	1 294	1 332	1 362	1 101	1 062
Uganda (b)	181	—	—	—	—
Zambia (b)	5 658	4 562	2 979	5 276	3 240
Zimbabwe	319	358	355	409	—
Canada	7 168	6 907	7 489	7 148	6 503
Cuba	3 319	3 210	3 734	3 694	3 601
USA	—	120	760	690	* 650
Brazil	3 500	3 838	2 771	853	800
China	8 580	9 619	10 093	9 293	* 9 000
Indonesia	* 4 700	* 329	* 350	* 350	* 300
Philippines	2 126	4 094	4 140	2 554	2 681
Vietnam	—	223	277	134	—
Australia (c)	6 837	6 252	6 777	6 012	5 198
New Caledonia	7 414	8 239	11 444	17 844	9 397
Papua New Guinea	1 013	2 134	2 505	2 191	3 308
World total	139 000	138 000	150 000	139 000	139 000

Note(s)

- (1) There is frequently a considerable disparity between the cobalt content of ore raised and cobalt actually recovered.
- (2) In many countries it is not clear whether cobalt that is known to be present in the extracted ore is subsequently recovered, nor whether the reported figure is contained or recovered cobalt.
- (3) Consequently, the figures in this table may relate either to cobalt recovered or to cobalt contained in ore raised.

- (a) By-product of copper mining but not currently recovered
- (b) Metal and/or refined
- (c) Years ended 30 June of that stated

Production of refined cobalt

tonnes (metric)

Country	2013	2014	2015	2016	2017
Belgium (a)	5 415	5 850	6 306	6 329	6 987
Finland	10 798	12 551	9 615	12 393	12 222
France	308	219	133	119	277
Norway	3 348	3 582	3 117	3 541	3 473
Russia	2 368	2 302	2 040	3 092	2 079
Congo, Democratic Republic (b)	2 777	2 859	3 141	* 1 100	* 200
Madagascar	2 083	2 915	3 464	3 273	3 053
Morocco	1 353	1 391	1 722	2 081	1 924
South Africa (c)	1 294	1 332	1 362	1 101	1 062
Uganda	291	—	—	—	—
Zambia	5 658	4 317	2 997	4 725	2 520
Canada (d)	5 602	5 491	6 126	6 302	6 355
Brazil	1 871	1 350	1 300	400	46
China (a)	36 062	39 292	48 719	45 046	69 600
India	295	* 100	* 150	* 100	* 100
Japan	2 747	3 654	4 259	4 305	4 159
Australia	4 981	5 419	5 150	3 200	3 000
New Caledonia (e)	503	435	1 568	2 531	2 302

Note(s)

(1) Refined cobalt can be in the form of metal, oxides, carbonates, sulphates and many other compounds. Efforts are made to avoid double-counting but it is not always possible to be certain.

(a) Some refined cobalt production in China is recorded in Belgium

(b) Excludes white alloy and matte which are believed to be further processed in Belgium and elsewhere

(c) Includes metal and cobalt contained in sulphate

(d) Including oxides

(e) Carbonate

Mine production of copper

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Albania	5 087	3 503	2 106	218	—
Armenia	48 891	50 952	83 634	102 962	113 560
Azerbaijan	327	784	969	1 941	1 991
Bulgaria (a)	115 149	108 323	111 746	109 702	109 078
Cyprus	3 631	3 088	2 121	1 754	1 293
Finland	38 763	42 790	41 085	47 488	53 144
Georgia	* 10 000	* 6 800	* 13 000	* 14 000	* 14 000
Macedonia	11 700	9 600	11 400	10 200	9 000
Poland	428 879	421 285	426 196	424 000	420 000
Portugal	77 236	75 433	83 081	74 453	63 812
Romania	6 800	7 200	3 600	7 300	7 400
Russia	655 900	691 500	711 400	702 300	705 400
Serbia	36 200	33 739	29 827	41 300	44 800
Slovakia	40	46	58	* 46	* 47
Spain	104 600	103 900	112 690	167 736	198 353
Sweden	82 904	79 345	75 125	78 992	104 450
Turkey	120 500	122 000	108 000	* 100 000	107 200
Botswana	48 500	38 000	9 162	12 415	1 239
Congo, Democratic Republic	922 016	1 030 129	1 039 007	1 023 687	1 094 638
Eritrea	21 800	88 900	61 600	25 300	7 900
Mauritania	37 970	33 079	45 001	32 820	28 791
Morocco	11 575	16 579	19 903	23 586	24 603
Namibia	4 896	5 249	14 010	16 653	15 466
South Africa	80 821	78 697	77 360	65 257	65 503
Tanzania	5 740	6 363	6 795	7 109	1 331
Zambia	759 800	708 259	710 860	762 516	797 266
Zimbabwe	8 285	8 261	8 218	9 101	* 9 000
Canada	652 595	672 729	714 647	693 059	594 994
Dominican Republic	10 379	9 262	7 324	9 725	9 618
Mexico	480 124	515 025	594 451	766 129	742 246
USA	1 278 200	1 384 700	1 416 300	1 461 900	1 290 000
Argentina	109 600	102 600	61 800	81 900	33 300
Bolivia	7 549	10 746	9 479	8 718	7 100
Brazil	270 979	301 197	359 463	337 600	384 400
Chile	5 776 000	5 761 100	5 772 100	5 552 600	5 503 500
Colombia	659	4 118	5 463	8 493	9 355
Ecuador	* 4 700	* 3 000	* 1 800	* 1 000	* 8 200
Peru	1 375 641	1 377 642	1 700 817	2 353 859	2 445 585
Burma	* 33 000	* 42 000	* 71 000	* 95 000	* 101 000
China	1 715 150	1 776 794	1 712 065	1 900 188	1 706 400
India (b)	32 194	24 889	32 493	31 999	33 678
Indonesia	509 300	378 500	578 600	728 000	622 200
Iran	222 900	216 800	246 400	289 300	295 621
Kazakhstan	454 400	471 700	473 600	474 800	545 100
Korea, Dem. P.R. of	* 15 000	* 15 000	* 16 000	* 23 000	* 10 000
Kyrgyzstan	—	700	3 100	8 200	7 500
Laos	154 915	159 696	167 702	177 939	153 304
Mongolia	189 000	253 000	318 000	516 000	475 000
Oman	10 906	13 699	7 828	—	—
Pakistan	* 20 700	* 18 000	* 16 000	* 14 100	* 15 000
Philippines	90 861	91 824	83 835	83 649	68 156
Saudi Arabia	5 095	10 848	14 032	27 216	49 754
Tajikistan	600	100	1 400	2 100	6 100
Uzbekistan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	12 958	20 296	22 524	21 240	19 690
Australia	1 000 999	978 534	995 881	947 555	859 811
Papua New Guinea	105 523	75 901	45 185	80 022	105 419
World total	18 300 000	18 600 000	19 400 000	20 700 000	20 200 000

Note(s)

(a) Metal content of ore

(b) Years ended 31 March following that stated

Smelter production of copper

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia	10 771	9 814	11 601	12 920	12 051
Bulgaria	294 000	318 700	292 200	245 000	322 700
Finland	135 840	146 542	141 474	145 189	146 749
Germany	289 900	349 700	338 300	342 800	332 600
Norway	37 461	35 813	35 477	28 123	22 695
Poland	458 789	503 111	514 774	446 902	547 549
Russia	650 000	664 000	661 000	665 000	730 000
Serbia	33 300	30 700	43 000	38 500	* 38 500
Spain	212 000	285 400	286 300	292 300	272 000
Sweden	137 200	145 300	137 400	131 500	150 000
Turkey	* 35 800	* 40 600	* 45 400	* 46 200	* 46 000
Namibia	24 354	35 042	44 504	40 181	40 476
South Africa	69 900	58 500	60 900	68 700	70 000
Zambia (a)	520 300	525 800	648 800	698 100	787 900
Zimbabwe	* 5 000	* 5 000	* —	* —	* —
Canada	254 509	288 699	281 416	304 349	289 400
Mexico	220 800	258 000	256 300	267 800	270 000
USA	516 500	522 000	527 000	563 000	470 000
Brazil	202 900	182 800	157 800	188 500	118 800
Chile	1 358 300	1 356 200	1 496 200	1 490 800	1 404 700
Peru	412 966	314 615	327 909	309 469	316 882
China	4 228 919	5 167 900	5 504 817	6 115 035	5 965 700
India	617 000	766 000	792 600	769 800	813 100
Indonesia	217 700	236 900	199 700	255 700	245 800
Iran	154 600	156 500	153 500	153 400	114 200
Japan	1 261 348	1 323 500	1 243 813	1 289 885	1 192 179
Kazakhstan	325 600	253 000	283 000	294 100	296 300
Korea (Rep. of)	478 800	500 000	511 200	510 000	501 300
Korea, Dem. P.R. of	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Oman	4 200	2 300	1 300	3 481	264
Pakistan (b)	15 285	* 16 000	* 15 000	* 14 000	* 15 000
Philippines	181 900	153 200	189 200	215 000	240 000
Uzbekistan	* 90 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	* 9 700	* 10 000	11 000	* 11 000	* 24 000
Australia	445 520	468 468	432 843	445 202	359 832
World total	13 900 000	15 200 000	15 800 000	16 500 000	16 300 000

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 30 June of that stated

Production of refined copper

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	82 842	83 200	102 900	103 215	109 800
Belgium	389 400	387 300	378 600	366 700	398 900
Bulgaria	230 100	234 000	230 000	216 000	228 500
Cyprus	3 631	3 088	2 121	1 754	1 293
Finland	135 840	146 542	141 474	145 189	146 749
Germany	677 600	674 000	678 100	671 400	694 400
Italy	5 000	7 900	7 300	6 600	8 700
Macedonia	1 900	1 700	2 268	1 396	958
Norway	37 461	35 813	35 477	28 123	22 695
Poland	565 155	576 876	574 310	535 597	522 022
Russia	875 500	890 800	875 700	867 300	948 600
Serbia	35 800	33 175	44 000	61 309	67 179
Spain	351 000	418 500	419 900	429 400	415 200
Sweden	206 193	217 337	206 059	207 220	219 462
Turkey	* 74 000	* 71 300	84 000	52 400	95 000
Ukraine	16 500	15 200	18 500	27 100	30 600
Congo, Democratic Republic	631 800	786 900	792 500	736 700	717 500
Egypt	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Namibia	—	—	10 659	16 391	15 466
South Africa	75 400	57 700	64 400	53 900	66 200
Zambia	567 800	499 400	495 600	426 400	466 200
Zimbabwe	* 5 000	* 5 000	* —	* —	* —
Canada	321 511	325 352	330 902	314 183	327 113
Mexico	355 100	397 700	434 100	462 300	446 000
USA	1 040 000	1 090 000	1 140 000	1 220 000	1 080 000
Argentina	* 16 000	* 14 000	* 14 000	* 14 000	* 14 000
Bolivia	1 271	1 810	1 789	2 199	2 200
Brazil	236 050	213 085	241 469	225 558	143 000
Chile	2 754 900	2 729 400	2 688 400	2 612 500	2 429 500
Peru	361 450	347 398	352 960	331 324	335 329
Burma	* 25 000	* 33 200	65 041	92 560	* 101 000
China	6 667 096	7 649 050	7 968 946	8 436 300	8 889 000
India (a)	644 193	762 176	790 372	787 657	830 524
Indonesia	214 300	233 216	199 626	253 460	270 960
Iran (b)	188 000	193 000	191 000	193 000	161 000
Japan	1 468 123	1 554 224	1 483 131	1 553 133	1 488 080
Kazakhstan	350 837	294 808	394 641	408 435	425 612
Korea (Rep. of)	604 000	604 000	644 603	644 788	663 327
Korea, Dem. P.R. of	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Laos	90 030	88 541	89 253	78 714	62 941
Mongolia	2 344	6 992	14 990	15 010	14 644
Oman (c)	4 200	2 300	1 300	3 481	264
Philippines	153 000	* 130 000	* 153 000	* 185 100	* 205 000
Thailand	203	229	187	—	—
Uzbekistan	* 90 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	* 9 700	* 10 000	11 000	* 11 000	* 24 000
Australia	480 775	511 252	474 963	474 954	386 249
World total	21 100 000	22 500 000	23 000 000	23 400 000	23 600 000

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 and Colombia produce refined copper.

(a) Years ended 31 March following that stated

(b) Years ended 20 March following that stated

(c) Sales

Production of diamond

Carats

Country	2013	2014	2015	2016	2017
Russia	37 884 140	38 303 500	41 912 390	40 322 030	42 614 780
Angola	8 601 696	8 791 340	9 018 942	9 021 767	9 438 802
Botswana	22 597 000	24 658 000	20 824 000	20 954 000	22 900 000
Cameroon (a)	* 5 000	* 6 000	* 4 500	* 3 000	* 3 500
Central African Republic	(b) ...	(b) ...	(b) ...	10 654	47 637
Congo	56 495	53 163	40 057	12 107	46 758
Congo, Democratic Republic	16 653 000	14 689 000	14 284 000	12 377 000	15 404 000
Ghana	159 074	241 235	174 364	143 005	87 065
Guinea	202 365	164 059	166 880	112 796	181 450
Ivory Coast	—	1 074	14 925	20 235	7 361
Lesotho	414 013	346 017	304 232	342 014	1 126 409
Liberia	47 819	74 882	65 996	60 367	59 951
Namibia	1 776 260	1 897 872	1 774 509	1 584 168	1 815 709
Sierra Leone	604 740	594 422	500 050	549 502	288 979
South Africa	8 168 113	8 060 373	8 232 627	8 450 758	9 685 235
Tanzania	179 633	252 875	216 491	237 685	304 456
Togo	24	23	46	—	2
Zimbabwe	10 411 818	4 771 637	3 490 881	2 102 873	2 507 604
Canada	10 561 600	12 082 000	11 677 472	11 103 500	22 724 000
Brazil	49 166	56 923	31 826	183 500	254 896
Guyana	63 961	99 950	118 451	139 890	52 161
China	* 1 050	* —	* —	* 127	* 230
India (c)	37 517	36 107	36 044	36 491	39 699
Australia	11 481 749	9 288 118	13 560 795	13 958 000	17 135 000
World total	130 000 000	124 500 000	126 400 000	121 700 000	146 700 000

Note(s)

- (1) This table does not show production of synthetic diamond.
- (2) So far as possible the amounts shown include estimates for artisanal and/or illegal production.
- (3) Production of diamond from Ivory Coast was under United Nations sanctions from 2004 to 2013. It is believed illegal production continued during this period but it is not possible to estimate the quantity involved.

- (a) Including artisanal production
- (b) Under temporary suspension by the Kimberley Process and not trading in rough diamonds; however it is unclear whether production was actually zero in these years
- (c) Years ended 31 March following that stated

Production of diatomite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia	19 376	20 439	18 915	25 486	* 25 000
Czech Republic	49 000	34 000	15 000	26 000	34 000
Denmark					
Moler (a)	128 125	118 750	127 500	114 375	110 000
France	* 85 000	* 90 000	* 90 000	* 90 000	* 90 000
Germany	51 435	54 277	52 784	54 764	56 721
Hungary	456	550	1 092	738	* 750
Poland	600	590	600	500	500
Russia	* 70 000	72 000	66 200	47 300	* 47 000
Spain (b)	53 713	59 619	47 706	48 231	70 550
Turkey	84 751	61 884	86 656	61 722	169 584
Algeria	2 124	2 415	2 400	2 500	* 2 500
Ethiopia (c)	* 4 800	* 5 000	* 5 000	* 5 000	* 5 000
Kenya	1 054	1 195	1 090	1 238	1 278
Mozambique	675	680	* 690	* 600	* 600
Costa Rica	8 813	5 024	* 5 000	4 218	* 4 200
Mexico	87 463	87 849	89 810	96 686	96 374
USA (d)	782 000	901 000	832 000	686 000	* 700 000
Argentina	209 466	* 200 000	* 200 000	* 200 000	* 200 000
Brazil	1 947	5 080	5 500	* 5 500	* 5 500
Chile	27 092	31 000	26 186	26 937	27 557
Peru	124 917	151 398	120 672	107 265	96 705
China	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Iran (e)	4 167	—	—	15 000	* 15 000
Japan	* 90 000	* 90 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	34 000	65 893	15 310	20 564	133 741
Australia (f)	* 21 000	* 13 000	* 16 000	* 12 000	* 12 000
New Zealand	4	43 624	* 44 000	* 44 000	* 44 000
World total	2 362 000	2 535 000	2 390 000	2 217 000	2 469 000

Note(s)

(1) In addition to the countries listed, Georgia, Saudi Arabia and Vietnam may produce diatomite.

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

(b) Including the mineral Tripoli

(c) Years ended 7 July of that stated

(d) Sold or used by producers

(e) Years ended 20 March following that stated

(f) Years ended 30 June of that stated

Production of feldspar

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	* 35 000	* 35 000	* 35 000	* 35 000	* 35 000
Czech Republic	411 000	412 000	433 000	454 000	368 000
Finland	47 636	46 233	38 026	18 549	14 926
France	* 550 000	* 550 000	* 550 000	* 550 000	* 550 000
Germany	* 350 000	320 000	253 411	284 569	276 747
Italy	* 4 700 000	4 700 000	4 700 000	4 000 000	* 3 500 000
Macedonia	15 168	18 076	20 289	19 919	21 237
Norway	—	154	76	70 015	87 894
Poland	483 000	519 896	537 520	510 900	524 500
Portugal (a)	138 715	136 440	178 622	249 996	228 491
Romania	7 060	7 570	13 244	4 501	* 4 500
Russia	* 200 000	* 200 000	232 995	278 142	* 278 000
Serbia	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Slovakia	5 000	6 000	4 000	8 400	15 800
Spain	592 908	533 328	558 273	634 519	595 666
Sweden	30 000	27 000	29 000	22 000	22 000
Turkey	7 090 677	7 609 692	10 422 766	11 033 578	10 273 573
Ukraine	133 933	(b) 94 506	(b) 44 460	(b) 33 627	(b)* 30 000
Algeria	258 700	230 372	154 400	168 400	* 170 000
Burkina Faso	4 800	7 950	377	—	—
Egypt	* 200 000	* 200 000	* 300 000	* 400 000	* 400 000
Ethiopia (c)	* 550	596	* 600	* 600	* 600
Morocco	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Nigeria	* 12 880	* 52 080	* 26 400	34 144	27 660
South Africa	191 443	102 541	126 542	131 023	116 400
Sudan	31 700	50 000	28 238	92 172	* 90 000
Cuba	3 200	3 600	3 300	3 900	3 600
Guatemala	19 611	10 410	10 340	30 428	* 29 000
Mexico	164 484	150 726	159 372	127 213	241 480
USA	550 000	530 000	520 000	470 000	* 530 000
Argentina	226 435	* 250 000	* 250 000	50 333	* 50 000
Brazil	294 357	417 771	456 000	* 500 000	* 500 000
Chile	3 874	4 233	6 577	6 352	4 421
Colombia	87 867	85 510	3 848	36 963	99 076
Ecuador	210 142	183 259	292 565	148 506	92 871
Peru	22 695	18 019	16 979	16 630	14 930
Uruguay	4	300	200	460	370
Venezuela	91 054	93 934	75 527	* 75 000	* 75 000
China	* 3 500 000	* 3 670 000	* 3 500 000	* 3 500 000	* 3 500 000
India (d)	1 512 982	1 343 366	* 1 300 000	* 1 300 000	* 1 300 000
Indonesia	* 18 000	* 18 000	* 18 000	* 18 000	* 18 000
Iran (e)	1 044 791	1 055 368	736 149	784 412	* 790 000
Japan (f)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	343 241	528 958	601 030	654 398	717 177
Malaysia	314 399	378 446	442 980	441 857	412 004
Pakistan (g)	38 218	92 672	141 582	316 289	273 468
Philippines	30 388	34 232	38 067	46 630	* 46 600
Saudi Arabia	160 000	168 000	176 000	188 000	197 000
Sri Lanka	96 043	* 96 000	* 96 000	* 96 000	* 96 000
Taiwan	15	5	1	0	—
Thailand	1 072 656	1 413 428	1 329 816	1 232 532	1 304 675
Uzbekistan	* 4 300	* 4 300	* 4 300	* 4 300	* 4 300
Vietnam	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Australia (g)	* 73 000	* 55 000	* 51 000	* 42 000	* 11 000
World total	25 637 000	26 730 000	29 182 000	29 389 000	28 207 000

See notes on the following page

Production of feldspar

Note(s)

- (a) Includes feldspathic sand
- (b) Figures do not include production from Crimea or Sevastopol
- (c) Years ended 6 July of that stated
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Including weathered granite feldspar
- (g) Years ended 30 June of that stated

Production of fluorspar

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bulgaria	82 500	130 800	146 500	4 400	—
Germany	48 744	58 100	49 801	52 552	45 375
Russia	56 200	8 200	2 000	3 000	6 000
Spain	128 512	135 293	157 486	162 989	154 931
Turkey	3 874	4 271	6 238	10 339	20 150
United Kingdom	* 16 000	* 25 000	* 17 000	* 12 000	* 11 000
Egypt (a)	850	—	25 902	26 000	* 26 000
Kenya	71 987	97 156	70 096	42 656	6 942
Morocco	81 200	79 840	80 890	73 920	* 74 000
Namibia	65 259	28 955	—	1 495	—
South Africa	157 776	* 180 000	* 135 000	* 165 000	* 200 000
Mexico	1 210 477	1 109 721	624 574	655 555	772 100
Argentina	37 967	* 30 000	* 30 000	* 30 000	* 30 000
Brazil (b)	27 712	23 849	27 000	* 27 000	* 27 000
Colombia	3	10	47	75	57
Afghanistan	—	20 000	* 20 000	* 40 000	60 000
China	* 4 800 000	4 310 000	* 3 820 000	* 3 800 000	* 3 800 000
India (c)	2 487	2 946	2 333	1 175	1 313
Iran (d)	56 298	54 370	57 232	122 427	* 120 000
Kazakhstan	* 110 000	* 100 000	* 100 000	* 100 000	* 100 000
Kyrgyzstan	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Mongolia	161 700	303 000	183 500	167 700	108 900
Pakistan (a)	13 344	7 500	5 962	9 494	2 263
Thailand	2 432	4 590	15 095	31 948	8 500
Vietnam	* 4 000	90 940	193 164	* 217 900	* 232 600
World total	7 100 000	6 800 000	5 800 000	5 800 000	5 800 000

Note(s)

- (1) In addition, the USA produced the following amounts of fluorspar equivalent in fluorosilicic acid derived from processing phosphate rock ('000 t): 2013: 121; 2014: 114; 2015: 105; 2016: 72; 2017: 72.

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

Production of primary gallium

Accurate data for gallium is difficult to obtain because it is produced only as a by-product of bauxite or zinc processing using proprietary techniques and the majority of producers do not report production figures. The following table provides the currently available information but this is incomplete. The United States Geological Survey estimates total World total primary production as: 2013, 390 tonnes; 2014, 440 tonnes; 2015, 435 tonnes; 2016, 274 tonnes and 2017, 315 tonnes.

Lower grade production is often subsequently refined to higher grade material which complicates the collection of production data as double counting is a significant risk. High-purity gallium is believed to be produced in China, Japan, Slovakia, United Kingdom and U.S.A.. There is also believed to be significant production of refined gallium from scrap recycling, particularly in Canada, China, Germany, Japan, United Kingdom and USA.

	tonnes (metric)				
Country	2013	2014	2015	2016	2017
Germany	38	16	11	23	—
Russia	* 13	* 13	* 13	* 13	* 13
China	* 300	* 300	284	171	285
Japan	8	8	6	3	3

Production of germanium metal

	tonnes (metric)				
Country	2013	2014	2015	2016	2017
Finland	17	17	13	0	—
Russia	* 5	* 5	* 5	* 6	* 6
USA (a)	* 3	* 3	* 3	* 2	* 3
China	* 110	* 110	94	82	79

Note(s)

(1) Germanium is also believed to be recovered from imported or domestic material in Belgium, Canada and Ukraine.

(a) Including production of secondary metal

Mine production of gold

In addition to 'industrial scale' gold mines around the World total, a significant quantity of gold is mined by small scale or artisanal producers, both on a legal and illegal basis. In some countries the quantities involved with artisanal mining can be relatively large. The compilation of reliable data for the quantity produced by artisanal mining in each country is difficult, particularly where the actions are illegal. Artisanal mining can be seasonal, temporary and highly variable, on both geographical and temporal scales.

Where possible, the table attempts to include estimates for artisanal mining of gold in order that the calculated World totals are as complete as possible. However, the difficulties noted above mean that these totals cannot be completely accurate and they are consequently rounded to a greater degree than the individual country figures may suggest is appropriate. This is an attempt to convey the level of uncertainty associated with these total figures.

For clarity, additional comments on specific countries are shown below (there may be other countries where artisanal mining also occurs; these comments are not intended to be exhaustive):-

Benin – artisanal gold mining is known to take place but no reliable estimates are available. It has been estimated to be in the region of 20–30 kg per year, for years prior to this volume, but it could be larger in some years.

Burkina Faso – official figures include 150 kg for artisanal mining in 2017; 235 kg in 2016; 302 kg in 2015; 208 kg in 2014; and 476 kg in 2013. It is believed the actual artisanal production is likely to be higher.

Burma – the figures shown in the table are reported and are believed to include artisanal mining.

Cameroon – all gold mining is currently small scale or artisanal. Available estimates vary widely, from as low as 500 kg per year to something in the order of 1500 kg or 2000 kg per year.

Central African Republic – artisanal gold mining is known to take place but no reliable estimates are available. It has been estimated to be in the region of 50-80 kg per year, for years prior to this volume.

Columbia – Artisanal mining, both legal and illegal, is quite extensive within Columbia. The government is taking steps to improve the licencing of legal artisanal mining and also to crack down on illegal activities. However, it is not clear whether the reported figures for gold production include artisanally mined gold. It is also possible that illegally mined material is brought into or out of the country without being recorded.

Congo – all gold mining is believed to be small scale or artisanal and a nominal estimate of 150 kg per year is shown in the table.

Costa Rica – all gold mining is currently artisanal. The figures in the table are reported by an official source.

Democratic Republic of Congo – artisanal mining is quite extensive, the figures shown include estimates for artisanal mining ranging from 4000 to 11000 kg per year.

Equatorial Guinea – artisanal gold mining is very likely to be taking place but no accurate information is available. A nominal estimate of 200 kg per year is included in the table but it could be more or less than this.

Ethiopia – small scale and artisanal gold mining is significant, but not all of it is illegal because some artisanal miners operate under a formal license. A proportion of the gold mined from artisanal sources is sold to the national bank but illicit sales to non-licensed buyers remains widespread. National bank purchases of gold from artisanal sources in fiscal year 2013/14 amounted to 7036 kg and in 2014/15 to 5473 kg. Actual artisanal production is likely to be higher.

France (French Guiana) – the table includes an estimate of 5000 kg per year for artisanal mining which is not included in the official reported figures.

Gabon – attempts to regulate artisanal gold mining are being undertaken with gold from artisanal miners being purchased by a government agency from 2013. The figures in the table include 43 kg for artisanal mining in 2013; 66 kg in 2014; 55 kg in 2015; 50 kg in 2016 and 40 kg in 2017.

Ghana – gold produced by artisanal mining is purchased by a state-owned marketing organisation but official figures of the quantity vary depending on the source. They are also reported in publications produced by under the Extractive Industry Transparency Initiative (EITI), although the most recent EITI report was for 2015 at the time of compilation. In the table below artisanal production for 2012 to 2015 is taken from the EITI reports and estimated for 2016 and 2017. The EITI reported quantities are 49,095 kg in 2013; 47,044 kg in 2014 and 32,073 kg in 2015.

Guinea – the figures in the table include reported figures for artisanal mining in 2013 to 2015, with estimates for 2016 and 2017. However, actual artisanal production may be higher than those reported because it is difficult to distinguish the material derived from artisanal mining within Guinea from that moved across the border from Mali or other countries. Some reports estimate it could be as high as 1500 to 3000 kg per year.

Ivory Coast – efforts are being made within Ivory Coast to rationalise artisanal mining as part of the EITI process, although the 2015 EITI report does not give any indication of the likely scale. Reports suggest that it varies considerably from year to year and may range between 1000 kg and 10 000 kg per year. A conservative estimate of 2000 kg has been added to reported industrial scale mine output in 2013 and 2014, 3000 kg has been added for 2015, 2016 and 2017.

Kenya – The reported figures shown are believed to include artisanal mining but in reality it could be much higher.

Liberia – official figures are believed to include both the industrial mine and artisanal production.

Madagascar – estimates of artisanal mining are in the order of 100 kg to 3000 kg per year.

Mali – the figures include an estimate of 5000 kg per year for artisanal mining, but it is likely the real figure varies from year to year.

South Sudan – artisanal mining is known to occur but reliable estimates are difficult to obtain. It has been estimated by an official source as approximately 200 kg per year.

Tanzania – Artisanal mining is known to occur and in 2015 was reported as approximately 30 kg per year.

Togo – the reported figures are exports of gold which is transiting through the country. It is believed the majority of this originates in Burkina Faso from artisanal mining but it is not recorded within the production figures for that country. Consequently it is recorded here for completeness. Some artisanal mining is also believed to occur in Togo.

Venezuela – artisanal mining is believed to be quite extensive and increasing. Estimates of quantities vary widely from less than 1000 kg up to 8000 kg per year. The Central Bank aims to purchase all the artisanally mined gold and the reported figures are shown for 2013 to 2015. However, actual output in those years may have been larger.

Vietnam – artisanal mining is believed to be taking place at the site of a former industrial mine. No information is available to indicate likely scale.

Mine production of gold

kilograms

Country	2013	2014	2015	2016	2017
Armenia	2 324	2 814	3 640	* 3 730	* 4 270
Azerbaijan	1 621	1 875	2 240	2 034	6 391
Bulgaria	7 385	7 899	7 914	7 918	8 682
Cyprus	—	—	—	—	48
Finland	8 660	8 085	8 342	8 865	9 102
Georgia	* 4 300	* 2 300	* 3 100	* 3 600	* 3 000
Greece	822	552	510	86	575
Greenland	25	—	—	—	—
Macedonia	490	480	494	664	972
Poland	431	226	431	402	572
Romania	* 500	* 500	* 500	* 500	961
Russia	214 700	249 100	256 500	253 200	270 300
Serbia (a)	1 154	1 310	1 186	850	1 087
Slovakia	533	582	603	492	500
Spain	2 052	1 958	2 128	1 291	1 605
Sweden	6 530	6 849	6 028	6 463	7 858
Turkey	33 980	31 260	27 800	24 030	23 090
United Kingdom	42	—	—	(b) 6	—
Algeria	140	85	106	102	* 100
Benin	* 30	* 30	* 30	* 30	* 30
Botswana	1 206	958	757	833	913
Burkina Faso	32 994	36 320	36 540	38 520	46 436
Burundi	2 823	650	549	396	954
Cameroon	* 1 000	* 1 000	795	542	689
Central African Republic	* 55	* 60	* 60	* 60	* 60
Congo	* 150	* 150	* 150	* 150	* 150
Congo, Democratic Republic	* 17 000	* 31 000	* 37 000	* 35 000	* 35 000
Egypt	11 102	11 734	13 657	17 139	16 941
Equatorial Guinea	* 200	* 200	* 200	* 200	* 200
Eritrea	2 862	840	753	* 1 400	* 1 000
Ethiopia (c)	13 050	10 340	9 370	8 297	9 089
Gabon	1 201	* 1 078	* 1 356	* 1 070	* 600
Ghana	137 820	137 861	112 402	* 129 000	* 137 000
Guinea	18 322	23 465	21 464	30 280	46 706
Ivory Coast	* 14 700	* 19 000	* 23 200	* 23 600	* 23 700
Kenya	2 100	200	300	200	503
Liberia	587	620	828	4 704	6 356
Madagascar	* 100	* 100	* 300	586	2 833
Mali	* 46 000	* 45 400	* 46 500	* 47 200	* 50 700
Mauritania	9 518	9 625	8 804	7 122	9 096
Morocco (a)	463	377	448	352	—
Mozambique	91	197	242	201	166
Namibia	2 038	4 553	6 285	6 756	7 293
Niger	1 041	732	1 220	999	914
Nigeria	6 261	* 6 300	* 6 300	* 6 300	* 6 300
Rwanda	—	319	336	* 300	* 300
Senegal	6 445	6 588	5 670	6 741	7 255
Sierra Leone	96	43	106	188	142
South Africa	159 724	151 622	144 515	142 077	136 833
South Sudan	* 200	* 200	* 200	* 200	* 200
Sudan	70 000	73 300	82 400	93 400	107 300
Tanzania	42 534	40 481	43 293	45 155	43 490
Togo (d)	21 086	20 583	15 568	14 000	* 20 000
Uganda	5	24	13	11	4
Zambia (e)	5 207	4 803	4 238	4 610	4 373
Zimbabwe	14 001	15 386	20 023	22 747	26 495
Canada	133 636	152 460	162 504	163 888	176 015
Costa Rica	* 1 500	* 1 350	* 950	* 750	* 4 255
Dominican Republic	26 084	36 085	31 134	37 933	35 116
Guatemala	6 386	6 142	5 610	3 910	1 647
Honduras	1 985	2 839	2 736	2 607	2 596
Mexico	119 774	117 771	134 759	132 413	126 820
Nicaragua	8 611	8 237	7 612	8 391	7 367
Panama	1 120	—	—	—	—
USA	229 703	210 077	213 808	222 211	236 778

Mine production of gold

kilograms

Country	2013	2014	2015	2016	2017
Argentina	52 486	60 170	62 673	56 017	63 000
Bolivia	18 127	24 803	* 23 000	* 21 000	24 900
Brazil	79 563	81 038	83 124	80 000	85 000
Chile	51 309	46 031	42 501	46 333	37 911
Colombia	55 968	57 895	59 575	62 507	42 100
Ecuador	8 676	7 322	8 356	6 761	6 176
France (French Guiana)	* 6 220	* 6 830	* 6 460	* 6 100	* 6 300
Guyana	14 963	12 053	14 029	22 167	20 334
Peru	151 486	140 090	146 823	153 006	151 104
Suriname	11 001	10 641	9 396	12 926	25 844
Uruguay (f)	2 092	1 715	1 480	993	1 062
Venezuela	1 679	1 056	558	* 5 000	* 5 000
Burma (g)	893	1 312	1 692	1 446	1 620
China (a)	428 163	451 799	450 053	453 490	426 142
India (g)	1 564	1 441	1 323	1 595	1 648
Indonesia	59 804	69 023	92 171	80 868	99 030
Iran (h)	1 656	1 760	2 358	4 537	* 4 500
Japan	7 411	7 114	7 699	6 455	6 369
Kazakhstan	42 552	50 339	63 614	74 737	85 029
Korea (Rep. of)	413	284	258	205	283
Kyrgyzstan	19 400	18 000	17 600	21 000	29 100
Laos	6 838	5 265	6 893	6 728	5 987
Malaysia	3 823	4 308	4 732	2 249	2 124
Mongolia	8 904	19 959	20 828	9 331	3 555
Philippines	17 248	18 423	21 314	23 053	22 699
Saudi Arabia	4 158	4 789	5 089	7 010	10 333
Taiwan	4	5	2	—	4
Tajikistan	2 670	3 436	* 4 400	* 5 000	* 5 500
Thailand	4 419	4 576	3 305	3 349	1 839
Uzbekistan	* 90 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	1 681	164	* 40	* 20	* —
Australia	267 062	274 047	279 190	290 800	294 171
Fiji	1 218	1 188	1 368	1 500	1 425
New Zealand	12 468	11 989	12 687	9 866	10 288
Papua New Guinea	61 878	56 148	57 640	61 952	65 246
Solomon Islands	1 826	603	—	—	—
World total	2 960 000	3 060 000	3 140 000	3 210 000	3 330 000

Note(s)

- (1) In several countries substantial amounts of gold produced in small and/or artisanal operations are not recorded in the official statistics. Estimates have been added where possible but these have varying degrees of uncertainty.
- (2) In addition to the countries listed, Oman produces less than 100 kg gold per year.
- (3) In addition to the countries listed, Cambodia, El Salvador, Haiti, Malawi, Pakistan, Paraguay and Portugal may produce gold.

- (a) Metal production
- (b) Sales
- (c) Years ended 7 July of that stated
- (d) Exports
- (e) Contained in blister copper, refinery muds and electrolytic copper
- (f) Year ended 30 November of the year stated
- (g) Years ended 31 March following that stated
- (h) Years ended 20 March following that stated

Production of graphite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria (a)	17 190	23 240	21 840	* 21 000	* 21 000
Germany	269	517	398	502	422
Norway	6 207	8 266	9 185	9 600	* 9 600
Russia	* 14 000	* 14 000	15 900	19 400	25 200
Sweden	—	—	113	—	—
Turkey	28 740	3 850	—	—	—
Ukraine	6 900	13 800	14 500	14 630	14 855
Madagascar	3 833	699	3 607	* 4 500	* 6 000
Mozambique	—	—	580	580	802
Namibia	—	—	—	—	* 13 000
Zimbabwe	6 934	6 853	6 362	5 622	* 2 400
Canada	* 20 000	* 30 000	* 30 000	* 30 000	* 30 000
Mexico	7 024	9 160	6 524	14 200	10 310
Brazil (b)	91 908	87 026	75 100	82 000	* 82 000
China (c)	* 840 000	* 900 000	* 860 000	* 900 000	* 900 000
India (a)(d)	146 390	116 712	135 528	122 438	33 558
Korea, Dem. P.R. of	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Pakistan (e)	6 188	14 279	2 864	360	—
Sri Lanka	3 143	4 000	4 212	* 3 100	* 3 100
World total	1 200 000	1 200 000	1 200 000	1 200 000	1 200 000

Note(s)

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

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

Production of gypsum

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania	126 349	108 733	86 163	132 126	104 120
Armenia	28 700	22 300	19 400	14 800	* 14 000
Austria (a)	635 299	729 892	715 195	674 346	712 469
Azerbaijan	169 028	145 457	196 463	110 501	33 013
Bosnia & Herzegovina (a)	73 300	67 700	58 800	61 231	99 001
Bulgaria	119 100	87 800	108 600	60 900	88 000
Croatia	114 450	120 055	138 088	170 107	200 932
Cyprus	315 000	347 600	471 885	682 024	703 079
Czech Republic	11 000	11 000	11 000	10 000	7 000
France (a)	2 189 971	1 907 768	1 807 978	1 734 975	1 873 581
Germany (a)	1 778 000	4 090 000	4 200 000	3 970 000	4 450 000
Greece (a)	760 000	664 290	649 280	777 990	855 000
Ireland, Republic of	* 200 000	* 300 000	* 250 000	* 250 000	* 200 000
Italy (a)	3 192 186	5 886 653	571 731	617 188	476 471
Latvia (a)	272 340	270 120	225 370	224 000	* 225 000
Macedonia (a)	162 661	156 492	172 525	202 582	217 491
Moldova (b)	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Norway (a)(c)	77 009	79 740	77 403	82 386	87 891
Poland (a)	1 270 100	1 231 858	1 099 081	1 118 484	1 108 000
Portugal	299 038	328 730	309 966	255 026	152 059
Romania	1 052 065	815 586	888 746	754 009	813 520
Russia	4 223 000	* 4 400 000	* 4 400 000	* 4 400 000	* 4 400 000
Slovakia (a)	60 000	65 000	67 000	53 000	45 700
Spain	7 388 699	6 925 120	7 403 767	8 936 364	9 202 009
Switzerland	284 000	257 000	165 000	195 500	* 200 000
Turkey	9 790 097	9 051 158	8 638 715	10 124 221	10 223 112
Ukraine (a)	2 175 400	1 525 300	1 254 900	1 303 000	1 528 900
United Kingdom	* 700 000	* 1 100 000	* 1 800 000	* 1 600 000	* 1 300 000
Algeria	2 077 700	2 130 459	—	—	* —
Angola	189 242	* 190 000	* 190 000	* 190 000	* 190 000
Egypt (a)(d)	940 615	872 141	744 160	* 740 000	* 740 000
Eritrea	* 1 200	* 1 200	* 1 200	* 1 000	* 1 000
Ethiopia (a)(e)	42 452	* 143 589	* 115 623	80 556	85 236
Kenya (a)	5 500	5 900	5 800	5 760	* 5 800
Libya	* 120 000	* 150 000	* 150 000	* 150 000	* 150 000
Madagascar	* 130	* 130	* 130	* 130	* 130
Mauritania	* 65 000	* 65 000	* 70 000	* 70 000	* 70 000
Morocco	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Niger	1 755	—	253	* 250	* 250
Nigeria	* 350 000	* 350 000	* 350 000	* 350 000	* 350 000
South Africa	559 443	376 223	232 878	266 811	317 990
Sudan	132 000	200 000	241 000	349 236	* 350 000
Tanzania	171 567	200 179	239 302	213 744	123 645
Tunisia	744 589	771 652	690 000	* 690 000	* 690 000
Canada (a)	2 654 000	1 811 000	2 682 000	1 704 000	2 738 000
Cuba	87 100	97 800	90 900	73 900	85 400
Dominican Republic	144 178	184 065	204 687	123 553	68 705
Guatemala	117 619	81 885	111 351	130 616	135 154
Honduras	* 5 500	* 10 000	* 10 000	* 10 000	* 10 000
Jamaica	48 322	45 201	42 883	49 703	* 49 000
Mexico	7 903 159	7 043 563	7 101 612	7 682 807	7 609 704
Nicaragua	36 500	57 390	50 370	41 750	66 736
USA	15 700 000	16 200 000	16 600 000	17 000 000	* 17 500 000
Argentina	1 547 862	* 1 500 000	* 1 500 000	2 391 350	* 2 000 000
Bolivia	1 223	* 1 000	650	1 181	* 1 100
Brazil	3 332 991	3 447 012	3 131 000	* 3 000 000	* 3 000 000
Chile	1 015 158	843 490	860 075	934 033	1 157 466
Colombia	294 507	368 859	448 316	387 060	404 949
Paraguay	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Peru	297 527	543 856	438 025	257 423	286 657
Afghanistan	2 500	3 000	* 3 000	* 3 000	* 3 000
Bhutan	351 421	414 148	389 365	317 597	328 128
Burma (f)	60 510	104 994	99 860	338 492	* 291 000
China	* 129 000 000	* 130 000 000	* 130 000 000	* 130 000 000	* 130 000 000

Production of gypsum

tonnes (metric)

Country	2013	2014	2015	2016	2017
India (f)(g)	3 115 894	2 478 056	* 2 376 000	* 2 019 000	* 2 000 000
Iran (h)	17 354 489	14 869 796	12 292 267	16 376 605	* 16 400 000
Iraq	10 461 708	* 10 462 000	* 10 460 000	* 10 460 000	* 10 460 000
Israel	27 200	82 000	159 299	147 000	116 000
Japan	4 771 000	4 674 000	4 670 000	* 4 670 000	* 4 700 000
Jordan	* 860 000	* 870 000	* 880 000	* 880 000	* 880 000
Kazakhstan	* 125 000	123 700	113 400	137 400	123 400
Laos	772 138	584 338	989 516	469 436	463 039
Mongolia	* 60 000	* 60 000	67 300	56 000	* 56 000
Oman	2 785 000	3 387 300	6 049 400	5 482 900	6 875 500
Pakistan (d)	1 249 967	1 326 437	1 417 007	1 871 716	2 079 629
Saudi Arabia	1 700 000	1 780 000	2 780 000	3 000 000	3 150 000
Sri Lanka	* 600	* 600	* 600	* 600	* 600
Syria	* 100 000	* 50 000	* 25 000	* 10 000	* 10 000
Tajikistan	12 200	12 900	8 500	8 814	43 066
Thailand					
Gypsum	12 382 648	12 445 100	11 267 144	10 718 622	8 489 443
Anhydrite	1 264 077	976 818	876 024	1 240 724	1 376 127
Uzbekistan	* 80 000	* 80 000	* 80 000	* 80 000	* 80 000
Yemen, Republic of	* 100 000	* 100 000	* 30 000	* 10 000	* 12 000
Australia (d)	3 588 885	3 624 174	3 824 801	3 972 295	3 835 210
World total	267 300 000	267 900 000	262 000 000	268 700 000	270 300 000

Note(s)

- (1) Some countries produce large quantities of synthetic gypsum. Where possible, this output is excluded from the table.
(2) In addition to the countries listed, Indonesia and Vietnam may also produce gypsum.

- (a) Including anhydrite
(b) Excluding output from the region east of the River Nistru and the Municipality of Bender
(c) Sales
(d) Years ended 30 June of that stated
(e) Years ended 7 July of that stated
(f) Years ended 31 March following that stated
(g) Including selenite
(h) Years ended 20 March following that stated

Production of helium

million cubic metres

Country	2013	2014	2015	2016	2017
Poland	1	1	1	1	1
Russia	4	4	5	5	5
Algeria	* 17	* 16	* 10	* 10	* 14
USA	69	75	71	66	63
Qatar	* 25	* 35	* 49	* 50	* 45
Australia	* 6	* 5	* 4	* 4	* 4

Refinery production of indium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Belgium	* 30	* 25	* 25	* 20	* 20
France	33	43	41	—	30
Germany	* 10	* —	* —	* —	* —
Italy	* 5	* 5	* 5	* 5	* 5
Russia	7	* 7	* 7	* 7	* 7
Canada	* 70	* 67	* 70	* 71	* 70
Brazil	* 5	* 5	* 5	* 5	* 5
Peru	* 11	14	* 9	* 10	* 10
China	* 415	* 460	* 520	* 510	* 480
Japan	70	70	70	70	70
Korea (Rep. of)	* 100	* 100	* 100	* 100	* 100

Note(s)

(1) In addition to the countries listed, Kazakhstan is believed to produce small quantities of indium

Production of iodine

kilograms

Country	2013	2014	2015	2016	2017
Azerbaijan	249 100	221 100	246 700	207 600	198 400
Russia	* —	* —	13 987	2 952	7 844
USA	* 1 270 000	* 1 270 000	* 1 350 000	* 1 250 000	* 1 250 000
Chile	20 656 000	18 989 000	21 179 000	18 444 000	17 976 000
China	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Indonesia	* 43 000	* 56 000	* 45 000	* 15 000	* 15 000
Iran (a)	* 300 000	* 300 000	301 000	348 000	* 500 000
Japan	9 334 000	9 814 000	10 610 000	9 993 000	8 839 000
Turkmenistan	* 500 000	* 500 000	* 510 000	* 510 000	* 500 000
Uzbekistan	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
World total	33 000 000	31 800 000	34 900 000	31 400 000	29 900 000

Note(s)

(a) Years ended 20 March following that stated

Production of iron ore

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria (a)	2 323 323	2 436 675	2 783 327	2 777 260	2 981 737
Azerbaijan	141 400	91 400	127 600	25 500	—
Bosnia & Herzegovina	2 121 908	2 127 564	2 122 802	1 751 800	1 621 907
Germany (b)(c)	413 404	461 082	467 690	514 004	517 918
Norway	9 549 232	10 542 149	3 519 116	1 757 851	1 622 477
Russia	102 100 000	102 100 000	101 000 000	101 000 000	95 000 000
Sweden	37 411 000	35 759 000	29 861 000	31 843 000	31 763 000

Production of iron ore

tonnes (metric)

Country	2013	2014	2015	2016	2017
Turkey	8 589 362	11 887 154	7 760 957	7 137 233	9 992 455
Ukraine	70 389 000	68 337 000	66 902 000	62 876 000	60 574 000
Algeria	1 066 700	911 135	944 000	826 000	* 830 000
Egypt (d)	1 421 772	1 699 133	508 915	* 500 000	* 600 000
Liberia	4 948 095	4 921 391	5 748 520	1 405 195	1 934 193
Malawi	—	—	—	3 800	5 000
Mali	* 100 000	* 100 000	—	* —	* —
Mauritania	12 532 200	13 305 800	11 607 000	13 268 061	11 771 000
Morocco	301 100	22 910	17 860	21 033	100 345
Nigeria	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Sierra Leone	11 894 580	17 497 553	5 247 688	6 576 576	* 6 856 000
South Africa (e)	71 543 088	80 759 334	73 220 891	66 455 868	74 643 475
Sudan	339 390	500 000	—	—	* —
Swaziland	1 258 560	603 251	—	—	—
Tunisia	244 643	331 869	284 600	285 000	285 000
Uganda	2 283	41 959	9 000	2 163	2 320
Canada (f)	42 769 700	44 196 000	46 673 000	48 999 000	49 009 000
Guatemala	778	—	—	—	—
Mexico	28 545 000	25 193 818	20 397 000	18 317 700	17 746 262
USA (f)(g)	52 800 000	56 100 000	46 100 000	41 800 000	* 46 300 000
Bolivia	1 760	18 360	24 453	2 940	* 3 000
Brazil	316 800 000	345 800 000	389 146 000	424 200 000	435 532 000
Chile	17 109 000	18 866 000	15 448 000	14 619 000	15 426 000
Colombia	831 280	676 419	902 233	715 692	712 515
Ecuador (h)	2 616	408	—	—	—
Peru	6 680 659	7 192 592	7 320 807	7 663 124	8 806 452
Venezuela	11 198 077	11 258 577	11 715 475	7 306 000	4 601 000
Bhutan	20 506	18 997	43 202	28 065	32 974
China	1 451 011 000	1 514 240 000	1 381 288 000	1 280 893 000	1 229 373 000
India (i)	152 183 000	129 321 000	158 108 000	194 584 000	200 955 000
Indonesia	22 353 337	5 951 400	3 838 546	3 800 000	900 000
Iran (j)	48 693 000	54 082 000	51 000 000	64 500 000	74 000 000
Kazakhstan	51 758 500	51 540 800	37 269 700	35 793 500	39 085 000
Korea (Rep. of)	663 045	693 262	445 318	444 677	310 550
Korea, Dem. P.R. of	* 3 444 000	* 3 212 000	* 1 931 000	* 2 000 000	* 1 000 000
Laos	904 757	1 098 133	234 745	115 065	250 000
Malaysia (f)	12 134 258	9 615 323	1 625 253	1 914 232	3 919 632
Mongolia	6 011 200	10 260 500	6 173 400	4 936 200	7 694 700
Nepal (k)	—	—	—	—	772
Pakistan (d)	408 604	197 074	328 915	432 156	501 664
Philippines	826 745	153 775	107 119	17 088	—
Thailand	389 620	347 918	16 483	—	135
Vietnam	2 495 300	2 719 000	2 691 000	3 056 000	5 074 000
Australia	609 729 698	739 682 244	809 881 763	858 025 634	885 356 738
New Zealand	3 156 619	3 245 369	3 193 722	3 495 818	4 008 000
World total	3 182 000 000	3 390 000 000	3 308 000 000	3 317 000 000	3 332 000 000

Note(s)

- (a) Including micaceous iron oxide
- (b) Including manganiferous iron ore
- (c) Used as aggregate in the construction industry
- (d) Years ended 30 June of that stated
- (e) Including by-product magnetite
- (f) Including by-product iron ore
- (g) Including beneficiated and direct shipping ore
- (h) Including iron sand
- (i) Years ended 31 March following that stated
- (j) Years ended 20 March following that stated
- (k) Years ended 15 July of that shown

Production of pig iron

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	6 200 000	6 015 000	5 805 000	5 642 000	6 335 000
Azerbaijan	1 916	1 504	1 150	2 533	321
Belgium	4 343 000	4 335 000	4 248 000	4 896 000	4 800 000
Bosnia & Herzegovina	759 100	860 430	845 462	778 123	738 476
Czech Republic	4 040 000	4 152 000	4 031 129	4 165 000	3 691 000
Finland	2 100 000	2 500 000	2 600 000	2 700 000	2 600 000
France	10 276 499	10 865 646	10 097 177	9 724 062	10 677 830
Germany	26 678 000	27 943 000	27 844 000	27 269 000	28 410 000
Hungary	600 000	801 000	1 247 000	863 000	1 311 000
Italy (a)	6 933 000	6 434 000	5 051 000	6 044 000	5 052 000
Netherlands	5 700 000	5 868 000	6 050 000	6 092 000	6 145 000
Norway	106 000	102 000	* 100 000	* 100 000	* 100 000
Poland	4 013 877	4 639 571	4 826 492	4 679 616	5 159 128
Romania	1 601 139	1 630 642	1 938 502	1 922 001	1 766 958
Russia	50 000 000	51 400 000	53 700 000	51 900 000	52 200 000
Serbia	366 277	550 000	904 000	1 154 000	1 340 000
Slovakia	3 617 000	3 838 000	3 738 486	3 987 000	4 106 000
Spain	3 949 000	3 958 000	4 450 000	4 115 000	4 462 000
Sweden	2 896 000	3 078 000	2 865 000	3 079 000	3 111 000
Turkey	19 548 094	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000
Ukraine	29 088 700	24 800 900	21 863 000	23 560 000	19 797 900
United Kingdom	9 470 600	9 704 600	8 773 500	6 142 400	5 997 000
Algeria	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Egypt	3 400 000	2 882 000	2 451 000	2 618 000	4 700 000
Libya	956 000	998 000	449 000	698 852	521 956
South Africa	6 404 000	6 040 000	6 939 000	5 013 000	5 277 000
Canada	7 300 000	8 210 000	7 353 000	7 606 000	7 914 000
Mexico	11 011 092	11 092 595	10 074 000	9 782 000	* 10 760 000
Trinidad & Tobago	1 749 700	1 633 000	901 100	—	—
USA	30 381 000	29 345 000	25 435 000	22 293 000	22 395 000
Argentina	4 115 390	4 428 300	3 934 000	2 914 000	3 205 000
Brazil	31 552 000	32 052 000	32 110 000	29 680 000	32 151 000
Chile	760 000	584 000	644 000	677 000	664 000
Colombia	264 000	234 000	240 000	225 000	178 000
Paraguay	69 000	71 000	71 000	50 000	39 000
Peru	93 000	88 000	72 000	11 000	—
Venezuela	2 727 000	1 402 000	1 356 000	908 000	491 000
Bahrain	780 000	1 440 000	1 230 000	1 260 000	* 1 300 000
China	711 498 800	713 747 800	691 413 000	702 273 300	710 759 000
India	68 252 000	75 532 000	74 621 000	77 254 000	96 313 000
Indonesia	757 000	155 000	53 000	—	—
Iran	16 465 000	17 333 000	17 005 000	18 264 000	21 694 000
Japan	83 849 049	83 872 490	81 010 826	80 186 246	78 329 729
Kazakhstan	2 622 745	3 184 780	3 233 671	3 595 090	3 768 000
Korea (Rep. of)	41 045 000	46 909 000	47 639 000	46 336 000	47 100 000
Korea, Dem. P.R. of	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Malaysia	1 399 000	1 007 000	1 434 000	1 178 000	952 000
Oman	1 468 000	1 420 000	1 509 000	1 439 000	1 526 000
Pakistan	* 165 000	* 142 000	* 163 000	—	—
Qatar	2 385 493	2 547 000	2 631 000	2 506 000	2 548 000
Saudi Arabia	6 070 000	6 460 000	5 800 000	5 119 000	4 812 000
Taiwan	13 300 000	14 505 000	14 370 000	14 890 000	14 361 000
United Arab Emirates	3 075 000	2 409 000	3 190 000	3 479 000	3 608 000
Vietnam	* 650 000	* 1 393 000	* 1 700 000	* 2 600 000	* 4 250 000
Australia	3 342 000	3 282 000	3 594 000	3 642 000	3 758 000
New Zealand	700 000	680 000	678 000	670 000	683 000
World total	1 251 000 000	1 269 000 000	1 235 000 000	1 237 000 000	1 272 000 000

Note(s)

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

(a) Includes ferro-manganese

Production of crude steel

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania	312 000	* 560 000	* 150 000	* 50 000	* —
Austria	7 953 000	7 876 000	7 687 000	7 438 000	8 135 000
Azerbaijan	222 800	324 119	302 015	345 340	387 258
Belarus	2 394 489	2 597 807	2 577 292	2 265 517	2 432 580
Belgium	7 127 000	7 331 000	7 257 000	7 687 000	7 842 000
Bosnia & Herzegovina	722 155	792 019	795 942	783 045	734 518
Bulgaria	523 000	612 000	543 000	527 000	652 000
Croatia	135 000	159 000	122 000	—	—
Czech Republic	5 171 255	5 360 000	5 261 591	5 305 000	4 553 000
Estonia	157	202	1 216	828	* 800
Finland	3 517 000	3 808 000	3 988 000	4 102 000	4 003 634
France	15 685 350	16 143 625	14 984 045	14 412 574	15 504 683
Germany	42 645 000	42 943 000	42 674 000	42 081 000	43 910 000
Greece	1 030 000	1 022 000	1 067 000	1 199 000	1 359 000
Hungary	883 000	1 152 000	1 675 000	1 279 000	1 901 000
Italy	24 091 000	23 715 000	22 018 000	23 372 000	24 069 000
Kosovo	* 120 000	* 150 000	* —	* —	* —
Latvia	198 000	* 190 000	* 190 000	* 4 000	* —
Luxembourg	2 090 000	2 193 000	2 127 000	2 175 000	2 172 000
Macedonia	145 633	196 454	165 235	239 084	271 287
Moldova (a)	190 000	351 000	443 000	126 000	455 000
Montenegro	19 723	* 15 000	36 602	26 246	27 638
Netherlands	6 713 000	6 964 000	6 995 000	6 917 000	6 781 000
Norway	605 000	600 000	590 000	620 000	603 000
Poland	8 199 353	8 799 731	9 337 105	9 160 660	10 540 354
Portugal	2 050 000	2 070 000	2 030 000	2 010 000	2 076 000
Romania	3 073 411	3 192 879	3 423 421	3 369 582	3 442 786
Russia	68 800 000	70 300 000	69 400 000	69 600 000	68 619 623
Serbia	396 000	583 000	955 000	1 173 000	1 477 000
Slovakia	4 511 000	4 705 000	4 561 609	4 808 000	4 980 000
Slovenia	618 000	615 000	604 000	613 000	648 000
Spain	14 252 000	14 163 000	14 845 000	13 654 000	14 444 000
Sweden	4 391 900	4 533 800	4 367 600	4 816 800	4 926 500
Switzerland	* 1 530 000	1 611 607	1 586 020	1 498 021	1 569 963
Turkey	34 654 000	34 035 000	31 517 000	33 163 000	37 524 000
Ukraine	33 198 653	27 372 913	23 166 031	24 218 000	21 334 000
United Kingdom	11 857 500	12 033 500	10 906 700	7 634 900	7 491 300
Algeria	417 000	415 000	650 000	650 000	650 000
Congo, Democratic Republic	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Egypt	6 754 000	6 485 000	5 506 000	5 036 000	6 870 000
Ethiopia	* 130 000	* 130 000	* 130 000	* 130 000	* 130 000
Ghana	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Kenya	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Libya	712 000	968 000	352 000	491 500	421 600
Mauritania	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Morocco	558 000	501 000	516 000	520 000	550 000
Nigeria	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
South Africa	7 253 000	7 210 000	7 614 000	6 141 000	6 301 000
Tunisia	109 600	100 700	50 000	* 50 000	* 50 000
Uganda	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Canada	12 349 000	12 595 000	12 473 000	12 672 000	13 614 000
Cuba	268 814	259 130	223 441	206 260	211 448
Dominican Republic	* 56 000	* 60 000	* 60 000	* 60 000	* 60 000
El Salvador	118 000	121 000	124 000	100 000	92 000
Guatemala	385 000	395 000	403 000	314 000	294 000
Mexico	18 242 195	18 995 283	18 228 000	18 811 000	* 20 504 000
Trinidad & Tobago	615 800	483 300	266 500	—	—
USA	86 878 000	88 174 000	78 845 000	78 475 000	81 612 000
Argentina	5 185 710	5 488 100	5 027 900	4 126 500	4 624 200
Brazil	34 163 000	33 897 000	33 256 000	31 275 000	34 350 000
Chile	1 323 000	1 079 000	1 112 000	1 153 000	1 129 000
Colombia	1 236 000	1 208 000	1 211 000	1 272 000	1 297 000
Ecuador	570 000	667 000	720 000	576 000	* 565 000

Production of crude steel

tonnes (metric)

Country	2013	2014	2015	2016	2017
Paraguay	45 000	47 000	48 000	35 000	24 000
Peru	1 069 000	1 078 000	1 080 000	1 168 000	1 262 000
Uruguay	91 000	94 000	97 000	61 000	58 000
Venezuela	2 494 000	1 466 000	1 346 000	553 000	444 000
Burma	* 30 000	* 35 000	* 35 000	* 35 000	* 35 000
China	813 138 900	822 306 300	803 825 000	807 609 400	831 728 000
India (b)	81 694 000	88 979 000	89 790 000	97 443 000	102 338 000
Indonesia	2 644 111	4 351 245	4 854 200	4 745 908	5 195 000
Iran (c)	15 631 000	16 257 000	16 656 000	18 466 000	21 840 000
Israel	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Japan	110 594 771	110 666 068	105 134 378	104 775 329	104 661 087
Jordan	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Kazakhstan	3 275 000	4 014 860	3 902 617	4 264 114	4 663 284
Korea (Rep. of)	66 061 000	71 542 000	69 670 000	68 575 000	71 080 000
Korea, Dem. P.R. of	* 1 250 000	* 1 250 000	* 1 250 000	* 1 250 000	* 1 250 000
Kuwait	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Malaysia	4 693 120	4 316 000	3 783 572	3 781 668	3 772 057
Mongolia	* 40 000	* 45 000	* 45 000	* 50 000	* 50 000
Pakistan	* 1 845 000	* 2 423 000	* 2 892 000	* 3 553 000	* 4 966 000
Philippines	1 308 000	1 196 000	968 000	1 075 000	1 378 000
Qatar	2 236 000	2 867 000	2 594 000	2 521 000	2 645 000
Saudi Arabia	5 471 000	6 291 000	5 662 000	5 461 000	4 831 000
Singapore	433 000	575 000	510 000	520 000	593 000
Syria	* 10 000	* 5 000	* 5 000	* 5 000	* 5 000
Taiwan	21 466 000	22 511 000	20 815 000	20 858 000	21 370 000
Thailand	3 579 000	4 095 000	3 718 000	3 825 120	4 471 361
United Arab Emirates	2 878 000	2 390 000	3 006 000	3 149 000	3 309 000
Uzbekistan	746 000	723 000	643 000	654 000	680 000
Vietnam	5 474 000	5 847 000	5 647 000	7 811 000	11 473 000
Australia	4 730 900	4 582 300	4 935 300	5 160 489	5 335 000
New Zealand	900 000	881 000	793 000	577 000	657 000
World total	1 642 000 000	1 670 000 000	1 620 000 000	1 628 000 000	1 689 000 000

Note(s)

- (1) Unless otherwise indicated, these figures include production from scrap
(2) Small amounts of steel are also believed to be produced in Sri Lanka

- (a) Production from the region east of the River Nistru
(b) Years ended 31 March following that stated
(c) Years ended 20 March following that stated

Production of ferro-alloys

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania					
Ferro-chrome	24 692	34 897	43 350	44 411	59 000
Armenia					
Ferro-molybdenum	6 619	6 528	5 576	6 526	6 588
Austria					
Ferro-molybdenum	4 000	4 000	4 000	4 000	4 000
Ferro-nickel	2 500	2 500	2 500	2 500	2 500
Ferro-vanadium	8 000	8 000	8 000	7 000	8 000
Bosnia & Herzegovina					
Ferro-alloys	16 707	18 383	18 716	28 138	30 473
Czech Republic					
Ferro-vanadium	* 6 400	* 6 100	* 6 200	* 6 300	* 6 600
Finland					
Ferro-chrome	434 000	441 000	457 000	469 000	415 000
France					
Ferro-manganese	104 000	115 700	* 126 000	* 126 000	* 126 000
Ferro-silico-manganese	64 900	64 800	* 65 000	* 65 000	* 65 000
Ferro-silicon	50 000	40 000	* 45 000	* 45 000	* 45 000
Silicon metal	* 110 000	100 000	* 100 000	80 000	* 80 000
Other ferro-alloys	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Georgia					
Ferro-manganese	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Ferro-silico-manganese	253 361	243 951	217 289	244 228	284 034
Germany					
Ferro-chrome	* 17 800	* 17 800	* 17 800	* 17 800	* 17 800
Silicon metal	30 283	28 500	29 953	29 940	31 915
Other ferro-alloys	* 8 200	* 8 200	* 8 200	* 8 200	* 8 200
Greece					
Ferro-nickel	86 850	94 952	89 129	87 880	86 140
Iceland					
Ferro-silicon	125 204	112 657	121 556	128 019	116 811
Italy					
Ferro-silico-manganese	153 000	67 000	82 000	90 000	91 000
Kosovo					
Ferro-nickel	33 300	34 000	39 200	22 800	* 23 000
Macedonia					
Ferro-nickel	20 001	18 054	17 699	10 603	7 175
Ferro-silicon	72 279	73 014	46 047	24 431	* 21 000
Norway					
Ferro-manganese	306 700	312 400	* 350 000	* 380 000	* 300 000
Ferro-silico-manganese	301 400	314 300	* 315 000	* 315 000	* 315 000
Ferro-silicon (a)	337 281	192 389	243 813	249 475	240 813
Silicon metal	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Poland					
Ferro-manganese	820	549	—	—	66
Ferro-silico-manganese	100	32	—	—	—
Ferro-silicon	73 589	62 878	77 754	77 682	65 732
Other ferro-alloys	11 250	24 909	460	12 517	24 800
Romania					
Ferro-silico-manganese	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Russia					
Spiegeleisen	* 7 000	* 7 000	* 7 000	* 7 000	* 7 000
Ferro-chrome	* 450 000	* 400 000	363 286	268 439	436 280
Ferro-silico-chrome	* 4 200	* 4 200	* 4 200	* 4 200	* 4 200
Ferro-manganese	* 170 000	* 170 000	155 700	124 200	167 100
Ferro-silico-manganese	* 148 000	* 148 000	188 895	203 216	52 095
Ferro-molybdenum	5 297	4 503	4 660	4 881	4 726
Ferro-nickel	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-silicon	* 1 050 000	* 1 050 000	1 057 909	935 912	840 764
Ferro-vanadium	14 059	14 076	12 277	12 392	12 588
Silicon metal	* 48 000	* 48 000	* 48 000	* 48 000	* 48 000
Other ferro-alloys	* 34 000	* 34 000	* 34 000	* 34 000	* 34 000
Slovakia					
Ferro-manganese	2 119	17 554	24 500	35 000	42 115
Ferro-silico-manganese	26 794	29 643	27 100	35 700	40 265
Ferro-silicon	41 664	39 300	38 200	30 900	52 436
Other ferro-alloys	* —	4 700	5 700	4 300	* 4 000

Production of ferro-alloys

tonnes (metric)

Country	2013	2014	2015	2016	2017
Spain					
Ferro-manganese	107 200	133 200	126 200	* 126 000	* 126 000
Ferro-silico-manganese	136 000	129 000	134 000	* 134 000	* 134 000
Ferro-silicon	* 80 500	* 80 500	* 80 000	* 80 000	* 80 000
Silicon metal	* 29 200	* 29 200	* 30 000	* 30 000	* 30 000
Sweden					
Ferro-chrome	55 078	65 703	82 616	81 102	114 101
Turkey					
Ferro-chrome	132 603	86 025	82 560	* 80 000	* 80 000
Ferro-silico-chrome	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
Ferro-silicon	* 2 000	* 2 000	—	—	* —
Ukraine					
Ferro-manganese	88 626	104 291	100 209	184 310	211 124
Ferro-silico-manganese	724 892	960 657	750 181	876 756	875 031
Ferro-nickel	121 586	114 222	95 209	84 025	74 459
Ferro-silicon	191 207	167 977	114 826	126 297	118 371
Other ferro-alloys	15 908	15 326	19 360	106 244	87 094
Egypt					
Ferro-silicon (b)	49 060	56 794	* 54 767	* 56 000	* 56 000
Other ferro-alloys (b)	30 000	12 000	12 000	* 12 000	* 12 000
South Africa					
Ferro-chrome	3 219 000	3 719 000	3 686 000	* 3 700 000	* 3 700 000
Ferro-manganese	650 000	772 000	595 000	* 600 000	* 600 000
Ferro-silico-manganese	134 000	228 000	210 000	* 210 000	* 210 000
Ferro-silicon	78 000	89 000	91 000	* 90 000	* 90 000
Ferro-vanadium	18 000	19 000	15 000	* 16 000	* 16 000
Silicon metal	34 000	56 000	57 000	* 60 000	* 60 000
Zimbabwe					
Ferro-chrome	129 554	235 256	190 837	* 170 000	* 170 000
Canada					
Ferro-niobium	4 916	5 774	5 385	6 213	* 6 300
Ferro-silicon	38 871	* 32 000	* 38 000	* 38 000	* 38 000
Ferro-vanadium	800	800	800	* 600	* 800
Silicon metal	* 12 000	* 30 000	* 30 000	* 27 000	* 27 000
Dominican Republic					
Ferro-nickel	23 419	—	—	33 203	43 894
Mexico					
Ferro-manganese	60 674	67 506	67 919	84 529	90 010
Ferro-silico-manganese	157 855	164 852	139 363	134 251	148 142
USA					
Ferro-silicon & silicon metal	552 000	517 000	424 000	* 425 000	* 425 000
Argentina					
Ferro-silico-manganese	* 11 000	* 11 000	* 11 000	* 10 000	* 10 000
Ferro-silicon	* 11 000	* 11 000	* 11 000	* 11 000	* 11 000
Brazil					
Ferro-chrome	160 996	178 279	155 421	(c) 150 240	(c) 171 531
Ferro-silico-chrome	13 184	10 403	36 092	...	...
Ferro-silico-magnesium	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-manganese	83 348	(d) 303 000	(d) 129 000	(d) 124 000	(d) 133 074
Ferro-silico-manganese	227 652	...	...	...	...
Ferro-nickel (e)	34 400	37 200	30 300	44 538	43 800
Ferro-niobium	71 600	51 737	51 874	44 390	58 690
Ferro-silicon	158 000	127 000	* 200 000	* 200 000	* 200 000
Silicon metal	230 000	230 000	150 000	110 000	110 000
Other ferro-alloys	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Chile					
Ferro-molybdenum	13 072	14 584	* 14 500	* 14 500	* 14 500
Colombia					
Ferro-nickel	137 995	117 775	104 773	105 976	116 016
Venezuela					
Ferro-manganese	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Ferro-silico-manganese	* 14 200	* 14 000	* 14 000	* 14 000	* 14 000
Ferro-nickel	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Ferro-silicon	* 74 300	* 80 000	* 80 000	* 80 000	* 80 000

Production of ferro-alloys

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bahrain					
Ferro-silico-manganese	20 000	17 000	15 000	* 15 000	* 15 000
Bhutan					
Ferro-silicon	* 83 000	* 79 500	* 104 500	* 106 000	* 109 000
Burma					
Ferro-nickel	27 000	56 302	65 466	64 462	62 367
China					
Ferro-alloys	37 762 000	37 860 000	36 664 000	35 588 000	32 887 000
Silicon metal	1 452 100	1 705 000	1 953 500	2 101 000	* 2 200 000
India					
Ferro-aluminium (f)	5 497	3 737	3 212	4 345	4 423
Ferro-chrome (f)	944 000	944 000	944 000	944 000	944 000
Ferro-silico-magnesium (f)	21 964	26 123	20 541	20 183	15 978
Ferro-manganese (f)	518 000	518 000	518 000	518 000	518 000
Ferro-silico-manganese (f)	225 395	249 691	269 920	300 625	311 326
Ferro-molybdenum (f)	1 231	1 295	1 459	1 603	1 205
Ferro-silicon (f)	90 000	90 000	90 000	90 000	90 000
Ferro-titanium (f)	821	545	198	291	281
Ferro-vanadium (f)	906	1 035	937	1 329	1 331
Indonesia					
Ferro-silico-manganese	* 16 200	* 37 100	* 20 700	* 20 000	* 6 000
Ferro-nickel	91 245	84 255	* 182 000	* 411 000	* 714 000
Iran					
Ferro-chrome (g)	* 8 000	* 8 000	* 8 000	* 8 000	* 8 000
Ferro-silicon (g)	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Japan					
Ferro-chrome	21 671	(h) ...	(h) ...	(h) ...	(h) ...
Ferro-manganese	460 936	463 345	465 952	473 740	456 460
Ferro-silico-manganese	24 741	(h) ...	(h) ...	(h) ...	(h) ...
Ferro-molybdenum	4 550	(h) ...	(h) ...	(h) ...	(h) ...
Ferro-nickel	402 768	379 291	396 969	333 448	312 324
Ferro-vanadium	4 433	(h) ...	(h) ...	(h) ...	(h) ...
Other ferro-alloys	19 394	79 912	73 651	77 453	79 809
Kazakhstan					
Ferro-chrome	1 337 275	1 351 803	1 414 476	1 525 222	1 640 299
Ferro-silico-chrome	165 195	158 825	74 609	94 467	110 497
Ferro-silico-manganese	203 926	200 379	164 189	135 885	137 006
Ferro-silicon	470	395	86 984	68 779	59 926
Other ferro-alloys	646	3 735	1 662	—	—
Korea (Rep. of)					
Ferro-manganese	* 355 000	* 355 000	* 355 000	* 355 000	* 355 000
Ferro-silico-manganese	* 196 000	* 196 000	* 196 000	* 196 000	* 196 000
Other ferro-alloys	* 4 200	* 4 200	* 4 200	* 4 200	* 4 200
Korea, Dem. P.R. of					
Ferro-alloys	* 21 000	* 22 000	* 16 000	* 23 000	* 30 000
Australia					
Ferro-manganese & ferro-silico-manganese (b)	234 000	269 000	278 000	222 000	245 000
Silicon metal	* 52 000	* 54 000	* 51 000	* 51 000	* 49 000
New Caledonia					
Ferro-nickel	174 078	224 884	228 484	261 420	269 961

Note(s)

- (1) In addition to the countries listed, Bahrain and Chile also produce ferro-chrome.
(2) In addition to the countries listed, Saudi Arabia also produces ferro-manganese and ferro-silico-manganese.

- (a) Sales
(b) Years ended 30 June of that stated
(c) Including ferro-silico-chrome
(d) Including ferro-silico-manganese
(e) Nickel content
(f) Years ended 31 March following that stated
(g) Years ended 20 March following that stated
(h) Included with 'other ferro-alloys'

Production of kaolin

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	11 558	14 343	12 894	13 558	* 13 500
Belgium	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Bosnia & Herzegovina	44 940	21 610	252 268	286 461	252 959
Bulgaria	* 262 600	341 400	334 100	330 200	321 800
Czech Republic (a)	609 000	617 000	648 000	648 000	676 000
France	300 000	311 000	275 150	263 993	* 260 000
Germany (b)	* 1 100 000	1 100 000	1 100 000	1 023 000	1 109 000
Italy	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Poland (c)	166 000	197 322	146 500	148 900	143 700
Portugal	248 008	269 073	251 582	283 571	307 982
Romania	32 722	30 638	* 30 000	* 30 000	* 30 000
Russia	* 674 000	* 787 000	786 600	1 064 800	1 226 000
Serbia	* 70 000	* 70 000	* 70 000	* 70 000	* 70 000
Slovakia	6 000	6 000	6 000	11 000	21 400
Spain (c)	410 717	344 414	391 960	347 258	475 074
Turkey	1 027 189	734 072	1 887 302	1 283 260	1 362 799
Ukraine	1 179 380	1 426 447	1 814 786	2 335 004	2 379 636
United Kingdom	* 1 110 000	* 1 090 000	* 1 014 000	* 940 000	* 970 000
Algeria	42 500	181 068	51 300	96 000	* 100 000
Egypt	* 300 000	* 300 000	232 351	* 230 000	* 230 000
Eritrea	* 200	* 200	* 200	* 200	* 200
Ethiopia (d)	3 534	4 530	* 3 500	* 3 500	* 3 500
Kenya	1 200	1 600	* 1 600	* 1 600	* 1 600
Madagascar	200	221	* 200	* 200	* 200
Nigeria	* 140 000	* 140 000	* 140 000	* 140 000	* 140 000
South Africa	22 295	27 258	20 339	21 141	31 295
Sudan	26 000	50 000	14 490	104 000	* 105 000
Tanzania	907	3 809	1 953	656	13 816
Uganda	43 875	46 286	34 697	45 909	55 317
Cuba	3 600	1 700	1 500	2 500	1 500
Guatemala	1 339	1 285	1 101	793	657
Mexico	669 860	546 437	366 049	452 070	294 055
USA (e)	6 140 000	6 250 000	6 030 000	5 170 000	* 5 500 000
Argentina	* 70 000	* 65 000	* 60 000	628 298	* 680 000
Brazil (a)	2 139 000	2 055 000	1 700 000	1 700 000	* 1 700 000
Chile	60 000	60 000	60 000	60 000	60 000
Colombia	64 684	223	5 028	8 510	* 8 500
Ecuador	100 195	40 236	64 486	4 110	548
Paraguay	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Peru	32 249	19 964	43 251	19 098	17 700
Venezuela	2 793	* 3 000	* 3 000	* 3 000	* 3 000
China	* 3 300 000	* 3 200 000	* 3 200 000	* 3 200 000	* 3 200 000
India (f)(g)	71 901	74 207	* 74 000	* 74 000	* 74 000
Indonesia	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Iran (h)	* 1 000 000	1 879 943	1 169 366	1 141 502	* 1 100 000
Japan	* 13 000	* 13 000	* 13 000	* 13 000	* 13 000
Jordan	* 80 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	847 172	682 749	587 787	586 973	724 194
Malaysia	293 480	219 652	294 693	392 932	540 297
Oman	114 700	66 600	169 500	173 800	199 500
Pakistan (i)	22 917	16 191	18 956	21 683	28 670
Philippines	6 568	7 050	8 179	10 059	* 10 000
Saudi Arabia	101 000	106 000	111 000	196 000	206 000
Sri Lanka	12 990	* 13 000	* 13 000	* 13 000	* 13 000
Taiwan	15 963	1 808	732	4 035	1 665
Thailand (a)	* 175 000	* 175 000	* 175 000	105 343	102 536
Uzbekistan (f)	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Vietnam	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000

Production of kaolin

tonnes (metric)

Country	2013	2014	2015	2016	2017
Australia (i)	204 521	171 933	246 047	230 429	204 185
New Zealand	13 066	61 382	13 659	61 650	50 424
World total	24 300 000	24 900 000	25 000 000	25 000 000	26 100 000

Note(s)

(1) In addition to the countries listed, Denmark is believed to produce kaolin.

- (a) Beneficiated
- (b) Washed and dried
- (c) Washed
- (d) Years ended 7 July of that stated
- (e) Sold or used by producers
- (f) Beneficiated; excludes directly used natural kaolin
- (g) Years ended 31 March following that stated
- (h) Years ended 20 March following that stated
- (i) Years ended 30 June of that stated

Mine production of lead

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Bosnia & Herzegovina	6 308	5 599	6 199	6 803	7 092
Bulgaria (a)	16 914	15 618	16 755	22 062	22 851
Greece	18 010	16 700	14 500	14 300	12 600
Ireland, Republic of	42 950	40 500	31 300	19 582	17 083
Kosovo	6 378	7 676	5 541	6 530	5 142
Macedonia	42 826	43 810	37 922	31 034	40 233
Montenegro	* 1 200	* 1 400	* 1 700	* 2 600	* 2 500
Poland	79 000	83 329	69 190	62 750	73 530
Portugal	1 496	3 192	3 077	4 126	5 164
Romania	* 400	* —	* —	* —	900
Russia	165 000	196 000	180 000	195 000	202 000
Serbia	3 100	3 700	3 300	3 500	3 200
Slovakia	235	162	—	—	—
Spain	2 200	1 300	1 598	4 946	3 268
Sweden	59 556	70 848	79 354	75 830	71 112
Turkey	76 638	62 190	33 477	29 480	* 30 000
United Kingdom	(b)* 100	(c)* 100	(c)* 100	(c)* 100	(c)* 100
Burkina Faso	2 168	1 902	—	—	—
Congo, Democratic Republic	600	800	700	100	—
Morocco	30 765	27 505	32 138	29 617	38 009
Namibia	11 224	11 788	10 746	6 116	6 577
Nigeria	* 11 500	* 11 400	* 8 000	9 660	6 840
South Africa	41 848	29 348	34 573	39 344	48 150
Canada	20 678	3 617	3 809	12 020	14 060
Guatemala	863	10 359	10 153	9 970	4 200
Honduras	11 600	15 500	9 800	3 985	6 761
Mexico	253 361	250 462	263 772	242 071	243 022
USA	339 000	379 000	367 000	336 000	302 000
Argentina	28 700	29 900	29 800	* 28 000	* 28 000
Bolivia	82 131	75 572	75 272	89 510	111 500
Brazil	8 020	10 978	9 441	9 015	6 157
Chile	1 829	2 678	2 979	1 110	1 562
Peru	266 472	277 294	315 525	314 422	306 794
Burma	* 11 700	24 309	17 463	20 322	45 964
China	2 696 538	2 608 619	2 335 024	2 337 485	* 2 300 000
India (d)	109 812	111 267	143 707	150 964	172 564
Indonesia	* 6 200	* 4 700	* 5 500	* 5 300	* 7 900
Iran	42 000	43 285	43 785	47 000	48 000
Kazakhstan	40 800	37 800	40 700	70 500	112 300
Korea (Rep. of)	2 500	2 764	2 921	2 840	3 762
Korea, Dem. P.R. of	* 40 000	* 36 000	* 33 000	* 39 000	* 34 000
Laos	* 1 600	* 100	* 200	* 200	* 700
Mongolia	200	500	200	4 700	8 500
Nepal (e)	—	—	—	—	300
Pakistan	* 300	* 1 200	* 100	1 196	3 047
Tajikistan	* 17 000	* 28 000	* 31 000	* 47 000	* 51 000
Uzbekistan	* 3 000	* 3 000	* 3 000	* 2 000	* 2 000
Vietnam	* 1 600	* 2 500	* 1 600	* 700	* 3 800
Australia	711 210	727 954	653 488	441 338	459 487
World total	5 300 000	5 300 000	5 000 000	4 800 000	4 900 000

Note(s)

(a) Metal content of ore

(b) By-product of Pennine fluorspar operations and of gold mining in Northern Ireland.

(c) By-product of Pennine fluorspar operations

(d) Years ended 31 March following that stated

(e) Years ended 15 July of that shown

Production of refined lead

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	25 000	25 100	24 400	25 000	27 000
Belgium	129 429	133 252	130 000	142 100	136 000
Bosnia & Herzegovina	2 382	1 227	142	182	25
Bulgaria	90 742	93 394	96 889	100 817	103 105
Croatia	—	—	* 1 900	* 4 400	* 4 600
Czech Republic	42 000	44 000	44 000	43 000	44 000
Estonia	10 580	11 256	11 268	11 607	12 708
France	71 000	72 000	72 000	70 000	* 70 000
Germany	400 000	380 000	378 000	339 000	354 000
Greece	7 000	18 000	24 000	28 000	* 28 000
Ireland, Republic of	17 000	17 200	17 200	18 000	17 500
Italy	179 700	209 600	209 900	187 200	173 700
Netherlands	27 000	31 000	32 000	33 000	36 000
Poland	145 400	149 000	155 400	154 900	157 000
Portugal	4 000	5 000	5 000	5 000	5 000
Romania	14 000	24 000	20 000	17 000	24 000
Russia	106 000	96 500	116 000	113 400	122 000
Serbia	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Slovenia	12 000	11 000	12 000	12 000	12 000
Spain	157 000	166 000	165 000	166 000	* 170 000
Sweden	68 713	68 708	71 293	74 367	78 241
Turkey	* 50 000	* 55 000	* 56 000	* 58 000	* 58 000
Ukraine	48 800	42 900	31 800	35 600	39 900
United Kingdom	296 000	267 000	357 200	374 600	353 800
Algeria	* 9 000	* 9 000	* 9 000	* 8 000	* 8 000
Ghana (a)	3 076	2 817	3 048	1 823	1 150
Kenya	1 000	* 1 000	* 1 100	* 1 100	1 400
Morocco	* 14 000	* 15 000	* 14 000	* 11 000	* 12 000
Mozambique (a)	1 900	2 310	2 494	2 844	3 828
Nigeria	* 14 000	* 14 000	* 2 000	* 9 000	* 8 300
Senegal (a)	2 607	2 187	1 857	3 576	3 424
South Africa	52 000	52 000	52 000	54 000	56 000
Uganda	* 500	* 500	* 500	* 500	* 500
Zambia	* 5 000	* 5 000	* 5 000	* 5 000	* 4 000
Canada	281 781	281 456	268 863	274 226	276 079
Costa Rica	* 7 000	* 7 000	* 7 000	* 8 000	* 10 400
Dominican Republic	* 6 000	* 6 000	* 6 000	* 8 000	* 8 000
Guatemala	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Honduras	—	—	—	—	4 500
Mexico	371 200	363 500	343 900	341 400	342 800
USA (b)	1 150 000	1 020 000	1 050 000	986 000	1 010 000
Argentina	* 91 000	92 000	92 000	* 90 000	* 90 000
Bolivia	—	1 924	459	41	1 100
Brazil	151 964	160 393	176 200	176 216	180 000
Chile	14 000	* 10 000	* 10 000	* 11 000	* 11 000
Colombia	* 42 000	* 42 000	* 42 000	* 42 000	* 42 000
Peru	62 900	54 550	1 494	—	—
Venezuela	* 22 000	* 20 000	* 20 000	* 16 000	* 16 000
Burma	* 200	* 200	* 600	* 5 900	* 12 000
China	4 935 100	4 704 319	4 421 631	4 603 884	4 716 000
India	463 000	477 000	500 600	519 500	564 900
Indonesia	* 42 000	* 46 000	* 46 000	* 48 000	* 47 000
Iran	76 000	72 000	78 000	86 000	90 000
Israel	22 148	26 426	26 000	24 128	25 261
Japan	251 854	* 240 000	* 232 000	* 240 000	* 239 000
Kazakhstan	91 072	127 064	120 108	134 144	147 366
Korea (Rep. of)	427 700	639 000	641 000	831 000	* 800 000
Korea, Dem. P.R. of	* 3 000	* 3 000	* 1 000	* 2 000	* 2 000
Lebanon	* 7 200	* 7 200	* 10 000	* 10 000	* 10 000
Malaysia	32 000	26 200	25 300	28 000	30 000
Pakistan (c)	2 527	2 549	—	—	—
Philippines	* 32 000	* 30 000	* 28 000	* 18 000	* 18 000
Saudi Arabia	* 37 000	* 36 000	* 37 000	* 50 000	* 82 000

Production of refined lead

tonnes (metric)

Country	2013	2014	2015	2016	2017
Sri Lanka (a)	4 803	4 528	2 548	3 006	3 527
Taiwan	34 000	40 000	46 000	48 000	48 000
Thailand	87 385	79 250	86 000	90 000	90 000
United Arab Emirates	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
Australia	232 000	226 000	223 000	224 000	211 300
World total	11 000 000	10 900 000	10 700 000	11 100 000	11 300 000

Note(s)

(1) Figures relate to both primary and secondary refined lead and include the lead content of antimonial lead.

(a) Years ended 31 March following that stated

(b) Excluding lead content of primary antimonial lead

(c) Years ended 30 June of that stated

Production of lithium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Portugal					
Lepidolite	19 940	17 459	19 275	40 758	65 743
Zimbabwe	44 000	44 000	44 000	48 000	51 000
Canada					
Carbonate	* —	108	—	—	—
Spodumene	—	—	—	—	1 000
USA (a)	870	* 900	* 900	* 900	* 900
Argentina (b)(c)	13 305	15 434	19 159	30 335	30 400
Bolivia (c)	—	—	—	162	* 60
Brazil					
Spodumene	7 982	8 519	5 781	* 5 500	* 5 500
Chile (d)	60 646	62 253	56 375	78 182	81 378
China (a)	* 2 100	* 1 900	* 2 000	* 2 300	* 3 000
Australia					
Spodumene	405 119	444 546	433 846	440 525	1 683 717
World total (Li content)	25 400	26 700	26 100	33 000	58 000

Note(s)

(1) In addition to the countries listed, Russia has also produced lithium minerals in the past.

(a) Li content

(b) Carbonate

(c) Chloride

(d) Carbonate, hydroxide and chloride

Production of magnesite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	714 422	754 096	702 504	645 593	730 482
Greece	314 770	391 140	383 312	418 558	499 381
Netherlands (a)	249 568	285 907	257 510	265 857	282 551
Poland	97 000	92 000	96 000	77 920	101 920
Russia	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000
Slovakia	584 000	557 100	501 200	* 430 900	* 678 000
Spain	836 269	836 869	464 691	583 698	788 991
Turkey	2 597 465	2 377 157	3 335 258	3 258 445	1 694 071
South Africa	* 40 000	* 50 000	* 50 000	* 60 000	* 70 000
Canada (b)	* 220 000	* 220 000	* 220 000	* 220 000	* 220 000
Guatemala	17 196	24 268	* 20 000	23 137	16 298
Mexico	101 000	101 000	101 000	101 000	101 000
Brazil (c)	1 084 194	1 423 000	1 621 000	* 1 600 000	* 1 600 000
Colombia	1 774	3 500	2 883	1 175	1 883
China	* 17 000 000	* 20 500 000	* 19 000 000	* 18 600 000	* 18 000 000
India (d)	196 940	285 009	327 663	299 149	195 033
Iran (e)	109 496	202 151	151 881	155 916	* 160 000
Israel (f)	91 040	135 966	* 136 000	107 274	90 000
Korea, Dem. P.R. of	* 700 000	* 700 000	* 700 000	* 700 000	* 300 000
Nepal (g)	—	225	60	—	—
Pakistan (h)	6 705	3 770	24 627	35 228	19 656
Philippines	5 998	* 6 000	7 158	10 310	* 10 300
Saudi Arabia	235 000	286 000	294 000	286 200	302 100
Australia (h)	522 187	611 547	680 967	489 036	234 704
World total	28 300 000	32 400 000	31 700 000	31 000 000	28 700 000

Note(s)

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

- (a) Chloride produced from solution mining
- (b) Officially described as magnesitic dolomite and brucite
- (c) Including beneficiated and directly shipped material
- (d) Years ended 31 March following that stated
- (e) Years ended 20 March following that stated
- (f) Magnesium chloride
- (g) Years ended 15 July of that stated
- (h) Years ended 30 June of that stated

Production of primary magnesium metal

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia	13 970	13 744	12 460	14 346	15 593
USA	* 40 000	* 40 000	* 40 000	* 40 000	* 30 000
Brazil	* 16 000	* 16 000	* 18 000	* 15 000	* 15 000
China	770 407	873 649	859 258	910 300	1 022 000
Israel	27 399	26 000	29 708	22 548	23 000
Korea (Rep. of)	* 7 500	* 10 000	* 10 000	* 10 000	* 10 000
Malaysia	* 650	* 2 950	* 1 600	* 400	* 30

Note(s)

- (1) In addition, substantial quantities of magnesium compounds are produced by, used and recycled within the process of titanium sponge production. It is believed this relates to the mineral carnallite and/or secondary magnesium chloride compounds.
- (2) Magnesium used within the process of titanium sponge production is not marketed as primary magnesium metal and is therefore excluded from this table. Annual quantities are likely to be approximately: Russia 50,000 t, Kazakhstan 10,000 t and Ukraine 8,000 t.

Production of manganese ore

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bulgaria	103 600	93 700	46 500	41 700	2 000
Georgia (a)	* 370 000	* 370 000	* 370 000	* 370 000	* 370 000
Hungary	35 000	51 000	57 000	19 000	—
Romania	21 300	12 662	40 262	4 477	* 4 500
Turkey	321 785	245 830	142 809	46 867	77 895
Ukraine	1 524 696	1 526 218	1 477 200	1 328 271	1 758 172
Burkina Faso	—	—	* 1 600	—	—
Egypt (b)	31 325	22 299	* —	* —	* —
Gabon	4 091 399	4 081 000	4 184 000	3 413 000	4 163 000
Ghana	1 997 911	1 531 394	1 562 769	2 018 254	3 003 580
Ivory Coast	271 562	308 401	294 904	294 904	* 295 000
Kenya	—	—	—	—	9 125
Morocco	111 000	91 271	71 700	70 138	99 008
Namibia	133 474	104 527	38 360	16 896	27 915
South Africa					
Metallurgical	* 10 930 000	* 13 830 000	* 15 947 000	* 13 708 000	* 13 861 000
Chemical	* 22 000	* 27 000	* 32 000	* 27 500	* 28 300
Sudan	3 250	20 000	31 400	9 800	* 9 500
Mexico	580 309	652 465	592 728	549 589	561 612
Brazil	2 833 000	2 723 000	2 816 675	2 880 718	* 2 880 000
Burma	* 394 000	* 242 000	* 70 000	* 293 000	* 310 000
China	* 17 500 000	* 15 500 000	* 13 000 000	* 11 650 000	* 12 500 000
India (c)	2 626 291	2 369 481	2 166 947	2 395 134	2 589 271
Iran (d)	163 367	139 736	86 523	78 955	* 80 000
Kazakhstan	2 852 100	2 608 800	1 625 700	1 600 700	1 492 100
Malaysia	1 125 127	835 429	480 727	700 717	1 226 106
Oman	49 000	37 500	7 400	21 300	9 000
Thailand	14 320	14 330	9 000	2 750	13 780
Vietnam	* 9 700	* 10 000	20 700	13 400	* 13 400
Australia	7 425 985	7 587 207	6 281 497	5 327 090	6 172 631
World total	55 500 000	55 000 000	51 500 000	46 900 000	51 600 000

Note(s)

(1) In addition to the countries listed, Colombia and Cuba may produce manganese ore.

(a) Marketable

(b) Fiscal years ending 30 June of that stated

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

Production of mercury

kilograms

Country	2013	2014	2015	2016	2017
Russia	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Morocco	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Mexico (a)	* 266 900	* 300 900	* 306 500	* 261 500	* 196 700
USA	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Argentina	28 000	* 25 000	* 25 000	* 25 000	* 25 000
Chile (b)	(a)* 19 000	* 18 000	* 14 000	* 2 000	(a)* 11 000
China	1 822 000	2 259 000	2 801 000	3 482 000	3 574 000
Iran	10 000	12 000	14 000	14 000	* 14 000
Kyrgyzstan	31 000	46 000	20 000	* 20 000	* 20 000
Tajikistan	130 000	85 000	96 000	* 100 000	* 100 000
World total	2 400 000	2 800 000	3 400 000	4 000 000	4 000 000

Note(s)

(1) Several countries are believed to have unrecorded production of mercury from copper electrowinning processes and by recovery from effluents.

(a) BGS estimates based on net exports

(b) From copper solvent extraction and electrowinning processes

Production of mica

tonnes (metric)

Country	2013	2014	2015	2016	2017
Finland	11 244	11 973	11 836	10 843	10 740
France (a)	* 19 700	* 20 200	* 20 700	* 19 600	* 19 200
Russia	* 7 000	* 6 000	4 823	4 823	3 701
Spain (a)	3 462	4 049	4 355	5 521	6 333
Turkey	1 076	17 440	44 637	14 531	204
Madagascar	9 782	* 12 000	* 17 000	* 22 000	* 35 000
South Africa	309	383	29	8	—
Sudan	500	1 000	—	—	* —
Canada	* 22 000	* 22 000	* 22 000	* 20 000	* 22 000
Mexico	160	160	145	145	145
USA (a)(b)	48 100	48 200	32 600	30 900	* 31 700
Argentina	* 7 500	* 5 000	* 5 000	* 5 000	* 5 000
Brazil	9 728	427 341	* 450 000	* 450 000	* 450 000
Colombia	240	162	240	247	159
China	* 41 000	* 25 600	* 25 000	* 25 000	* 25 000
India (c)	1 660	636	* 600	* 600	* 600
Iran (d)	5 635	* 5 600	* 5 600	1 500	* 1 500
Korea (Rep. of) (e)	25 143	24 205	17 405	12 934	14 576
Malaysia (f)	4 363	5 659	4 788	4 716	4 787
Sri Lanka	1 493	* 1 500	* 1 500	* 1 500	* 1 500
Taiwan	8 931	5 016	8 287	1 879	750
World total	229 000	644 000	677 000	632 000	633 000

Note(s)

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

- (a) Including mica recovered from mica schists and/or kaolin beneficiation
- (b) Sold or used by producers
- (c) Years ended 31 March following that stated
- (d) Years ended 20 March following that stated
- (e) Mainly sericite
- (f) Sericite

Mine production of molybdenum

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Armenia	5 934	6 022	5 324	5 438	5 590
Norway	8	2	1	2	* 2
Poland	1 310	1 330	1 360	1 320	1 220
Russia	3 605	3 114	3 254	3 359	2 806
Turkey	1	—	3	—	—
Canada	8 952	8 681	1 983	2 883	5 306
Mexico	12 562	14 370	11 327	11 896	13 985
USA	61 000	68 200	47 400	35 800	* 44 600
Argentina	3 829	1 907	1 730	957	1 301
Brazil	* 200	* 200	* 200	* 200	* 200
Chile	38 433	48 898	52 398	55 834	62 454
Peru	18 140	17 018	20 153	25 757	28 141
China	122 265	128 538	135 270	129 357	* 130 000
Iran (a)	3 470	4 000	6 705	6 975	* 7 000
Mongolia	1 819	1 999	2 557	2 431	2 639
World total	282 000	304 000	290 000	282 000	305 000

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 (metric)

Country	2013	2014	2015	2016	2017
Norway	320 000	331 000	324 000	* 324 000	* 324 000
Russia					
Nepheline syenite	4 662 000	4 396 000	4 111 000	4 432 000	4 332 000
Nepheline concentrates	990 600	940 300	951 900	958 100	998 100
Canada	674 000	670 000	599 000	475 000	625 000

Mine production of nickel

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Albania	2 151	5 091	6 280	3 952	1 856
Finland (a)	18 560	19 281	9 383	20 654	34 641
Greece	19 800	20 600	20 800	21 800	19 100
Kosovo	7 607	6 724	7 418	4 265	7 120
Norway	296	290	300	300	200
Poland	570	780	840	770	720
Russia	264 000	264 000	261 000	223 000	221 000
Spain	7 574	8 631	7 213	—	—
Turkey	1 076	3 034	8 637	9 337	14 770
Botswana	22 848	14 958	16 789	14 273	—
Ivory Coast	—	—	—	—	600
Madagascar	25 148	37 053	47 271	42 105	35 474
Morocco	160	—	—	—	196
South Africa (b)	51 208	54 956	56 689	48 994	48 383
Zimbabwe	12 962	16 633	16 109	17 743	16 617
Canada	227 743	228 867	234 519	235 034	214 302
Cuba	55 600	51 600	53 800	51 600	52 800
Dominican Republic	9 355	—	—	9 913	15 632
Guatemala	9 120	37 222	46 298	36 939	54 517
USA	—	4 093	27 167	23 417	21 302
Brazil	77 400	85 600	89 300	78 626	87 600
Colombia	49 320	41 221	36 671	37 091	40 606
Venezuela	—	2 500	2 581	—	—
Burma	9 450	19 706	22 913	22 562	21 828
China	93 151	101 067	101 403	100 219	105 000
Indonesia	1 340 000	188 000	129 751	179 600	339 000
Philippines	315 633	393 262	418 292	300 506	315 428
Vietnam	1 166	6 854	8 607	4 272	—
Australia	292 619	268 533	229 381	203 135	178 853
New Caledonia	164 406	175 174	193 199	204 207	215 382
Papua New Guinea	11 369	20 987	25 582	22 269	34 666
World total	3 090 000	2 077 000	2 078 000	1 917 000	2 098 000

Note(s)

(a) In addition some nickel is produced as a by-product of a talc operation. The amount is negligible.

(b) Includes metal and metal content of sulphate and concentrates.

Smelter/refinery production of nickel

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	500	600	700	700	* 700
Finland	44 498	42 750	60 709	85 424	85 780
France	12 100	8 400	6 500	4 600	2 300
Greece	17 500	18 481	17 113	17 071	16 781
Kosovo	7 600	6 700	7 400	4 300	7 100
Macedonia	20 000	18 100	17 700	10 600	7 200
Norway	91 017	90 526	91 222	92 735	86 495
Poland	570	780	840	770	720
Russia	241 800	234 700	231 200	188 700	203 000
Ukraine	21 200	18 600	17 952	18 100	15 300
United Kingdom	42 400	39 100	38 804	45 194	25 781
Madagascar	25 148	37 053	47 271	42 105	35 474
South Africa	32 200	34 100	41 900	42 100	43 000
Zimbabwe	2 800	4 600	—	—	—
Canada	152 728	149 486	149 716	158 299	154 080
Cuba	16 600	13 300	14 600	14 400	14 400
Dominican Republic	9 355	—	—	* 9 900	* 15 600
Guatemala	—	* 4 000	10 826	8 688	12 416
Brazil	57 500	79 600	77 700	77 100	68 500
Colombia	49 369	41 221	36 671	37 091	40 606
Venezuela	5 200	2 500	2 581	—	—
Burma	9 450	19 706	22 913	22 562	21 828
China	693 500	690 500	600 000	573 400	623 700
India	* 290	* 490	* 950	* 260	* 50
Indonesia	21 200	21 900	* 38 000	* 117 000	* 205 000
Japan	177 810	177 782	192 789	195 565	187 046
Korea (Rep. of)	23 325	24 903	34 882	44 857	43 861
Australia	141 251	137 762	152 978	120 520	103 900
New Caledonia	48 370	62 049	77 530	95 983	104 094
World total	1 965 000	1 980 000	1 991 000	2 028 000	2 125 000

Note(s)

- (1) Data relate to refined nickel plus the nickel content of ferro-nickel, nickel oxide and nickel salts. It does not include nickel content of nickel hydroxide cake or nickel matte as these are further refined elsewhere.
- (2) In addition to the countries listed, the USA produces some nickel as a refinery by-product.

Production of perlite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia	53	14	—	4	—
Bulgaria	—	—	—	—	4 800
Greece	890 000	985 330	890 670	921 410	932 950
Hungary	64 944	68 546	65 459	76 254	* 75 000
Italy	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Russia	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Slovakia	16 000	17 000	25 000	19 000	47 510
Turkey	1 075 949	879 125	846 242	1 066 251	606 231
Ukraine	* 16 000	* 16 000	* 16 000	15 772	16 560
South Africa	1 078	* 1 100	* 1 100	* 1 000	* 1 000
Mexico	27 200	26 000	13 000	19 000	13 000
USA	419 000	462 000	488 000	513 000	* 520 000
Argentina	19 793	* 20 000	* 17 000	35 021	* 35 000
Chile	4 800	800	3 000	5 500	4 210
China	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
Iran (a)	1 120 951	351 009	395 182	524 823	* 500 000
Philippines	14 249	17 134	18 575	14 460	2 148
Thailand	14 293	54 100	17 200	18 740	5 850
Australia (b)	1 300	—	—	620	275

Note(s)

(1) In addition to the countries listed, Algeria, Canada, Djibuti, Georgia, Iceland, Morocco and Mozambique are believed to produce perlite.

(a) Years ended 20 March following that stated

(b) Years ended 30 June of that stated

Production of crude petroleum

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania	1 203 638	1 342 451	1 279 253	1 055 764	957 768
Austria (a)(b)	917 321	945 034	905 999	809 358	741 890
Azerbaijan	43 500 000	(b) 41 952 400	(b) 41 628 300	(b) 40 999 100	(b) 38 700 000
Belarus	1 645 000	1 645 000	1 645 000	1 645 000	1 650 000
Bulgaria	27 400	26 200	23 700	22 600	21 930
Croatia	620 795	535 281	613 281	676 752	682 339
Czech Republic	152 000	148 000	126 000	116 000	106 000
Denmark	8 657 000	8 159 150	7 710 265	6 949 005	6 740 075
Estonia (c)	2 379 253	2 295 594	2 002 415	1 875 685	2 493 408
France	6 322 286	6 421 849	6 571 195	6 770 322	5 973 813
Georgia	47 863	42 631	40 206	38 557	31 995
Germany	2 638 379	2 429 789	2 412 063	2 355 028	2 218 406
Greece	440 000	462 000	497 000	601 000	597 000
Hungary	626 890	616 070	633 090	774 000	705 000
Italy	5 480 000	5 750 000	5 450 000	3 740 000	4 140 000
Lithuania	86 054	80 862	73 540	63 468	55 829
Netherlands	1 729 000	2 089 000	2 004 000	1 558 000	1 465 000
Norway	90 387 000	93 294 000	95 797 000	98 466 000	96 830 000
Poland	960 672	950 548	927 737	1 001 122	996 049
Romania	3 994 122	3 922 784	3 862 744	3 693 914	3 528 868
Russia	523 000 000	525 000 000	533 000 000	549 000 000	546 000 000
Serbia	1 163 988	1 112 303	1 026 686	933 884	* 900 000
Slovakia	13 000	8 000	10 000	9 000	5 000
Slovenia	298	366	261	229	241
Spain	367 569	305 263	229 567	139 176	118 809
Turkey	2 508 894	2 743 565	* 2 700 000	2 336 391	* 2 350 000
Ukraine	3 071 000	2 758 000	2 531 000	2 272 000	2 098 200
United Kingdom	40 646 000	39 928 000	45 288 000	47 445 000	45 636 000
Algeria	64 800 000	68 800 000	67 200 000	68 400 000	66 600 000
Angola	85 700 000	81 600 000	87 000 000	86 300 000	81 800 000
Cameroon	3 399 200	3 850 000	4 896 300	4 716 700	3 880 800
Chad	4 800 000	4 700 000	5 400 000	5 400 000	5 400 000
Congo	12 060 000	11 720 000	11 910 000	9 970 000	12 250 000
Congo, Democratic Republic	1 146 380	1 147 838	1 132 052	1 075 779	1 034 393
Egypt	34 400 000	35 100 000	35 400 000	33 800 000	32 200 000
Equatorial Guinea	13 600 000	13 700 000	12 500 000	10 700 000	9 500 000
Gabon	11 270 000	10 980 000	11 922 000	11 484 000	11 060 000
Ghana	4 960 000	5 311 000	5 161 000	4 960 192	7 615 649
Ivory Coast	1 904 000	1 854 000	1 503 000	2 505 000	2 756 000
Libya	49 459 000	23 897 000	19 996 000	18 810 000	* 27 550 000
Mauritania	336 000	299 000	258 900	240 528	165 603
Morocco	6 000	5 000	5 000	* 5 000	* 5 000
Niger	995 720	995 720	697 000	647 220	547 650
Nigeria	109 200 000	109 400 000	105 800 000	91 400 000	95 300 000
Senegal	15 800	30 100	22 900	3 300	13 000
South Africa	79 000	88 803	70 979	38 796	31 145
South Sudan	4 900 000	7 700 000	7 300 000	5 800 000	5 300 000
Sudan	5 800 000	5 900 000	5 400 000	5 100 000	4 200 000
Tunisia	3 038 000	2 813 000	2 547 000	2 168 400	1 827 600
Barbados	34 923	32 161	34 239	31 944	32 046
Canada	172 500 000	186 200 000	191 400 000	192 400 000	208 500 000
Cuba	2 897 100	2 905 300	2 822 000	2 619 200	* 2 600 000
Guatemala	505 573	508 862	508 222	475 741	488 068
Mexico	148 998 583	144 138 810	133 953 966	127 077 904	115 135 269
Trinidad & Tobago	4 180 844	4 186 801	4 052 724	3 693 394	3 700 692
USA	463 954 442	542 522 718	587 858 026	563 910 993	599 553 471
Argentina	28 675 450	28 249 453	28 243 328	27 176 128	25 465 748
Bolivia	3 010 400	3 195 000	3 427 000	3 566 000	3 566 000
Brazil	109 360 000	121 372 585	130 716 876	135 223 698	141 362 424
Chile	357 838	354 130	254 649	213 032	176 065
Colombia	51 660 305	51 059 991	51 841 046	45 661 017	44 800 000
Ecuador	26 842 000	28 359 000	29 100 000	29 500 000	28 500 000
Peru	8 278 655	8 525 044	7 342 379	6 657 419	6 620 481
Suriname	964 672	988 869	998 387	961 341	959 752
Venezuela	137 600 000	138 200 000	135 900 000	123 100 000	108 300 000

Production of crude petroleum

tonnes (metric)

Country	2013	2014	2015	2016	2017
Afghanistan	4 507	5 080	* 3 700	* 3 600	* 3 600
Bahrain (b)	3 068 000	3 115 000	3 209 000	3 108 000	2 878 000
Brunei	6 733 840	6 217 262	6 238 268	5 960 395	5 555 999
Burma (d)	863 000	826 000	673 000	607 000	560 000
China (a)	209 918 500	211 429 200	214 555 800	199 685 200	191 506 000
East Timor (b)	2 519 000	1 615 000	1 585 000	1 007 000	800 000
India (d)	37 788 000	37 461 000	36 950 000	36 010 000	35 683 000
Indonesia	41 259 000	39 439 000	39 290 000	41 667 000	40 051 000
Iran	169 763 200	174 239 000	181 606 500	216 431 400	234 200 000
Iraq	153 200 000	160 300 000	197 000 000	217 600 000	221 500 000
Israel	52 259	60 010	65 383	92 837	65 488
Japan	627 000	588 000	544 000	501 000	512 000
Jordan	1 000	800	500	400	300
Kazakhstan	81 731 400	80 825 600	79 456 300	78 031 700	86 201 600
Kuwait (e)	151 300 000	150 100 000	148 100 000	152 600 000	146 000 000
Kyrgyzstan	83 500	82 900	106 700	* 106 700	* 106 700
Malaysia	27 510 000	28 800 000	31 240 000	31 860 000	30 950 000
Mongolia	705 488	* 900 000	1 206 231	1 134 773	1 048 707
Oman	46 902 251	46 981 924	48 854 229	49 816 773	48 331 377
Pakistan (f)	3 735 038	4 155 885	4 627 053	4 246 335	4 329 140
Philippines	819 217	995 470	845 024	844 200	755 013
Qatar	84 500 000	83 800 000	82 100 000	82 500 000	79 900 000
Saudi Arabia (e)	542 300 000	543 400 000	567 800 000	586 600 000	561 700 000
Syria	2 700 000	1 500 000	1 200 000	1 100 000	1 100 000
Taiwan	10 511	9 320	9 534	8 446	5 407
Tajikistan	27 300	24 500	24 600	25 134	23 482
Thailand	13 421 000	12 992 000	13 816 000	14 520 000	13 390 000
Turkmenistan	11 400 000	12 100 000	12 700 000	12 300 000	12 400 000
United Arab Emirates	165 700 000	167 300 000	175 500 000	181 600 000	176 300 000
Uzbekistan	2 900 000	2 800 000	2 700 000	2 600 000	2 500 000
Vietnam (b)	17 390 000	17 392 000	18 746 000	17 230 000	15 518 000
Yemen, Republic of	9 000 000	6 900 000	2 600 000	1 600 000	2 100 000
Australia	18 238 139	19 558 279	17 222 771	16 015 145	15 396 984
New Zealand (b)	1 605 470	1 788 250	1 869 660	1 584 350	1 404 500
Papua New Guinea	1 399 000	1 407 000	1 311 000	1 195 000	946 000
World total	4 123 000 000	4 215 000 000	4 347 000 000	4 361 000 000	4 358 000 000

Note(s)

(1) The figures shown in this table include natural gas liquids.

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

Production of natural gas

million cubic metres

Country	2013	2014	2015	2016	2017
Albania	19	33	35	92	102
Austria	1 359	1 245	1 183	1 253	1 742
Azerbaijan	17 895	18 827	19 236	18 718	18 185
Belarus	228	222	225	216	205
Bulgaria	282	183	85	80	65
Croatia	1 862	1 804	1 828	1 690	1 530
Czech Republic	207	198	200	169	171
Denmark	4 566	4 381	4 374	4 301	4 592
France	340	17	28	* 28	* 28
Georgia	5	10	11	7	8
Germany	10 678	10 060	9 323	8 608	7 932
Greece	5	5	4	9	8
Hungary	2 028	1 946	1 872	1 986	1 605
Ireland, Republic of	343	354	118	2 748	3 171
Italy	7 710	7 280	6 880	6 020	5 650
Netherlands	82 358	68 684	52 177	50 373	43 915
Norway	108 746	108 820	117 150	116 820	124 160
Poland	5 789	5 648	5 624	5 493	5 408
Romania	11 135	11 345	11 436	10 090	13 536
Russia	668 000	639 000	633 000	639 000	691 000
Serbia	660	631	626	595	510
Slovakia	91	99	104	87	88
Slovenia	3	3	3	5	8
Spain	62	26	12	8	13
Turkey	562	* 550	396	* 400	* 400
Ukraine	21 313	20 138	19 757	20 047	20 800
United Kingdom	37 308	37 680	40 466	41 607	42 094
Algeria	79 300	80 200	81 400	91 400	91 200
Angola	910	720	770	1 913	* 2 500
Cameroon	152	308	369	357	392
Congo	1 642	1 501	1 501	1 388	1 388
Egypt	54 000	47 000	42 600	40 300	49 000
Equatorial Guinea	8 999	8 462	8 405	* 7 900	* 8 200
Gabon (a)	420	420	378	* 380	* 380
Ivory Coast	2 104	2 109	2 177	2 395	2 400
Libya	12 200	11 800	12 400	11 200	11 500
Morocco	92	104	82	* 80	* 80
Mozambique	5 280	5 607	5 695	* 5 700	* 5 700
Nigeria	36 200	45 000	50 100	44 900	47 200
South Africa	838	849	1 333	820	749
Tanzania	1 017	958	36 568	47 704	51 054
Tunisia	2 789	2 557	2 479	2 213	2 089
Barbados	22	21	20	17	15
Canada	145 395	151 351	154 275	156 807	154 707
Cuba	1 066	1 200	1 245	1 185	1 051
Mexico	64 346	64 275	59 870	52 248	48 704
Trinidad & Tobago	42 361	41 571	39 164	34 091	34 391
USA (a)	689 062	733 095	766 225	729 300	734 500
Argentina	41 708	41 484	42 896	44 988	44 595
Bolivia	20 800	21 954	21 981	21 134	17 100
Brazil	24 290	24 536	24 862	25 337	28 663
Chile	893	907	1 064	1 175	1 200
Colombia	13 200	12 300	11 600	10 900	10 100
Ecuador	514	566	510	538	481
Peru	12 921	13 687	13 239	14 783	13 712
Venezuela	32 900	32 900	36 500	38 300	37 600
Afghanistan (b)	155	142	146	165	156
Bahrain	19 241	20 627	21 283	21 062	21 465
Bangladesh (c)	22 670	23 232	25 263	27 559	27 445
Brunei	12 206	11 852	12 452	12 025	12 290
Burma (d)	13 648	18 999	19 703	18 963	18 893
China	120 858	130 157	134 610	136 865	147 420
East Timor	5 906	5 320	6 055	5 855	5 270
India (d)	35 407	33 656	32 249	31 897	31 806

Production of natural gas

million cubic metres

Country	2013	2014	2015	2016	2017
Indonesia	77 263	76 145	75 770	74 704	72 453
Iran	166 800	185 800	189 400	203 200	223 900
Iraq	7 100	7 500	7 300	9 900	10 400
Israel	6 492	7 676	8 438	9 390	9 570
Japan	2 995	2 822	2 734	2 754	3 008
Jordan	150	130	122	116	102
Kazakhstan	41 912	43 177	45 256	46 677	53 202
Kuwait (e)	15 500	14 300	16 100	16 400	17 400
Kyrgyzstan	33	34	31	* 31	* 31
Malaysia	64 780	65 400	63 380	67 510	71 320
Oman	32 093	29 915	31 093	31 742	30 463
Pakistan (c)	42 646	42 302	41 511	41 958	41 684
Philippines	3 511	3 693	3 471	3 977	3 923
Qatar	167 700	169 100	175 200	177 000	175 700
Saudi Arabia (e)	95 000	97 300	99 200	105 300	111 400
Syria	4 800	4 400	4 100	3 600	3 100
Taiwan	381	387	374	322	266
Tajikistan	2	3	4	3	2
Thailand	40 382	40 150	39 559	39 273	37 925
Turkmenistan	62 300	69 300	72 400	66 900	62 000
United Arab Emirates	56 000	57 800	55 800	59 600	60 400
Uzbekistan	56 900	57 300	57 700	53 100	53 400
Vietnam	9 751	10 210	10 660	10 610	9 866
Yemen, Republic of	10 400	9 800	2 900	600	700
Australia	62 479	67 335	76 791	97 328	113 805
New Zealand	4 526	5 015	4 596	4 878	4 761
Papua New Guinea	156	5 257	9 795	10 455	11 018
World total	3 541 000	3 603 000	3 691 000	3 712 000	3 834 000

Note(s)

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

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

Production of phosphate rock

tonnes (metric)

Country	2013	2014	2015	2016	2017
Finland	877 189	946 234	956 564	939 531	978 613
Russia	10 500 000	10 700 000	11 500 000	12 300 000	12 500 000
Turkey	510 080	604 000	713 230	772 500	—
Algeria	1 150 000	1 417 950	1 288 900	1 274 000	* 1 300 000
Burkina Faso	1 414	1 832	* 1 000	* 1 000	* 1 000
Egypt (a)	4 500 501	4 830 918	3 427 000	* 3 000 000	* 3 000 000
Malawi	11 783	11 194	12 400	2 500	10 000
Mali	* 7 500	* 15 000	31 000	37 236	41 000
Morocco	26 400 000	27 390 000	26 264 000	26 900 000	32 800 000
Senegal	882 400	806 200	1 062 000	1 609 000	1 385 000
South Africa	2 131 854	2 011 151	1 852 348	1 696 533	2 079 294
Tanzania	23 020	* 23 000	* 23 000	23 658	* 23 000
Togo	1 213 657	1 085 546	1 150 194	850 076	732 503
Tunisia	3 283 522	3 783 969	3 228 311	3 663 613	4 422 100
Zimbabwe	17 900	6 100	6 200	6 500	* 6 500
Canada	316 000	—	—	—	—
Cuba	3 000	1 300	—	—	—
Mexico	2 217 481	1 733 479	1 929 439	3 294 266	2 307 180
USA	31 200 000	25 300 000	27 400 000	27 100 000	* 27 700 000
Brazil (b)	6 715 000	6 513 000	6 100 000	6 500 000	5 500 000
Chile					
Phosphate rock	12 041	20 142	16 141	1 604	—
Guano	2 915	2 717	3 408	4 601	4 238
Colombia	65 759	41 692	95 483	66 324	45 272
Peru	14 842 307	10 884 269	11 161 636	10 561 111	8 450 379
Venezuela	98 458	35 820	26 324	* 25 000	* 25 000
China	108 510 000	120 438 000	142 039 000	144 398 000	123 132 000
Christmas Island (a)(c)(d)	672 000	575 000	671 000	770 000	644 000
India (e)	1 453 580	1 608 145	1 571 973	1 124 440	1 534 269
Iran (f)	119 961	75 092	85 066	64 805	* 65 000
Iraq	140 000	* 140 000	* 140 000	* 140 000	* 140 000
Israel	2 539 166	2 778 715	3 427 469	3 591 200	2 637 440
Jordan	5 398 600	7 143 713	8 335 993	7 991 157	8 687 581
Kazakhstan	1 831 800	* 1 830 000	* 1 830 000	* 1 830 000	* 1 830 000
Laos					
Phosphate rock	1 325	—	—	—	—
Guano	5 000 000	—	—	181 000	435 000
Pakistan (a)	104 961	101 971	109 874	115 140	61 677
Philippines					
Phosphate rock	3 478	3 897	5 437	8 019	* 8 000
Guano	443	409	495	670	* 700
Saudi Arabia	1 820 000	1 911 000	2 002 000	5 400 000	5 670 000
Sri Lanka	49 106	62 595	52 518	38 848	42 435
Syria	897 600	1 230 000	750 000	* —	* 100 000
Thailand	350	500	* 500	* 500	* 500
Uzbekistan	700 000	* 700 000	* 700 000	* 700 000	* 700 000
Vietnam	2 656 100	2 470 900	2 923 400	3 142 500	3 238 900
Australia (a)	2 064 291	1 950 050	1 027 622	1 037 265	942 373
Nauru (c)	347 184	153 418	94 021	114 350	126 000
World total	241 000 000	241 000 000	264 000 000	271 000 000	253 000 000

Note(s)

(1) In addition to the countries listed, Indonesia and Nigeria are believed to produce phosphate rock

(a) Years ended 30 June of that stated

(b) Including beneficiated and directly shipped material

(c) Exports

(d) Including phosphate dust

(e) Years ended 31 March following that stated

(f) Years ended 20 March following that stated

Mine production of platinum group metals

kilograms (metal content)

Country	2013	2014	2015	2016	2017
Finland					
Platinum	946	1 060	992	1 154	1 418
Palladium	766	808	784	883	1 021
Poland					
Platinum	51	40	40	50	* 40
Palladium	30	25	20	30	* 35
Russia					
Platinum (a)	25 000	22 000	20 800	22 500	20 200
Palladium (a)	84 000	81 300	75 500	86 300	82 500
Other platinum metals (a)	2 600	2 800	2 500	2 600	2 000
Serbia					
Platinum	2	3	4	* 3	* 3
Palladium	25	23	31	* 20	* 20
Botswana					
Platinum	218	124	31	—	—
Palladium	1 337	560	156	—	—
South Africa					
Platinum	137 024	93 991	139 125	133 241	131 247
Palladium	76 008	58 410	82 691	76 273	80 134
Other platinum metals	51 156	36 043	53 699	54 139	48 895
Zimbabwe					
Platinum	13 066	12 483	12 564	15 110	14 257
Palladium	10 153	10 138	10 055	12 222	11 822
Other platinum metals	2 677	2 667	2 612	3 093	* 3 000
Canada					
Platinum	* 9 700	* 12 000	* 11 900	* 11 300	* 9 800
Palladium	* 19 800	* 21 000	* 20 800	* 19 700	* 17 100
Other platinum metals	* 1 100	* 1 400	* 1 400	* 1 300	* 1 100
USA					
Platinum	3 720	3 660	3 670	3 890	* 3 900
Palladium	12 600	12 400	12 500	13 100	* 13 000
Colombia	1 520	1 142	861	917	566
China					
Platinum	* 1 600	* 1 600	* 2 300	* 2 300	* 2 300
Palladium	* 850	* 850	* 1 200	* 1 200	* 1 200
Australia					
Palladium (b)	786	766	533	762	765
World total	457 000	377 000	457 000	462 000	446 000

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 production listed, concentrates produced in Spain, and possibly other countries, are believed to be processed in China to recover platinum group metals.

- (a) Sales from mine production and stocks
(b) Platinum group metals; all forms

Production of potash

tonnes (K₂O content)

Country	2013	2014	2015	2016	2017
Belarus	4 178 500	6 339 990	6 467 878	6 180 050	7 101 799
Germany					
Potassic salts	3 075 201	3 178 103	3 109 903	2 694 126	2 906 481
Russia					
Chloride	6 104 270	7 402 350	6 954 000	6 588 000	* 6 600 000
Spain					
Chloride	711 272	706 664	667 959	667 224	557 468
United Kingdom					
Chloride	* 540 000	576 000	594 000	432 000	216 000
Polyhalite	—	—	200 000	200 000	500 000
Canada					
Chloride	10 140 000	11 345 000	11 506 000	10 208 000	12 214 000
USA					
Potassic salts	960 000	850 000	740 000	500 000	* 480 000
Brazil					
Chloride	492 151	492 355	289 000	300 000	306 000
Chile					
Chloride	1 158 403	1 108 478	1 118 864	1 237 447	1 197 105
China	* 5 300 000	* 6 110 000	* 5 710 000	* 5 700 000	* 5 700 000
Israel					
Chloride	2 155 414	2 212 923	950 077	2 306 675	2 479 000
Jordan	1 064 000	1 275 500	1 436 600	1 222 100	1 415 200
World total	35 900 000	41 600 000	39 700 000	38 200 000	41 700 000

Production of rare earth oxides

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia	1 443	2 134	2 312	3 063	2 500
USA	3 300	3 240	3 540	—	—
China (a)	* 95 000	* 139 000	* 140 000	* 140 000	* 140 000
India (b)	319	1 836	956	* 1 000	* 1 000
Malaysia	229	292	365	1 221	196
Vietnam	* 100	* —	* 250	* 220	* 100
Australia (c)	970	3 965	8 799	12 631	16 003

Note(s)

- (1) All the figures in this table are either reported as rare earth oxides or are calculated to rare earth oxide equivalent.
 - (2) Prior to the 2005-2009 edition of this book, a table for the production of 'rare earth minerals' was included rather than the current 'rare earth oxides'. Users should exercise caution when comparing statistics over longer time periods.
 - (3) Although rare earth minerals are believed to be extracted in other countries, there is insufficient evidence to estimate the quantities of contained oxides.
 - (4) Where possible, data are shown against the country where the mineral is mined.
- (a) Includes production from iron ore extraction, bastnasite concentrates and ion absorption clays
 (b) Years ending 31 March following that stated
 (c) Years ending 30 June of that stated

Production of rhenium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia	* 0	* 0	—	—	—
Poland	8	8	9	9	11
Russia	* 2	* 2	* 2	* 2	* 2
USA	7	9	8	8	* 9
Chile	* 27	* 25	* 26	* 27	* 27
China	* 2	* 2	* 3	* 3	* 3
Kazakhstan	* 3	* 0	* 1	* 1	* 1
Uzbekistan	* 0	* 0	* 0	* 0	* 0

Production of salt

tonnes (metric)

Country	2013	2014	2015	2016	2017
Albania					
Sea salt	* 47 000	* 47 000	* 47 000	* 47 000	* 47 000
Armenia	30 786	39 793	27 392	32 250	32 551
Austria					
Rock salt	184	245	248	244	251
Salt in brine	982 551	1 116 658	985 357	1 044 926	1 113 728
Azerbaijan	6 268	5 173	4 743	4 690	4 985
Belarus	2 625 270	1 820 547	2 055 047	2 476 493	2 628 985
Bosnia & Herzegovina	727 894	791 047	869 750	966 177	1 029 302
Bulgaria	2 000 000	3 300 000	3 100 000	3 300 000	3 400 000
Croatia	42 502	33 039	51 877	39 836	52 938
Denmark	580 000	* 580 000	* 580 000	* 580 000	* 580 000
France	7 312 200	6 500 000	4 266 053	4 164 364	* 4 200 000
Germany					
Rock salt	8 510 652	4 928 656	6 027 873	5 634 339	6 793 883
Brine salt	2 164 456	2 133 359	2 286 769	2 278 304	2 679 189
Salt in brine	7 878 895	4 075 004	8 132 675	8 324 054	8 961 916
Greece	189 500	(a) 146 402	(a) 121 537	(a) 158 020	(a)* 160 000
Italy					
Rock salt & brine salt	2 672 340	2 819 824	3 030 687	2 550 849	3 195 063
Malta	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Montenegro					
Sea salt	10 000	* 10 000	* 10 000	* 10 000	* 10 000
Netherlands	6 517 000	6 500 000	6 700 000	6 625 000	6 935 000
Poland					
Rock salt	1 310 500	775 185	639 735	698 607	984 000
Brine salt	2 735 500	2 705 091	2 797 703	2 964 690	2 989 000
Other salt	421 000	459 400	487 189	499 506	446 000
Portugal					
Rock salt	473 095	69 702	30 008	6 092	7 800
Sea salt	91 282	96 321	117 282	105 972	114 531
Romania	2 127 780	2 046 740	2 092 932	2 128 156	2 290 060
Russia	348 000	361 000	723 000	769 000	* 770 000
Serbia	13 704	12 994	13 202	9 149	* 9 000
Slovenia	3 360	—	2 191	2 417	2 335
Spain					
Rock salt	2 973 993	2 753 802	3 032 409	3 253 372	3 100 000
Sea salt	1 221 018	1 358 647	1 402 672	1 199 669	1 110 768
Other salt	114 829	157 188	154 464	99 815	99 592
Switzerland	560 076	418 389	476 941	447 216	448 509
Turkey	5 564 736	5 931 945	6 257 320	5 328 256	6 644 552
Ukraine	5 796 287	2 497 706	2 136 500	1 783 530	1 815 684
United Kingdom	6 930 000	4 690 000	* 4 700 000	* 4 100 000	* 4 100 000
Algeria					
Brine salt & sea salt	172 900	192 982	175 000	157 400	* 160 000
Angola	* 45 000	* 45 000	47 845	93 000	* 93 000
Botswana	521 306	515 311	404 295	399 837	369 613
Djibouti	* 500	* 500	* 500	* 500	* 500
Egypt (b)	2 193 936	1 543 279	* 1 325 584	* 1 300 000	* 1 300 000
Eritrea	* 290 000	* 300 000	* 300 000	* 290 000	* 290 000
Ethiopia (c)	318 402	* 320 000	* 320 000	* 320 000	* 320 000
Ghana	* 250 000	* 250 000	* 250 000	* 250 000	* 250 000
Guinea	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Kenya (d)	8 895	18 936	21 201	23 423	43 245
Libya	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Madagascar	* 85 000	* 85 000	* 85 000	* 95 000	* 85 000
Mauritania	* 700	* 700	* 700	* 700	* 700
Mauritius (a)	3 800	3 500	1 800	500	500
Morocco	488 300	439 160	555 760	634 662	659 263
Mozambique (a)	* 150 000	* 160 000	* 160 000	* 140 000	* 140 000
Namibia	644 961	745 785	267 147	581 558	808 952
Senegal	243 000	244 700	265 700	263 200	265 000
South Africa	479 024	493 828	520 070	488 984	503 935
Sudan	20 800	30 000	20 136	223 397	* 225 000
Tanzania	36 032	54 757	92 158	145 718	100 017
Tunisia	1 293 880	1 124 019	1 280 000	* 1 280 000	* 1 280 000

Production of salt

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bahamas (b)	956 789	1 493 308	962 486	308 007	349 710
Bonaire (a)	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Canada					
Rock salt	11 223 829	13 173 990	13 312 076	9 310 950	10 381 495
Other salt (e)	986 253	995 546	974 035	979 382	981 661
Cuba	222 400	243 300	284 900	248 000	246 300
Dominican Republic	* 13 000	11 271	12 328	* 12 000	* 13 000
El Salvador (a)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Guatemala (a)	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Honduras	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Jamaica	14 166	* 14 200	* 14 000	* 14 000	* 14 000
Mexico	10 126 601	10 520 508	9 718 027	9 785 053	8 671 281
Nicaragua (a)	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Panama (a)	27 197	25 660	23 294	23 470	18 637
USA					
Rock salt (f)	14 364 000	19 026 000	19 800 000	* 18 480 000	* 17 630 000
Salt in brine (f)	18 354 000	18 120 000	17 100 000	* 15 960 000	* 17 630 000
Evaporated salt (f)	7 182 000	8 154 000	8 010 000	* 7 560 000	* 7 740 000
Argentina	1 652 087	* 1 500 000	* 1 700 000	2 525 234	* 2 500 000
Bolivia	2 262	* 2 200	2 216	4 534	* 4 500
Brazil					
Rock salt	1 349 411	1 451 051	* 1 450 000	* 1 500 000	* 1 500 000
Sea salt	5 926 042	6 050 000	* 6 000 000	* 6 000 000	* 6 000 000
Chile	6 576 960	10 553 440	11 831 116	8 139 914	7 440 741
Colombia					
Rock salt	339 737	494 185	334 804	354 791	336 373
Sea salt	113 226	105 577	95 652	176 021	165 126
Ecuador	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Peru	1 205 435	1 175 157	1 471 131	1 450 415	1 481 398
Venezuela (a)	* 350 000	* 350 000	* 350 000	* 350 000	* 350 000
Afghanistan (g)	40 992	87 014	97 560	56 928	75 579
Bangladesh (b)	1 438 805	1 460 698	1 463 117	1 477 157	1 495 512
Burma (h)	169 109	129 000	212 000	221 270	167 000
Cambodia (a)(i)	147 000	270 000	174 000	148 900	* 150 000
China	73 676 000	70 497 100	66 655 400	66 201 000	62 666 000
India					
Sea salt (h)	17 517 000	21 022 100	21 516 900	23 454 700	* 23 500 000
Other salt (h)	5 502 300	5 865 000	6 126 800	5 736 900	* 5 700 000
Indonesia	* 720 000	* 720 000	* 720 000	* 720 000	* 720 000
Iran (g)	3 269 439	3 517 536	2 813 780	2 796 224	* 2 800 000
Iraq	181 928	* 182 000	* 182 000	* 182 000	* 182 000
Israel (a)	442 417	459 742	333 317	389 236	514 100
Japan (j)	929 000	928 000	938 000	928 000	926 000
Jordan	* 32 000	* 32 000	* 32 000	* 32 000	* 32 000
Kazakhstan	519 188	596 508	608 627	730 283	814 509
Korea (Rep. of)	421 259	303 510	342 844	323 470	308 844
Korea, Dem. P.R. of	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Kuwait	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Laos	6 099	8 823	1 733	118	6 697
Lebanon (a)	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Mongolia	* 2 100	* 2 100	* 2 100	* 2 100	* 2 100
Oman	11 800	12 900	12 600	4 500	11 000
Pakistan					
Rock salt (b)	2 159 939	2 220 347	2 797 506	3 552 948	3 534 075
Sea salt (b)(d)	297 047	254 985	292 953	254 089	209 018
Philippines (a)	992 640	* 993 000	* 993 000	* 993 000	* 993 000
Saudi Arabia					
Rock salt & brine salt	1 900 000	1 990 000	2 000 000	2 400 000	2 520 000
Sri Lanka	36 920	102 023	* 100 000	* 100 000	* 100 000
Syria	* 20 000	* 10 000	* 5 000	* 2 500	* 2 500
Taiwan	80 966	81 893	78 301	77 276	77 054
Tajikistan	32 062	36 348	35 704	33 055	41 323
Thailand					
Rock salt	1 300 156	1 381 067	1 385 911	1 333 675	772 110
Turkmenistan	* 225 000	* 230 000	* 230 000	* 230 000	* 230 000

Production of salt

tonnes (metric)

Country	2013	2014	2015	2016	2017
Uzbekistan	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Vietnam	718 100	905 600	1 061 000	982 000	854 300
Yemen, Republic of	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Australia (b)	13 184 573	13 563 290	12 324 493	11 514 481	11 280 859
New Zealand	55 000	65 000	101 000	101 678	60 000
World total	288 700 000	288 600 000	288 000 000	278 000 000	279 300 000

Note(s)

- (1) This table does not include production of refined salt.
(2) Salt is known to be produced in many countries for which statistics are not available.

- (a) Sea salt
(b) Years ended 30 June of that stated
(c) Years ended 7 July of that stated
(d) Lake salt
(e) Including salt in brine
(f) Sold or used by producers
(g) Years ended 20 March following that stated
(h) Years ended 31 March following that stated
(i) Seasons beginning in November and ending in May of the year stated.
(j) Exports

Production of refined selenium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Armenia	20	* 20	* 20	* 20	* 20
Belgium	* 200	* 200	* 200	* 200	* 200
Finland	72	94	93	104	100
Germany (a)	* 700	* 700	* 790	* 790	* 790
Poland	80	90	87	82	74
Russia	114	131	143	197	* 197
Serbia	16	17	15	* 16	* 16
Sweden	* 20	* 20	* 20	* 20	* 20
Canada	159	154	154	176	49
Mexico	132	120	99	121	112
USA	* 150	* 160	* 90	* 122	* 116
Chile	70	41	* 50	* 50	* 50
Peru	50	49	40	45	* 50
China	* 610	* 670	720	750	770
Japan	739	782	772	753	792
Kazakhstan	* 130	* 130	* 130	* 130	* 130
Philippines	* 70	* 70	* 70	* 70	* 70
Uzbekistan	* 20	* 20	* 20	* 20	* 20

Note(s)

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

- (a) Includes selenium produced from imported material

Production of sillimanite minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
France					
Andalusite (a)	* 68 000	* 68 000	* 68 000	* 58 000	* 68 000
Madagascar	4 500	* 3 000	1 900	1 800	4 200
South Africa					
Andalusite	175 328	172 657	* 190 000	* 190 000	* 190 000
USA					
Kyanite (b)	110 000	88 600	109 000	79 700	* 90 000
Brazil					
Kyanite (c)	* 200	* 200	* 200	* 200	* 200
India					
Kyanite (d)	3 679	6 255	2 901	3 253	7 818
Sillimanite (d)	67 265	66 273	69 942	68 131	81 638
Nepal					
Kyanite (e)	19	12	7	1	2

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 believed to be produced in Brazil, Germany and Hungary.
- (3) Production capacity for synthetic mullite also exists in China, India, Japan, the USA and the United Kingdom but output is believed to be zero.

- (a) May include other sillimanite minerals
- (b) Including related minerals
- (c) Including beneficiated and directly shipped material
- (d) Years ended 31 March following that stated
- (e) Years ending 15 July of that stated

Mine production of silver

kilograms (metal content)

Country	2013	2014	2015	2016	2017
Armenia	14 083	13 295	14 344	12 792	15 552
Azerbaijan	2 051	970	890	5 136	8 076
Bulgaria	55 637	50 200	37 955	52 526	53 053
Cyprus	—	—	—	—	99
Finland	14 226	12 830	13 051	16 348	13 654
Greece	39 759	35 785	28 100	29 300	23 200
Greenland	* 3	—	—	—	—
Ireland, Republic of	7 822	6 436	3 770	1 080	1 340
Macedonia	23 400	23 900	17 700	14 000	12 775
Poland	1 161 114	1 384 000	1 407 000	1 482 000	1 490 000
Portugal	40 621	43 172	41 337	38 631	40 186
Romania	* 18 000	* 18 000	* 18 000	* 18 000	* 18 000
Russia (a)	1 427 700	1 433 900	1 580 100	1 449 400	1 306 300
Serbia (a)	5 800	8 600	7 500	11 300	11 900
Slovakia	508	437	532	* 449	* 460
Spain	* 27 900	* 27 300	27 300	17 600	30 000
Sweden	341 346	382 611	479 686	498 686	467 500
Turkey	189 600	183 880	190 550	376 640	151 490
United Kingdom	82	—	—	14	—
Algeria	27	16	* 20	* 20	* 20
Botswana	22 597	22 288	2 801	—	—
Burkina Faso	31 436	25 520	—	103	—
Congo, Democratic Republic	60 431	6 485	2 401	800	500

Mine production of silver

kilograms (metal content)

Country	2013	2014	2015	2016	2017
Eritrea	15 799	47 398	38 910	13 219	(b) 1 192
Ethiopia (c)	* 1 400	1 020	* 1 000	* 745	* 750
Ghana	* 3 900	* 3 900	* 4 000	* 4 000	3 000
Ivory Coast	572	585	587	549	493
Mali	2 577	2 490	2 608	* 2 700	* 2 900
Morocco	194 077	188 538	216 383	237 418	239 416
Namibia	1 400	1 129	11 555	4 702	7 451
Niger	110	67	119	* 100	* 100
Senegal	850	1 150	540	500	700
South Africa	68 777	37 268	38 824	52 127	62 536
Sudan	* 700	* 1 000	* 1 000	* 1 000	* 1 000
Tanzania	11 014	14 493	15 569	17 984	10 911
Canada	640 362	495 403	383 807	385 134	389 568
Dominican Republic	78 228	135 025	95 706	121 749	147 047
Guatemala	281 331	858 349	862 814	837 815	336 944
Honduras	50 916	58 826	34 369	17 600	21 784
Mexico	5 821 001	5 765 662	5 955 151	5 408 521	5 815 034
Nicaragua	13 745	13 889	18 576	21 382	15 419
USA	1 037 000	1 184 000	1 090 000	1 150 000	* 1 020 000
Argentina	774 470	905 100	1 079 300	933 100	995 000
Bolivia	1 287 200	1 345 022	1 306 098	1 353 202	1 196 400
Brazil	22 427	32 000	44 000	* 40 000	* 45 000
Chile	1 173 845	1 571 788	1 504 271	1 501 436	1 318 582
Colombia	14 046	11 692	10 355	11 378	10 922
Ecuador	1 198	577	2 358	934	68
Peru	3 674 283	3 768 147	4 101 568	4 375 337	4 303 541
China	3 673 300	3 673 300	3 421 355	3 496 003	3 502 300
India (d)	349 774	327 647	426 443	460 811	557 691
Indonesia	123 109	119 189	151 934	185 234	331 644
Iran	* 35 000	34 945	48 400	* 50 000	* 50 000
Japan	3 644	3 541	4 616	5 076	3 408
Kazakhstan	963 580	989 247	1 308 926	1 186 511	1 058 605
Korea (Rep. of)	3 897	3 289	4 600	6 579	8 863
Korea, Dem. P.R. of	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Kyrgyzstan	10 400	9 300	10 400	17 000	15 700
Laos	32 262	39 823	51 764	51 301	42 835
Malaysia	361	533	945	1 075	1 404
Mongolia	29 332	39 160	48 989	79 480	72 440
Philippines	40 043	23 005	29 952	35 186	31 748
Saudi Arabia	4 158	4 888	4 500	4 710	5 181
Tajikistan	1 800	1 700	* 2 700	3 200	3 100
Thailand	32 381	29 216	26 438	26 430	14 587
Uzbekistan	* 23 000	* 23 000	* 23 000	* 22 000	21 800
Australia	1 839 782	1 846 848	1 430 298	1 418 219	1 120 175
Fiji	462	361	354	354	350
New Zealand	11 223	15 811	12 498	7 960	8 022
Papua New Guinea	89 666	81 096	44 588	90 498	69 330
Solomon Islands	685	280	—	—	—
World total	25 973 000	27 440 000	27 795 000	27 715 000	26 559 000

Note(s)

- (a) Smelter and/or refinery production
- (b) Sales
- (c) Years ended 7 July of that stated
- (d) Years ended 31 March following that stated

Production of natural sodium carbonate

tonnes (metric)

Country	2013	2014	2015	2016	2017
Turkey	1 665 077	1 828 167	1 854 290	1 976 880	3 274 416
Botswana	227 913	268 529	243 369	280 457	226 667
Ethiopia (a)	* 5 000	* 6 000	* 6 000	4 326	6 476
Kenya	468 215	409 845	319 761	301 719	303 580
USA	11 500 000	11 700 000	11 600 000	11 800 000	* 11 800 000

Note(s)

(a) Years ended 7 July of that stated

Production of strontium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Spain	90 972	128 077	116 765	85 599	99 663
Mexico	67 778	64 931	79 022	33 230	40 699
Argentina (a)	5 246	* 700	* 1 000	* 1 000	* 1 000
China	* 76 000	* 50 600	* 50 000	* 50 000	* 50 000
Iran (b)	46 240	41 050	36 760	196 689	* 200 000

Note(s)

(1) In addition to the countries listed, Germany is believed to produce strontium minerals

(a) May contain unbeneficiated material

(b) Years ended 20 March following that stated

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2013	2014	2015	2016	2017
Austria					
Recovered (a)	45 442	44 560	* 44 000	* 44 000	* 44 000
Belarus					
Recovered (a)	58 343	70 379	72 038	59 920	64 184
Belgium					
Recovered (b)(a)	396 900	* 400 000	* 400 000	* 400 000	* 400 000
Bosnia & Herzegovina					
Recovered	4 568	4 513	4 138	4 563	4 887
Bulgaria					
Recovered (b)	392 200	* 392 000	* 392 000	* 392 000	* 392 000
Recovered (a)	60 000	* 60 000	* 60 000	* 60 000	* 60 000
Croatia					
Recovered (a)	15 902	19 384	17 540	21 690	24 168
Czech Republic					
Recovered (a)	35 000	* 35 000	* 35 000	* 35 000	* 35 000
Denmark					
Recovered (a)	3 599	4 435	4 447	6 144	4 004

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2013	2014	2015	2016	2017
Finland					
Pyrites	347 000	353 000	353 000	206 002	290 692
Recovered (b)	315 958	336 168	348 640	349 504	344 441
Recovered (a)	130 000	* 130 000	* 130 000	* 130 000	* 130 000
France					
Recovered (a)	370 000	* 370 000	* 370 000	* 370 000	* 370 000
Recovered (c)	78 400	* 78 400	* 78 400	* 78 400	* 78 400
Germany					
Recovered (a)	754 540	708 146	627 797	577 684	537 882
Recovered (c)	464 776	437 677	383 894	351 865	328 247
Greece					
Recovered (a)	228 000	227 140	154 990	190 000	326 100
Hungary					
Recovered (a)	58 000	* 54 000	* 54 000	* 54 000	* 54 000
Italy					
Recovered	(b) 40 200	...	...	...	...
Recovered (a)	510 000	(d) 740 000	(d) 740 000	(d) 550 000	(d)* 550 000
Lithuania					
Recovered (a)	81 449	76 594	84 001	94 522	93 969
Netherlands					
Recovered (b)	120 900	* 120 000	* 107 000	* 112 000	* 86 000
Recovered (a)	430 000	* 410 000	* 410 000	* 410 000	* 410 000
Norway					
Recovered (b)	77 329	76 772	76 384	74 277	63 974
Recovered (a)	22 000	* 22 000	* 22 000	* 22 000	* 22 000
Poland					
Frasch	526 290	605 420	627 600	620 500	663 000
Recovered (b)	260 000	* 260 000	* 280 000	* 280 000	* 280 000
Recovered (a)	24 300	24 200	23 820	24 500	23 000
Portugal					
Recovered	* 21 000	* 21 000	* 21 000	* 21 000	* 21 000
Romania					
Recovered	60 000	* 47 000	* 46 000	* 44 000	* 42 000
Russia					
Pyrites	* 71 000	* 71 000	* 71 000	* 71 000	* 71 000
Recovered (a)	6 091 700	* 6 092 000	* 6 092 000	* 6 092 000	* 6 092 000
Recovered (c)	954 200	* 954 000	* 954 000	* 954 000	* 954 000
Sulphur ore	* 100 000	* 100 000	110 155	94 418	96 316
Serbia					
Recovered (b)	29 400	* 29 400	* 29 400	* 29 400	* 29 400
Slovakia					
Recovered (b)	4 900	* 4 900	* 4 900	* 4 900	* 4 900
Recovered (a)	85 300	* 85 300	* 85 300	* 85 300	* 85 300
Spain					
Recovered (b)	539 200	* 539 000	* 539 000	* 539 000	* 539 000
Recovered (a)	515 000	* 515 000	* 515 000	* 515 000	* 515 000
Sweden					
Recovered (b)	194 938	205 616	192 499	187 264	190 014
Recovered (a)	64 587	86 538	95 172	86 312	91 018
Turkey					
Pyrites	45 348	42 849	22 271	61	31 482
Recovered (a) (c)	* 72 900	* 72 900	* 72 900	* 72 900	* 72 900
Sulphur ore	8 069	—	823	—	5 285
Ukraine					
Sulphur ore	120 000	* 120 000	* 120 000	* 120 000	* 120 000
United Kingdom					
Recovered (a)	145 000	134 000	135 000	133 000	133 000
Algeria					
Recovered (a)	10 000	* 10 000	* 10 000	* 10 000	* 10 000
Egypt					
Recovered (a)	80 000	* 80 000	* 80 000	* 80 000	* 80 000
Libya					
Recovered (a)	133 500	143 000	—	—	* 242 000
Morocco					
Recovered	60 000	* 60 000	* 60 000	* 60 000	* 60 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2013	2014	2015	2016	2017
South Africa					
Recovered (b)	* 130 000	* 130 000	* 144 000	* 146 000	* 133 500
Recovered (a)	* 120 000	* 120 000	* 133 000	* 134 800	* 123 200
Zambia					
Recovered (b)	* 262 000	* 265 000	* 300 000	* 300 000	* 300 000
Canada					
Recovered (b)	677 000	590 000	558 000	635 300	534 500
Recovered (a)	5 624 000	5 252 000	5 187 000	4 746 100	4 929 900
Cuba					
Recovered	1 360	1 350	1 355	1 780	3 047
Recovered (a)	20 000	* 20 000	* 20 000	* 20 000	* 20 000
Mexico					
Recovered (b)	555 600	* 556 000	* 556 000	* 556 000	* 556 000
Recovered (a)	1 025 841	992 939	858 527	673 285	551 218
Trinidad & Tobago					
Recovered (a)	10 000	* 10 000	* 10 000	* 10 000	* 10 000
USA					
Recovered (b)	616 000	587 000	646 000	673 000	* 630 000
Recovered (a)	8 590 000	9 050 000	8 890 000	9 070 000	* 9 030 000
Argentina					
Recovered (b)	* 23 000	* 23 000	* 23 000	* 23 000	* 20 000
Brazil					
Pyrites	17 581	18 827	* 20 000	* 20 000	* 20 000
Recovered (b)	324 405	286 754	259 000	* 292 000	* 292 000
Recovered (a)	218 014	239 970	255 000	* 239 000	* 239 000
Chile					
Recovered (b)	1 474 368	1 513 923	1 488 326	1 595 595	1 524 437
Colombia					
Recovered (a)	5 969	6 222	8 170	7 653	6 980
Sulphur ore	52 470	48 513	76 239	76 331	64 856
Ecuador					
Recovered (a) (e)	5 000	* 5 000	* 5 000	* 5 000	* 5 000
Peru					
Recovered (d)	555 600	* 556 000	* 556 000	* 556 000	* 556 000
Venezuela					
Recovered (a)	415 000	* 460 000	* 450 000	* 410 000	* 360 000
Bahrain					
Recovered (a)	* 120 000	* 120 000	* 120 000	* 120 000	* 110 000
China					
Pyrites	7 703 600	* 7 700 000	* 7 700 000	* 7 700 000	* 7 700 000
Recovered	7 516 300	* 7 500 000	* 7 500 000	* 7 500 000	* 7 500 000
Sulphur ore	4 975 000	* 5 000 000	* 5 000 000	* 5 000 000	* 5 000 000
India					
Recovered (b) (f)	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000
Recovered (a)	* 1 600 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Indonesia					
Recovered (b)	163 400	* 160 000	* 160 000	* 160 000	* 160 000
Recovered (a)	120 000	* 120 000	* 120 000	* 120 000	* 120 000
Iran					
Recovered (d)	1 890 000	2 100 000	2 200 000	* 2 200 000	* 2 200 000
Iraq					
Recovered (a)	190 000	* 190 000	* 190 000	* 190 000	* 190 000
Israel					
Recovered (a)	65 000	61 009	71 627	71 104	* 71 000
Japan					
Recovered (b)	1 633 171	1 691 409	1 629 493	1 700 085	1 583 867
Recovered (a)	1 778 963	1 750 938	1 733 338	1 817 790	1 788 620
Jordan					
Recovered (a)	486 000	* 490 000	* 490 000	* 490 000	* 490 000
Kazakhstan					
Recovered (b)	604 600	* 604 000	* 604 000	* 604 000	* 604 000
Recovered (a)	2 452 700	2 464 600	2 514 900	2 546 500	2 947 300
Korea (Rep. of)					
Recovered (b)	1 078 400	* 1 078 000	* 1 078 000	* 1 078 000	* 1 078 000
Recovered (a)	1 600 000	1 200 000	1 450 000	2 000 000	2 000 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2013	2014	2015	2016	2017
Kuwait					
Recovered (a)	850 000	* 850 000	* 850 000	* 850 000	* 850 000
Oman					
Recovered (a)	51 000	* 50 000	* 50 000	* 50 000	* 50 000
Pakistan					
Sulphur ore (g)	20 610	35 672	19 730	14 869	23 740
Philippines					
Recovered (b)	169 900	* 169 900	* 169 900	* 169 000	* 169 000
Recovered (a)	45 000	* 45 000	* 45 000	* 45 000	* 45 000
Qatar					
Recovered (a)	1 978 862	* 1 760 000	* 1 724 000	* 1 733 000	* 1 678 000
Saudi Arabia					
Recovered (a)	3 900 000	* 3 600 000	* 3 800 000	* 3 900 000	* 3 700 000
Singapore					
Recovered (a)	300 000	* 300 000	* 300 000	* 300 000	* 300 000
Syria					
Recovered (a)	* 6 000	* 3 000	* 1 500	* 1 500	* 1 500
Taiwan					
Recovered	192 292	195 280	211 219	163 768	173 963
Thailand					
Recovered (b)	45 800	* 45 800	* 45 800	* 45 800	* 45 800
Recovered (a)	220 000	* 210 000	* 210 000	* 210 000	* 210 000
Turkmenistan					
Recovered (a)	400 000	* 410 000	* 410 000	* 410 000	* 410 000
United Arab Emirates					
Recovered (a)	2 510 000	* 2 530 000	* 2 530 000	* 2 530 000	* 2 530 000
Uzbekistan					
Recovered (b)	130 700	* 131 000	* 131 000	* 131 000	* 131 000
Recovered (a)	385 000	* 385 000	* 385 000	* 385 000	* 385 000
Australia					
Recovered (b)	* 810 000	* 810 000	* 810 000	* 810 000	* 810 000
Recovered (a)	* 90 000	* 90 000	* 90 000	* 90 000	* 90 000
New Zealand					
Recovered (a)	35 000	* 35 000	* 35 000	* 35 000	* 35 000
World total					
Pyrites	8 200 000	8 200 000	8 200 000	8 000 000	8 100 000
Frasch	500 000	600 000	600 000	600 000	700 000
Recovered	69 300 000	68 700 000	68 600 000	68 900 000	68 900 000
Sulphur ore	5 300 000	5 300 000	5 300 000	5 300 000	5 300 000

Note(s)

(1) In addition to the countries listed Dem. P.R. of Korea may also produce pyrites and may recover sulphur from metal processing

- (a) From petroleum refining and/or natural gas
- (b) From metal sulphide processing
- (c) Other
- (d) Sulphur; all forms
- (e) Including frasch
- (f) Years ended 31 March following that stated
- (g) Years ended 30 June of that stated

Production of talc

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	134 814	131 108	122 306	123 040	123 558
Finland	361 840	380 821	332 174	345 739	354 819
France	350 000	350 000	350 000	* 370 000	* 370 000
Italy	162 234	* 165 000	* 165 000	* 165 000	* 165 000
Macedonia	—	—	—	—	400
Norway	8 459	—	—	—	—
Portugal	11 348	14 942	11 204	11 699	13 600
Russia	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Slovakia	10 000	3 000	1 000	700	13 988
Spain	—	—	—	—	11 500
Turkey					
Talc	1 132	5 048	9 681	8 559	3 882
Pyrophyllite	101 872	109 366	172 681	194 665	470 600
United Kingdom	2 947	4 907	5 430	2 997	3 671
Egypt (a)	63 358	31 066	21 674	* 21 000	* 21 000
South Africa					
Talc	4 924	4 827	4 569	4 462	3 728
Pyrophyllite	17 336	18 900	16 801	19 114	55 048
Sudan	* 3 000	* 3 000	3 000	4 250	* 4 500
Canada	175 000	81 000	181 000	217 000	225 000
Guatemala	3 253	3 368	3 779	2 733	1 982
Mexico	846 813	752 077	20 452	11 392	1 280
USA	542 000	608 000	615 000	536 000	* 550 000
Argentina (b)	27 124	* 25 000	* 25 000	14 216	* 14 000
Brazil (b)	592 844	644 478	* 650 000	* 650 000	* 650 000
Colombia (b)	90	562	55	103	59
Peru					
Talc	32 899	28 847	26 781	11 507	19 363
Pyrophyllite	31 678	17 859	26 209	17 872	22 760
Uruguay	710	360	590	290	100
Bhutan	9 584	12 601	5 807	2 261	1 293
China	* 1 970 000	* 1 870 000	* 1 800 000	* 1 800 000	* 1 900 000
India					
Pyrophyllite (c)	224 677	147 431	* 140 000	* 140 000	* 140 000
Steatite (c)	887 925	774 281	* 770 000	* 770 000	* 770 000
Iran (d)	93 116	112 500	137 135	118 960	* 120 000
Japan					
Talc	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Pyrophyllite	* 350 000	* 350 000	* 350 000	* 350 000	* 350 000
Korea (Rep. of)					
Talc	2 808	5 484	6 371	2 247	2 834
Pyrophyllite	524 881	622 865	596 860	590 000	431 458
Nepal (e)	5 140	5 703	3 183	1 860	3 003
Pakistan (a)	93 214	89 022	116 223	125 985	152 279
Saudi Arabia					
Pyrophyllite	6 000	7 000	8 000	42 000	44 000
Taiwan	362	133	162	250	—
Thailand					
Talc	7 880	8 208	6 768	6 886	7 532
Pyrophyllite	26 820	49 100	45 500	63 500	100 000
Australia (a)	* 104 000	* 115 000	* 80 000	* 111 000	* 119 000
World total	8 000 000	7 700 000	7 000 000	7 000 000	7 400 000

Note(s)

(1) In addition to the countries listed, pyrophyllite may be produced in Vietnam.

(a) Years ended 30 June of that stated

(b) Including talc, agalmatolite and pyrophyllite

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

(e) Years ended 15 July of that stated

Production of tantalum and niobium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia					
Nb content	511	581	628	628	648
Ta content	32	40	32	49	45
Burundi					
Columbite-tantalite	74	82	44	32	* 30
Congo, Democratic Republic					
Columbite-tantalite	500	1 140	2 102	2 414	2 174
Ethiopia					
Tantalite (a)	11	46	* 59	* 63	* 65
Mozambique					
Tantalite	43	23	20	* 5	* 5
Nigeria					
Tantalite	60	* 60	* 60	28	19
Columbite	21	* 22	* 22	21	12
Rwanda					
Columbite-tantalite (b)	2 466	2 303	1 652	1 270	1 725
Uganda					
Columbite-tantalite	—	—	—	13	11
Canada					
Pyrochlore	* 12 300	* 13 000	* 11 600	* 11 600	* 11 600
Tantalite	121	—	—	—	—
Nb content	4 910	5 480	5 753	6 099	6 981
Bolivia					
Tantalite	—	23	1	—	* —
Brazil					
Pyrochlore	* 150 000	* 170 000	152 709	132 275	* 130 000
Columbite-tantalite	* 10 000	* 10 000	21 975	10 518	* 10 000
China					
Columbite-tantalite	* 190	* 240	* 380	* 380	* 380
Malaysia					
Struverite	190	255	86	77	61
Australia					
Tantalite	—	—	—	37	299
World total concentrates (c)	* 200 000	* 200 000	190 000	160 000	* 160 000
Nb content	* 60 000	* 69 000	* 66 000	* 59 000	* 60 000
Ta content	* 1 000	* 1 100	* 1 200	* 1 200	* 1 300

Note(s)

- (1) Niobium and tantalum minerals are also believed to be produced in Namibia and South Africa.
- (2) The figures in this table refer to gross tonnage of tantalum and niobium concentrates, except where noted.
- (3) Tantalum is also recovered from tin slags and this is believed to have accounted for approximately 20% of raw material supplied.

- (a) Years ended 7 July of that stated
- (b) Exports
- (c) Excluding Russia

Production of refined tellurium

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia	31	33	34	40	* 40
Sweden	24	31	33	39	35
Canada	12	9	9	18	17
USA	* 50	* 50	* 50	* 50	* 50
China	* 150	* 180	210	279	281
Japan	31	32	34	28	34

Note(s)

(1) In addition to the countries listed, Germany and Belgium are believed to produce refined tellurium.

Mine production of tin

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Portugal	84	75	42	54	81
Russia	156	321	575	627	1 000
Spain	0	—	—	7	23
United Kingdom	—	—	—	160	255
Burundi	56	81	55	51	50
Congo, Democratic Republic	3 427	4 012	4 567	6 503	10 391
Egypt (a)	69	85	3	—	—
Niger	8	5	8	* 8	* 8
Nigeria	2 516	2 485	2 298	3 443	6 550
Rwanda (b)	3 671	4 465	2 884	2 662	3 570
Tanzania	118	59	134	104	68
Uganda	19	33	135	63	66
Bolivia	19 287	19 791	20 135	17 460	18 341
Brazil	16 830	25 534	18 900	15 183	13 900
Peru (c)	23 668	23 105	19 511	18 789	17 790
Burma	* 19 000	* 26 000	* 43 000	* 57 000	* 68 000
China	101 236	102 052	110 156	97 165	* 93 400
India (d)	26	19	10	9	13
Indonesia	92 491	75 170	71 309	66 358	83 200
Korea (Rep. of)	20	68	7	63	8
Laos	521	782	692	1 005	975
Malaysia	3 697	3 777	4 125	4 158	4 819
Mongolia (e)	* 60	* 60	* 3	* 25	* —
Thailand	83	98	45	59	395
Vietnam	5 129	4 833	4 530	4 579	* 4 500
Australia	6 472	6 898	7 158	6 635	7 402
World total	299 000	300 000	310 000	302 000	335 000

Note(s)

(a) Years ended 30 June of that stated

(b) Exports

(c) Recoverable

(d) Years ended 31 March following that stated

(e) Estimate based on reported exports

Smelter production of tin

tonnes (metric)

Country	2013	2014	2015	2016	2017
Belgium	10 346	9 718	8 788	8 474	9 652
Poland	1 900	2 253	2 171	2 903	3 422
Russia	800	—	—	—	—
Rwanda	—	—	0	—	—
Bolivia (a)	14 863	15 439	15 464	16 810	16 120
Brazil	14 721	22 334	16 531	12 542	13 796
Peru	24 181	24 460	20 396	19 390	17 906
China	159 601	187 094	167 204	182 498	182 176
India (b)	23	9	17	—	14
Indonesia	* 54 800	* 69 800	* 67 400	* 66 900	* 80 000
Japan	1 786	1 746	1 688	1 620	1 624
Malaysia	32 668	34 971	30 209	26 802	27 172
Taiwan	* 2 400	* 2 600	* 2 700	* 2 800	* 2 800
Thailand	23 087	16 661	10 502	11 088	10 601
Vietnam	4 961	4 688	4 382	4 419	* 4 500
Australia	—	—	—	41	21
World total	346 000	392 000	347 000	356 000	370 000

Note(s)

(1) Figures relate to both primary and secondary metal.

(2) In addition to the countries listed, many countries produce small amounts of secondary metal.

(a) Refined, including alloys

(b) Years ended 31 March following that stated

Production of titanium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Norway					
Ilmenite	826 126	863 660	630 323	* 630 000	* 630 000
Russia					
Ilmenite	150 458	178 426	193 236	60 000	—
Ukraine					
Ilmenite	* 670 000	* 450 000	* 350 000	* 350 000	* 350 000
Rutile	* 162 000	* 110 000	* 90 000	* 90 000	* 90 000
Kenya					
Ilmenite	—	281 543	444 999	465 728	470 240
Rutile	—	52 465	78 947	87 716	91 454
Madagascar					
Ilmenite	562 000	333 736	166 290	255 907	430 479
Rutile	* 12 000	* 10 700	* 5 000	* 5 000	* 5 000
Mozambique					
Ilmenite	720 100	854 600	763 500	903 300	998 200
Rutile	4 000	6 100	6 000	7 800	9 100
Senegal					
Ilmenite	—	100 590	427 690	416 249	492 440
Leucoxene (a)	—	663	5 311	9 664	9 975
Sierra Leone					
Ilmenite	32 350	35 839	48 420	28 102	* 54 000
Rutile	120 350	115 078	126 021	148 541	* 166 000
South Africa					
Ilmenite (b)	* 1 070 000	* 1 105 000	* 1 280 000	* 1 020 000	* 1 300 000
Rutile	* 73 400	* 133 000	* 67 000	* 67 000	* 65 000

Production of titanium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Canada					
Ilmenite (b)(c)	* 2 800 000	* 2 500 000	* 1 900 000	* 1 800 000	* 2 300 000
USA	200 000	100 000	200 000	* 100 000	* 100 000
Brazil					
Ilmenite	78 264	81 278	78 991	* 80 000	* 80 000
Rutile	2 021	1 834	1 984	* 2 000	* 2 000
China					
Ilmenite	* 1 420 000	* 1 420 000	* 1 400 000	* 1 400 000	* 1 400 000
India					
Ilmenite (d)	721 959	643 128	521 801	* 522 000	* 522 000
Rutile (d)	13 459	15 617	16 723	* 17 000	* 17 000
Kazakhstan	* 17 000	* 17 000	* 17 000	* 17 000	* 17 000
Korea (Rep. of)					
Ilmenite	229 723	240 892	204 082	166 900	* 167 000
Malaysia					
Ilmenite	16 043	8 159	5 814	4 316	6 363
Rutile	5 983	3 069	198	3 810	5 266
Sri Lanka					
Ilmenite	42 685	32 972	39 439	26 159	53 734
Rutile	1 406	2 111	1 808	2 237	2 174
Vietnam					
Ilmenite	1 025 800	558 000	237 700	210 800	225 000
Australia					
Ilmenite (e)	1 313 800	1 138 000	1 146 935	765 399	683 763
Rutile (e)	250 400	340 700	294 600	284 772	226 089
Leucoxene (e)	225 500	241 000	246 000	73 380	55 390
World total					
Ilmenite (wt of concs)	11 900 000	10 900 000	10 100 000	9 200 000	10 300 000
Rutile (wt of concs)	600 000	800 000	700 000	700 000	700 000
All forms (TiO ₂ content)	6 300 000	6 100 000	5 600 000	5 100 000	5 500 000

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 and USA.

- (a) Including natural rutile
 (b) It is believed that the majority of this is processed into slag
 (c) Canada produces some ilmenite which is sold as such and not processed into slag, but tonnages are small
 (d) Years ended 31 March following that stated
 (e) Years ended 30 June of that stated

Mine production of tungsten

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Austria	851	830	870	950	* 950
Portugal (a)	692	671	474	549	669
Russia	2 982	2 659	2 608	3 048	2 072
Spain	487	822	835	699	564
United Kingdom	—	—	195	923	1 370
Burundi	115	115	78	131	* 150
Congo, Democratic Republic	70	10	65	93	153
Rwanda (b)	1 344	1 342	1 081	1 040	923
Uganda	44	48	28	32	47
Zimbabwe	—	—	* 200	* 1 200	* 1 000
Canada	2 762	2 689	2 114	—	—
Bolivia	957	956	1 116	848	* 1 400
Brazil (c)	494	510	432	* 400	* 400
Peru	35	77	139	—	—
Burma (d)	* 140	* 143	* 140	* 170	* 310
China	64 895	65 369	66 545	63 956	* 65 000
Korea, Dem. P.R. of	* 65	* 70	* 70	* 50	* 300
Kyrgyzstan	* 100	* 100	* 100	* 100	* 100
Thailand (a)	161	110	38	37	76
Uzbekistan	* 300	* 300	* 300	* 300	* 300
Vietnam	—	4 134	5 123	6 357	6 483
Australia (e)	296	383	297	208	* 200
World total	76 800	81 300	82 800	81 100	82 500

Note(s)

(1) In addition to the countries listed, the USA is known to produce tungsten.

(a) Wolframite and scheelite

(b) Exports

(c) Mainly scheelite

(d) Including tungsten content of tin-tungsten concentrates

(e) Years ended 30 June of that stated

Mine production of uranium

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Czech Republic	232	165	134	128	56
Germany	27	33	—	45	34
Romania	* 77	* 77	* 77	* 50	* —
Russia	3 135	2 990	3 055	3 005	2 917
Ukraine	* 922	* 926	* 1 200	* 1 005	* 550
Malawi	1 133	369	—	—	—
Namibia	4 328	3 311	2 950	3 657	4 843
Niger	4 277	4 156	4 115	3 478	3 485
South Africa	531	566	448	382	358
Canada	9 331	9 101	13 324	14 037	11 591
USA	1 794	1 884	1 287	1 123	941
Brazil	192	55	40	44	—
China	* 1 500	* 1 500	* 1 616	* 1 616	* 1 885
India	* 385	* 385	* 385	* 385	421
Kazakhstan	22 567	23 127	23 800	24 575	23 391
Pakistan	* 45	* 45	* 45	* 45	* 45
Uzbekistan	* 2 400	* 2 400	* 2 385	* 2 404	* 2 404
Australia	6 393	5 100	5 655	6 234	5 344
World total	59 300	56 200	60 500	62 200	58 300
World total (U ₃ O ₈ equivalent)	70 000	66 300	71 400	73 400	68 800

Note(s)

(1) Excluding uranium production from decommissioning operations.

Mine production of vanadium

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Russia	14 403	15 125	16 196	16 886	18 636
South Africa	21 397	21 582	17 788	* 18 000	* 18 000
USA	591	—	—	—	—
Brazil	—	578	3 254	4 461	5 206
China	* 45 000	* 48 000	* 45 000	* 45 000	* 43 000
Kazakhstan	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
World total	82 000	86 000	83 000	85 000	86 000

Note(s)

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

Production of vermiculite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Bulgaria	* 8 000	* 10 000	* 10 000	* 10 000	* 10 000
Russia	* 10 000	* 10 000	8 282	12 363	* 12 400
Turkey	1 604	716	425	1 050	1 618
Egypt	2 743	* 2 700	* 8 190	* —	* —
Kenya	400	440	410	410	* 400
South Africa	127 658	143 007	138 290	166 483	166 084
Uganda	4 165	2 661	801	3 295	4 119
Zimbabwe	28 800	29 500	* 30 000	* 35 000	* 35 000
Mexico	425	226	299	310	—
USA (a)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Argentina	* 120	* 90	* 90	* 100	* 100
Brazil	60 379	56 444	* 60 000	* 60 000	* 60 000
China	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
India (b)	11 851	19 336	23 279	9 042	6 055
Australia (c)	9 091	—	—	—	—

Note(s)

(a) Sold or used by producers

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

Production of wollastonite

tonnes (metric)

Country	2013	2014	2015	2016	2017
Finland	* 11 500	* 10 000	* 10 000	* 10 000	* 10 000
Spain	16 738	15 298	17 700	13 553	19 135
Mexico	57 302	54 579	57 451	63 683	87 562
USA	* 70 000	* 70 000	* 70 000	* 60 000	* 50 000
China	* 750 000	* 1 100 000	* 1 000 000	* 1 100 000	* 1 100 000
India (a)	192 712	186 524	175 348	166 186	153 049
Australia (b)	—	—	2 428	1 797	1 749

Note(s)

(1) In addition to the countries listed, Canada also produces wollastonite (since 2014).

(a) Years ended 31 March following that stated

(b) Years ended 30 June of that stated

Mine production of zinc

tonnes (metal content)

Country	2013	2014	2015	2016	2017
Armenia	9 570	8 825	6 791	4 735	5 784
Bosnia & Herzegovina	9 102	7 837	8 946	9 670	10 235
Bulgaria (a)	13 902	11 872	15 616	18 795	19 232
Finland	41 124	46 100	25 332	45 852	66 284
Greece	22 549	23 085	13 174	18 866	14 169
Ireland, Republic of	326 700	282 600	236 300	147 797	130 580
Kosovo	4 983	5 514	3 986	4 814	4 468
Macedonia	30 907	31 570	29 150	24 871	27 846
Montenegro	5 487	7 200	7 068	8 100	8 800
Poland	75 000	56 000	52 709	50 124	44 959
Portugal	53 382	67 378	61 921	69 527	71 356
Romania	* 2 000	* 3 300	* 3 000	* 1 600	* 800
Russia	193 000	192 000	206 000	260 000	279 000
Serbia	5 800	7 100	4 400	6 200	3 900
Slovakia	190	176	* 200	* 200	* 200
Spain	30 428	26 756	49 216	76 342	70 451
Sweden	176 582	221 841	246 983	258 264	251 244
Turkey	195 025	210 152	173 589	* 201 500	* 365 000
Algeria	—	—	50	314	* 500
Burkina Faso	32 215	64 976	68 804	81 422	92 731
Congo, Democratic Republic	12 144	12 737	12 675	12 587	12 377
Eritrea	—	—	—	40 900	95 400
Morocco	41 625	45 412	53 747	53 880	51 701
Namibia	188 402	173 665	123 529	124 749	133 637
Nigeria	* 6 786	* 7 000	* 7 000	* 9 660	* 6 840
South Africa	30 145	26 141	29 040	26 695	30 778
Sudan	—	* —	46	—	* —
Tunisia	7 700	7 400	—	—	—
Canada	426 545	352 125	289 584	301 210	344 294
Dominican Republic	—	—	4 655	3 636	3 920
Guatemala	1 221	13 394	14 810	14 975	6 100
Honduras	25 000	30 000	24 988	14 579	20 436
Mexico	642 542	659 878	786 774	661 646	671 444
USA	784 400	832 000	824 700	805 000	* 730 000
Argentina	47 650	43 967	33 787	26 680	26 800
Bolivia	407 332	474 988	442 154	486 955	503 700
Brazil	152 147	169 766	156 926	158 197	156 306
Chile	29 759	45 094	48 071	42 870	29 006
Peru	1 351 273	1 315 000	1 421 218	1 337 081	1 473 037
Burma	* 4 800	* 6 100	* 4 800	* 6 500	* 13 100
China	5 187 747	5 118 394	4 748 877	4 710 500	* 4 300 000
India (b)	769 927	766 730	740 737	755 778	783 992
Indonesia	1 200	700	19 300	8 500	13 900
Iran	130 000	* 150 000	168 200	157 300	140 000
Kazakhstan	417 000	386 300	384 000	366 000	375 000
Korea (Rep. of)	1 749	1 919	2 070	2 257	3 321
Korea, Dem. P.R. of	* 36 000	* 32 000	* 26 000	* 35 000	* 20 000
Laos	1 900	2 000	—	800	5 700
Mongolia	52 050	46 600	44 800	50 100	41 350
Pakistan (c)	—	—	—	7 702	19 457
Philippines	16 730	—	—	—	—
Saudi Arabia	26 293	41 804	39 000	41 640	45 804
Tajikistan	* 24 300	* 54 300	* 57 800	* 56 500	* 81 500
Thailand	25 887	34 033	27 154	33 983	2 775
Uzbekistan	8 000	8 000	12 000	12 000	37 000
Vietnam	* 20 000	* 17 000	* 15 000	* 12 000	* 12 000
Australia	1 510 738	1 505 968	1 610 004	883 747	840 989
World total	13 600 000	13 700 000	13 400 000	12 600 000	12 500 000

See notes on the following page.

Mine production of zinc

Note(s)

(a) Metal content of ore

(b) Years ended 31 March following that stated

(c) Years ended 30 June of that stated

Production of slab zinc

tonnes (metric)

Country	2013	2014	2015	2016	2017
Belgium (a)	252 000	262 000	260 000	236 000	249 000
Bulgaria	69 600	74 200	75 500	76 200	73 700
Finland	311 686	302 024	305 717	290 599	284 992
France	152 000	171 000	169 000	149 000	166 000
Germany	162 000	168 000	173 000	168 000	174 000
Italy	111 000	138 100	140 200	139 500	128 800
Netherlands	275 000	290 000	291 000	283 000	248 000
Norway	143 444	165 600	162 878	170 541	172 086
Poland	146 300	154 000	161 500	161 200	162 247
Russia	216 000	223 000	229 600	247 200	280 000
Spain	481 000	498 000	509 000	507 000	510 000
Ukraine	3 900	8 100	700	100	—
Algeria	* 7 000	6 976	7 086	3 101	1 472
Namibia	128 291	118 665	71 818	90 739	83 105
Canada	651 638	649 217	683 118	691 389	598 416
Mexico	322 781	320 923	326 642	321 159	327 000
USA	233 100	180 000	172 300	126 000	* 130 000
Argentina	37 900	29 100	30 300	—	—
Brazil	245 417	246 120	270 715	284 457	245 200
Peru	346 400	336 500	335 422	341 518	312 339
China	5 279 600	5 806 970	6 115 928	6 195 962	6 220 000
India (a)	767 994	732 792	758 944	672 010	791 461
Iran	140 000	145 000	138 000	135 000	155 000
Japan	587 291	583 021	566 619	533 689	523 919
Kazakhstan	320 150	324 946	323 848	325 820	329 178
Korea (Rep. of)	886 000	901 000	940 195	1 009 116	961 904
Korea, Dem. P.R. of	* 32 000	* 27 000	* 15 000	* 15 000	* 15 000
Thailand	76 576	65 694	74 121	72 813	30 018
Uzbekistan	52 000	72 000	55 000	68 000	70 000
Vietnam	* 12 000	* 12 000	* 10 000	* 10 000	* 10 000
Australia	498 291	481 573	489 030	464 176	462 095
World total	12 900 000	13 500 000	13 900 000	13 800 000	13 700 000

Note(s)

(a) Years ended 31 March following that stated

Production of zirconium minerals

tonnes (metric)

Country	2013	2014	2015	2016	2017
Russia (a)	8 504	7 900	7 334	7 800	7 200
Ukraine	* 41 000	* 27 000	* 25 000	* 25 000	* 25 000
Kenya	—	40 123	25 951	34 977	35 293
Madagascar	31 345	27 275	11 879	9 200	21 000
Mozambique	31 400	50 800	51 800	68 200	74 000
Nigeria	* 2 000	1 034	* 1 000	891	4 086
Senegal	—	9 040	45 248	52 627	61 563
Sierra Leone	2 950	2 416	1 389	* 1 400	* 1 400
South Africa	* 292 000	* 393 000	* 390 000	* 400 000	* 460 000
USA	* 80 000	* 70 000	50 000	* 50 000	* 30 000
Brazil (b)	24 687	23 659	* 25 000	* 25 000	* 25 000
China	* 33 500	* 33 500	* 33 500	* 33 500	* 33 500
India (c)	21 125	20 626	18 437	* 18 000	* 18 000
Indonesia (d)	* 49 000	* 21 000	* 31 000	* 35 000	* 27 000
Malaysia	379	677	826	653	1 595
Sri Lanka	228	1 335	614	7 749	24 486
Vietnam	* 7 000	* 7 000	* 1 000	* 6 000	* —
Australia (e)	497 550	581 600	607 836	620 136	535 933
World total	1 123 000	1 318 000	1 328 000	1 396 000	1 385 000

Note(s)

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

- (a) Baddeleyite concentrate
- (b) Including caldasite rock containing zircon and baddeleyite
- (c) Years ending 31 March following that stated
- (d) Conservative BGS estimates, based on exports
- (e) Years ended 30 June of that stated

APPENDIX 1

Additional tables relating to Europe only

Production of primary aggregates (sand and gravel and crushed rock)

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria					
Sand and gravel (a)	30 123 970	30 276 160	29 469 566	29 347 490	29 658 112
Crushed rock (a)	25 973 740	26 946 973	24 744 662	24 862 807	25 451 296
Belgium					
Sand and gravel	* 21 000 000	* 19 000 000	* 19 000 000	* 20 000 000	* 20 000 000
Crushed rock	* 46 000 000	* 45 000 000	* 45 000 000	* 46 000 000	* 46 000 000
Bulgaria					
Sand and gravel	8 220 863	9 490 428	9 610 390	8 582 230	8 897 242
Crushed rock	18 963 207	22 481 902	27 513 000	19 756 017	16 340 103
Croatia					
Sand and gravel	3 779 919	3 496 693	3 544 899	3 444 036	3 766 684
Cyprus					
Crushed rock	4 561 152	4 039 087	3 941 378	5 482 913	7 034 430
Czech Republic					
Sand and gravel	17 363 000	17 668 000	19 546 000	18 338 000	19 848 000
Crushed rock	33 004 000	35 972 000	40 260 000	37 793 000	38 262 000
Denmark					
Sand and gravel	38 798 333	41 016 667	45 215 000	47 058 000	50 722 000
Crushed rock	243 000	223 000	233 000	232 000	283 000
Estonia					
Sand and gravel	5 201 380	3 164 640	7 035 400	7 269 100	9 097 300
Crushed rock	6 463 100	4 967 400	5 366 300	6 224 000	8 777 000
Finland					
Sand and gravel	* 34 000 000	* 32 000 000	* 32 000 000	* 35 000 000	* 35 000 000
Crushed rock	* 49 000 000	* 47 000 000	* 44 000 000	* 43 000 000	* 40 000 000
France					
Sand and gravel	135 543 000	126 598 000	117 875 000	120 382 000	* 120 000 000
Crushed rock	205 638 000	201 902 000	184 423 000	183 960 000	* 183 000 000
Germany					
Sand and gravel	228 000 000	238 000 000	239 000 000	247 000 000	257 000 000
Crushed rock	207 000 000	211 000 000	210 000 000	218 000 000	220 000 000
Greece					
Crushed rock	* 30 000 000	* 38 000 000	35 603 020	42 051 690	38 339 770
Hungary					
Sand and gravel	27 252 746	42 444 954	33 664 690	29 829 848	* 30 000 000
Crushed rock	7 483 894	8 526 891	10 213 538	9 002 304	* 9 000 000
Iceland					
Sand and gravel	291 384	* 291 000	* 291 000	* 291 000	* 291 000
Ireland, Republic of					
Sand and gravel	* 7 000 000	* 7 000 000	* 7 000 000	* 7 000 000	* 7 000 000
Crushed rock	* 22 000 000	* 22 000 000	* 22 000 000	* 23 000 000	* 23 000 000
Italy					
Sand and gravel	79 086 763	41 038 798	46 552 088	59 911 685	64 397 229
Crushed rock	49 075 806	39 669 853	54 850 643	52 783 855	62 187 576
Latvia					
Sand and gravel	7 297 980	12 491 577	9 716 013	9 181 594	11 417 545
Crushed rock	2 664 580	1 393 464	1 461 820	1 547 520	2 069 297
Lithuania					
Sand and gravel	6 930 916	7 164 096	7 751 342	8 227 013	9 805 230
Crushed rock	3 801 100	4 084 594	4 528 671	4 338 680	6 386 329
Malta					
Crushed rock	1 357 273	1 262 887	1 514 977	1 551 410	(b) 1 428 570
Montenegro					
Sand and gravel	213 002	289 469	258 120	178 906	173 670
Crushed rock	143 179	137 299	124 141	184 976	212 697
Netherlands					
Sand and gravel	48 974 000	48 000 000	61 900 000	55 900 000	* 56 000 000
Norway					
Sand and gravel	13 984 000	14 111 000	13 000 000	14 959 000	14 696 000
Crushed rock	66 259 000	64 828 000	61 000 000	70 043 000	75 845 000
Poland					
Sand and gravel (c)	* 139 000 000	* 136 000 000	* 140 000 000	* 140 000 000	* 153 000 000
Crushed rock	57 945 100	61 117 900	60 665 300	59 448 000	67 617 000
Portugal					
Sand and gravel	5 964 368	5 975 880	6 638 053	* 6 304 000	* 6 000 000
Crushed rock	23 369 495	26 539 817	25 339 949	25 939 048	26 849 154
Romania					
Sand and gravel	50 829 386	51 812 555	69 894 594	* 70 000 000	* 70 000 000
Crushed rock	36 888 195	35 115 670	40 091 390	* 40 000 000	* 40 000 000

Production of primary aggregates (sand and gravel and crushed rock)

tonnes (metric)

Country	2013	2014	2015	2016	2017
Slovakia					
Sand and gravel	3 953 525	3 863 467	1 199 550	1 306 800	1 743 489
Crushed rock	8 526 598	10 188 851	14 274 900	12 833 100	13 518 792
Slovenia					
Sand and gravel	2 143 013	2 799 006	2 943 870	1 833 732	2 047 403
Crushed rock	7 067 895	8 123 587	8 108 113	7 470 433	8 642 881
Spain					
Sand and gravel	33 300 000	33 600 000	34 000 000	31 000 000	32 600 000
Crushed rock	67 800 000	64 600 000	70 400 000	100 000 000	110 000 000
Sweden					
Sand and gravel	12 712 100	12 233 750	13 038 828	11 927 694	11 774 505
Crushed rock	66 621 935	68 034 725	75 271 803	75 720 385	84 467 197
Switzerland					
Sand and gravel	49 480 000	53 940 000	50 606 637	52 751 000	* 51 264 000
Crushed rock	2 445 464	2 401 627	2 463 037	2 324 800	2 194 123
United Kingdom					
Sand and gravel	58 100 000	61 300 000	66 443 000	68 075 000	67 400 000
Crushed rock (d)	90 600 000	108 200 000	116 401 000	125 301 000	125 900 000
European total	2 209 000 000	2 219 000 000	2 277 000 000	2 344 000 000	2 426 000 000

Note(s)

- (1) So far as possible, these production statistics include construction sand; gravel, pebbles, shingle and flint; crushed stone used for concrete aggregates, roadstone and other construction uses; granules, chippings and powders.
 - (2) Where official sources show more than one series for aggregates the higher series has generally been used in this compilation.
 - (3) Where marine sands and gravels have been identified, these are included.
 - (4) Information may be incomplete or absent due to reporting methods, confidentiality or lack of available information. All European countries produce sand and gravel and crushed rock.
 - (5) Production from many small operations are not officially compiled. The minimum number of employees for which establishments are required to report production varies between different countries and can also vary from year to year within a country.
 - (6) Quantities of sand from sand and gravel operations may be discarded due to low demand. This may or may not be included in the statistics.
- (a) Sales
 - (b) Estimated by official source based on a previous year census and the rate of change observed from a sample of quarries in subsequent years
 - (c) Includes an estimate for small producers
 - (d) Includes small quantities for other purposes in Northern Ireland

Production of cement clinker

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria	* 120 000	* 120 000	* 125 000	* 125 000	* 125 000
Belgium	911 116	* 900 000	* 900 000	* 850 000	800 584
Bulgaria	77 200	36 700	44 500	61 100	79 800
Cyprus	1 619 080	1 804 562	1 729 877	1 801 647	1 815 568
Czech Republic	2 472 196	2 792 101	2 919 190	3 188 086	3 236 047
Denmark	—	9 081	—	—	* —
Estonia	691 400	721 000	356 000	328 900	517 900
France	13 778 000	13 146 000	12 513 000	12 528 000	* 13 000 000
Germany	23 127 000	23 871 000	23 355 000	23 423 000	* 23 400 000
Greece	6 754 154	7 025 675	* 6 000 000	5 891 157	* 5 500 000
Hungary	1 065 349	* 1 100 000	376 309	* 400 000	* 400 000
Italy	15 691 270	14 105 796	14 429 977	13 677 374	13 604 846
Latvia	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Luxembourg	* 710 000	* 700 000	* 700 000	* 700 000	* 700 000
Norway	1 399 012	1 364 866	1 284 156	1 306 292	1 461 477
Poland	10 855 278	11 865 500	11 278 400	12 075 300	12 996 500
Portugal	5 427 443	5 967 865	5 626 409	4 412 793	4 854 448
Romania	5 061 670	5 466 540	6 203 413	5 932 979	6 189 799
Serbia	1 121 538	1 122 964	1 218 213	1 311 629	* 1 300 000
Slovakia	* 1 500 000	* 1 600 000	* 1 700 000	* 1 700 000	* 1 800 000
Spain	14 600 000	16 968 987	16 985 662	17 341 318	17 304 352
Sweden	2 598 905	2 602 263	2 825 883	2 847 000	2 768 000
Turkey	56 905 641	58 598 068	61 971 380	67 856 234	70 812 559
United Kingdom	(a) 6 712 000	(a) 7 197 000	7 804 000	8 056 000	7 824 000
European total	175 000 000	181 000 000	182 000 000	187 000 000	192 000 000

Note(s)

(a) Great Britain only

Production of finished cement

tonnes (metric)

Country	2013	2014	2015	2016	2017
Austria (a)	3 967 440	4 048 146	4 176 063	4 501 008	4 660 187
Belgium	6 119 000	6 364 000	6 275 000	* 6 255 000	* 6 300 000
Bulgaria (a)	1 796 021	1 770 508	2 040 853	1 951 286	2 064 792
Croatia	4 543 358	4 670 807	4 498 264	4 325 467	5 134 160
Cyprus	854 778	734 692	788 168	1 018 537	1 319 351
Czech Republic	3 211 000	3 691 000	3 781 000	3 937 000	4 033 854
Denmark	1 852 445	1 876 095	2 027 843	2 259 902	2 359 131
Estonia	456 700	447 000	395 000	398 800	502 900
Finland (a)	1 271 378	1 255 468	1 188 387	1 335 248	1 510 974
France	17 469 000	16 426 000	15 597 000	15 934 000	* 16 900 000
Germany	31 308 000	32 099 000	31 160 000	32 674 000	34 000 000
Greece	5 553 411	5 563 414	5 291 113	6 680 078	6 133 079
Hungary	2 022 000	2 000 000	* 1 277 000	* 1 000 000	* 1 000 000
Ireland, Republic of	2 083 000	2 533 000	2 911 000	* 2 100 000	* 2 000 000
Italy	23 114 037	20 913 094	20 013 662	19 992 976	19 785 250
Latvia	1 092 000	1 197 000	1 018 000	* 1 000 000	* 1 000 000
Lithuania	1 069 593	902 733	979 565	1 009 936	1 023 437
Luxembourg	1 128 000	1 057 000	1 033 000	* 1 000 000	* 1 000 000
Macedonia	729 672	660 035	671 542	855 295	900 836
Netherlands	2 030 000	1 984 000	1 839 000	* 1 970 000	* 2 070 000
Norway	1 694 150	1 693 379	1 647 566	1 745 614	1 924 388
Poland	14 831 323	15 594 900	15 265 200	15 782 400	17 254 400
Portugal (a)	5 342 661	5 480 202	5 050 802	4 100 010	3 792 733
Romania	7 450 792	7 621 129	8 356 162	8 037 717	8 441 574
Serbia	1 591 703	1 631 633	1 654 390	(a) 1 774 404	(a) 1 879 506
Slovakia	3 121 000	3 319 320	3 465 597	3 518 456	3 781 889
Slovenia	614 000	706 000	544 000	* 500 000	* 500 000
Spain	* 13 700 000	14 554 039	14 322 672	14 286 013	15 548 943
Sweden	2 582 255	2 883 710	2 766 983	2 795 000	3 067 400
Switzerland (b)	4 563 931	4 583 355	4 219 466	4 397 180	4 272 316
Turkey	72 899 430	72 412 441	71 418 945	75 403 325	80 552 257
United Kingdom	(c) 8 203 000	(c) 8 958 000	9 235 000	9 370 000	9 359 000
European total	248 000 000	250 000 000	245 000 000	252 000 000	264 000 000

Note(s)

(a) Sales

(b) Includes production in Liechtenstein

(c) Great Britain only

APPENDIX 2

Further acknowledgments

Further Acknowledgments

In addition to the acknowledgments section on page iv, supplementary information is also obtained from publications dealing with a wide range of commodities such as African Development Bank Group, *African Statistical Yearbook*; BP PLC, *BP Statistical Review of World Energy*; Austrian Federal Ministry of Science, Research and Economy, *World Mining Data*; Société de l'Industrie Minérale, *Annuaire Statistique Mondial des Minerais et Métaux*; publications of the Interstate Statistical Committee of the CIS and World Bureau of Metal Statistics, *World Metal Statistics and Metallstatistik*.

Information has been obtained from the websites of the following international organisations: ALACERO; CEMBUREAU The European Cement Association; Extractive Industries Transparency Initiative (EITI); European Aggregates Association (UEPG); Eurostat; Federacciai; International Tin Association Ltd; Kimberley Process; South East Asia Iron and Steel Institute (SEASI); The European Steel Association (EUROFER); The Silver Institute; United Nations agencies; United States Energy Information Administration; United States Geological Survey; World Nuclear Association; World Steel Association.

In addition, information has been obtained from the websites of the following companies: Amania Mining; Agrium; Aluar; Aluminio Argentino; Alumina Ltd; Aluminium Bahrain; Anglo American Plc; Anglo Asian Mining Plc; Arab Potash Company; Arrowhead Resources Ltd; Ascendant Resources Inc; Asian Mineral Resources Ltd; Aura Minerals Inc.; Aurubis AG; Autlan; AzerGold; Barrick Gold Corporation; BEB Erdgas und Erdöl GmbH & Co; Besra Gold Inc; Bikita Minerals; Boliden Group; Cámara Argentina del Acero; Canadian Clay Products Inc; Cancero; Centamin Plc; Centerra Gold Inc; CI Resources Ltd; Compagnie Minière du Bafing; Dominion Salt; Dundee Precious Metals Inc; Eldorado Gold Corporation; Emirates Global Aluminium; En+ Group Plc; Endiama EP; Eramet Group; ETI Aluminium Inc; EVRAZ Plc; First Quantum Mineral Ltd; Galane Gold; Gemfields Ltd; Glencore International AG; Goldcorp Inc; Grafitbergbau Kaisersberg GmbH; Gravita India Ltd; Grecian Magnesite SA; Grupo Mexico; HeidelbergCement AG; Highlands Pacific Ltd; Hudson Resources Inc; IAMGold Corporation; Inception Mining Inc; IRC Company Limited; Johnson Matthey; KAZ Minerals Plc; Kenmare Resources Plc; LARCO; Largo Resources Ltd; Libyan Iron and Steel company; Lundin Mining Corporation; Lynas Corporation Ltd; Ma'aden Saudi Arabian Mining Company; Magris Resources Inc; Malaysia Smelting Corporation; Managem Group; Mandalay Resources Ltd; Masan Resources Corporation; Mawson West Ltd; Maya Gold & Silver Inc; MedcoEnergy; Metallurgical Corporation of China Ltd; Minera Alumbra; MMG Limited; Nedmag B.V.; Nemaska Lithium Inc; Newsun Resources Ltd; Newcrest Mining Ltd; Newmont Mining Corporation; Nexa Resources S.A.; Nickel Asia Corporation; Norilsk Nickel; Nyrstar; Orocobre Ltd; Orosur mining Inc; Orvana Minerals Corp; Outokumpu; Padaeng Industry Plc; Paladin Energy Ltd; PanAust Ltd; PEMEX Petróleos Mexicanos; Peñoles; Perlite Group; PhosAgro; Polymetal International PLC; PT Antam Tbk; PT Indonesia Asahan Aluminium; Qatalum; Qatar Steel Company; Rio Tinto Ltd; RUSAL; RW Silicium GmbH; Salinen Austria AG; Sherritt International Corporation; Solikamsk Magnesium Plant; Solway Investment Group Ltd; South32; Tahoe Resources; Tajik Aluminium Company; Talum

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Department of Statistics, Bahamas; National Oil and Gas Authority, Bahrain; Bangladesh Bureau of Statistics; The Central Bank of Barbados; Government of Barbados, Energy Division; National Statistical Committee Belarus; Belgian Steel Federation, Belgium; Federation de l'Industrie Cimentière Belge, Belgium; National Statistics Bureau, Bhutan; Ministerio de minería y metalurgia, Bolivia; Government of Bonaire; Agency for Statistics of Bosnia and Herzegovina; Department of Mines, Botswana; Associacao Brasileira do Alumínio, Brazil; Agencia Nacional de Mineracao, Brazil; Union of the Coal Extraction Industry of the State of Santa Catarina, Brazil; Ministry of Mines and Energy, Brazil; Ferbasa, Brazil; Agencia Nacional do Petróleo, Gas Natural e Biocombustíveis, Brazil; Energy Dept, Prime Ministers Office, Brunei; Ministry of Energy, Bulgaria; Bulgarian Association of Metal Industries, Bulgaria; Chambre des Mines du Burkina, Burkina Faso; Central Statistical Organization, Burma; Institut de Statistiques et d'Études Économiques du Burundi.

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Danish Energy Agency, Denmark; Statistics Denmark; Direccion General de Minería, Dominican Republic; Autoridade Nacional do Petróleo e Minerais, East Timor; Agencia de Regulacion y Control Minero, Ecuador; Central Agency for Public Mobilisation and Statistics, Egypt; Statistics Estonia; Fiji Bureau of Statistics; Geological Survey of Finland; Bureau de Recherches Géologiques et Minières, France; Federation Francaise de l'Acier, France; Infociments, France; L'Union nationale des industries de carrières et matériaux de construction, France; National Statistics Office of Georgia; Federal Institute for Geosciences and Natural Resources, Germany; Chamber of Mines, Ghana; Greek Ministry of Environment, Energy and Climate Change, Greece; Greek Institute of Geology and Mineral Exploration, Greece; Greek Statistical Authority, Greece; Greek Mining Enterprises Association, Greece; Ministerio de Energia y Minas, Guatemala; Direction Nationale de la Statistique, Guinea; Bank of Guyana.

Hungarian Mining and Geological Service, Hungary; Hungarian Central Statistical Office, Hungary; Statistics Iceland; Indian Bureau of Mines, India; Ministry of Steel, India; Office of the Salt Commissioner, India; National Aluminium Company Ltd, India; Ministry of Energy and Mineral Resources of Indonesia; Statistics Indonesia; Statistical Centre of Iran; Iranian Mines & Mining Industries Development & Renovation Organization, Iran; National Iranian Copper Industries Co, Iran; Iraq Geological Survey; Sustainable Energy Authority of Ireland; Department of Communications, Energy and Natural Resources, Ireland; Ministry of Energy and Water Resources, Israel; Italian National Institute of Statistics, Italy; Ministry of Economic Development, Italy; National Association of Non-Ferrous Metals Industries, Italy.

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