

World Mineral Production



2014–2018



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BRITISH GEOLOGICAL SURVEY

WORLD MINERAL PRODUCTION 2014–18

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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 2018 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 2014 to 2018. 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.

Whilst overall changes in the world production of most minerals between 2017 and 2018 are less than 10 per cent, there are notable exceptions. The largest increases are for the commodities used to manufacture batteries – lithium (an increase of 25%), cobalt (up 18%), graphite and nickel (both increased by about 13%). In the case of lithium this increase is particularly significant as it follows a major increase in production between 2016 and 2017. Over the five year period covered in this edition, global lithium production has increased by more than 235 per cent (based on Li content). Australia has made a substantial contribution to this increased production, where the opening/re-opening of mines means that there are now six sites producing lithium minerals. However, there have also been notable increases in the production of lithium from Canada, Chile, Zimbabwe and China as well as new production established in Namibia and Nigeria.

In contrast to lithium, the global increase in the mine production of cobalt is more complex, with decreased output from some countries being masked by a 33 per cent increase in production from the Democratic Republic of Congo (DRC). As a consequence, the proportion of the global production originating in the DRC has risen to 65 per cent, its highest level in the five years covered by this edition. For graphite, the increased production between 2017 and 2018 has still not resulted in total world production returning to the levels produced in 2014 and 2015. Notable increases in the production of graphite from Mozambique, Brazil and Namibia have been partially offset by declines elsewhere. The increase in mine production of nickel is largely due to a 134 per cent increase in Indonesia's output following the temporary relaxation of the country's ban on the exports of nickel ore in early 2017.

Despite the general upward trend in world production of most minerals between 2017 and 2018, some have experienced declines in production. There have been

notable decreases in global output of mercury (a decline of 31%), zirconium minerals (down about 15%), iron ore (down 13%) and tungsten (a decline of about 13%). In all these cases, the decreases in production have resulted in 2018 production levels that are lower than in 2014 despite increases in the intervening years. In the case of mercury the decline in production is likely to be directly linked to the Minamata Convention on Mercury, which came into force on 16 August 2017, and aims to protect human health and the environment from mercury emissions.

There is continuing interest and concern surrounding the worldwide security of supply of certain minerals. In 2018 the OECD in its 'Global Material Resources Outlook to 2060' indicated that materials use is projected to more than double by 2060, with metals expected to grow the fastest. They warn about the pressure this will place on the environment, global economies and future gains in well-being. BGS research is evolving to address this challenge, placing particular emphasis on improving understanding of stocks and flows of raw materials (e.g. cobalt, lithium) that are essential for decarbonisation of energy and transport systems. Although metals are an essential component of decarbonisation technologies, their production is currently carbon intensive. This has led the BGS to develop an interest in understanding how sustainable and responsible supply of metals from primary and secondary sources can be improved, and what policies or approaches will be most effective in implementing change.

During the past year, the BGS has continued to be involved with many European partners in several minerals-related research projects, 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/>), Solutions 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; <https://orama-h2020.eu/>). The BGS is involved in the UKRI-funded Circular Economy Network+ in Transportation Systems (CENTS) which will link academic organisations and industry to identify opportunities for increasing circularity in transport systems across their life cycle.

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.

Karen Hanghøj
Director

British Geological Survey
Keyworth
Nottingham

February 2020

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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. 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 organisations 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	2014	2015	2016	2017	2018
Bosnia & Herzegovina	605 215	787 409	738 609	740 384	760 244
Croatia	9 150	11 900	9 780	12 215	11 780
France (a)	71 000	* 70 000	* 70 000	* 70 000	* 70 000
Greece	1 876 000	1 831 000	1 880 000	1 927 000	1 607 000
Hungary	14 400	8 300	16 700	1 300	4 200
Montenegro	155 153	50 369	* 516 200	927 847	468 164
Russia	5 589 000	5 398 000	5 432 000	5 523 000	5 651 000
Turkey	1 091 442	1 050 000	989 200	1 719 144	* 1 300 000
Ghana	798 114	1 014 605	1 143 676	1 476 966	1 011 302
Guinea (b)	20 288 000	20 905 000	32 424 000	51 701 000	59 573 707
Mozambique	3 324	4 985	1 451	3 182	9 912
Sierra Leone	1 161 705	1 334 046	1 368 531	1 787 716	1 938 461
Tanzania	25 641	205	73	12	7
Dominican Republic	1 749 308	1 724 162	7 318	—	—
Jamaica	9 676 697	9 628 824	8 540 130	8 244 628	9 962 672
USA (c)(d)	133 266	483 695	272 908	352 096	399 712
Brazil (e)	36 313 200	37 057 000	39 244 200	38 072 100	32 006 900
Colombia	601	861	693	2 400	9 043
Guyana	1 563 563	1 526 467	1 479 090	1 459 223	1 924 558
Suriname	2 707 719	1 865 148	—	—	—
Venezuela	2 346 160	991 810	340 000	242 099	92 000
China	59 212 401	60 787 599	66 157 689	* 69 000 000	* 62 000 000
India (f)	22 493 671	28 123 789	24 745 487	22 312 681	* 23 840 000
Indonesia	2 556 429	* 611 000	* 1 485 000	* 4 200 000	* 10 300 000
Iran (g)	748 297	840 681	868 255	1 046 634	719 537
Kazakhstan	4 515 600	4 682 600	4 801 300	4 846 100	6 104 200
Malaysia	(h)* 3 500 000	(h)* 27 700 000	(h)* 6 670 000	(h)* 810 000	589 684
Pakistan (i)	31 156	24 689	57 024	75 375	146 045
Saudi Arabia	2 076 000	3 022 000	4 768 000	4 117 000	4 323 000
Vietnam	1 100 000	* 1 100 000	* 1 400 000	* 2 700 000	3 569 700
Australia	78 630 996	80 909 261	83 517 148	89 420 589	95 947 498
Fiji	489 476	120 726	59 500	* 60 000	* 58 000
Solomon Islands	* 40	* 292 000	* 240 000	* 1 550 000	* 1 600 000
World total	261 500 000	294 000 000	289 200 000	314 400 000	326 000 000

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	2014	2015	2016	2017	2018
Bosnia & Herzegovina	170 646	250 845	187 515	247 449	261 700
France	400 000	432 000	* 500 000	* 500 000	* 500 000
Germany	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000	* 1 000 000
Greece	674 040	674 420	693 460	695 400	677 000
Hungary	* 1 000	—	—	—	—
Ireland, Republic of	1 876 851	1 897 616	1 898 054	1 880 057	1 818 065
Romania	362 627	404 825	467 031	472 606	571 772
Russia	2 572 000	2 593 000	2 682 000	2 822 000	2 763 000
Spain	1 517 000	1 633 000	1 579 000	1 588 000	1 589 000
Turkey	* 190 000	* 200 000	* 260 000	* 260 000	* 260 000
Ukraine	1 455 000	1 481 000	1 510 000	1 676 000	1 715 000
Guinea	—	—	—	—	390 200
Canada	1 562 559	1 560 932	1 566 467	1 570 000	1 568 000
Jamaica	1 850 960	1 864 645	1 865 278	1 782 373	2 483 572
USA	4 461 000	4 234 000	2 360 000	1 430 000	* 1 500 000
Brazil	10 404 000	10 451 500	10 885 500	11 060 600	8 258 000
Suriname	1 149 388	779 660	—	—	—
Venezuela	660 195	459 488	* 300 000	* 200 000	* 60 000
China	52 399 100	58 978 355	60 906 000	69 006 700	72 530 571
India (a)	5 024 215	5 572 293	6 075 839	6 119 449	6 546 500
Indonesia	—	69 869	* 495 000	917 099	842 536
Iran (b)	251 000	241 000	235 000	240 200	237 563
Japan	* 116 000	* 19 000	* 17 000	* 13 000	* 8 000
Kazakhstan	1 628 252	1 448 280	1 745 801	1 771 697	1 751 472
Saudi Arabia	23 000	846 000	1 429 000	1 484 000	1 774 000
Vietnam	485 000	* 474 000	* 597 000	1 062 000	1 329 700
Australia	20 475 523	20 097 181	20 680 827	20 485 770	20 061 795
World total	110 700 000	117 700 000	119 900 000	128 300 000	130 500 000

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	2014	2015	2016	2017	2018
Azerbaijan	50 357	53 303	36 811	28 500	47 487
Bosnia & Herzegovina	131 238	118 253	106 649	125 536	131 508
France	415 000	415 000	424 600	430 000	380 000
Germany	530 683	541 379	546 806	549 995	528 868
Greece	173 260	179 993	181 189	181 630	185 000
Iceland	698 765	724 704	700 080	763 618	733 523
Montenegro	42 767	42 499	38 915	39 379	40 163
Netherlands	800	27 700	36 300	29 300	* 100 000
Norway	1 182 000	1 224 000	1 247 000	1 253 000	1 295 000
Romania	263 098	271 356	272 507	282 074	282 810
Russia	3 488 000	3 529 000	3 561 000	3 584 000	3 627 000
Slovakia	167 767	171 328	173 600	173 500	173 700
Slovenia	84 400	83 800	84 365	84 424	80 544
Spain	* 230 000	* 360 000	* 360 000	* 360 000	* 350 000
Sweden	113 000	116 000	124 000	123 000	125 000
Turkey	30 400	60 000	79 000	76 000	73 300
United Kingdom	42 000	47 000	46 000	48 000	48 000
Cameroon	93 000	* 65 000	* 66 000	* 67 000	* 74 000
Egypt (a)	333 178	279 365	355 000	298 000	317 000
Ghana	38 100	(b) 28 519	(b) 33 010	(b) 33 364	(b) 42 867
Mozambique	566 900	558 386	571 125	577 495	571 125
South Africa	745 000	695 000	701 000	716 000	714 000
Canada	2 858 238	2 880 035	3 208 707	3 211 882	2 936 921
USA	1 710 400	1 586 500	818 430	740 884	898 652
Argentina	442 719	430 388	424 996	433 391	437 771
Brazil	962 000	772 200	793 000	801 700	659 000
Venezuela	138 334	125 537	147 000	136 000	64 700
Bahrain	931 427	960 643	971 420	981 016	1 011 101
China	28 316 671	31 518 147	32 698 082	33 289 600	35 801 912
India (c)	2 026 803	2 354 949	2 896 629	3 400 618	* 2 750 000
Indonesia	264 474	257 149	245 483	218 816	242 043
Iran (d)	354 400	353 200	341 200	337 600	* 340 000
Japan	500	—	—	—	—
Kazakhstan	207 849	219 192	240 171	255 090	258 400
Malaysia	440 000	440 000	620 000	760 000	760 000
Oman	364 000	377 000	386 000	253 000	380 000
Qatar	640 153	638 155	643 514	650 000	616 000
Saudi Arabia	662 000	839 000	871 000	916 000	932 000
Tajikistan	121 261	139 123	129 300	103 000	95 796
United Arab Emirates	2 296 000	2 397 000	2 471 000	2 600 000	2 640 000
Australia	1 704 991	1 645 963	1 633 904	1 487 555	1 574 240
New Zealand	327 000	333 000	339 000	337 000	340 111
World total	54 200 000	57 900 000	59 600 000	60 700 000	62 700 000

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) Exports

(c) Years ended 31 March following that stated

(d) Years ended 20 March following that stated

Mine production of antimony

tonnes (metal content)

Country	2014	2015	2016	2017	2018
Russia	* 6 400	7 420	11 900	14 400	* 30 000
Turkey	3 013	1 917	2 700	4 750	* 4 000
South Africa	816	400	* —	* —	* —
Canada	5	1	0	1	1
Guatemala	—	—	25	—	—
Honduras	13	14	6	4	20
Mexico	266	90	166	240	299
Bolivia	4 186	3 843	2 669	2 881	3 110
Ecuador	—	—	—	261	—
Burma (a)	4 234	5 777	2 780	3 060	2 641
China	140 389	120 732	107 535	97 683	89 584
Iran (a)	432	1 020	1 765	2 489	* 2 500
Kazakhstan	* 800	* 700	* 900	* 200	* 100
Kyrgyzstan	* 1 450	* 1 200	* 1 880	* 1 100	* 620
Laos	620	1 166	242	320	—
Pakistan (b)	127	114	21	15	—
Tajikistan	11 200	13 460	26 970	26 450	28 881
Thailand	706	* 700	32	—	—
Vietnam	1 098	219	229	230	235
Australia (b)	3 680	3 926	5 004	4 294	2 864
World total	179 000	163 000	165 000	158 000	165 000

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	2014	2015	2016	2017	2018
Belgium	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Russia	* 1 500	* 1 500	* 1 500	* 1 500	* 1 500
Morocco	6 863	7 567	6 122	6 879	* 6 000
Namibia	1 980	1 960	* 1 900	* 700	—
Bolivia	52	38	38	20	238
Peru	—	* —	23 252	22 319	20 376
China	* 25 000	* 25 000	* 25 000	* 24 000	* 24 000
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	2014	2015	2016	2017	2018
Russia	* 800 000	650 375	691 712	714 105	752 917
Argentina	* 100	* —	* —	* —	* —
Brazil	311 227	232 052	117 677	129 000	101 000
Colombia	8 946	13 240	10 465	4 423	* 4 000
China	* 250 000	* 210 000	* 200 000	* 125 000	* 100 000
Kazakhstan	213 100	179 800	192 500	192 700	195 700
World total	1 600 000	1 300 000	1 200 000	1 200 000	1 200 000

Note(s)

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

Production of barytes

tonnes (metric)

Country	2014	2015	2016	2017	2018
Bulgaria	20 000	60 000	70 000	80 000	* 80 000
Georgia	500	500	400	400	* 400
Germany	87 585	45 311	49 373	34 177	39 218
Italy	* 3 500	* 3 500	* 3 000	* 3 000	* 3 000
Russia	* 220 000	361 000	434 000	178 000	163 000
Slovakia	21 000	20 000	25 000	15 690	9 500
Spain	3 000	3 000	3 000	3 000	* 3 000
Turkey	* 340 000	* 310 000	321 239	292 447	* 290 000
United Kingdom	* 44 000	* 50 000	* 56 000	* 55 000	* 55 000
Algeria	56 829	44 000	52 000	* 52 000	* 52 000
Egypt (a)	3 379	3 811	4 000	4 000	* 4 000
Morocco	1 006 600	1 212 130	676 940	818 016	* 800 000
Nigeria	* 20 000	* 22 000	* 22 000	* 22 000	* 22 000
Tunisia	9 800	10 000	10 000	—	* —
Zimbabwe	300	500	200	200	* 200
Canada	35 000	32 000	32 000	32 000	* 32 000
Guatemala	43	544	500	43	63
Mexico	130 914	265 700	156 854	359 912	366 234
USA (b)	667 000	433 000	232 000	334 000	* 480 000
Argentina	16 300	* 17 000	* 17 000	* 17 000	* 17 000
Bolivia	26 240	46 732	16 632	29 114	53 163
Brazil	3 389	173 284	105 176	* 100 000	* 100 000
Colombia	4 688	4 003	3 068	1 791	2 586
Peru	106 071	28 407	7 953	9 182	15 621
Afghanistan	500	* 500	* 500	* 500	* 500
Burma (c)	23 060	2 836	3 215	2 186	4 560
China	4 100 000	3 500 000	3 100 000	* 3 200 000	* 3 200 000
India (c)	910 963	1 252 262	1 262 476	2 050 215	* 2 000 000
Iran (d)	440 741	340 318	399 750	239 132	* 240 000
Kazakhstan	200 000	210 000	190 000	160 000	420 000
Laos	46 000	92 000	82 000	77 000	35 000
Malaysia	14 456	16 600	16 600	16 600	* 16 600
Pakistan (a)	133 658	118 773	157 858	91 711	88 847
Saudi Arabia	32 000	43 000	—	—	—
Thailand	134 961	170 621	211 920	147 954	67 490
Vietnam	140 000	80 000	50 000	50 000	* 50 000
Australia	14 676	6 016	7 139	8 957	6 534
World total	9 000 000	9 000 000	7 800 000	8 500 000	8 700 000

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	2014	2015	2016	2017	2018
Armenia					
Bentonite	798	1 592	5 543	11 724	21 029
Azerbaijan					
Bentonite	76 512	56 825	49 328	225 288	201 539
Bosnia & Herzegovina					
Bentonite (a)	80 952	67 261	102 858	92 344	87 358
Bulgaria					
Bentonite	41 100	61 600	37 100	54 100	* 54 100
Cyprus					
Bentonite	140 174	127 036	117 184	95 593	98 800
Czech Republic					
Bentonite	301 000	369 000	374 000	254 000	277 000
Denmark					
Bentonite	66 388	54 272	66 278	69 594	56 173
France					
Bentonite	11 607	36 404	42 567	24 497	35 696
Germany					
Bentonite	394 657	393 000	393 000	416 000	390 000
Greece					
Bentonite	1 011 480	1 123 320	883 220	1 087 800	1 355 000
Attapulgitite	45 000	108 000	44 500	54 280	53 300
Hungary					
Bentonite	10 463	11 290	16 006	9 852	* 10 000
Italy					
Bentonite	20 658	12 840	45 978	86 106	100 067
North Macedonia					
Bentonite	11 691	9 012	1 968	912	2 945
Poland					
Bentonite	650	450	1 000	—	560
Romania					
Bentonite	18 583	19 355	26 758	33 777	34 809
Russia					
Bentonite	* 460 000	497 900	589 000	91 000	50 100
Slovakia					
Bentonite	205 000	205 000	158 000	226 082	270 000
Slovenia					
Bentonite	199	232	182	147	113
Spain					
Bentonite	105 627	100 604	155 038	177 565	178 463
Attapulgitite	26 798	26 188	28 809	58 952	28 021
Sepiolite	555 581	524 915	518 699	482 550	698 058
Turkey					
Bentonite	1 088 444	3 134 911	1 744 912	1 481 617	* 1 500 000
Sepiolite	53 110	28 804	56 038	15 624	* 16 000
Ukraine					
Bentonite	* 219 000	* 219 000	* 219 000	* 219 000	* 219 000
Algeria					
Bentonite	31 510	34 100	37 200	35 600	36 000
Angola					
Fuller's earth	* 98 000	* 98 000	* 98 000	* 98 000	* 98 000
Egypt					
Bentonite (b)	3 615	* 4 900	* 3 600	* 2 000	* 3 400
Kenya					
Bentonite	110	* 110	* 110	* 110	* 110
Morocco					
Bentonite	98 757	92 290	103 266	174 546	* 175 000
Fuller's earth (c)	73 500	* 84 570	* 80 000	* 80 000	* 80 000
Mozambique					
Bentonite	739	350	322	285	—
Senegal					
Attapulgitite	191 400	188 400	172 300	165 900	177 900
South Africa					
Bentonite	169 591	163 696	148 742	165 141	173 486
Attapulgitite	18 376	18 280	16 374	18 333	17 121

Production of bentonite and fuller's earth

tonnes (metric)

Country	2014	2015	2016	2017	2018
Canada					
Bentonite (d)	2 083	583	468	* —	* —
Cuba					
Bentonite	700	500	389	589	630
Guatemala					
Bentonite	38 368	31 582	18 081	20 562	16 953
Mexico					
Bentonite	519 625	294 236	109 176	148 475	264 800
Fuller's earth	245 147	108 215	111 713	110 860	—
USA					
Bentonite (e)	4 800 000	4 010 000	* 3 600 000	* 4 300 000	* 3 700 000
Fuller's earth (e)	1 990 000	1 930 000	1 860 000	* 1 700 000	* 1 600 000
Argentina					
Bentonite	* 225 000	* 200 000	193 619	* 200 000	* 200 000
Bolivia					
Bentonite	886	1 023	525	68	2
Brazil					
Bentonite	394 386	401 844	352 920	* 350 000	* 350 000
Chile					
Bentonite	1 083	1 434	1 288	1 584	525
Colombia					
Bentonite	* 9 000	* 9 000	* 9 000	* 9 000	* 9 000
Peru					
Bentonite	37 375	21 341	19 410	756	2 384
Uruguay					
Bentonite	7 800	4 250	6 650	6 640	* 6 640
Burma					
Bentonite (f)	—	700	600	600	—
China					
Bentonite	* 5 000 000	* 5 600 000	* 5 600 000	* 5 600 000	* 5 590 000
India					
Bentonite (f)	* 1 371 000	* 1 457 000	2 978 858	3 488 264	* 3 500 000
Fuller's earth (f)	* 400 000	473 998	479 825	798 156	564 000
Indonesia					
Bentonite	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Iran					
Bentonite (g)	403 008	418 840	842 421	723 718	* 730 000
Iraq					
Bentonite	* 6 300	* 6 300	* 6 300	* 6 300	* 6 300
Japan					
Bentonite	* 420 000	* 420 000	* 420 000	* 420 000	* 420 000
Korea (Rep. of)					
Bentonite	71 850	78 439	63 834	47 306	31 824
Fuller's earth	54 001	87 094	81 688	115 568	54 687
Pakistan					
Bentonite (b)	40 374	23 283	42 038	42 770	74 268
Fuller's earth (b)	6 397	8 005	13 740	18 185	9 188
Philippines					
Bentonite	3 369	3 477	3 361	1 249	658
Uzbekistan					
Bentonite	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Australia					
Bentonite (b)	65 806	70 072	90 917	116 762	87 330
Fuller's earth	10 176	16 216	12 200	11 871	* 10 000
New Zealand					
Bentonite	* 750	* 750	* 750	* 750	* 750
World total bentonite	18 000 000	19 900 000	19 700 000	20 600 000	20 400 000
World total fuller's earth (a)	3 800 000	3 700 000	3 600 000	3 700 000	3 400 000

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 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	2014	2015	2016	2017	2018
Madagascar (a)	* 135	* 140	* 140	* 140	* 140
Mozambique	3	312	181	53	416
Zambia	4	7	5	3	7
USA (b)	6 900	5 100	3 870	3 760	* 3 700
China	* 1 200	* 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	2014	2015	2016	2017	2018
Armenia	* 4	* 4	* 4	* 4	* 4
Russia	* 45	* 45	* 45	* 45	* 45
Canada	3	2	2	5	5
Mexico	948	601	539	513	333
Bolivia	11	20	43	8	39
Peru (a)	* —	* —	188	124	145
China	1 490	1 587	1 672	* 1 700	* 1 750
Japan (a)	582	568	409	489	547
Vietnam	646	1 510	* 1 700	2 743	3 099
World total	3 700	4 300	4 600	5 600	6 000

Note(s)

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

(a) Metal production

Production of borates

tonnes (metric)

Country	2014	2015	2016	2017	2018
Russia	* 250 000	* 80 000	* 80 000	* 75 000	* 75 000
Turkey	3 143 175	2 180 976	2 070 257	2 494 627	* 2 500 000
USA (a)	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000	* 1 300 000
Argentina	* 600 000	* 480 000	* 520 000	* 519 000	* 544 400
Bolivia	168 187	166 451	199 924	223 515	232 268
Chile	496 533	517 584	558 854	607 076	398 411
Peru	239 725	662 709	33 792	—	100 552
China (b)	* 97 000	* 90 000	* 80 000	* 70 000	* 70 000
Iran (c)	1 383	675	—	1 150	* 1 000
Kazakhstan	* 30 000	* 500 000	* 510 000	* 500 000	* 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	2014	2015	2016	2017	2018
Germany	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Ukraine	* 3 200 000	* 3 500 000	* 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	* 75 500 000	* 60 000 000	* 57 600 000	* 60 000 000	* 60 000 000
India (b)	2 196 270	2 439 390	2 717 210	2 266 000	* 2 300 000
Israel	173 796 000	115 583 000	161 986 000	180 000 000	175 000 000
Japan	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000	* 20 000 000
Jordan	* 100 000 000	* 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	2014	2015	2016	2017	2018
Bulgaria	382	344	362	333	313
Germany	* 400	* 400	* 400	500	500
Netherlands	* 620	* 620	* 620	* 620	* 620
Norway	* 310	* 310	* 355	* 416	* 399
Poland	628	383	319	309	305
Russia	* 1 200	* 1 300	* 1 500	* 1 800	* 1 900
Canada (a)	1 187	1 159	2 305	1 802	1 676
Mexico	1 409	1 283	1 244	1 142	1 307
USA (a)	* 550	* 500	* 400	* 550	* 550
Argentina	30	39	30	* 30	* 30
Brazil	* 200	* 200	* 200	* 200	* 300
Peru	769	757	820	797	765
China	8 201	8 162	8 222	* 8 200	* 8 200
India (b)	69	—	35	47	—
Japan	2 039	2 188	1 989	2 310	2 108
Kazakhstan	1 633	1 475	2 682	* 1 500	* 1 500
Korea (Rep. of)	5 645	* 5 600	4 000	4 000	4 905
Korea, Dem. P.R. of	* 200	* 200	* 200	* 200	* 200
World total	25 500	24 900	25 700	24 800	25 600

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	2014	2015	2016	2017	2018
Albania	683 874	639 909	726 671	808 016	1 142 719
Finland (a)	1 034 750	946 188	1 070 281	972 028	1 099 438
Kosovo	12 700	—	—	—	—
Russia	380 000	503 000	485 000	488 000	507 000
Turkey	6 611 394	* 6 600 000	* 6 600 000	* 6 600 000	* 6 600 000
Madagascar	53 657	88 560	71 043	64 200	35 381
South Africa	14 037 722	15 684 481	14 705 180	16 586 863	17 829 038
Sudan	60 000	15 143	45 000	32 000	27 000
Zimbabwe	408 422	208 328	112 026	688 838	894 660
Brazil	716 674	527 000	* 500 000	542 989	* 500 000
Colombia	128	30	—	—	—
Afghanistan	6 369	* 6 400	* 6 400	* 6 400	* 6 400
China	24 000	22 700	25 444	* 30 000	* 30 000
India (b)	2 164 163	2 915 584	3 727 780	3 480 928	* 3 780 000
Iran (c)(d)	359 332	276 570	342 332	301 119	* 300 000
Kazakhstan	5 410 700	5 382 800	5 542 900	6 313 300	6 888 800
Oman	751 200	442 600	450 800	631 600	687 700
Pakistan	* 350 000	* 330 000	* 230 000	* 350 000	* 324 700
Philippines (c)	47 056	15 502	25 745	20 849	45 011
Papua New Guinea (e)	—	—	—	90 121	92 139
World total	33 100 000	34 600 000	34 700 000	38 000 000	40 800 000

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
- (e) Exports

Production of coal

tonnes (metric)

Country	2014	2015	2016	2017	2018
Albania					
Lignite	—	69 000	4 000	46 000	98 000
Bosnia & Herzegovina					
Brown coal & lignite	11 673 320	12 111 830	13 488 147	14 033 504	14 378 767
Bulgaria					
Anthracite & Bituminous	16 500	—	10	—	* —
Lignite	29 127 500	33 773 000	29 294 200	32 136 500	* 32 137 000
Brown coal	2 228 800	2 165 100	2 140 000	2 451 500	* 2 450 000
Czech Republic					
Bituminous	8 341 000	7 640 000	6 074 000	4 870 000	4 110 000
Brown coal	38 348 000	38 251 000	38 646 000	39 310 000	39 187 000
Georgia	299 314	305 870	296 500	268 113	137 912
Germany					
Anthracite & Bituminous	8 340 000	6 650 000	4 079 000	3 840 000	2 700 000
Brown coal	178 154 848	178 065 353	171 546 550	171 286 000	166 258 371
Greece					
Lignite	50 411 000	46 308 120	32 674 790	37 802 600	36 800 000
Hungary					
Bituminous	11	5 687	748	789	2 083
Lignite	8 918 000	9 095 000	9 164 000	7 890 000	7 843 000
Brown coal	635 700	162 490	68 061	83 341	53 606
Kosovo					
Lignite	7 204 211	8 240 694	8 800 848	7 574 697	7 169 767
Montenegro					
Lignite	1 655 045	1 752 758	1 349 729	1 419 655	1 539 100
Brown coal	—	17 900	47 800	55 200	56 800
North Macedonia					
Lignite	6 469 819	5 927 749	5 130 055	5 056 918	4 946 486
Norway					
Bituminous (a)	1 701 000	1 203 000	962 000	134 000	142 500
Poland					
Coking coal	12 288 000	12 985 000	13 204 000	12 482 000	12 047 000
Other bituminous coal	60 983 000	59 701 000	57 580 000	53 485 000	51 767 000
Lignite	64 002 000	63 135 000	60 273 000	63 060 000	61 144 000
Romania					
Anthracite & Bituminous	1 619 347	1 418 596	1 068 507	784 433	538 092
Lignite	22 958 755	25 424 709	22 156 556	25 232 160	23 319 839
Russia	356 000 000	372 000 000	385 000 000	410 000 000	440 000 000
Serbia					
Bituminous	121 000	123 000	105 000	79 000	101 000
Lignite (b)	29 340 000	37 308 043	37 934 000	39 353 000	37 253 000
Brown coal	354 000	351 116	355 000	342 000	277 000
Slovakia					
Lignite	166 000	97 000	195 000	56 000	169 000
Brown coal	1 885 000	1 636 000	1 622 000	1 619 000	1 257 000
Slovenia					
Lignite	3 108 203	3 168 001	3 348 889	3 355 664	3 216 735
Spain					
Anthracite	1 263 585	1 113 336	736 035	370 445	293 799
Bituminous	1 343 617	610 395	365 872	791 303	483 159
Sub-bituminous	1 347 849	1 318 625	730 470	1 833 357	1 630 088
Turkey					
Anthracite	1 916 833	2 074 049	1 881 664	1 764 028	1 620 682
Lignite	66 207 010	58 730 170	77 896 048	86 534 278	* 85 000 000
Ukraine					
Bituminous	45 932 000	29 917 000	31 630 000	34 916 100	26 254 000
United Kingdom					
Bituminous (c)	11 648 000	8 598 000	4 178 000	3 041 000	2 581 000
Botswana	1 711 555	2 065 778	1 873 547	2 215 782	2 482 313
Congo, Democratic Republic					
Bituminous	5 600	6 900	8 200	* 8 000	* 8 000
Egypt (d)	9 387	—	—	* —	* —
Swaziland					
Anthracite	177 931	141 732	158 419	202 277	106 856
Ethiopia					
Lignite	* 27 000	34 131	14 582	* 14 600	* 14 600

Production of coal

tonnes (metric)

Country	2014	2015	2016	2017	2018
Malawi	63 673	58 774	43 338	45 230	49 753
Mozambique					
Bituminous	* 8 500 000	* 8 600 000	5 500 000	11 260 000	12 926 416
Niger	255 936	221 024	246 631	233 792	221 580
Nigeria					
Sub-bituminous	46 000	47 000	46 000	* 46 000	* 46 000
South Africa					
Anthracite	3 516 573	3 395 505	2 612 215	2 886 078	3 316 837
Bituminous	257 881 954	248 680 484	248 399 455	249 456 924	249 939 594
Tanzania					
Bituminous	246 128	257 321	276 030	558 553	627 652
Zambia					
Bituminous	158 757	103 439	126 050	70 808	60 000
Zimbabwe					
Bituminous	5 782 600	4 336 100	1 635 800	2 928 000	3 347 500
Canada	69 036 000	61 931 000	61 461 000	60 866 000	54 600 000
Mexico					
Bituminous	15 874 413	15 716 400	13 676 593	12 748 000	* 12 700 000
USA					
Anthracite (e)	1 766 289	1 944 000	1 510 000	1 734 000	1 720 022
Bituminous (e)	435 440 500	366 241 366	293 346 350	320 708 000	324 069 976
Sub-bituminous	397 912 999	380 577 606	299 591 410	318 877 000	308 449 162
Lignite	72 109 393	64 929 000	66 313 390	61 393 000	51 744 000
Argentina					
Bituminous	57 000	34 000	23 000	* 20 000	* 20 000
Brazil					
Bituminous & lignite (f)	7 723 299	6 899 484	6 062 760	* 5 000 000	* 5 000 000
Chile					
Bituminous	194 747	157 017	114 887	70 281	38 021
Lignite	3 973 438	3 004 709	2 410 284	2 425 109	2 256 656
Colombia					
Anthracite (g)	5 622	7 133	29 721	25 051	* 26 000
Coking coal	5 104 123	4 823 869	4 411 104	5 981 970	* 4 900 000
Other bituminous coal	83 677 949	81 723 769	86 582 319	84 542 025	* 81 000 000
Peru					
Anthracite & Bituminous	229 213	251 788	266 208	301 050	216 581
Venezuela					
Bituminous	800 640	801 697	900 000	500 000	200 000
Afghanistan (h)	1 517 400	1 364 800	1 698 200	2 191 400	2 444 600
Bangladesh (d)	942 796	675 776	1 021 638	1 160 658	923 276
Bhutan	121 891	85 164	117 783	161 527	186 824
Burma (i)	386 732	419 862	549 837	736 948	* 1 445 200
China	3 874 000 000	3 747 000 000	3 411 000 000	3 524 000 000	3 683 000 000
India					
Bituminous (i)	609 179 000	639 230 000	657 868 000	678 533 000	* 696 540 000
Lignite (i)	48 270 000	43 842 000	45 230 000	47 668 000	* 43 330 000
Indonesia					
Anthracite & Bituminous	458 096 707	461 566 080	456 197 775	461 248 184	557 772 940
Iran					
Bituminous (h)	1 375 000	1 339 000	1 340 000	1 496 000	* 1 500 000
Kazakhstan					
Bituminous	107 669 100	101 792 500	97 308 600	101 797 300	107 575 900
Lignite	6 893 500	5 525 700	5 750 400	6 094 500	6 560 700
Korea (Rep. of)					
Anthracite	1 748 000	1 764 000	1 727 000	1 485 000	1 201 920
Korea, Dem. P.R. of	27 081 000	31 115 000	35 741 000	21 738 000	* 18 000 000
Kyrgyzstan	1 777 400	1 869 900	* 1 869 900	* 1 870 000	* 1 870 000
Laos					
Anthracite	105 564	106 028	138 809	133 284	142 994
Lignite	26 320	4 464 068	13 097 121	13 439 492	15 903 277
Malaysia	2 667 764	2 559 444	2 414 765	2 988 212	2 652 813
Mongolia					
Brown coal & lignite (j)	24 449 000	23 979 000	35 096 500	49 480 200	50 009 300

Production of coal

tonnes (metric)

Country	2014	2015	2016	2017	2018
Nepal					
Sub-bituminous (k)	8 151	6 754	1 722	7 270	11 522
Pakistan (l)(d)	3 340 192	3 407 659	3 749 312	3 953 992	4 470 000
Philippines					
Bituminous	7 601 260	7 377 639	11 211 254	11 932 328	11 755 360
Tajikistan	878 100	1 041 900	1 361 400	1 759 700	1 907 054
Thailand					
Lignite	17 991 362	15 150 549	17 069 712	16 258 637	14 851 950
Uzbekistan					
Bituminous	408 000	367 000	360 000	376 000	* 380 000
Lignite	3 989 000	3 590 000	3 989 000	3 624 000	* 3 600 000
Vietnam					
Anthracite	41 086 000	41 664 000	38 527 000	38 237 000	42 047 000
Australia					
Bituminous (m)	441 520 000	439 979 000	443 449 000	435 889 000	456 325 000
Brown coal (d)	58 001 000	60 957 000	59 757 000	56 095 000	45 062 000
New Zealand					
Bituminous	1 935 881	1 400 886	1 205 388	1 212 126	1 318 322
Sub-bituminous	1 731 874	1 665 676	1 348 199	1 386 950	1 582 773
Lignite	316 692	324 086	313 035	319 487	307 327
World total	8 153 000 000	7 934 000 000	7 472 000 000	7 700 000 000	7 964 000 000

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) Spitzbergen: not including production from mines controlled by Russia
 - (b) Excluding production in Kosovo
 - (c) Including anthracite
 - (d) Years ended 30 June of that stated
 - (e) Includes a small amount of refuse recovery
 - (f) Including beneficiated and directly shipped material
 - (g) May also include other types of coal
 - (h) Years ended 20 March following that stated
 - (i) Years ended 31 March following that stated
 - (j) Coal; all forms
 - (k) Years ended 15 July of that shown
 - (l) Including lignite
 - (m) Including sub-bituminous

Mine production of cobalt

tonnes (metal content)

Country	2014	2015	2016	2017	2018
Finland	2 104	2 119	2 260	* 1 900	1 377
Russia	5 400	5 800	5 600	4 700	5 330
Botswana	196	316	248	—	—
Congo, Democratic Republic	75 560	83 529	68 822	82 461	109 402
Madagascar	3 221	3 920	3 370	2 840	2 655
Morocco (a)	1 391	1 722	2 081	1 924	1 806
South Africa (a)	1 332	1 362	1 101	1 062	1 007
Zambia (a)	4 562	2 979	5 276	3 240	1 585
Zimbabwe	358	355	409	445	403
Canada	6 907	7 489	7 148	6 058	5 268
Cuba	4 143	4 729	5 514	5 407	* 5 300
USA	120	760	690	640	630
Brazil	3 838	2 771	852	28	4
China	9 619	10 093	9 293	* 9 000	* 9 000
Indonesia	* 329	* 350	* 350	* 350	* 350
Philippines	4 094	4 140	4 400	3 700	5 400
Vietnam	223	277	134	—	—
Australia (b)	6 252	6 777	6 020	5 221	5 609
New Caledonia	8 239	11 444	17 844	9 397	* 9 400
Papua New Guinea	2 134	2 505	2 191	3 308	3 275
World total	140 000	153 000	144 000	142 000	168 000

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.
- (4) In addition to the countries listed, cobalt is contained within copper ores in Poland but this is not currently recovered.

(a) Metal and/or refined

(b) Years ended 30 June of that stated

Production of refined cobalt

tonnes (metric)

Country	2014	2015	2016	2017	2018
Belgium (a)	5 850	6 306	6 329	6 987	6 360
Finland	12 551	9 615	12 393	12 222	12 874
France	219	133	119	277	48
Norway	3 582	3 117	3 541	3 473	4 166
Russia	2 302	2 040	3 092	2 077	* 1 800
Congo, Democratic Republic (b)	2 859	3 195	82	120	68
Madagascar	2 915	3 464	3 273	3 053	2 850
Morocco	1 391	1 722	2 081	1 924	1 806
South Africa (c)	1 332	1 362	1 101	1 062	1 007
Zambia	4 562	2 979	4 982	2 676	1 663
Canada (d)	5 491	6 126	6 302	5 152	6 296
Brazil	1 350	1 300	400	46	4
China (a)	39 292	48 719	45 046	69 600	78 360
India	* 100	* 150	* 100	* 100	—
Japan	3 654	4 259	4 305	4 159	3 669
Australia	5 419	5 150	3 200	3 042	3 200
New Caledonia (e)	435	1 568	2 531	2 302	1 662

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	2014	2015	2016	2017	2018
Albania	3 503	2 106	218	—	2 601
Armenia	50 952	83 634	102 962	113 560	84 100
Azerbaijan	784	969	1 941	1 991	1 645
Bulgaria (a)	108 323	111 746	109 702	109 078	109 400
Cyprus	3 088	2 121	1 754	1 293	908
Finland	42 790	41 085	47 488	53 144	46 755
Georgia	* 6 800	* 13 000	* 14 000	* 15 000	* 13 000
North Macedonia	9 600	11 400	10 200	9 000	8 000
Poland	421 285	426 196	424 000	419 000	401 300
Portugal	75 433	83 081	74 453	63 812	49 064
Romania	7 200	3 600	7 300	7 400	8 100
Russia	691 500	711 400	702 300	762 300	785 300
Serbia	33 739	29 827	41 300	44 800	44 100
Slovakia	46	58	39	32	21
Spain	103 900	112 690	167 736	198 353	185 237
Sweden	79 345	75 125	78 992	104 450	106 142
Turkey	122 000	108 000	* 100 000	83 000	79 600
Botswana	38 000	9 162	12 415	1 239	1 462
Congo, Democratic Republic	1 030 129	1 039 007	1 023 687	1 094 638	1 225 227
Eritrea	88 900	61 600	25 300	7 900	17 300
Mauritania	33 079	45 001	32 820	28 791	28 138
Morocco	16 579	19 903	23 586	24 603	23 859
Namibia	5 249	14 010	16 653	15 534	15 177
South Africa	78 697	77 360	65 257	65 503	46 900
Tanzania	6 363	6 465	7 150	1 331	—
Zambia	708 259	710 860	725 359	797 266	851 089
Zimbabwe	8 261	8 218	9 101	8 839	9 077
Canada	672 729	714 647	693 059	597 194	539 473
Dominican Republic	9 262	7 324	9 725	9 618	8 588
Mexico	515 025	594 451	766 129	742 246	696 580
USA	1 384 700	1 416 300	1 461 900	1 290 000	1 250 000
Argentina	102 600	61 800	81 900	33 300	17 400
Bolivia	10 746	9 479	8 718	7 219	5 200
Brazil	301 197	359 463	337 600	384 542	381 000
Chile	5 761 100	5 772 100	5 552 600	5 503 500	5 831 600
Colombia	4 118	5 463	8 493	9 355	10 371
Ecuador	* 3 000	* 1 800	* 1 000	* 8 200	* 8 000
Peru	1 377 642	1 700 817	2 353 859	2 445 585	2 436 951
Burma	* 42 000	* 71 000	* 95 000	* 116 000	* 154 000
China	1 776 794	1 712 065	1 900 188	1 706 400	1 591 000
India (b)	24 889	32 493	31 999	33 678	* 37 000
Indonesia	378 500	578 600	728 000	622 030	651 136
Iran	216 800	246 400	289 300	295 621	316 500
Kazakhstan	471 700	473 600	474 800	557 800	635 500
Korea, Dem. P.R. of	7 700	8 600	12 600	1 800	* —
Kyrgyzstan	700	3 100	8 200	7 500	7 200
Laos	159 696	167 702	177 939	153 304	147 019
Mongolia	253 000	318 000	516 000	475 000	458 780
Oman	13 699	7 828	—	—	—
Pakistan	* 18 000	* 16 000	* 14 100	* 15 000	* 16 700
Philippines	91 824	83 835	83 649	68 156	69 933
Saudi Arabia	10 848	11 563	27 500	36 279	67 508
Tajikistan	100	1 400	2 500	6 100	—
Uzbekistan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	20 296	22 524	22 636	21 451	23 378
Australia	978 534	995 881	947 555	849 121	913 336
Papua New Guinea	75 901	45 185	80 022	105 419	96 287
World total	18 600 000	19 300 000	20 600 000	20 200 000	20 600 000

Note(s)

(a) Metal content of ore

(b) Years ended 31 March following that stated

Smelter production of copper

tonnes (metric)

Country	2014	2015	2016	2017	2018
Armenia	9 814	11 601	12 920	12 051	8 831
Bulgaria	318 700	292 200	245 000	322 700	316 800
Finland	146 542	141 474	145 189	133 197	139 087
Germany	349 700	338 300	342 800	332 600	311 200
Norway	35 813	35 477	28 123	22 695	20 590
Poland	503 111	514 774	446 902	457 549	461 865
Russia	664 000	661 000	665 000	730 000	754 300
Serbia	30 700	43 000	61 000	68 200	66 200
Spain	285 400	286 300	292 300	272 000	284 800
Sweden	145 300	137 400	131 500	150 000	150 000
Turkey	* 40 600	* 45 400	* 46 200	* 51 000	* 51 000
Namibia	35 042	44 504	40 181	40 476	48 971
South Africa	58 500	60 900	51 000	52 600	33 300
Tanzania	* 4 000	* 4 000	* 1 000	* 13 000	* 15 000
Zambia (a)	525 800	648 800	698 100	787 900	828 700
Canada	288 699	281 416	304 349	289 400	290 100
Mexico	258 000	256 252	267 843	270 213	286 242
USA	522 000	527 000	563 000	470 000	536 000
Brazil	182 800	157 800	188 500	118 800	132 200
Chile	1 362 400	1 382 000	1 365 300	1 264 600	1 246 100
Peru	314 615	327 909	309 469	316 882	327 821
China	5 167 900	5 504 817	6 115 035	5 965 700	6 357 400
India	766 000	792 600	773 300	823 100	491 500
Indonesia	236 900	199 700	255 700	245 800	258 800
Iran	156 500	153 500	153 400	114 200	304 400
Japan	1 323 500	1 243 813	1 289 885	1 192 179	1 263 456
Kazakhstan	253 000	283 000	294 100	296 300	295 000
Korea (Rep. of)	500 000	511 200	510 000	510 000	530 000
Korea, Dem. P.R. of	* 4 000	* 4 000	* —	* —	* —
Oman	2 300	1 300	3 481	264	—
Pakistan (b)	* 16 000	* 15 000	* 14 000	* 15 000	* 16 600
Philippines	153 200	189 200	215 000	240 000	170 900
Uzbekistan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	11 200	11 300	11 600	11 500	* 11 500
Australia	468 468	432 843	445 202	359 832	377 943
World total	15 200 000	15 600 000	16 400 000	16 000 000	16 500 000

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	2014	2015	2016	2017	2018
Austria	83 200	102 900	103 215	109 800	107 200
Belgium	387 300	378 600	366 700	398 900	390 200
Bulgaria	233 274	229 723	216 428	228 457	224 098
Cyprus	3 088	2 121	1 754	1 293	908
Finland	146 542	141 474	145 189	133 197	157 288
Germany	674 000	678 100	671 400	694 400	672 400
Italy	7 900	7 300	6 600	8 700	7 500
North Macedonia	1 700	2 268	1 396	958	768
Norway	35 813	35 477	28 123	22 695	20 590
Poland	576 876	574 310	535 597	522 022	501 817
Russia	889 300	874 300	860 100	949 000	1 039 000
Serbia	33 175	44 000	61 309	67 179	72 087
Spain	418 500	419 900	429 400	415 200	423 800
Sweden	217 337	206 059	207 220	219 462	224 487
Turkey	71 300	84 000	52 400	95 000	126 300
Ukraine	15 200	18 500	27 100	25 186	24 901
Congo, Democratic Republic	786 900	891 369	818 925	825 346	999 513
Egypt	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Namibia	—	10 659	16 391	15 466	15 177
South Africa	57 700	64 400	53 900	66 200	43 900
Zambia	499 400	495 600	426 400	466 200	458 200
Zimbabwe	* 5 000	* —	—	—	100
Canada	325 352	330 902	314 183	330 386	290 728
Mexico	397 700	434 100	462 300	446 000	436 900
USA	1 090 000	1 140 000	1 220 000	1 080 000	1 070 000
Argentina	* 14 000	* 14 000	* 14 000	* 14 000	* 14 000
Bolivia	1 810	1 789	2 199	2 269	3 300
Brazil	213 085	241 469	225 558	143 000	132 000
Chile	2 729 400	2 688 400	2 612 500	2 429 500	2 461 200
Peru	347 398	352 960	331 324	335 329	336 798
Burma	* 33 200	65 041	92 560	* 115 100	* 153 000
China	7 649 050	7 968 946	8 436 300	8 969 500	9 028 585
India (a)	762 176	790 372	787 657	830 524	* 450 000
Indonesia	233 216	199 626	253 460	270 769	274 641
Iran (b)	193 000	191 000	193 000	161 000	238 700
Japan	1 554 224	1 483 131	1 553 133	1 488 080	1 594 517
Kazakhstan	294 808	394 641	408 435	426 191	438 115
Korea (Rep. of)	604 000	644 603	644 788	663 327	665 000
Korea, Dem. P.R. of	* 4 000	* 4 000	* —	* —	* —
Laos	88 541	89 253	78 714	62 941	71 268
Mongolia	6 992	14 990	15 010	14 644	14 200
Oman (c)	2 300	1 300	3 481	264	—
Philippines	130 000	153 000	185 100	205 000	170 800
Thailand	229	187	—	—	—
Uzbekistan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Vietnam	11 200	11 300	11 600	11 500	* 11 500
Australia	511 252	474 963	474 954	386 249	407 618
World total	22 400 000	23 100 000	23 500 000	23 800 000	23 900 000

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	2014	2015	2016	2017	2018
Russia	38 303 500	41 912 390	40 322 030	42 614 780	43 161 058
Angola	8 791 340	9 018 942	9 021 767	9 438 802	8 408 688
Botswana	24 658 000	20 824 000	20 954 000	22 900 000	27 373 000
Cameroon (a)	* 6 000	* 4 500	* 3 000	* 3 500	* 3 600
Central African Republic	(b) ...	(b) ...	10 654	47 637	13 572
Congo	53 163	40 057	12 107	46 758	47 579
Congo, Democratic Republic	14 689 000	14 284 000	12 377 000	15 404 000	15 131 210
Ghana	241 235	174 364	143 005	86 925	57 531
Guinea	164 059	166 880	112 796	181 450	292 707
Ivory Coast	1 074	14 925	20 235	7 361	5 678
Lesotho	346 017	304 232	342 014	1 126 409	1 294 283
Liberia	74 882	65 996	60 367	60 636	75 448
Namibia	1 897 872	1 774 509	1 584 168	1 815 709	2 091 781
Sierra Leone	594 422	500 050	549 502	288 979	739 600
South Africa	8 060 373	8 232 627	8 450 758	9 685 235	9 911 460
Tanzania	252 875	216 491	237 685	304 456	381 302
Togo	23	46	—	2	—
Zimbabwe	4 771 637	3 490 881	2 102 873	2 507 604	3 255 079
Canada	12 082 000	11 677 472	11 103 500	23 198 761	23 239 926
Brazil	56 923	31 826	183 500	254 896	250 940
Guyana	99 950	118 451	139 890	52 161	62 111
China	* —	* —	* 127	* 230	* 99
India (c)	36 107	36 044	36 491	39 699	* 36 000
Australia	9 288 118	13 560 795	13 958 000	17 135 000	14 008 054
World total	124 500 000	126 400 000	121 700 000	147 200 000	149 800 000

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.

(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	2014	2015	2016	2017	2018
Armenia	20 439	18 915	25 486	23 465	* 23 000
Czech Republic	34 000	15 000	26 000	34 000	31 000
Denmark					
Moler (a)	118 750	127 500	114 375	176 422	99 000
France	90 000	* 90 000	* 90 000	* 90 000	* 90 000
Germany	54 277	52 784	54 764	56 721	58 340
Hungary	550	1 092	738	1 173	1 100
Poland	590	600	500	500	580
Russia	72 000	66 200	47 300	52 000	50 600
Spain (b)	59 619	47 706	48 231	70 550	51 536
Turkey	61 884	86 656	61 722	169 584	* 170 000
Algeria	2 415	2 400	2 500	2 439	2 468
Ethiopia (c)	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Kenya	1 195	1 090	1 238	1 406	1 548
Mozambique	27	160	* 100	* 150	* 400
Costa Rica	5 024	* 3 000	1 953	1 953	1 839
Mexico	87 849	89 810	96 686	96 374	92 700
USA (d)	901 000	832 000	686 000	768 000	* 790 000
Argentina	189 000	189 000	200 000	57 000	* 60 000
Brazil	5 080	5 530	16 408	* 16 000	* 16 000
Chile	31 000	26 186	26 937	27 557	24 736
Peru	151 398	120 672	107 265	96 590	96 547
China	* 379 000	* 350 000	* 420 000	* 420 000	* 420 000
Iran (e)	—	—	15 000	2 660	* 2 600
Japan	* 90 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	65 893	15 310	20 564	133 741	25 902
Australia (f)	* 13 000	* 16 000	* 12 000	* 12 000	* 11 000
New Zealand	43 624	* 44 000	* 44 000	* 44 000	* 44 000
World total	2 483 000	2 307 000	2 225 000	2 459 000	2 270 000

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	2014	2015	2016	2017	2018
Austria	35 000	35 000	35 000	35 000	35 000
Czech Republic	422 000	433 000	454 000	368 000	449 000
Finland	46 233	38 026	18 549	14 926	17 469
France	* 550 000	* 550 000	* 550 000	* 550 000	* 450 000
Germany	320 000	253 411	284 569	276 747	252 693
Italy	4 700 000	4 700 000	4 000 000	3 500 000	* 3 000 000
North Macedonia	18 076	20 289	19 919	21 237	30 813
Norway	154	76	70 015	87 894	* 88 000
Poland	519 896	537 520	510 900	568 600	593 100
Portugal (a)	136 440	178 622	249 996	228 491	227 367
Romania	7 570	13 244	4 501	* 4 500	* 4 500
Russia	* 200 000	232 995	278 142	281 236	294 411
Serbia	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Slovakia	6 000	4 000	8 000	15 800	17 000
Spain	533 328	558 273	634 519	819 218	616 229
Sweden	27 000	29 000	22 000	22 000	28 000
Turkey	7 609 692	10 422 766	11 033 578	10 273 573	* 10 000 000
Ukraine (b)	94 506	44 460	33 627	* 30 000	* 30 000
Algeria	230 372	154 400	168 400	* 170 000	* 170 000
Burkina Faso	7 950	377	—	—	—
Egypt	* 400 000	421 000	* 400 000	* 400 000	* 400 000
Ethiopia (c)	596	* 600	* 600	* 600	* 600
Morocco	* 45 000	* 45 000	* 45 000	* 40 000	* 40 000
Nigeria	60 580	47 000	34 144	27 660	41 355
South Africa	102 541	126 542	131 023	116 400	76 803
Sudan	50 000	28 238	49 000	29 000	36 000
Cuba	3 600	3 300	3 900	3 600	3 000
Guatemala	10 410	10 340	30 428	29 000	30 257
Mexico	150 726	159 372	127 213	233 050	209 770
USA	530 000	520 000	470 000	440 000	* 450 000
Argentina	* 250 000	* 250 000	50 333	* 50 000	* 50 000
Brazil	492 469	517 597	486 684	400 000	* 400 000
Chile	4 233	6 577	6 352	4 421	2 789
Colombia	158 741	159 740	151 759	150 334	141 164
Ecuador	183 259	253 253	148 506	92 871	43 197
Peru	18 019	16 979	16 630	14 930	31 588
Uruguay	300	200	460	370	* 350
Venezuela	93 934	75 527	* 75 000	36 313	* 30 000
China	* 3 670 000	* 3 820 000	* 3 800 000	* 4 000 000	* 4 000 000
India (d)	1 343 366	3 343 773	6 434 788	4 270 245	* 4 300 000
Indonesia	* 18 000	* 18 000	* 18 000	* 39 000	* 39 000
Iran (e)	1 055 368	736 149	784 412	1 339 453	* 1 300 000
Japan (f)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	528 958	601 030	654 398	717 177	617 166
Malaysia	378 446	442 980	441 857	412 004	414 441
Pakistan (g)	92 672	141 582	316 289	273 468	151 743
Philippines	34 232	38 067	46 630	* 46 600	* 46 600
Saudi Arabia	168 000	176 000	188 000	197 000	206 000
Sri Lanka	* 96 000	* 96 000	* 96 000	* 96 000	* 96 000
Taiwan	5	1	0	—	0
Thailand	1 413 428	1 329 816	1 232 532	1 385 925	1 117 803
Uzbekistan	* 4 300	* 4 300	* 4 300	* 4 300	* 4 300
Vietnam	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Australia (g)	* 55 000	* 51 000	* 42 000	* 11 000	* 11 000
World total	27 096 000	31 865 000	34 882 000	32 348 000	30 815 000

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	2014	2015	2016	2017	2018
Bulgaria	130 800	146 500	4 400	—	* —
Germany	58 100	49 801	52 552	45 375	55 000
Russia	8 200	2 000	3 000	2 700	6 000
Spain	135 293	157 486	162 989	154 931	176 188
Turkey	4 271	6 238	10 339	20 150	* 20 000
United Kingdom	* 25 000	* 12 000	* 12 000	* 11 000	* 11 000
Egypt (a)	—	25 902	26 000	* 26 000	* 26 000
Kenya	97 156	70 096	42 656	6 945	—
Morocco	79 840	80 890	73 920	75 500	* 70 000
Namibia	28 955	—	1 495	—	—
South Africa	* 180 000	* 135 000	* 165 000	* 257 000	* 260 000
Mexico	1 109 721	624 574	655 555	741 678	1 182 058
Argentina	* 30 000	* 30 000	39 000	14 000	* 14 000
Brazil (b)	20 600	23 623	18 260	24 000	* 24 000
Colombia	10	47	75	57	46
Afghanistan	20 000	* 20 000	* 40 000	60 000	60 000
China	4 310 000	* 3 980 000	* 3 730 000	* 3 500 000	* 3 500 000
India (c)	2 946	2 333	1 175	1 313	* 600
Iran (d)	54 370	57 232	122 427	36 511	* 35 000
Kazakhstan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea, Dem. P.R. of	* 5 000	* 3 000	* 5 000	* 7 000	* 7 000
Kyrgyzstan	* 4 000	* 4 000	* 4 000	* 4 000	* 4 000
Mongolia	303 000	183 500	167 700	108 900	101 200
Pakistan (a)	7 500	5 962	9 494	2 263	2 777
Thailand	4 590	15 095	31 948	5 500	16 700
Vietnam	90 940	193 164	* 217 900	234 905	238 702
World total	6 800 000	5 900 000	5 700 000	5 400 000	5 900 000

Note(s)

- (1) In addition, the USA produced the following amounts of fluorspar equivalent in fluorosilicic acid derived from processing phosphate rock ('000 t): 2014: 114; 2015: 105; 2016: 72; 2017: 64; 2018: 64.

- (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

tonnes (metric)

Country	2014	2015	2016	2017	2018
Germany	16	11	23	—	—
Russia	* 13	* 13	* 13	* 13	* 13
China	* 300	284	171	319	404
Japan	8	6	3	3	3

- (1) 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. As a consequence, this table may not be complete.
- (2) Lower grade production is often subsequently refined to higher grade material which complicates the collection of data as double counting is a significant risk.
- (3) In addition to the above primary production, there is also believed to be significant production of refined gallium from scrap recycling.
- (4) In addition to the countries listed, the Republic of Korea and Ukraine may produce primary gallium.

Production of germanium metal

tonnes (metric)

Country	2014	2015	2016	2017	2018
Finland	17	13	0	—	—
Russia	* 5	* 5	* 6	* 6	* 6
USA (a)	* 3	* 3	* 2	* 3	* 3
China	* 110	94	82	79	95

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, 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, but it could be larger in some years.

Burkina Faso – official figures include 306 kg for artisanal mining in 2018; 150 kg in 2017; 235 kg in 2016; 302 kg in 2015; and 208 kg in 2014;. It is believed the actual artisanal production is likely to be higher.

Burma – the figures shown in the table for 2014 to 2017 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. No reliable estimates are available but it could be in the region of 50-80 kg per year. The figures shown are reported and it is assumed these are artisanal but they may not be fully inclusive in every year.

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 it is believed there are more than 200 locations where this occurs. 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 2014/15 amounted to 5473 kg; in 2015/16 to 4145 kg and in 2016/17 to 1920 kg. Actual artisanal production could 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 66 kg for artisanal mining in 2014; 55 kg in 2015; 50 kg in 2016 and 40 kg in 2017. Data for 2018 is all artisanal.

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). In the table below the following figures are included for artisanal production: 47,044 kg in 2014; 32,073 kg in 2015; 35,292 kg in 2016; 45,992 kg in 2017 and 37,324 kg in 2018.

Guinea – the figures in the table include reported figures for artisanal mining. 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.

Ivory Coast – efforts are being made within Ivory Coast to rationalise artisanal mining as part of the EITI process. 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 2014, 3000 kg in 2015 and 4500 kg per year for 2016 to 2018.

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 for 2014 and 2015 and 6000 kg per year thereafter, but it is likely the real figure varies more than this from year to year.

Panama – artisanal mining is known to occur but no reliable estimates are available. A nominal estimate of 100 kg per year has been included.

Papua New Guinea – official estimates of "alluvial and small scale" mining are approximately 3500 to 4000 kg per year.

Rwanda – it is believed that the reported and estimated figures are actually gold that originated in neighbouring countries but is not recorded in those countries.

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

Tanzania – Artisanal mining is known to occur and in 2015 and 2016 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 9000 kg per year. The Central Bank aims to purchase all the artisanally mined gold, however, actual output is believed to be larger than the reported figures and therefore higher estimates have been used.

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	2014	2015	2016	2017	2018
Armenia	2 814	3 640	* 3 730	4 270	4 908
Azerbaijan	1 872	2 229	1 895	3 667	3 476
Bulgaria	7 899	7 914	7 918	8 682	8 995
Cyprus	—	—	—	48	47
Finland	8 085	8 342	8 865	9 102	8 732
Georgia	* 2 300	* 3 100	* 3 600	* 3 000	* 3 000
Greece	552	510	86	575	1 454
North Macedonia	480	494	664	972	767
Poland	226	431	402	572	523
Romania	* 500	* 500	* 500	* 500	* 500
Russia	249 100	256 500	253 200	270 300	279 900
Serbia (a)	1 310	1 186	805	1 199	839
Slovakia	582	603	466	447	515
Spain	1 958	2 128	1 291	1 605	1 991
Sweden	6 849	6 028	6 463	7 858	7 866
Turkey	31 260	27 800	24 030	23 090	27 100
United Kingdom	—	—	(b) 6	—	—
Algeria	85	106	102	137	* 250
Benin	* 30	* 30	* 30	* 30	* 30
Botswana	958	757	833	913	1 105
Burkina Faso	36 320	36 540	38 520	46 436	53 234
Burundi	650	549	396	953	576
Cameroon	* 1 000	795	542	689	* 700
Central African Republic	7	15	33	118	142
Chad	* 10	* 10	* 10	* 10	* 10
Congo	* 150	* 150	* 150	* 150	* 150
Congo, Democratic Republic	* 36 600	* 38 000	* 37 100	* 37 100	* 43 800
Egypt	11 734	13 657	17 139	16 941	14 694
Equatorial Guinea	* 200	* 200	* 200	* 200	* 200
Eritrea	840	753	* 1 400	* 2 700	* 3 700
Eswatini (Swaziland)	—	—	—	—	12
Ethiopia (c)	10 340	9 370	7 467	4 704	3 495
Gabon	* 1 078	* 1 356	* 1 070	* 600	* 100
Ghana	137 861	112 402	114 488	133 303	149 067
Guinea	23 465	21 464	29 192	46 845	25 823
Ivory Coast	* 19 000	* 23 200	* 25 100	* 25 200	* 24 500
Kenya	200	300	200	503	472
Liberia	620	828	4 704	6 071	7 096
Madagascar	* 100	* 300	586	2 833	(d) 3 000
Mali	* 45 400	* 46 500	* 48 200	* 51 500	* 61 000
Mauritania	9 625	8 804	7 122	9 096	9 235
Morocco (a)	377	448	352	220	160
Mozambique	197	242	201	166	507
Namibia	4 553	6 285	6 756	7 469	6 632
Niger	732	1 220	999	914	6 207
Nigeria	* 6 300	* 6 300	* 6 300	* 6 300	* 10 000
Rwanda	319	336	* 300	* 300	* 300
Senegal	6 588	5 670	6 741	7 255	12 509
Sierra Leone	43	106	188	142	464
South Africa	151 622	144 515	142 077	136 833	117 150
South Sudan	* 200	* 200	* 200	* 200	* 200
Sudan	73 300	82 400	93 400	107 300	93 600
Tanzania	40 481	43 293	45 155	43 489	39 304
Togo (d)	20 583	15 568	* 14 000	* 20 000	* 10 000
Uganda	24	13	11	4	* 4
Zambia (e)	4 803	4 238	4 610	4 373	4 581
Zimbabwe	15 386	20 023	22 747	23 929	35 054

Mine production of gold

kilograms

Country	2014	2015	2016	2017	2018
Canada	152 460	162 504	163 888	171 111	184 066
Costa Rica	1 350	950	750	4 255	3 699
Dominican Republic	36 085	31 134	37 932	35 242	31 633
Guatemala	6 142	5 610	3 910	1 647	—
Honduras	2 839	2 736	2 607	2 596	2 148
Mexico	117 771	134 759	132 413	126 820	118 359
Nicaragua	8 237	7 612	8 391	7 367	7 703
Panama	* 100	* 100	* 100	* 100	* 100
USA	210 077	213 808	222 211	236 778	211 000
Argentina	60 170	62 673	56 017	60 177	59 818
Bolivia	20 296	19 770	22 545	29 524	29 976
Brazil	81 038	83 124	93 921	79 717	97 100
Chile	46 031	42 501	46 333	37 911	37 066
Colombia	57 896	59 638	63 157	43 128	35 560
Ecuador	7 322	7 723	6 761	6 368	8 212
France (French Guiana)	* 6 830	* 6 460	* 6 100	* 6 300	* 6 200
Guyana	12 053	14 029	22 167	20 334	19 069
Peru	140 090	146 823	153 006	151 964	142 643
Suriname	10 641	9 396	12 926	25 844	26 002
Uruguay (f)	1 715	1 480	993	1 062	465
Venezuela	* 5 000	* 5 000	* 5 000	* 8 000	* 9 000
Burma (g)	1 312	1 692	1 888	1 620	* 500
China (a)	451 799	450 053	453 490	426 142	401 119
India (g)	1 441	1 323	1 595	1 648	* 1 500
Indonesia	69 023	92 171	80 868	99 030	135 250
Iran (h)	1 760	2 358	4 537	7 100	* 7 000
Japan	7 114	7 699	6 455	6 369	6 453
Kazakhstan	50 339	63 614	74 737	85 339	100 288
Korea (Rep. of)	284	258	205	283	239
Korea, Dem. P.R. of	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Kyrgyzstan	18 000	17 600	21 000	29 100	19 000
Laos	5 265	6 893	6 728	5 987	5 577
Malaysia	4 308	4 732	2 249	2 124	2 978
Mongolia	19 959	20 828	9 331	19 849	20 655
Philippines	18 423	21 314	23 053	22 749	20 765
Saudi Arabia	4 789	5 089	7 010	10 333	11 831
Taiwan	5	2	—	4	4
Tajikistan	3 436	* 4 400	* 5 000	* 5 500	* 6 400
Thailand	4 576	3 305	4 250	—	—
Uzbekistan	* 100 000	* 100 000	* 100 000	* 90 000	* 90 000
Vietnam	728	579	604	557	* 600
Australia	271 856	277 372	290 767	292 022	313 028
Fiji	1 188	1 368	1 500	1 425	1 281
New Zealand	11 989	12 687	9 866	10 288	10 045
Papua New Guinea	56 148	57 640	61 952	65 246	67 562
Solomon Islands	603	—	—	—	—
World total	3 080 000	3 150 000	3 230 000	3 330 000	3 350 000

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 100kg 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	2014	2015	2016	2017	2018
Austria (a)(b)	23 240	21 840	23 200	24 400	25 000
Germany	517	398	502	422	222
Norway	8 266	9 185	9 600	* 9 600	* 9 600
Russia	* 14 000	15 900	19 400	25 200	17 800
Sweden	—	113	—	—	—
Turkey	3 850	—	—	—	* —
Ukraine	13 800	14 500	14 630	14 855	* 15 000
Madagascar	699	3 607	5 419	* 8 000	* 8 000
Mozambique	—	580	580	802	106 773
Namibia	—	—	—	2 216	3 461
Zimbabwe	6 853	6 362	5 622	1 577	174
Canada	* 20 000	* 18 000	* 16 000	14 000	13 000
Mexico	9 160	6 524	14 200	10 310	4 198
Brazil (c)	87 026	75 100	61 687	79 771	96 800
China (d)	* 900 000	* 860 000	* 550 000	* 625 000	* 630 000
India (a)(e)	116 712	135 528	122 438	33 558	* 39 000
Korea, Dem. P.R. of	* 60 000	* 80 000	* 50 000	* 140 000	* 40 000
Pakistan (f)	14 279	2 864	360	—	—
Sri Lanka	4 000	4 212	4 000	3 500	* 4 000
World total	1 300 000	1 300 000	900 000	1 000 000	1 000 000

Note(s)

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

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

Production of Gypsum

tonnes (metric)

Country	2014	2015	2016	2017	2018
Albania	108 733	86 163	131 925	104 120	102 016
Armenia	22 300	19 400	14 800	14 300	20 400
Austria (a)	729 892	715 195	674 346	712 469	836 862
Azerbaijan	145 457	196 463	110 501	33 037	9 067
Bosnia & Herzegovina (a)	67 700	58 800	61 231	99 001	122 421
Bulgaria	87 800	108 600	60 900	88 000	* 88 000
Croatia	120 055	138 088	170 107	200 932	267 155
Cyprus	347 600	471 885	682 024	703 079	625 721
Czech Republic	11 000	11 000	10 000	7 000	8 000
France (a)	1 907 768	1 807 978	1 734 975	1 873 581	2 836 329
Germany (a)	4 090 000	4 200 000	3 970 000	4 450 000	3 100 000
Greece (a)	664 290	649 280	777 990	855 000	880 000
Ireland, Republic of	* 300 000	* 250 000	* 250 000	* 200 000	* 200 000
Italy (a)	5 886 653	571 731	617 188	469 044	188 618
Latvia (a)	270 120	225 370	224 000	* 225 000	* 225 000
Moldova (b)	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
North Macedonia (a)	156 492	172 525	202 582	217 491	230 029
Norway (a)(c)	79 740	77 403	82 386	87 891	89 655
Poland (a)	1 231 858	1 099 081	1 118 484	1 108 000	1 120 344
Portugal	328 730	309 966	255 026	152 059	232 921
Romania	815 586	888 746	754 009	813 520	799 810
Russia	* 4 400 000	* 4 400 000	* 4 400 000	* 4 000 000	* 4 000 000
Slovakia (a)	65 000	67 000	53 000	45 700	55 000
Spain	6 925 120	7 403 767	8 936 364	9 545 228	10 578 457
Switzerland	257 000	165 000	195 500	* 200 000	* 200 000
Turkey	9 051 158	8 638 715	10 124 221	10 223 112	* 10 300 000
Ukraine (a)	1 525 300	1 254 900	1 303 000	1 528 900	1 386 400
United Kingdom	* 1 100 000	* 1 800 000	* 1 600 000	* 1 300 000	* 1 400 000
Algeria	2 130 459	1 770 000	2 170 000	* 2 170 000	* 2 200 000
Angola	328 130	127 910	* 190 000	* 190 000	* 190 000
Egypt (a)(d)	872 141	744 160	68 661	* 100 000	* 100 000
Eritrea	* 12 000	* 13 000	* 13 000	* 13 000	* 13 000
Ethiopia (e)	231 985	115 623	89 520	74 299	* 70 000
Guinea	7 533	18 677	273 245	* 200 000	* 200 000
Kenya (a)	5 900	5 800	5 760	* 5 800	* 5 800
Libya	* 150 000	* 150 000	* 150 000	* 200 000	* 200 000
Madagascar	* 130	* 130	* 130	* 130	* 130
Mauritania	* 65 000	* 70 000	* 70 000	* 70 000	* 70 000
Morocco	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Niger	—	253	* 250	* 250	* 250
Nigeria	31 791	* 34 000	* 35 000	* 35 000	39 052
South Africa	376 223	232 878	266 811	317 990	313 909
Sudan	200 000	24 136	349 236	333 000	226 000
Tanzania	200 179	239 302	213 744	123 645	241 259
Tunisia	771 652	690 000	* 690 000	* 690 000	* 690 000
Uganda	—	—	—	60	* —
Canada (a)	1 811 000	2 682 000	1 704 000	3 010 000	3 032 000
Cuba	97 800	90 900	73 900	85 400	99 900
Dominican Republic	184 065	204 687	123 553	94 595	82 896
Guatemala	81 885	111 351	130 616	135 154	132 897
Honduras	57 390	50 370	41 750	* 70 500	* 70 000
Jamaica	45 201	42 883	49 703	* 49 000	* 49 000
Mexico	7 043 563	7 101 612	7 682 807	7 609 704	8 546 723
Nicaragua	57 400	50 400	41 800	66 800	70 300
USA	18 300 000	18 800 000	19 800 000	20 700 000	* 21 000 000
Argentina	* 1 500 000	* 1 500 000	2 391 350	* 2 000 000	* 2 000 000
Bolivia	* 1 000	650	1 181	* 1 100	* 1 100
Brazil	3 471 328	3 161 856	3 471 328	* 3 000 000	* 3 400 000
Chile	843 490	860 075	934 033	1 157 466	909 191
Colombia	368 939	448 543	471 306	405 802	393 496
Paraguay	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Peru	543 856	438 025	257 423	286 657	456 356

Production of Gypsum

tonnes (metric)

Country	2014	2015	2016	2017	2018
Afghanistan	3 000	* 3 000	* 3 000	* 3 000	* 3 000
Bhutan	414 148	389 365	317 597	328 128	461 128
Burma (f)	104 994	99 860	338 489	297 339	331 200
China	* 19 970 000	* 16 300 000	* 15 500 000	* 15 500 000	16 000 000
India (f)(g)	2 478 056	2 141 917	1 821 308	2 048 596	* 2 000 000
Iran (h)	14 869 796	12 292 267	16 376 605	13 476 148	* 13 500 000
Iraq	* 10 462 000	* 10 460 000	* 10 460 000	* 10 460 000	* 10 460 000
Israel	82 000	159 299	147 000	116 000	75 800
Japan	4 674 000	4 670 000	* 4 670 000	* 4 700 000	* 4 700 000
Jordan	* 870 000	* 880 000	* 880 000	* 880 000	* 880 000
Kazakhstan	123 700	113 400	137 400	133 200	121 400
Laos	584 338	989 516	469 436	463 039	618 783
Mongolia	* 60 000	67 300	56 000	* 56 000	* 56 000
Oman	3 387 300	6 049 400	5 482 900	8 664 700	9 085 600
Pakistan (d)	1 326 437	1 417 007	1 871 716	2 079 629	2 489 000
Saudi Arabia	1 780 000	2 780 000	3 000 000	3 150 000	3 307 000
Sri Lanka	* 600	* 600	* 600	* 600	* 600
Syria	* 50 000	* 25 000	* 10 000	* 10 000	* 10 000
Tajikistan	12 900	8 500	8 814	48 800	9 900
Thailand					
Gypsum	12 445 100	11 267 144	10 718 622	9 253 951	9 680 429
Anhydrite	976 818	876 024	1 240 724	1 392 693	1 517 228
Uzbekistan	* 80 000	* 80 000	* 80 000	* 80 000	* 80 000
Yemen, Republic of	* 100 000	* 30 000	* 10 000	* 12 500	* 15 000
Australia (d)	3 624 174	3 824 801	3 972 295	3 832 559	4 347 494
World total	159 900 000	151 400 000	158 800 000	160 300 000	165 400 000

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	2014	2015	2016	2017	2018
Poland	4	4	4	4	4
Russia	4	5	5	5	5
Algeria	* 16	* 10	* 10	* 14	* 14
USA	75	71	66	63	* 64
Qatar	* 35	* 49	* 50	* 45	* 45
Australia	* 5	* 4	* 4	* 4	* 4

Refinery production of indium

tonnes (metric)

Country	2014	2015	2016	2017	2018
Belgium	* 25	* 25	* 20	* 20	* 20
France	43	41	—	30	43
Italy	* 5	* 5	* 5	* 5	* 5
Russia	* 7	* 7	* 7	* 7	* 7
Canada	* 67	* 70	* 71	* 67	* 70
Brazil	* 5	* 5	* 5	* 5	* 5
Peru	14	* 9	* 10	* 10	* 10
China	* 460	* 520	* 510	478	487
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	2014	2015	2016	2017	2018
Azerbaijan	221 100	246 700	207 600	198 400	185 100
Russia	* —	13 987	2 952	7 844	7 895
USA	* 1 270 000	* 1 350 000	* 1 250 000	* 1 250 000	* 1 250 000
Chile	18 989 000	21 179 000	18 444 000	17 976 000	20 216 000
China	* 600 000	* 600 000	* 600 000	* 600 000	* 600 000
Indonesia	* 56 000	* 45 000	* 35 000	* 39 000	* 40 000
Iran (a)	* 300 000	301 000	348 000	400 000	* 400 000
Japan	9 814 000	10 610 000	9 993 000	8 839 000	9 136 000
Turkmenistan	* 500 000	* 510 000	* 510 000	544 000	* 540 000
Uzbekistan	* 2 000	* 2 000	* 2 000	* 2 000	* 2 000
World total	31 800 000	34 900 000	31 400 000	29 900 000	32 400 000

Note(s)

(a) Years ended 20 March following that stated.

Production of iron ore

tonnes (metric)

Country	2014	2015	2016	2017	2018
Austria (a)	2 436 675	2 783 327	2 777 260	2 981 737	2 803 536
Azerbaijan	91 400	127 600	25 500	—	—
Bosnia & Herzegovina	2 127 564	2 122 802	1 751 800	1 621 907	1 380 488
Germany (b)(c)	461 082	467 690	514 004	517 918	518 047
Norway	10 542 149	3 519 116	1 757 851	1 622 477	1 700 000
Russia	102 100 000	101 000 000	101 000 000	95 000 000	95 900 000
Sweden	35 759 000	29 861 000	31 843 000	31 763 000	35 774 000
Turkey	11 887 154	7 760 957	7 137 233	9 992 455	* 10 000 000
Ukraine	68 337 000	66 902 000	62 876 000	60 574 000	60 549 000

Production of iron ore

tonnes (metric)

Country	2014	2015	2016	2017	2018
Algeria	911 135	944 000	826 000	* 830 000	* 830 000
Egypt (d)	1 699 133	508 915	565 229	* 500 000	* 500 000
Swaziland	603 251	—	—	—	—
Liberia	4 921 391	5 748 520	1 405 195	1 604 763	4 631 744
Malawi	—	—	3 800	5 000	2 563
Mali	* 100 000	—	* —	* —	* —
Mauritania	13 305 800	11 607 000	13 268 061	11 771 000	10 710 305
Morocco	22 910	17 860	21 033	* 15 000	* 15 000
Namibia	—	4 000	8 478	2 450	13 035
Nigeria	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Sierra Leone	17 497 553	5 247 688	6 576 576	6 531 460	968 585
South Africa (e)	80 759 334	73 220 891	66 455 868	74 643 475	74 263 738
Sudan	500 000	—	—	* —	* —
Tunisia	331 869	284 600	285 000	285 000	* 285 000
Uganda	41 959	9 000	2 163	2 320	—
Canada (f)	44 196 000	46 673 000	48 999 000	51 836 000	53 547 000
Mexico	25 193 818	20 397 000	18 317 700	17 746 262	21 244 460
USA (g)(f)	56 100 000	46 100 000	41 800 000	47 900 000	49 300 000
Bolivia	18 425	24 453	22	38 330	* 68 600
Brazil	411 182 786	430 838 137	424 200 000	453 703 525	460 000 000
Chile	18 866 000	15 448 000	14 619 000	15 426 000	14 013 000
Colombia	676 525	902 322	715 786	712 820	572 862
Ecuador (h)	408	—	—	—	—
Peru	7 192 592	7 320 807	7 663 124	8 806 452	9 533 871
Venezuela	11 258 577	11 715 475	7 306 000	4 601 000	2 800 000
Bhutan	18 997	43 202	28 065	32 974	37 843
China	1 514 240 000	1 381 288 000	1 280 893 000	1 229 373 000	763 374 000
India (i)	129 321 000	158 108 000	194 584 000	200 955 000	* 204 660 000
Indonesia	5 951 400	3 838 546	3 800 000	1 955 926	760 482
Iran (j)	54 082 000	58 485 696	65 001 032	75 843 536	* 75 000 000
Kazakhstan	51 540 800	37 269 700	35 793 500	38 728 200	41 876 500
Korea (Rep. of)	693 262	445 318	444 677	310 550	382 547
Korea, Dem. P.R. of	5 487 000	4 020 000	4 280 000	4 473 000	* 3 500 000
Laos	1 098 133	234 745	115 065	250 000	99 196
Malaysia (f)	9 615 323	1 625 253	1 914 232	3 919 632	3 353 634
Mongolia	10 260 500	6 173 400	4 936 200	7 694 700	6 225 400
Nepal (k)	—	—	—	772	396
Pakistan (d)	197 074	328 915	432 156	501 664	677 206
Philippines	153 775	107 119	17 088	—	—
Thailand	347 918	16 483	—	135	—
Vietnam	2 719 000	2 691 000	3 056 000	5 074 000	5 471 000
Australia	739 682 244	809 881 763	858 025 634	885 356 738	901 118 648
New Zealand	3 245 369	3 193 722	3 495 818	4 008 000	* 4 000 000
World total	3 458 000 000	3 360 000 000	3 320 000 000	3 360 000 000	2 923 000 000

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	2014	2015	2016	2017	2018
Austria	6 015 000	5 805 000	5 642 000	6 335 000	5 269 000
Azerbaijan	1 504	1 150	2 533	315	—
Belgium	4 335 000	4 248 000	4 896 000	4 860 000	4 900 000
Bosnia & Herzegovina	860 430	845 462	778 123	738 476	664 291
Czech Republic	4 152 000	4 031 129	4 165 000	3 691 000	4 005 000
Finland	2 500 000	2 600 000	2 700 000	2 600 000	2 700 000
France	10 865 646	10 097 177	9 724 062	10 677 830	10 529 559
Germany	27 943 000	27 844 000	27 269 000	27 816 000	27 271 000
Hungary	801 000	1 247 000	863 000	1 311 000	1 355 000
Italy (a)	6 434 000	5 051 000	6 044 000	5 052 000	4 836 000
Netherlands	5 868 000	6 050 000	6 092 000	6 145 000	6 150 000
Norway	102 000	* 100 000	* 100 000	* 100 000	* 100 000
Poland	4 639 571	4 826 492	4 679 616	5 159 128	4 787 696
Romania	1 630 642	1 938 502	1 922 001	1 766 958	2 000 000
Russia	51 400 000	53 700 000	51 900 000	52 200 000	51 800 000
Serbia	550 000	904 000	1 154 000	1 340 000	1 593 000
Slovakia	3 838 000	3 738 486	3 987 000	4 106 000	4 200 000
Spain	3 958 000	4 450 000	4 115 000	4 462 000	4 500 000
Sweden	3 078 000	2 865 000	3 079 000	3 111 000	2 877 000
Turkey	9 364 000	10 184 000	10 304 000	10 589 000	10 536 000
Ukraine	24 800 900	21 863 000	23 560 000	19 797 900	20 531 200
United Kingdom	9 704 600	8 773 500	6 142 400	5 997 000	5 587 900
Algeria	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Egypt	2 882 000	2 451 000	2 618 000	4 700 000	5 800 000
Libya	998 000	449 000	698 852	561 956	611 763
South Africa	6 040 000	6 939 000	5 013 000	5 277 000	5 400 000
Canada	8 210 000	7 353 000	7 606 000	7 914 000	6 700 000
Mexico	11 092 595	10 074 000	9 782 000	10 256 000	* 10 373 000
Trinidad & Tobago	1 633 000	901 100	—	—	—
USA	29 345 000	25 435 000	22 293 000	22 395 000	24 058 000
Argentina (b)	4 428 300	3 934 000	2 914 000	3 402 000	3 951 000
Brazil	32 052 000	32 110 000	29 680 000	32 151 000	32 500 000
Chile	584 000	644 000	677 000	670 000	664 000
Colombia	234 000	240 000	225 000	203 000	213 000
Paraguay	71 000	71 000	50 000	38 000	* 40 000
Peru	88 000	72 000	11 000	—	—
Venezuela	1 402 000	1 356 000	908 000	491 000	400 000
Bahrain	1 440 000	1 230 000	1 260 000	* 1 300 000	* 1 300 000
China	713 747 800	691 413 000	702 273 300	713 619 300	771 054 400
India	75 532 000	74 621 000	77 254 000	96 313 000	106 823 000
Indonesia	155 000	53 000	—	—	—
Iran	17 333 000	17 005 000	18 264 000	21 694 000	28 100 000
Japan	83 872 490	81 010 826	80 186 246	78 329 729	77 327 888
Kazakhstan	3 184 780	3 233 671	3 595 090	3 766 322	3 158 877
Korea (Rep. of)	46 909 000	47 639 000	46 336 000	47 100 000	47 124 000
Korea, Dem. P.R. of	* 250 000	* 250 000	* 250 000	* 250 000	* 200 000
Malaysia	1 007 000	1 434 000	1 178 000	952 000	* 600 000
Oman	1 420 000	1 509 000	1 439 000	1 526 000	* 1 500 000
Pakistan	* 142 000	* 163 000	—	—	—
Qatar	2 547 000	2 631 000	2 506 000	2 548 000	2 525 000
Saudi Arabia	6 460 000	5 800 000	5 119 000	4 812 000	5 000 000
Taiwan	14 505 000	14 370 000	14 890 000	14 361 000	14 841 000
United Arab Emirates	2 409 000	3 190 000	3 479 000	3 608 000	3 784 000
Vietnam	* 1 393 000	* 1 700 000	* 2 600 000	* 4 250 000	* 4 600 000
Australia	3 282 000	3 594 000	3 642 000	3 758 000	3 882 000
New Zealand	680 000	678 000	670 000	683 000	700 000
World total	1 258 000 000	1 225 000 000	1 227 000 000	1 265 000 000	1 340 000 000

See notes on the following page

Production of pig iron

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

(b) Including sponge iron

Production of crude steel

tonnes (metric)

Country	2014	2015	2016	2017	2018
Albania	* 560 000	* 150 000	* 50 000	* —	* —
Austria	7 876 000	7 687 000	7 438 000	8 135 000	6 885 000
Azerbaijan	324 119	302 015	345 340	387 258	381 617
Belarus	2 597 807	2 577 292	2 265 517	2 432 580	2 572 862
Belgium	7 331 000	7 257 000	7 687 000	7 842 000	8 000 000
Bosnia & Herzegovina	792 019	795 942	783 045	734 518	677 443
Bulgaria	612 400	543 100	527 300	652 400	666 100
Croatia	159 000	122 000	—	—	135 800
Czech Republic	5 360 000	5 261 591	5 305 000	4 553 000	4 966 000
Finland	3 808 000	3 988 000	4 102 000	4 003 634	4 100 000
France	16 143 625	14 984 045	14 412 574	15 504 683	15 387 355
Germany	42 943 000	42 674 000	42 081 000	43 297 000	42 435 000
Greece	1 022 000	1 067 000	1 199 000	1 359 000	1 467 000
Hungary	1 152 000	1 675 000	1 279 000	1 901 000	1 989 000
Italy	23 715 000	22 018 000	23 372 000	24 069 000	24 532 000
Kosovo	* 150 000	* —	* —	* —	* —
Latvia	* 190 000	* 190 000	* 4 000	* —	* —
Luxembourg	2 193 000	2 127 000	2 175 000	2 172 000	2 228 000
Moldova (a)	351 000	443 000	126 000	455 000	497 000
Montenegro	* 15 000	36 602	26 246	27 638	26 552
Netherlands	6 964 000	6 995 000	6 917 000	6 781 000	6 813 000
North Macedonia	196 454	165 235	239 084	271 287	269 658
Norway	600 000	590 000	620 000	603 000	* 600 000
Poland	8 799 731	9 337 105	9 160 660	10 540 354	10 336 483
Portugal	2 070 000	2 030 000	2 010 000	2 076 000	2 200 000
Romania	3 192 879	3 423 421	3 369 582	3 442 786	3 529 286
Russia	70 300 000	69 400 000	69 600 000	72 968 168	74 144 495
Serbia	583 000	955 000	1 173 000	1 477 000	1 973 400
Slovakia	4 705 000	4 561 609	4 808 000	4 980 000	4 947 000
Slovenia	615 000	604 000	613 000	648 000	653 800
Spain	14 163 000	14 845 000	13 654 000	14 444 000	14 320 500
Sweden	4 533 800	4 367 600	4 816 800	4 926 500	4 655 100
Switzerland	1 611 607	1 586 020	1 498 021	1 569 963	1 561 826
Turkey	34 035 000	31 517 000	33 163 000	37 524 000	37 311 700
Ukraine	27 372 913	23 166 031	24 218 000	21 334 000	21 100 000
United Kingdom	12 033 500	10 906 700	7 634 900	7 491 300	7 267 700
Algeria	415 000	650 000	650 000	650 000	* 650 000
Congo, Democratic Republic	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Egypt	6 485 000	5 506 000	5 036 000	6 870 000	7 806 800
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	968 000	352 000	491 500	421 648	396 342
Mauritania	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Morocco	501 000	516 000	520 000	550 000	600 000
Nigeria	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
South Africa	7 210 000	7 614 000	6 141 000	6 301 000	6 300 000
Tunisia	100 700	50 000	* 50 000	* 50 000	* 50 000
Uganda	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Zimbabwe	6 759	2 806	2 785	1 294	1 322

Production of crude steel

tonnes (metric)

Country	2014	2015	2016	2017	2018
Canada	12 595 000	12 473 000	12 672 000	13 614 000	13 443 100
Cuba	259 130	223 441	206 260	211 448	* 225 000
Dominican Republic	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
El Salvador	121 000	124 000	100 000	96 000	99 000
Guatemala	395 000	403 000	314 000	294 000	300 000
Mexico	18 995 283	18 228 000	18 811 000	19 924 000	20 694 000
Trinidad & Tobago	483 300	266 500	—	—	—
USA	88 174 000	78 845 000	78 475 000	81 612 000	86 607 400
Argentina	5 488 100	5 027 900	4 126 500	4 624 200	5 161 700
Brazil	33 897 000	33 256 000	31 275 000	34 350 000	34 900 000
Chile	1 118 000	1 358 000	1 272 000	1 253 000	1 157 000
Colombia	1 079 000	1 112 000	1 153 000	1 158 000	1 098 000
Ecuador	667 000	720 000	576 000	561 000	* 583 000
Paraguay	47 000	48 000	35 000	24 000	* 24 000
Peru	1 078 000	1 082 000	1 168 000	1 207 000	1 240 000
Uruguay	94 000	97 000	61 000	58 000	* 60 000
Venezuela	1 466 000	1 346 000	553 000	444 000	100 000
Burma	* 35 000	* 35 000	* 35 000	* 35 000	* 35 000
China	822 306 300	803 825 000	807 609 400	870 740 900	928 009 000
India (b)	88 979 000	89 790 000	97 443 000	102 338 000	110 920 000
Indonesia	4 351 245	4 854 200	4 745 908	5 195 000	5 500 000
Iran (c)	16 257 000	16 656 000	18 466 000	21 840 000	24 500 000
Israel	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Japan	110 666 068	105 134 378	104 775 329	104 661 087	104 318 836
Jordan	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Kazakhstan	4 014 860	3 902 617	4 264 114	4 657 009	4 005 982
Korea (Rep. of)	71 542 000	69 670 000	68 575 000	71 080 000	72 464 000
Korea, Dem. P.R. of	* 1 250 000	* 1 250 000	* 1 250 000	* 1 250 000	* 1 250 000
Malaysia	4 316 000	3 783 572	3 781 668	3 772 057	* 3 500 000
Mongolia	* 45 000	* 45 000	* 50 000	* 50 000	* 50 000
Pakistan	* 2 423 000	* 2 892 000	* 3 553 000	* 4 966 000	* 4 719 000
Philippines	1 196 000	968 000	1 075 000	1 378 000	1 500 000
Qatar	2 867 000	2 594 000	2 521 000	2 645 000	2 575 000
Saudi Arabia	6 291 000	5 662 000	5 461 000	4 831 000	5 200 000
Singapore	575 000	510 000	520 000	596 000	618 000
Syria	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Taiwan	22 511 000	20 815 000	20 858 000	21 370 000	23 200 000
Thailand	4 095 000	3 718 000	3 825 120	4 471 361	4 305 000
United Arab Emirates	2 390 000	3 006 000	3 149 000	3 309 000	3 247 500
Uzbekistan	723 000	643 000	654 000	680 000	646 000
Vietnam	5 847 000	5 647 000	7 811 000	11 473 000	14 008 500
Australia	4 582 300	4 935 300	5 160 489	5 335 000	5 899 000
New Zealand	881 000	793 000	577 000	657 000	651 800
World total	1 670 000 000	1 620 000 000	1 627 000 000	1 731 000 000	1 812 000 000

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	2014	2015	2016	2017	2018
Albania					
Ferro-chrome	34 897	43 350	44 551	23 987	92 850
Armenia					
Ferro-molybdenum	6 528	5 576	6 526	6 588	7 275
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	7 000	8 000	7 000
Bosnia & Herzegovina					
Ferro-alloys	18 383	18 716	28 138	30 473	31 460
Czech Republic					
Ferro-vanadium	* 6 100	* 6 200	* 6 300	* 6 600	* 6 400
Finland					
Ferro-chrome	441 000	457 000	469 000	415 000	497 000
France					
Ferro-manganese	115 700	126 000	126 000	* 126 000	* 126 000
Ferro-silico-manganese	108 000	98 000	82 000	* 65 000	* 60 000
Ferro-silicon	40 000	* 45 000	* 45 000	* 35 000	* 35 000
Silicon metal	100 000	* 100 000	80 000	* 105 000	* 100 000
Other ferro-alloys	* 60 000	* 60 000	* 70 000	* 80 000	* 60 000
Georgia					
Ferro-manganese	* 4 500	* 4 500	* 4 500	* 4 500	* 4 500
Ferro-silico-manganese	243 951	217 289	244 228	289 765	332 893
Germany					
Ferro-chrome	* 17 000	* 17 000	* 17 000	* 17 000	* 17 000
Silicon metal	28 500	29 953	29 940	31 915	28 058
Other ferro-alloys	* 8 200	* 8 200	* 8 200	* 8 200	* 8 200
Greece					
Ferro-nickel	94 952	89 129	87 880	86 140	* 86 000
Iceland					
Ferro-silicon	112 657	121 556	128 019	116 811	116 889
Italy					
Ferro-silico-manganese	67 000	82 000	90 000	91 000	91 000
Kosovo					
Ferro-nickel	34 000	39 200	22 800	* 23 000	* 6 000
North Macedonia					
Ferro-nickel	18 054	17 699	10 603	7 175	10 100
Ferro-silicon	73 014	46 047	24 431	21	185
Norway					
Ferro-manganese	295 400	309 200	* 380 000	* 300 000	* 300 000
Ferro-silico-manganese	314 300	309 900	* 310 000	* 269 000	* 328 000
Ferro-silicon (a)	192 389	243 813	249 475	240 813	265 964
Silicon metal	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Poland					
Ferro-manganese	549	—	—	66	—
Ferro-silico-manganese	32	—	—	—	—
Ferro-silicon	62 878	77 754	77 682	65 732	63 618
Other ferro-alloys	24 909	460	12 517	24 800	33 250
Russia					
Spiegeleisen	* 7 000	* 7 000	* 7 000	* 7 000	* 7 000
Ferro-chrome	* 400 000	363 286	268 439	434 452	332 261
Ferro-silico-chrome	* 4 200	* 4 200	* 4 200	* 4 200	* 4 200
Ferro-manganese	* 170 000	155 700	124 200	253 000	281 000
Ferro-silico-manganese	* 148 000	188 895	203 216	44 917	43 334
Ferro-molybdenum	4 503	4 660	4 881	4 726	* 4 700
Ferro-nickel	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-silicon	* 1 050 000	1 057 909	935 912	840 352	928 797
Ferro-vanadium	14 076	12 277	12 392	12 588	11 383
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	17 554	24 500	35 000	41 300	* 40 000
Ferro-silico-manganese	29 643	27 100	35 700	40 100	* 40 000
Ferro-silicon	39 300	38 200	30 900	44 600	* 45 000
Other ferro-alloys	4 700	5 700	4 300	2 700	* 2 000

Production of ferro-alloys

tonnes (metric)

Country	2014	2015	2016	2017	2018
Spain					
Ferro-manganese	133 200	126 200	126 000	* 130 000	* 126 000
Ferro-silico-manganese	129 000	134 000	134 000	* 140 000	* 140 000
Ferro-silicon	* 80 500	* 80 000	* 80 000	* 95 000	* 90 000
Silicon metal	* 29 200	* 24 000	* 30 000	* 7 500	* 8 000
Sweden					
Ferro-chrome	65 703	82 616	81 102	114 101	106 486
Turkey					
Ferro-chrome	86 025	82 560	* 80 000	* 80 000	* 80 000
Ferro-silico-chrome	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
Ferro-silicon	* 2 000	—	—	* —	* —
Ukraine					
Ferro-manganese	104 291	100 209	184 310	211 124	155 869
Ferro-silico-manganese	960 657	750 181	876 756	875 031	912 300
Ferro-nickel	114 222	95 209	84 025	74 459	79 537
Ferro-silicon	167 977	114 826	126 297	118 371	97 084
Other ferro-alloys	15 326	19 360	106 244	87 094	100 764
Egypt					
Ferro-silicon (b)	56 794	54 767	60 477	* 60 500	* 60 500
Other ferro-alloys (b)	12 000	12 000	* 12 000	* 12 000	* 12 000
South Africa					
Ferro-chrome	3 719 000	3 686 000	* 3 700 000	* 3 700 000	* 3 700 000
Ferro-manganese	772 000	595 000	* 600 000	* 600 000	* 600 000
Ferro-silico-manganese	228 000	210 000	* 210 000	* 210 000	* 210 000
Ferro-silicon	89 000	91 000	* 90 000	* 90 000	* 90 000
Ferro-vanadium	19 000	15 000	* 16 000	* 16 000	* 16 000
Silicon metal	56 000	57 000	* 60 000	* 60 000	* 60 000
Zimbabwe					
Ferro-chrome (a)	235 256	190 837	148 842	328 386	315 685
Canada					
Ferro-niobium	5 774	5 385	6 213	6 981	* 7 000
Ferro-silicon	* 32 000	* 38 000	* 38 000	* 40 000	* 40 000
Ferro-vanadium	1 300	1 300	* 1 000	* 1 300	* 1 500
Silicon metal	* 30 000	* 30 000	* 27 000	28 300	* 28 300
Dominican Republic					
Ferro-nickel	—	—	33 203	43 894	53 697
Mexico					
Ferro-manganese	67 506	67 919	84 529	90 010	95 349
Ferro-silico-manganese	164 852	139 363	134 251	148 142	151 991
USA					
Ferro-silicon & silicon metal	401 000	411 000	384 000	415 000	* 430 000
Argentina					
Ferro-silico-manganese	* 11 000	* 11 000	* 10 000	* 10 000	* 10 000
Ferro-silicon	* 11 000	* 11 000	* 11 000	* 11 000	* 11 000
Brazil					
Ferro-chrome	178 279	155 421	(c) 150 240	(c) 171 531	(c) 175 061
Ferro-silico-chrome	10 403	36 092
Ferro-silico-magnesium	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Ferro-manganese (d)	303 000	129 000	124 000	133 074	168 000
Ferro-nickel (e)	37 200	30 300	44 538	43 800	42 300
Ferro-niobium	51 737	51 874	44 390	58 690	* 60 000
Ferro-silicon	127 000	* 100 000	* 100 000	* 100 000	* 100 000
Silicon metal	230 000	150 000	110 000	110 000	190 000
Other ferro-alloys	* 40 000	* 40 000	* 40 000	* 40 000	* 40 000
Chile					
Ferro-molybdenum	14 584	* 14 500	* 14 500	* 14 500	* 14 500
Colombia					
Ferro-nickel	117 775	104 773	105 976	116 016	* 111 000
Venezuela					
Ferro-manganese	* 12 000	* 12 000	* 12 000	* 12 000	* 6 000
Ferro-silico-manganese	* 14 000	* 14 000	* 14 000	* 14 000	* 7 000
Ferro-nickel	* 50 000	* 50 000	* 50 000	* 50 000	* 25 000
Ferro-silicon	* 80 000	* 80 000	* 80 000	* 80 000	* 40 000

Production of ferro-alloys

tonnes (metric)

Country	2014	2015	2016	2017	2018
Bahrain					
Ferro-silico-manganese	17 000	15 000	* 15 000	* 15 000	* 15 000
Bhutan					
Ferro-silicon	* 79 500	* 104 500	* 106 000	* 109 000	* 120 900
Burma					
Ferro-nickel	56 302	65 466	64 462	62 367	32 786
China					
Ferro-alloys	37 860 000	36 664 000	35 588 000	32 887 000	31 234 000
Silicon metal	1 705 000	1 953 500	2 101 000	* 1 800 000	* 1 800 000
India					
Ferro-aluminium (f)	3 737	3 212	4 345	4 423	* 2 700
Ferro-chrome (f)	944 000	944 000	944 000	944 000	* 944 000
Ferro-silico-magnesium (f)	26 123	20 541	20 183	15 978	* 19 700
Ferro-manganese (f)	518 000	518 000	518 000	518 000	* 515 000
Ferro-silico-manganese (f)	249 691	269 920	300 625	311 326	* 343 900
Ferro-molybdenum (f)	1 295	1 459	1 603	1 205	* 1 000
Ferro-silicon (f)	90 000	90 000	90 000	90 000	* 90 000
Ferro-titanium (f)	545	198	291	281	* 130
Ferro-vanadium (f)	1 035	937	1 329	1 331	* 1 100
Indonesia					
Ferro-silico-manganese	* 8 000	* 8 000	* 8 000	* 6 000	* 5 000
Ferro-nickel	84 255	86 055	101 465	108 810	124 340
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-manganese	463 345	465 952	473 740	456 460	456 518
Ferro-nickel	379 291	396 969	333 448	312 324	339 844
Other ferro-alloys	79 912	73 651	77 453	79 809	73 094
Kazakhstan					
Ferro-chrome	1 351 803	1 414 476	1 525 222	1 640 299	* 1 640 300
Ferro-silico-chrome	158 825	74 609	94 467	110 497	* 110 500
Ferro-silico-manganese	200 379	164 189	135 885	123 977	137 710
Ferro-silicon	395	86 984	68 779	60 001	65 405
Other ferro-alloys	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	* 22 000	* 16 000	* 23 000	* 30 000	* 41 000
Australia					
Ferro-manganese & ferro-silico-manganese (b)	269 000	278 000	222 000	245 000	275 000
Silicon metal	* 54 000	* 51 000	* 51 000	* 49 000	* 42 000
New Caledonia					
Ferro-nickel	224 884	228 484	261 420	269 961	260 206

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

Production of kaolin

tonnes (metric)

Country	2014	2015	2016	2017	2018
Austria	14 343	12 894	13 558	* 13 500	* 13 500
Belgium	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Bosnia & Herzegovina	21 610	252 268	286 461	252 959	303 626
Bulgaria	341 400	334 100	330 200	321 800	* 321 800
Czech Republic (a)	617 000	648 000	648 000	676 000	653 000
France	311 000	275 150	263 993	279 120	* 280 000
Germany (b)	1 100 000	1 100 000	1 023 000	1 109 000	1 004 000
Italy	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Poland (c)	197 322	146 500	148 900	143 700	154 314
Portugal	269 073	251 582	283 571	307 982	300 265
Romania	30 638	* 31 000	* 31 000	* 31 000	* 31 000
Russia	* 787 000	786 600	1 064 800	1 593 000	1 593 000
Serbia	* 70 000	* 70 000	* 70 000	* 70 000	* 70 000
Slovakia	6 000	6 000	11 000	21 400	34 400
Spain (c)	344 414	391 960	347 258	475 074	468 058
Turkey	734 072	1 887 302	1 283 260	1 362 799	* 1 300 000
Ukraine	1 426 447	1 814 786	2 335 004	2 379 636	2 091 525
United Kingdom	* 1 090 000	* 1 014 000	* 940 000	* 970 000	* 996 000
Algeria	181 068	51 300	96 000	* 100 000	* 100 000
Egypt	* 300 000	232 351	* 232 000	* 230 000	* 230 000
Eritrea	* 200	* 200	* 200	* 200	* 200
Ethiopia (d)	4 530	* 4 600	* 4 600	* 4 600	* 4 600
Kenya	1 600	* 1 600	* 1 600	* 1 600	* 1 600
Madagascar	221	* 220	* 220	* 220	* 220
Nigeria	* 35 180	38 000	24 105	46 935	11 707
South Africa	27 258	20 339	21 141	31 295	23 724
Sudan	50 000	14 490	6 500	6 000	11 000
Tanzania	3 809	1 953	656	13 816	129 383
Uganda	46 286	34 697	45 909	55 317	* 27 200
Cuba	1 700	1 500	2 500	1 500	2 700
Guatemala	1 285	1 101	793	657	724
Mexico	546 437	366 049	452 070	325 864	898 246
USA (e)	5 960 000	5 810 000	5 320 000	* 7 300 000	* 7 300 000
Argentina	* 65 000	* 60 000	628 298	* 630 000	* 630 000
Brazil (a)	2 055 000	1 809 000	1 737 000	* 1 800 000	* 1 800 000
Chile	60 000	60 000	60 000	60 000	88 262
Colombia	223	5 028	8 510	* 8 500	* 8 500
Ecuador	40 236	64 486	4 110	548	—
Paraguay	* 6 000	* 6 000	* 6 000	* 6 000	* 6 000
Peru	19 964	43 251	19 098	17 700	16 004
Venezuela	* 3 000	* 3 000	* 3 000	* 3 000	* 3 000
China	* 3 200 000	* 3 200 000	* 3 200 000	* 3 200 000	* 3 200 000
India (f)(g)	74 207	* 130 000	* 110 000	* 130 000	* 130 000
Indonesia	* 180 000	* 180 000	* 180 000	* 180 000	* 180 000
Iran (h)	1 879 943	1 169 366	1 141 502	2 036 670	* 2 040 000
Japan	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Jordan	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Korea (Rep. of)	682 749	587 787	586 973	724 194	364 249
Malaysia	219 652	294 693	392 932	540 297	496 219
Oman	66 600	169 500	173 800	218 600	101 100
Pakistan (i)	16 191	18 956	21 683	28 670	19 563
Philippines	7 050	8 179	10 059	* 10 000	* 10 000
Saudi Arabia	106 000	111 000	196 000	206 000	216 000
Sri Lanka	* 13 000	* 13 500	* 13 500	* 13 500	* 13 500
Taiwan	1 808	732	4 035	1 665	20
Thailand (a)	* 175 000	* 175 000	105 343	102 659	96 666
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	2014	2015	2016	2017	2018
Australia (i)	179 175	254 103	244 157	217 673	208 088
New Zealand	61 382	13 659	61 650	50 424	51 369
World total	24 500 000	24 800 000	25 000 000	29 200 000	28 900 000

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	2014	2015	2016	2017	2018
Bosnia & Herzegovina	5 599	6 199	6 803	7 092	7 347
Bulgaria (a)	15 618	16 755	22 062	22 851	24 000
Greece	16 700	14 500	14 300	12 600	13 700
Ireland, Republic of	40 500	31 300	19 582	17 083	16 712
Kosovo	7 676	5 541	6 530	5 142	4 694
Montenegro	2 400	2 200	3 600	3 100	3 100
North Macedonia	43 810	37 922	31 034	40 233	42 534
Poland	83 150	69 190	62 750	73 530	70 340
Portugal	3 192	3 077	4 126	5 164	6 571
Romania	* —	* —	* —	900	1 200
Russia	196 000	180 000	217 000	210 000	215 000
Serbia	3 700	3 300	3 500	3 200	3 200
Slovakia	162	—	—	—	100
Spain	1 200	1 598	4 946	3 258	9 936
Sweden	70 848	79 354	75 830	71 112	64 751
Turkey	62 190	33 477	29 480	* 30 000	* 30 000
United Kingdom (b)	* 100	* 100	* 100	* 100	* 100
Burkina Faso	1 902	—	—	—	—
Congo, Democratic Republic	800	700	100	—	—
Morocco	27 505	32 138	29 617	38 009	* 50 000
Namibia	11 788	10 746	6 116	6 577	3 856
Nigeria	* 11 400	* 8 000	* 13 000	* 21 000	* 17 900
South Africa	29 348	34 573	39 344	48 150	35 118
Canada	3 617	3 809	12 020	20 477	13 717
Cuba	—	—	—	* 1 500	* 25 000
Guatemala	10 359	10 153	9 970	4 200	—
Honduras	15 500	9 800	3 985	6 761	9 893
Mexico	250 462	263 772	242 071	243 022	230 869
USA	378 000	370 000	346 000	310 000	* 260 000
Argentina	31 740	29 480	29 580	29 580	31 235
Bolivia	75 706	75 272	89 906	113 285	112 140
Brazil	10 978	9 441	9 015	6 157	7 277
Chile	2 678	2 979	1 110	1 562	712
Peru	277 294	315 525	314 422	306 794	289 195
Burma	24 309	17 463	20 322	45 964	21 342
China	2 608 619	2 335 024	2 337 485	2 300 000	2 280 000
India (c)	111 267	143 707	150 964	172 564	* 198 000
Indonesia	* 4 700	* 5 500	* 5 300	* 7 900	* 11 400
Iran	43 285	43 785	47 000	48 000	48 000
Kazakhstan	37 800	40 700	70 500	111 200	86 500
Korea (Rep. of)	2 764	2 921	2 840	3 762	2 341
Korea, Dem. P.R. of	32 820	31 684	32 116	32 621	* 20 000
Laos	* 100	* 200	* 200	* 700	* 300
Mongolia	500	200	4 700	7 400	11 600
Nepal (d)	—	—	—	3 900	—
Pakistan	* 1 200	* 100	1 196	3 047	4 822
Tajikistan	* 28 000	* 31 000	* 47 000	* 51 000	* 44 000
Uzbekistan	* 3 000	* 3 000	* 2 000	* 2 000	* 2 000
Vietnam	* 2 500	* 1 600	* 700	* 3 800	* 5 900
Australia	727 954	653 488	441 338	392 858	431 552
World total	5 300 000	5 000 000	4 800 000	4 800 000	4 800 000

Note(s)

(a) Metal content of ore

(b) By-product of Pennine fluorspar operations

(c) Years ended 31 March following that stated

(d) Years ended 15 July of that shown

Production of refined lead

tonnes (metric)

Country	2014	2015	2016	2017	2018
Austria	25 100	24 400	25 000	* 26 000	* 27 000
Belgium	133 252	130 000	142 100	136 000	142 700
Bosnia & Herzegovina	1 227	142	182	25	1
Bulgaria	93 394	96 889	100 817	103 105	102 808
Croatia	* 600	* 1 200	* 3 900	* 4 300	* 5 000
Czech Republic	44 000	44 000	43 000	* 43 000	* 43 000
Estonia	8 588	8 329	8 348	9 606	7 393
France	72 000	72 000	70 000	* 70 000	* 70 000
Germany	380 000	378 000	339 000	354 000	315 000
Greece	18 000	24 000	28 000	* 28 000	* 30 000
Ireland, Republic of	17 200	17 200	18 000	17 500	15 000
Italy	209 600	209 900	187 200	173 700	167 500
Netherlands	31 000	32 000	33 000	36 000	36 000
Poland	149 000	155 400	154 900	157 000	159 470
Portugal	8 000	8 000	8 000	10 000	10 000
Romania	24 000	20 000	17 000	24 000	21 000
Russia	96 500	116 000	130 000	140 000	140 000
Serbia	6 000	6 000	6 000	15 000	14 000
Slovenia	11 000	12 000	12 000	12 000	12 000
Spain	166 000	165 000	166 000	168 000	175 000
Sweden	68 708	71 293	74 367	78 241	75 784
Turkey	55 000	56 000	58 000	* 58 000	* 58 000
Ukraine	34 958	24 203	28 465	33 633	29 755
United Kingdom	267 000	357 200	374 600	353 800	354 300
Algeria	* 9 000	* 9 000	* 8 000	* 8 000	* 8 000
Ghana (a)	2 817	3 048	1 823	1 150	1 200
Kenya	1 000	1 100	1 100	1 400	1 000
Morocco	* 15 000	* 14 000	* 11 000	* 12 000	* 10 000
Mozambique (a)	2 310	2 494	2 844	3 828	3 422
Nigeria	* 14 000	2 000	9 000	* 9 000	* 4 000
Senegal (a)	2 187	1 857	3 576	3 424	3 693
South Africa	52 000	52 000	54 000	56 000	* 56 000
Uganda	* 500	* 500	* 500	* 500	* 500
Zambia	* 5 000	* 4 000	* 5 000	* 4 000	* 4 000
Canada	281 456	268 863	274 226	274 061	289 604
Costa Rica	* 7 000	* 7 000	* 8 000	* 10 400	* 10 000
Dominican Republic	* 6 000	* 6 000	* 8 000	* 8 000	* 7 000
Guatemala	* 12 000	* 12 000	* 12 000	* 12 000	* 12 000
Honduras	—	—	—	4 700	8 000
Mexico	363 900	343 900	341 400	342 800	344 100
USA (b)	1 020 000	1 050 000	986 000	1 130 000	* 1 300 000
Argentina	40 000	42 000	38 300	40 000	39 900
Bolivia	1 924	459	41	1 100	* 1 000
Brazil	160 393	176 200	176 216	192 000	* 192 000
Chile	* 10 000	* 10 000	* 11 000	* 12 000	* 15 000
Colombia	* 42 000	* 42 000	* 42 000	* 43 000	* 44 000
Peru	54 550	1 494	—	—	—
Venezuela	* 20 000	* 20 000	* 16 000	* 16 000	* 10 000
Burma	* 200	* 600	* 5 900	* 12 000	* 5 700
China	4 704 319	4 421 631	4 603 884	4 716 423	5 112 850
India	475 000	503 000	528 000	573 000	* 620 000
Indonesia	* 46 000	* 46 000	* 48 000	* 46 000	* 54 000
Iran	72 000	78 000	86 000	90 000	85 000
Israel	26 426	26 000	24 128	25 261	28 700
Japan	* 240 000	* 232 000	* 240 000	* 239 000	* 240 000
Kazakhstan	127 064	120 108	134 144	147 328	154 700
Korea (Rep. of)	634 700	656 500	812 500	806 600	801 000
Korea, Dem. P.R. of	* 3 000	* 1 000	* 2 000	* 2 000	* 2 000
Lebanon	* 7 200	* 10 000	* 10 000	* 10 000	* 10 000
Malaysia	26 200	25 300	28 000	30 000	30 000
Pakistan (c)	2 549	—	—	—	—
Philippines	30 000	28 000	14 000	10 000	10 000
Saudi Arabia	* 36 000	* 37 000	* 60 000	* 72 000	* 68 000

Production of refined lead

tonnes (metric)

Country	2014	2015	2016	2017	2018
Sri Lanka (a)	4 528	2 548	3 006	3 527	3 673
Taiwan	40 000	46 000	48 000	48 000	58 000
Thailand	79 250	86 000	86 000	88 000	86 000
United Arab Emirates	16 000	18 000	22 000	25 000	25 000
Australia	225 900	227 600	223 700	211 200	195 900
World total	10 800 000	10 700 000	11 000 000	11 400 000	12 000 000

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	2014	2015	2016	2017	2018
Portugal					
Lepidolite	17 459	19 275	40 758	65 743	76 818
Namibia					
Lepidolite	—	—	—	—	30 000
Nigeria	—	—	—	—	1 567
Zimbabwe	44 000	44 000	48 000	51 000	70 000
Canada					
Carbonate	108	—	—	—	—
Spodumene	—	—	—	1 100	140 000
USA (a)	* 900	* 900	* 900	* 900	* 900
Argentina (b)(c)	15 434	19 159	30 335	30 400	33 473
Bolivia (b)	—	—	162	* 60	* 230
Brazil					
Spodumene	8 519	5 781	8 804	* 9 000	* 9 000
Chile (d)	62 253	56 375	78 182	81 378	97 323
China (a)	* 1 900	* 2 300	* 3 800	* 6 800	* 7 100
Australia					
Spodumene	444 546	445 990	440 525	1 706 619	2 112 667
World total (Li content)	35 000	35 000	43 000	93 000	117 000

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	2014	2015	2016	2017	2018
Austria	754 096	702 504	645 593	730 482	808 239
Greece	391 140	383 312	418 558	499 381	464 689
Netherlands (a)	285 907	257 510	265 857	282 551	348 500
Poland	92 000	96 000	77 920	101 920	102 110
Russia	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000	* 2 600 000
Slovakia	557 100	501 200	433 500	610 000	615 500
Spain	836 869	464 691	583 698	788 991	738 994
Turkey	2 377 157	3 335 258	3 258 445	1 694 071	* 1 700 000
South Africa	12 335	* 12 000	* 15 000	* 12 000	* 15 000
Canada (b)	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Guatemala	24 268	* 20 000	23 137	16 298	4 745
Mexico	101 000	101 000	101 000	101 000	101 000
Brazil (c)	1 423 000	1 621 000	1 652 424	* 1 600 000	* 1 600 000
Colombia	3 500	2 883	1 175	1 883	1 039
China	* 16 000 000	* 18 400 000	* 18 600 000	* 19 000 000	* 19 000 000
India (d)	285 009	327 663	299 149	195 033	* 145 000
Iran (e)	202 151	151 881	155 916	154 860	* 160 000
Israel (f)	135 966	* 120 000	107 274	90 000	113 000
Korea, Dem. P.R. of	179 450	149 599	160 935	172 488	* 170 000
Nepal (g)	225	60	—	—	—
Pakistan (h)	3 770	24 627	35 228	19 656	23 596
Philippines	* 6 000	7 158	10 310	200	140
Saudi Arabia	286 000	294 000	286 200	302 100	325 950
Australia (h)	611 547	680 967	489 036	234 704	288 069
World total	27 300 000	30 400 000	30 400 000	29 400 000	29 500 000

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	2014	2015	2016	2017	2018
Russia	13 744	12 460	14 346	15 593	15 753
USA	* 40 000	* 40 000	* 40 000	* 30 000	* 30 000
Brazil	* 16 000	* 18 000	* 15 000	* 15 000	* 15 000
China	873 649	859 258	910 300	1 021 957	863 000
Israel	26 000	29 708	22 548	23 000	21 100
Korea (Rep. of)	3 000	3 000	3 000	3 000	110
Malaysia	* 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, Ukraine 10,000 t.

Production of manganese ore

tonnes (metric)

Country	2014	2015	2016	2017	2018
Bulgaria	93 700	46 500	41 700	2 000	* —
Georgia (a)	* 370 000	* 370 000	* 370 000	* 370 000	* 370 000
Hungary	51 000	57 000	19 000	—	—
Romania	12 662	40 262	4 477	* 4 500	* 4 500
Turkey	245 830	142 809	46 867	77 895	* 80 000
Ukraine	1 526 218	1 477 200	1 328 271	1 758 172	1 845 156
Burkina Faso	—	* 1 600	—	—	—
Egypt (b)	22 299	* —	* —	* —	* —
Gabon	4 081 000	4 184 000	3 413 000	4 163 000	4 330 000
Ghana	1 531 394	1 562 769	2 018 254	3 003 580	4 551 754
Ivory Coast	308 401	294 904	294 904	515 624	791 911
Kenya	—	—	—	9 125	* 9 000
Morocco	91 271	71 700	70 138	99 008	* 100 000
Namibia	104 527	38 360	16 896	27 915	23 045
South Africa					
Metallurgical	* 13 830 000	* 15 947 000	* 13 708 000	* 13 861 000	* 14 888 400
Chemical	* 27 000	* 32 000	* 27 500	* 28 300	* 29 800
Sudan	20 000	31 400	9 800	* 9 500	* 9 500
Mexico	652 465	592 728	549 589	561 612	556 220
Brazil	2 723 000	2 816 675	2 880 718	3 273 029	* 3 200 000
Burma	* 242 000	* 70 000	* 293 000	* 310 000	* 310 000
China	* 15 500 000	* 13 000 000	* 15 528 000	* 8 500 000	* 9 000 000
India (c)	2 369 481	2 166 947	2 395 134	2 589 271	* 2 759 000
Iran (d)	139 736	86 523	78 955	100 780	* 100 000
Kazakhstan	2 608 800	1 625 700	1 600 700	1 460 000	1 427 300
Malaysia	835 429	480 727	700 717	1 226 106	1 262 725
Oman	37 500	7 400	21 300	33 900	36 100
Thailand	14 330	9 000	2 750	8 020	4 000
Vietnam	* 10 000	20 700	13 400	50 000	68 800
Australia	7 587 207	6 281 497	5 327 566	6 172 266	7 210 992
World total	55 000 000	51 500 000	50 800 000	48 200 000	53 000 000

Note(s)

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

(a) Marketable

(b) Years ended 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	2014	2015	2016	2017	2018
Russia	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Morocco	* 8 000	* 5 000	* 5 000	* 14 000	* 2 000
Mexico (a)	* 300 900	* 306 500	* 261 500	* 196 700	* 230 000
USA	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Argentina	* 25 000	* 25 000	* 25 000	* 25 000	* 25 000
Chile (b)	* 18 000	* 14 000	* 2 000	(a)* 11 000	(a)* —
China	2 259 000	2 801 000	3 482 000	3 574 000	2 316 000
Iran	12 000	14 000	—	* —	* —
Kyrgyzstan	46 000	20 000	* 20 000	* 20 000	* 20 000
Tajikistan	85 000	96 000	* 100 000	* 100 000	* 100 000
World total	2 800 000	3 300 000	4 000 000	4 000 000	2 800 000

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	2014	2015	2016	2017	2018
Finland	11 973	11 836	10 843	10 740	12 122
France (a)	* 20 200	* 20 700	* 19 600	* 19 200	* 15 000
Russia	* 6 000	4 823	4 823	5 219	4 465
Spain (a)	4 049	4 355	5 521	6 333	6 932
Turkey	17 440	44 637	14 531	204	* 200
Madagascar	* 12 000	* 17 000	* 22 000	* 35 000	* 49 000
South Africa	383	29	8	—	32
Sudan	1 000	—	—	—	* —
Canada	* 22 000	* 22 000	* 22 000	* 24 000	* 24 000
Mexico	160	145	145	145	408
USA (a)(b)	48 200	32 600	28 000	40 000	* 44 000
Argentina	575	583	564	* 550	* 500
Brazil	427 341	* 450 000	* 450 000	* 450 000	* 400 000
Colombia	162	240	247	159	—
China	* 25 600	* 25 100	* 25 000	* 25 000	* 25 000
India (c)	636	* 2 600	* 4 500	* 1 700	* 1 700
Iran (d)	* 5 600	* 5 600	1 500	4 500	* 4 500
Korea (Rep. of) (e)	24 205	17 405	12 934	14 576	16 559
Malaysia (f)	5 659	4 788	4 716	4 787	5 165
Sri Lanka	* 1 500	* 1 500	* 1 500	* 1 500	* 1 500
Taiwan	5 016	8 287	1 879	750	2 970
World total	640 000	674 000	630 000	644 000	614 000

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	2014	2015	2016	2017	2018
Armenia	6 022	5 324	5 438	5 886	5 666
Norway	2	1	2	* 2	* 2
Poland	1 330	1 360	1 320	1 220	1 190
Russia	3 114	3 254	3 359	3 227	2 400
Turkey	—	3	—	—	* —
Canada	8 681	1 983	2 883	4 941	5 131
Mexico	14 370	11 327	11 896	13 985	20 265
USA	68 200	47 400	36 200	40 700	* 42 000
Argentina	1 907	1 730	957	1 301	* 1 000
Brazil	* 200	* 200	* 200	* 200	* 200
Chile	48 898	52 398	55 834	62 454	60 248
Peru	17 018	20 153	25 757	28 141	28 034
China	128 538	135 270	129 357	117 104	99 390
Iran (a)	4 000	6 705	6 975	7 767	* 8 000
Mongolia	1 999	2 557	2 431	2 639	2 571
World total	304 000	290 000	283 000	290 000	276 000

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	2014	2015	2016	2017	2018
Norway	331 000	324 000	* 324 000	* 324 000	* 324 000
Russia					
Nepheline syenite	4 396 000	4 111 000	4 432 000	4 332 000	4 294 000
Nepheline concentrates	940 300	951 900	958 100	998 100	986 000
Canada	670 000	599 000	475 000	632 000	565 000

Mine production of nickel

tonnes (metal content)

Country	2014	2015	2016	2017	2018
Albania	5 091	6 280	3 952	5 323	4 204
Finland (a)	19 281	9 383	20 654	34 641	43 572
Greece	20 600	20 800	21 800	19 100	17 900
Kosovo	6 724	7 418	4 265	7 120	4 791
Norway	290	300	300	200	300
Poland	780	840	770	720	700
Russia	264 000	261 000	223 000	221 000	218 000
Spain	8 631	7 213	—	—	—
Turkey	3 034	8 637	9 337	14 770	* 18 000
Botswana	14 958	16 789	14 273	—	—
Ivory Coast	—	—	—	600	6 900
Madagascar	37 053	47 271	42 105	35 474	33 183
Morocco	—	—	—	196	200
South Africa (b)	54 956	56 689	48 994	48 383	43 236
Zimbabwe	16 633	16 109	17 743	16 617	17 850
Canada	228 867	234 519	235 034	214 302	180 399
Cuba	51 600	53 800	51 600	52 900	52 800
Dominican Republic	—	—	9 913	15 632	19 214
Guatemala	37 222	46 298	36 939	54 517	65 710
USA	4 093	27 167	23 417	21 302	17 573
Brazil	85 600	89 300	78 626	68 803	74 400
Colombia	41 221	36 671	37 091	40 606	43 055
Venezuela	2 500	2 581	—	—	—
Burma	19 706	22 913	22 562	21 828	* 18 100
China	101 067	101 403	100 219	94 381	98 963
Indonesia	188 000	113 950	126 160	216 992	508 580
Philippines	393 262	418 292	300 506	339 377	344 915
Vietnam	6 854	8 607	4 272	—	—
Australia	266 181	225 227	203 135	185 466	148 468
New Caledonia	175 174	193 199	204 207	215 382	216 225
Papua New Guinea	20 987	25 582	22 269	34 666	35 355
World total	2 074 000	2 058 000	1 863 000	1 980 000	2 233 000

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	2014	2015	2016	2017	2018
Austria	600	700	700	* 700	* 700
Finland	42 750	60 709	85 424	85 780	92 591
France	8 400	6 500	4 600	2 300	3 700
Greece	18 481	17 113	17 071	16 781	15 720
Kosovo	6 700	7 400	4 300	7 100	4 800
North Macedonia	18 100	17 700	10 600	7 200	10 100
Norway	90 526	91 222	92 735	86 495	90 758
Poland	780	840	770	720	700
Russia	234 700	231 200	188 700	219 200	211 000
Ukraine	18 600	17 952	18 100	15 300	15 807
United Kingdom	39 100	38 804	45 194	38 052	41 220
Madagascar	37 053	47 271	42 105	35 474	33 183
South Africa	34 100	41 900	42 100	43 000	* 40 000
Zimbabwe	4 600	—	—	—	—
Canada	149 486	149 716	158 299	154 759	135 921
Cuba	13 300	7 000	15 000	15 800	16 800
Dominican Republic	—	—	9 961	15 363	18 794
Guatemala	* 4 000	10 826	8 688	12 416	14 688
Brazil	79 600	77 700	77 100	68 500	62 200
Colombia	41 221	36 671	37 091	40 606	43 055
Venezuela	2 500	2 581	—	—	—
Burma	19 706	22 913	22 562	21 828	* 18 100
China	690 500	600 000	573 400	670 000	705 000
India	* 490	* 950	* 260	* 50	* —
Indonesia	21 900	* 38 000	* 117 000	* 205 000	* 290 000
Japan	177 782	192 789	195 565	187 046	186 736
Korea (Rep. of)	24 903	34 882	44 857	43 861	43 386
Australia	137 762	152 978	120 520	108 500	114 517
New Caledonia	62 049	77 530	95 983	104 094	107 914
World total	1 980 000	1 984 000	2 029 000	2 206 000	2 317 000

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	2014	2015	2016	2017	2018
Armenia	14	—	4	78	—
Bulgaria	—	—	—	4 800	* 4 800
Greece	985 330	890 670	921 410	932 950	764 000
Hungary	68 546	65 459	76 254	71 412	34 000
Italy	60 000	* 60 000	* 60 000	* 60 000	* 60 000
Russia	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Slovakia	17 000	25 000	19 000	47 510	36 000
Turkey	879 125	846 242	909 253	1 116 629	* 1 200 000
Ukraine	* 16 000	* 16 000	15 772	16 560	* 17 000
South Africa	* 1 100	* 1 100	* 1 000	* 1 000	* 1 000
Mexico	26 000	13 000	19 000	15 899	26 400
USA	462 000	501 000	521 000	570 000	* 560 000
Argentina	* 20 000	* 17 000	35 021	* 35 000	* 35 000
Chile	800	3 000	5 500	4 210	5 020
China	* 700 000	* 723 000	* 700 000	* 700 000	* 700 000
Iran (a)	351 009	395 182	524 823	368 601	* 400 000
Philippines	17 134	18 575	14 460	2 148	9 696
Thailand	54 100	17 200	18 740	5 850	5 600
Australia (b)	—	—	620	275	2 285

Note(s)

(1) In addition to the countries listed, Algeria, Canada, Djibouti, 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	2014	2015	2016	2017	2018
Albania	1 342 451	1 279 253	1 055 764	954 768	910 683
Austria (a)(b)	945 034	905 999	809 358	741 890	664 009
Azerbaijan (b)	41 952 400	41 628 300	40 999 100	38 688 400	38 814 300
Belarus	1 645 000	1 645 000	1 645 000	1 650 000	1 670 000
Bulgaria	26 200	23 700	22 600	21 930	* 21 930
Croatia	535 281	613 281	676 752	682 339	682 128
Czech Republic	148 000	126 000	116 000	107 000	109 000
Denmark	8 159 150	7 710 265	6 949 005	6 740 075	5 635 500
Estonia (c)	2 295 594	2 002 415	1 875 685	2 508 512	2 538 474
France	6 421 849	6 571 195	6 770 322	5 973 813	* 6 000 000
Georgia	42 631	40 206	38 557	31 995	30 159
Germany	2 429 789	2 412 063	2 355 028	2 218 406	2 066 642
Greece	224 000	214 000	329 000	266 000	334 000
Hungary	616 070	633 090	774 000	705 274	818 151
Italy	5 750 000	5 450 000	3 740 000	4 140 000	4 700 000
Lithuania	80 862	73 540	63 468	55 829	46 029
Netherlands	2 089 000	2 004 000	1 558 000	1 464 000	2 444 000
Norway	93 294 000	95 797 000	98 466 000	96 830 000	91 080 000
Poland	950 548	927 737	1 001 122	996 049	889 186
Romania	3 912 242	3 847 897	3 685 575	3 538 345	3 485 778
Russia	525 000 000	533 000 000	549 000 000	546 000 000	556 000 000
Serbia	1 112 303	1 026 686	933 884	893 000	876 592
Slovakia	8 000	10 000	9 000	5 000	5 000
Slovenia	366	261	229	241	270
Spain	305 263	229 567	139 176	118 809	89 476
Turkey	2 743 565	* 2 700 000	2 336 391	2 638 251	* 2 600 000
Ukraine	2 758 000	2 531 000	2 272 000	2 098 200	2 293 000
United Kingdom	39 928 000	45 288 000	47 445 000	45 636 000	50 432 000
Algeria	68 800 000	67 200 000	68 400 000	66 600 000	65 300 000
Angola	83 300 000	88 200 000	85 800 000	81 900 000	74 600 000
Cameroon	3 850 000	4 896 300	4 716 700	3 880 800	3 518 600
Chad	4 700 000	5 800 000	5 400 000	5 400 000	5 300 000
Congo	11 720 000	11 910 000	9 970 000	12 250 000	16 873 834
Congo, Democratic Republic	1 147 838	1 132 052	1 075 779	1 034 393	1 152 050
Egypt	35 100 000	35 400 000	33 800 000	32 200 000	32 700 000
Equatorial Guinea	13 300 000	12 100 000	10 400 000	9 000 000	8 700 000
Gabon	10 980 000	11 920 000	11 480 000	10 500 000	9 650 000
Ghana	5 311 000	5 161 000	4 960 192	7 615 649	8 762 913
Ivory Coast	947 363	1 473 595	2 117 487	1 707 688	* 1 700 000
Libya	23 897 000	19 996 000	18 810 000	43 757 120	55 146 520
Mauritania	299 000	258 900	240 528	165 603	* 160 000
Morocco	5 000	5 000	* 5 000	* 5 000	* 5 000
Niger	995 720	697 000	647 220	547 650	* 550 000
Nigeria	109 300 000	105 700 000	91 300 000	95 500 000	98 400 000
Senegal	30 100	22 900	3 300	13 000	20 200
South Africa	88 803	70 979	38 796	31 145	23 781
South Sudan	7 700 000	7 300 000	5 800 000	5 500 000	6 400 000
Sudan	3 695 760	4 187 200	4 074 800	3 589 000	3 588 400
Tunisia	2 813 000	2 547 000	2 168 400	1 827 600	1 764 000
Barbados	32 161	34 239	31 944	32 046	29 963
Canada	186 200 000	191 400 000	192 400 000	208 500 000	223 700 000
Cuba	2 905 300	2 822 000	2 619 200	2 522 200	* 2 600 000
Guatemala	508 862	508 222	475 741	488 068	466 496
Mexico	144 138 810	133 953 966	127 077 904	115 135 269	* 107 191 000
Trinidad & Tobago	4 186 801	4 052 724	3 693 394	3 700 692	3 271 538
USA	542 522 718	587 858 026	563 910 993	599 553 471	701 850 924
Argentina	28 243 106	27 176 128	27 176 128	25 463 642	26 013 729
Bolivia	3 149 000	3 381 000	3 566 000	3 520 000	3 566 000
Brazil	121 372 585	130 716 876	135 223 698	141 362 424	139 356 470
Chile	354 130	254 649	213 032	176 065	158 795
Colombia	51 059 991	51 841 046	45 661 017	45 000 000	45 600 000
Ecuador	28 359 000	29 100 000	29 500 000	28 500 000	27 700 000
Peru	8 525 044	7 342 379	6 657 419	6 620 481	6 635 696
Suriname	988 869	998 387	961 341	959 752	964 639
Venezuela	138 500 000	135 400 000	120 100 000	107 600 000	77 300 000

Production of crude petroleum

tonnes (metric)

Country	2014	2015	2016	2017	2018
Afghanistan	5 080	* 3 700	* 3 600	* 3 600	* 3 600
Bahrain (b)	3 074 000	3 157 000	3 065 000	2 807 000	2 769 000
Bangladesh	—	—	—	491 307	488 812
Brunei	6 217 262	6 238 268	5 960 395	5 555 999	5 478 268
Burma (d)	826 000	673 000	607 000	560 000	479 000
China (a)	211 429 200	214 555 800	199 685 200	191 506 100	189 105 600
East Timor (b)	1 615 000	1 585 000	1 007 000	800 000	603 000
India (d)	37 461 000	36 942 000	36 009 000	35 684 000	* 34 200 000
Indonesia	39 439 000	39 290 000	41 667 000	40 051 000	38 767 000
Iran	174 239 000	181 606 500	216 431 400	235 600 000	220 400 000
Iraq	160 300 000	197 000 000	217 600 000	222 200 000	226 100 000
Israel	60 010	65 383	92 837	65 488	75 292
Japan	588 000	544 000	501 000	512 000	455 000
Jordan	800	500	400	300	1 000
Kazakhstan	80 825 600	79 456 300	78 031 700	86 194 000	90 359 000
Kuwait (e)	150 100 000	148 100 000	152 600 000	146 000 000	146 800 000
Kyrgyzstan	82 900	106 700	* 106 700	* 106 700	* 106 700
Malaysia	28 800 000	31 240 000	31 860 000	31 527 000	30 906 000
Mongolia	* 900 000	1 206 231	1 134 773	1 048 707	878 762
Oman	46 981 924	48 854 229	49 816 773	48 331 377	48 719 782
Pakistan (f)	4 155 885	4 627 053	4 246 335	4 329 140	3 852 905
Philippines	995 470	845 024	844 200	755 013	173 507
Qatar	83 800 000	82 100 000	82 500 000	79 900 000	78 500 000
Saudi Arabia (e)	543 400 000	567 800 000	586 600 000	559 300 000	578 300 000
Syria	1 500 000	1 200 000	1 100 000	1 100 000	1 100 000
Taiwan	9 320	9 534	8 446	5 407	4 678
Tajikistan	24 500	24 600	25 134	23 400	* 23 600
Thailand	12 992 000	13 816 000	14 520 000	13 390 000	12 795 000
Turkmenistan	12 500 000	12 800 000	11 900 000	11 200 000	10 600 000
United Arab Emirates	167 300 000	175 500 000	181 600 000	176 300 000	177 770 000
Uzbekistan	2 800 000	2 700 000	2 600 000	2 800 000	2 900 000
Vietnam (b)	17 392 000	18 746 000	17 230 000	15 518 000	13 969 000
Yemen, Republic of	6 900 000	2 600 000	1 600 000	2 400 000	2 800 000
Australia	19 558 279	17 203 247	16 112 627	15 495 471	16 206 743
New Zealand (b)	1 788 250	1 869 660	1 584 630	1 404 490	1 104 190
Papua New Guinea	1 407 000	1 311 000	1 195 000	946 000	467 300
World total	4 213 000 000	4 345 000 000	4 355 000 000	4 372 000 000	4 473 000 000

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	2014	2015	2016	2017	2018
Albania	33	35	92	102	92
Austria	1 245	1 183	1 253	1 742	969
Azerbaijan	18 827	19 236	18 718	18 186	19 207
Belarus	222	225	216	205	211
Bulgaria	183	85	80	65	* 65
Croatia	1 804	1 828	1 690	1 530	1 279
Czech Republic	198	200	169	171	179
Denmark	4 381	4 374	4 301	4 592	3 929
France	17	28	* 28	* 28	* 28
Georgia	10	11	7	9	9
Germany	10 060	9 323	8 608	7 932	6 888
Greece	5	4	9	8	* 8
Hungary	1 946	1 872	1 986	1 885	* 2 000
Ireland, Republic of	354	118	2 748	3 171	3 057
Italy	7 280	6 880	6 020	5 650	5 200
Netherlands	68 684	52 177	50 373	43 915	36 478
Norway	108 820	117 150	116 820	124 160	121 560
Poland	5 648	5 624	5 493	5 408	5 343
Romania	11 374	11 426	10 118	11 071	10 752
Russia	639 000	633 000	639 000	691 000	728 000
Serbia	631	626	595	548	506
Slovakia	99	104	87	88	80
Slovenia	3	3	5	8	15
Spain	26	12	8	13	93
Turkey	* 550	396	* 400	* 400	* 400
Ukraine	20 138	19 757	20 047	20 510	20 806
United Kingdom	37 680	40 466	41 607	42 094	41 022
Algeria	80 200	81 400	91 400	93 000	92 300
Angola	720	770	1 710	* 3 100	* 3 100
Cameroon	308	369	357	392	1 463
Congo	1 501	1 501	1 388	1 388	* 1 400
Egypt	40 400	36 600	34 600	42 000	50 400
Equatorial Guinea	8 462	8 405	* 7 900	* 8 200	* 8 000
Gabon (a)	438	466	530	565	622
Ghana	52 568	24 200	24 200	30 800	* 31 000
Ivory Coast	2 132	2 234	2 396	2 155	* 2 100
Libya	10 200	9 500	8 100	8 200	8 400
Morocco	104	82	* 80	* 80	* 80
Mozambique	5 607	5 695	* 5 000	3 730	4 171
Nigeria	40 000	48 000	46 200	48 100	49 200
South Africa	849	1 333	820	749	624
Tanzania	958	36 568	47 704	51 054	58 951
Tunisia	2 557	2 479	2 213	2 089	1 961
Barbados	21	20	17	15	15
Canada	151 352	154 275	156 807	159 386	167 387
Cuba	1 200	1 245	1 185	1 051	970
Mexico	64 275	59 870	52 248	48 704	* 46 000
Trinidad & Tobago	41 571	39 164	34 091	34 391	36 647
USA (a)	733 095	766 225	729 300	745 800	831 800
Argentina	41 484	42 896	44 988	44 595	40 294
Bolivia	21 954	21 981	21 134	17 100	16 000
Brazil	24 536	24 862	25 337	28 663	26 687
Chile	907	1 064	1 175	1 200	1 221
Colombia	12 300	11 600	12 000	12 300	12 900
Ecuador	566	510	538	481	* 500
Peru	13 687	13 239	14 783	13 712	13 507
Venezuela	32 900	36 100	37 200	38 600	33 200
Afghanistan (b)	142	146	165	156	153
Bahrain	20 627	21 283	21 062	21 465	21 879
Bangladesh (c)	23 232	25 263	27 489	27 445	27 430
Brunei	11 852	12 452	12 025	12 290	11 851
Burma (d)	18 999	19 703	18 963	18 893	17 380
China	130 157	134 610	136 865	148 035	160 265
East Timor	5 320	6 055	5 855	5 270	6 554

Production of natural gas

million cubic metres

Country	2014	2015	2016	2017	2018
India (d)	33 656	32 249	31 897	32 649	* 32 000
Indonesia	76 145	75 770	74 704	72 453	* 74 000
Iran	175 500	183 500	199 300	220 200	239 500
Iraq	7 500	7 300	9 900	10 400	10 100
Israel	7 676	8 438	9 390	9 570	10 480
Japan	2 822	2 734	2 754	3 008	2 707
Jordan	130	122	116	102	93
Kazakhstan	43 177	45 256	46 677	52 921	55 453
Kuwait (e)	14 300	16 100	16 400	17 400	15 000
Kyrgyzstan	34	31	* 31	* 31	* 31
Malaysia	65 400	63 380	67 510	70 251	66 698
Oman	29 915	31 093	31 742	30 463	34 640
Pakistan (c)	42 302	41 511	41 958	41 684	41 312
Philippines	3 693	3 471	3 977	3 923	4 380
Qatar	169 100	175 200	177 000	175 700	175 500
Saudi Arabia (e)	97 300	99 200	105 300	109 300	112 100
Syria	4 600	4 100	3 500	3 400	3 600
Taiwan	387	374	322	266	198
Tajikistan	3	4	3	2	1
Thailand	40 150	39 559	39 273	37 925	37 393
Turkmenistan	63 500	65 900	63 200	58 700	61 500
United Arab Emirates	52 900	58 700	60 300	62 000	64 700
Uzbekistan	57 300	57 700	53 100	53 400	56 600
Vietnam	10 210	10 660	10 610	9 866	10 010
Yemen, Republic of	9 800	2 900	500	500	600
Australia	67 335	76 791	97 328	113 805	130 987
New Zealand	5 015	4 596	4 843	4 757	4 200
Papua New Guinea	5 257	9 795	10 455	11 018	9 809
World total	3 622 000	3 695 000	3 720 000	3 865 000	4 048 000

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	2014	2015	2016	2017	2018
Finland	946 234	956 564	939 531	978 613	989 073
Russia	10 700 000	11 500 000	12 300 000	13 200 000	13 600 000
Turkey	604 000	713 230	772 500	—	* —
Algeria	1 417 950	1 288 900	1 274 000	1 112 000	1 204 100
Burkina Faso	1 832	* 1 000	* 1 000	* 1 000	* 1 000
Egypt (a)	4 830 918	3 427 000	2 556 000	* 2 500 000	* 2 500 000
Malawi	11 194	12 400	2 500	1 000	1 594
Mali	* 15 000	31 000	37 236	41 000	* 46 000
Morocco	27 390 000	26 264 000	26 900 000	32 800 000	37 600 000
Senegal	806 200	1 062 000	1 609 000	1 385 000	1 782 000
South Africa	2 011 151	1 852 348	1 696 533	2 079 294	2 058 274
Tanzania	* 23 000	* 23 000	23 658	1 351	—
Togo	1 085 546	1 150 194	850 076	732 503	930 857
Tunisia	3 783 969	3 228 311	3 663 613	4 422 100	2 802 000
Zimbabwe	6 100	6 200	6 500	* 6 500	* 6 500
Cuba	1 300	—	—	—	—
Mexico	1 733 479	1 929 439	3 294 266	2 307 180	829 835
USA	25 300 000	27 400 000	27 100 000	27 900 000	* 27 000 000
Brazil (b)	6 513 000	6 700 000	6 500 000	5 345 000	5 098 000
Chile	20 142	16 141	1 604	—	—
Chile					
Guano	2 717	3 408	4 601	4 238	4 154
Colombia	41 692	95 483	84 125	55 410	49 042
Peru	10 884 269	11 161 636	10 561 111	8 450 379	10 308 276
Venezuela	35 820	26 324	* 25 000	68 062	* 70 000
China	120 438 000	142 039 000	144 398 000	123 132 000	96 326 000
Christmas Island (a)(c)(d)	575 000	671 000	770 000	644 000	643 000
India (e)	1 608 145	1 571 973	1 124 440	1 534 269	* 1 250 000
Iran (f)	75 092	85 066	64 805	52 600	* 60 000
Iraq	* 140 000	* 140 000	* 140 000	* 140 000	* 140 000
Israel	2 778 715	3 427 469	3 591 200	2 637 440	3 028 800
Jordan	7 143 713	8 335 993	7 991 157	8 687 581	8 022 393
Kazakhstan	* 1 830 000	* 1 830 000	* 1 830 000	* 1 830 000	* 1 830 000
Laos					
Guano	—	—	181 000	435 000	—
Pakistan (a)	101 971	109 874	115 140	61 677	* 60 000
Philippines					
Phosphate rock	3 897	5 437	8 019	159	1 236
Guano	409	495	670	* 700	1 500
Saudi Arabia	1 911 000	2 002 000	5 400 000	5 800 000	6 090 000
Sri Lanka	62 595	52 518	38 848	42 435	* 40 000
Syria	1 230 000	750 000	* —	100 000	* 100 000
Thailand	500	* 500	* 500	8 000	—
Uzbekistan	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
Vietnam	2 470 900	2 923 400	3 142 500	4 588 000	5 423 700
Australia (a)	628 647	1 027 622	1 037 265	942 373	850 987
Nauru (c)	153 418	94 021	114 350	126 000	* 100 000
World total	240 000 000	265 000 000	271 000 000	255 000 000	232 000 000

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	2014	2015	2016	2017	2018
Finland					
Platinum	1 060	992	1 154	1 418	1 576
Palladium	808	784	883	1 021	1 157
Poland					
Platinum	40	40	50	* 11	* 11
Palladium	25	20	30	* 7	* 7
Russia					
Platinum	(a) 22 000	(a) 20 800	20 500	22 100	20 200
Palladium	(a) 81 300	(a) 75 500	78 300	83 800	83 100
Other platinum metals (a)	2 800	2 500	2 600	2 400	2 100
Serbia					
Platinum	3	2	3	3	* 6
Palladium	23	22	23	50	* 55
Botswana					
Platinum	124	31	—	—	—
Palladium	560	156	—	—	—
Ethiopia					
Platinum (b)	* —	* 5	* 5	* 5	* 5
South Africa					
Platinum	93 991	139 125	133 241	131 247	137 053
Palladium	58 410	82 691	76 273	80 134	80 629
Other platinum metals	36 043	53 699	54 139	48 895	52 964
Zimbabwe					
Platinum	12 483	12 564	15 110	14 257	14 703
Palladium	10 138	10 055	12 222	11 822	12 094
Other platinum metals	2 667	2 612	3 093	3 005	3 076
Canada					
Platinum	* 12 000	* 11 900	* 11 300	* 9 800	* 10 000
Palladium	* 21 000	* 20 800	* 19 700	* 17 100	* 17 400
Other platinum metals	* 1 400	* 1 400	* 1 300	* 1 100	* 1 100
USA					
Platinum	3 660	3 670	3 890	3 980	* 4 100
Palladium	12 488	12 532	13 070	13 600	* 14 000
Other platinum metals	124	96	103	* 100	* 100
Colombia	1 142	861	917	566	269
China					
Platinum	1 600	2 300	3 000	2 500	2 500
Palladium	1 000	1 200	1 300	1 400	1 300
Australia					
Palladium (c)	766	533	762	765	541
World total	378 000	457 000	453 000	451 000	460 000

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) Years ending 7 July of that stated

(c) Platinum group metals; all forms

Production of potash

tonnes (K₂O content)

Country	2014	2015	2016	2017	2018
Belarus	6 339 990	6 467 878	6 180 050	7 101 799	7 346 096
Germany					
Potassic salts	3 178 103	3 109 903	2 694 126	2 963 561	2 830 167
Russia					
Chloride	7 402 350	6 954 000	6 588 000	7 320 000	7 015 000
Spain					
Chloride	706 664	667 959	667 224	557 469	566 632
United Kingdom					
Chloride	576 000	594 000	432 000	216 000	210 000
Polyhalite	—	200 000	200 000	500 000	400 000
Canada					
Chloride	11 345 000	11 506 000	10 208 000	12 624 000	13 802 000
USA					
Potassic salts	850 000	740 000	510 000	480 000	* 500 000
Brazil					
Chloride	492 355	481 270	500 917	306 000	201 200
Chile					
Chloride	1 108 478	1 118 864	1 237 447	1 197 105	988 512
China	* 6 110 000	* 5 710 000	* 5 780 000	* 5 510 000	* 5 500 000
Israel					
Chloride	2 212 923	950 077	2 306 675	2 479 000	2 344 600
Jordan	1 275 500	1 436 600	1 222 100	1 415 200	1 486 000
World total	41 600 000	39 900 000	38 500 000	42 700 000	43 200 000

Production of rare earth oxides

tonnes (metric)

Country	2014	2015	2016	2017	2018
Russia	2 134	2 312	3 063	2 500	2 596
USA	3 240	3 540	—	—	* 9 000
Burma	* 300	* 400	* 4 500	* 20 000	* 23 000
China (a)	* 139 000	* 139 000	* 140 000	* 140 000	* 140 000
India (b)	1 836	956	2 265	* 2 000	* 2 000
Malaysia	292	365	1 221	196	1 012
Vietnam	* —	* 250	* 220	* 200	* 400
Australia (c)	3 965	8 799	12 631	16 003	17 754

Note(s)

- (1) All the rare earth 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	2014	2015	2016	2017	2018
Poland	8	9	9	11	9
Russia	* 2	* 2	* 2	* 2	* 2
USA	9	8	8	8	* 8
Chile	* 25	* 26	* 27	* 27	* 27
China	* 2	* 3	* 3	* 3	* 3
Kazakhstan	* 0	* 1	* 1	* 1	* 1
Uzbekistan	* 0	* 0	* 0	* 0	* 0

Production of salt

tonnes (metric)

Country	2014	2015	2016	2017	2018
Albania					
Sea salt	* 47 000	* 47 000	* 47 000	* 47 000	* 47 000
Armenia	39 793	27 392	32 250	32 551	22 583
Austria					
Rock salt	245	248	244	251	53
Salt in brine	1 116 658	985 357	1 044 926	1 113 728	1 178 500
Azerbaijan	5 173	4 743	4 690	4 985	4 208
Belarus	1 820 547	2 055 047	2 476 493	2 628 985	2 904 097
Bosnia & Herzegovina	791 047	869 750	966 177	1 029 302	1 063 457
Bulgaria	3 300 000	3 100 000	3 300 000	3 400 000	* 3 400 000
Croatia	33 039	51 877	39 836	52 938	50 825
Denmark	* 580 000	* 580 000	* 580 000	* 580 000	* 350 000
France	6 500 000	4 266 053	5 185 000	4 663 569	4 532 085
Germany					
Rock salt	4 928 656	6 027 873	5 634 339	6 793 883	7 185 794
Brine salt	2 133 359	2 286 769	2 278 304	2 679 189	2 609 664
Salt in brine	4 075 004	8 132 675	8 324 054	8 961 916	8 711 720
Greece (a)	146 402	121 537	158 020	* 160 000	* 160 000
Italy					
Rock salt & brine salt	2 819 824	3 030 687	2 550 849	2 283 406	1 514 829
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	6 500 000	6 700 000	6 625 000	6 935 000	6 744 000
Poland					
Rock salt	775 185	639 735	698 607	984 000	853 210
Brine salt	2 705 091	2 797 703	2 964 690	2 989 000	2 928 781
Other salt	459 400	487 189	499 506	446 000	497 354
Portugal					
Rock salt	69 702	30 008	6 092	7 800	6 201
Sea salt	96 321	117 282	105 972	114 531	94 624
Romania	2 046 740	2 092 932	2 128 156	2 290 060	* 2 300 000
Russia	361 000	723 000	769 000	* 770 000	* 770 000
Serbia	12 994	13 202	9 149	* 9 000	* 9 000
Slovenia	—	2 191	2 417	2 335	2 018
Spain					
Rock salt	2 753 802	3 032 409	3 253 372	2 869 661	2 794 570
Sea salt	1 358 647	1 402 672	1 199 669	1 168 121	1 092 887
Other salt	157 188	154 464	99 815	97 844	117 674
Switzerland	418 389	476 941	447 216	448 509	530 414
Turkey	5 931 945	6 257 320	5 328 256	6 644 552	* 6 600 000
Ukraine	2 497 706	2 136 500	1 783 530	1 815 684	2 191 619
United Kingdom	4 690 000	* 4 700 000	* 4 700 000	* 4 700 000	* 4 700 000
Algeria					
Brine salt & sea salt	192 982	175 000	157 400	* 160 000	* 160 000
Angola	45 000	47 845	93 000	101 000	* 101 000
Botswana	515 311	404 295	399 837	369 613	367 988
Djibouti	* 500	* 500	* 500	* 500	* 500
Egypt (b)	1 543 279	1 609 000	1 402 000	* 1 400 000	* 1 400 000
Eritrea	* 300 000	* 300 000	* 310 000	* 310 000	* 310 000
Ethiopia (c)	29 815	79 605	29 634	438 192	* 400 000
Ghana	250 000	250 000	250 000	* 250 000	* 250 000
Guinea	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Kenya (d)	18 936	21 201	23 423	43 245	12 419
Libya	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Madagascar	* 120 000	* 120 000	* 130 000	* 130 000	* 120 000
Mauritania	* 700	* 700	* 700	* 700	* 700
Mauritius (a)	3 500	1 800	500	500	* 500
Morocco	439 160	555 760	634 662	659 263	* 660 000
Mozambique (a)	* 160 000	* 160 000	* 170 000	* 170 000	* 170 000
Namibia	797 405	732 980	835 539	865 754	1 220 960
Senegal	244 700	265 700	263 200	265 000	245 70
South Africa	493 828	520 070	488 984	503 935	476 107
Sudan	30 000	20 136	223 397	235 000	267 000
Tanzania	54 757	92 158	145 718	100 017	36 392
Tunisia	1 124 019	1 280 000	* 1 280 000	* 1 280 000	* 1 280 000

Production of salt

tonnes (metric)

Country	2014	2015	2016	2017	2018
Bahamas (e)	1 493 308	962 486	308 007	349 710	854 223
Bonaire (a)	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Canada					
Rock salt	13 173 990	13 312 076	9 272 371	10 378 614	9 675 013
Other salt (f)	995 546	974 035	979 790	1 045 010	1 016 444
Cuba	243 300	284 900	248 000	246 300	192 700
Dominican Republic	11 271	12 328	* 12 000	* 13 000	* 25 000
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	56 500	* 60 000	* 60 000	* 60 000	* 60 000
Jamaica	* 14 200	* 14 000	* 14 000	* 14 000	* 14 000
Mexico	10 520 508	9 718 027	9 785 053	9 570 779	10 852 583
Nicaragua (a)	* 30 000	* 30 000	* 30 000	* 30 000	* 30 000
Panama (a)	25 660	23 294	23 470	18 637	17 281
USA					
Rock salt (g)	19 026 000	19 800 000	18 348 000	* 17 630 000	* 18 060 000
Salt in brine (g)	18 120 000	17 100 000	15 846 000	* 17 630 000	* 16 800 000
Evaporated salt (g)	8 154 000	8 010 000	7 506 000	* 7 740 000	* 7 140 000
Argentina	* 1 500 000	* 1 700 000	2 525 234	* 2 250 000	* 1 500 000
Bolivia	* 2 200	2 216	4 534	3 358	5 373
Brazil					
Rock salt	1 451 051	1 476 015	1 410 314	* 1 500 000	* 1 500 000
Sea salt	6 050 000	6 200 000	6 100 000	* 6 000 000	* 6 100 000
Chile	10 553 440	11 831 116	8 139 914	7 440 741	10 012 105
Colombia					
Rock salt	494 185	334 804	354 791	336 373	339 503
Sea salt	105 577	95 652	176 021	165 126	51 720
Ecuador	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Peru	1 175 157	1 471 131	1 450 415	1 481 398	1 509 564
Venezuela (a)	* 350 000	* 350 000	* 350 000	* 350 000	* 300 000
Afghanistan (h)	87 014	97 560	56 928	75 579	47 594
Bangladesh (b)	1 460 698	1 463 117	1 477 157	1 495 512	1 513 022
Burma (j)	129 000	212 000	221 270	166 590	* 170 000
Cambodia (a)(i)	147 000	174 000	148 900	32 000	* 30 000
China	70 497 100	66 655 400	66 201 000	66 541 700	58 361 700
India					
Sea salt (j)	21 022 100	21 516 900	23 454 700	23 854 600	* 23 900 000
Other salt (j)	5 865 000	6 126 800	5 736 900	5 094 800	* 5 100 000
Indonesia	2 192 168	* 600 000	* 600 000	* 600 000	* 600 000
Iran (h)	3 517 536	2 813 780	2 796 224	3 024 621	* 3 000 000
Iraq	* 182 000	* 182 000	* 182 000	* 182 000	* 182 000
Israel (a)	459 742	333 317	389 236	514 100	376 800
Japan (j)	928 000	938 000	928 000	926 000	929 000
Jordan	* 8 000	* 8 000	* 8 000	* 8 000	* 8 000
Kazakhstan	596 508	608 627	730 283	803 794	885 717
Korea (Rep. of)	303 510	342 844	323 470	308 844	282 590
Korea, Dem. P.R. of	* 500 000	* 500 000	* 500 000	* 500 000	* 500 000
Kuwait	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
Laos	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	12 900	12 600	4 500	18 000	11 500
Pakistan					
Rock salt (b)	2 220 347	2 797 506	3 552 948	3 534 075	3 591 000
Sea salt (b)(d)	254 985	292 953	254 089	209 018	—
Philippines (a)	* 993 000	* 993 000	* 993 000	* 993 000	* 993 000
Saudi Arabia					
Rock salt & brine salt	1 990 000	2 000 000	2 400 000	2 520 000	2 646 000
Sri Lanka	102 023	29 243	106 063	* 100 000	* 100 000
Syria	* 10 000	* 5 000	* 2 500	* 2 500	* 2 500
Taiwan	81 893	78 301	77 276	77 054	78 539
Tajikistan	36 348	35 704	33 055	35 516	41 382
Thailand					
Rock salt	1 381 067	1 385 911	1 333 675	1 497 223	1 487 364
Turkmenistan	* 230 000	* 230 000	* 230 000	* 230 000	* 230 000
Uzbekistan	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000

Production of salt

tonnes (metric)

Country	2014	2015	2016	2017	2018
Vietnam	905 600	1 061 000	982 000	648 500	953 200
Yemen, Republic of	* 75 000	* 75 000	* 75 000	* 75 000	* 75 000
Australia (b)	13 563 290	12 324 493	11 514 481	11 280 859	13 582 811
New Zealand	65 000	101 000	101 678	60 000	50 000
World total	289 700 000	288 500 000	279 200 000	284 500 000	280 000 000

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) Exports
(f) Including salt in brine
(g) Sold or used by producers
(h) Years ended 20 March following that stated
(i) Seasons beginning in November and ending in May of the year stated.
(j) Years ended 31 March following that stated

Production of refined selenium

tonnes (metric)

Country	2014	2015	2016	2017	2018
Armenia	* 20	* 20	* 20	* 20	* 20
Belgium	* 200	* 200	* 200	* 200	* 200
Finland	94	93	104	100	109
Germany (a)	* 700	* 790	* 790	* 790	* 790
Poland	90	87	82	74	66
Russia	131	143	197	194	176
Serbia	17	15	18	* 16	* 16
Sweden	* 20	* 20	* 20	* 20	* 20
Canada	154	154	176	49	61
Mexico	120	99	121	112	107
USA	* 160	* 90	* 122	* 116	* 152
Chile	41	* 50	* 50	* 50	* 50
Peru	49	40	45	45	* 45
China	* 670	720	750	930	1 050
Japan	782	772	753	792	750
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	2014	2015	2016	2017	2018
France					
Andalusite (a)	* 68 000	* 68 000	* 58 000	* 68 000	* 65 000
Madagascar	* 3 000	1 900	1 800	4 200	* 4 200
South Africa					
Andalusite	172 657	* 190 000	* 190 000	* 190 000	* 190 000
USA					
Kyanite (b)	88 600	109 000	79 700	91 300	* 95 000
Brazil					
Kyanite (c)	* 200	* 200	* 200	* 200	* 200
India					
Kyanite (d)	6 255	2 901	3 253	7 818	* 5 100
Sillimanite (d)	66 273	69 942	68 131	81 638	* 73 000
Nepal					
Kyanite (e)	12	7	1	2	0

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	2014	2015	2016	2017	2018
Armenia	13 295	14 344	12 792	15 552	12 441
Azerbaijan	970	890	5 136	8 076	8 943
Bulgaria	50 200	37 955	52 526	53 053	41 315
Cyprus	—	—	—	99	180
Finland	12 830	13 051	16 348	13 654	12 849
Greece	35 785	28 100	29 300	23 200	38 500
Ireland, Republic of	6 436	3 770	1 080	1 340	1 160
North Macedonia	23 900	17 700	14 000	12 775	12 694
Poland	1 384 000	1 407 000	1 482 000	1 490 000	1 471 000
Portugal	43 172	41 337	38 631	40 186	55 706
Romania	* 18 000	* 18 000	* 18 000	* 18 000	* 18 000
Russia (a)	1 433 900	1 580 100	1 493 000	1 373 000	1 400 100
Serbia (a)	8 600	7 500	11 300	11 900	9 000
Slovakia	437	532	391	410	345
Spain	* 27 300	27 300	17 600	98 600	165 300
Sweden	382 611	479 686	498 686	467 500	443 624
Turkey	183 880	190 550	376 640	151 490	171 070
United Kingdom	—	—	(b) 14	—	—
Algeria	16	* 20	* 20	* 20	* 20
Botswana	22 288	2 801	—	—	—
Burkina Faso	5 400	5 500	5 800	7 000	8 000
Congo, Democratic Republic	6 485	2 401	800	500	600
Eritrea	47 398	38 910	13 219	(b) 1 192	31 000
Ethiopia (c)	1 020	* 1 000	745	* 1 000	* 1 000

Mine production of silver

kilograms (metal content)

Country	2014	2015	2016	2017	2018
Ghana	4 199	* 4 000	* 4 000	2 800	10 200
Ivory Coast	585	587	549	493	137
Mali	2 490	2 608	2 005	* 2 100	* 2 600
Morocco	188 538	216 383	237 418	239 416	190 500
Namibia	1 129	11 555	4 702	7 451	3 602
Niger	67	119	* 100	* 100	* 100
Senegal	1 150	540	500	700	700
South Africa	37 268	38 824	52 127	62 536	46 467
Sudan	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
Tanzania	14 493	15 569	17 984	10 911	12 041
Canada	495 403	383 807	385 134	389 568	366 000
Dominican Republic	135 024	95 705	121 748	151 756	166 499
Guatemala	858 349	862 814	837 815	336 944	—
Honduras	58 826	34 369	17 600	21 784	31 182
Mexico	5 765 662	5 955 151	5 408 521	5 815 034	7 243 245
Nicaragua	13 889	18 576	21 382	15 419	11 263
USA	1 184 000	1 090 000	1 140 000	1 030 000	923 000
Argentina	905 100	1 079 300	933 100	995 000	1 101 000
Bolivia	1 346 941	1 306 977	1 356 620	1 222 371	1 191 024
Brazil	32 300	44 142	48 793	41 900	49 600
Chile	1 571 788	1 504 271	1 501 436	1 318 582	1 370 237
Colombia	11 692	11 602	11 866	12 074	15 967
Ecuador	577	2 521	934	68	192
Peru	3 768 147	4 101 568	4 375 337	4 417 887	4 162 658
China	3 673 300	3 421 355	3 496 003	3 502 223	3 573 761
India (d)	327 647	426 443	460 811	557 691	* 653 000
Indonesia	119 189	151 934	185 234	331 644	* 383 000
Iran	34 945	48 400	* 50 000	* 50 000	* 50 000
Japan	3 541	4 616	5 076	3 408	3 596
Kazakhstan	989 247	1 308 926	1 186 511	1 060 662	969 347
Korea (Rep. of)	3 289	4 600	6 579	8 863	7 090
Korea, Dem. P.R. of	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Kyrgyzstan	9 300	10 400	13 500	12 900	12 400
Laos	39 823	51 764	51 301	42 840	37 464
Malaysia	533	945	1 075	1 404	1 542
Mongolia	39 160	48 989	79 480	72 440	64 800
Philippines	23 005	29 952	35 186	31 748	29 782
Saudi Arabia	4 888	4 500	4 710	5 069	5 322
Tajikistan	1 700	* 2 700	3 200	3 100	* 6 300
Thailand	29 216	26 438	26 430	—	—
Uzbekistan	* 23 000	* 23 000	* 22 000	21 800	* 22 000
Australia	1 846 847	1 430 298	1 418 219	1 120 175	1 254 480
Fiji	361	354	354	350	358
New Zealand	15 811	12 498	7 960	8 022	6 332
Papua New Guinea	81 096	44 588	90 498	69 330	104 004
Solomon Islands	280	—	—	—	—
World total	27 423 000	27 803 000	27 763 000	26 838 000	28 037 000

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	2014	2015	2016	2017	2018
Turkey	1 828 167	1 854 290	1 976 880	3 274 416	* 3 300 000
Botswana	268 529	243 369	280 457	226 667	297 237
Ethiopia (a)	3 896	6 878	4 177	6 785	* 6 800
Kenya	409 845	319 761	301 719	311 000	339 025
USA	11 700 000	11 600 000	11 800 000	12 000 000	* 12 000 000

Note(s)

(a) Years ended 7 July of that stated

Production of strontium minerals

tonnes (metric)

Country	2014	2015	2016	2017	2018
Spain	128 077	116 765	85 599	99 663	89 165
Mexico	64 931	79 022	33 230	40 699	35 489
Argentina (a)	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
China	* 50 600	* 53 200	* 50 000	* 50 000	* 50 000
Iran (b)	41 050	36 760	196 689	94 610	* 100 000

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	2014	2015	2016	2017	2018
Austria					
Recovered (a)	44 560	* 44 000	* 44 000	* 44 000	* 44 000
Belarus					
Recovered (a)	70 379	72 038	59 920	64 184	72 718
Belgium					
Recovered (a)(b)	* 400 000	* 400 000	* 400 000	* 400 000	* 400 000
Bosnia & Herzegovina					
Recovered	4 513	4 138	4 563	4 887	3 702
Bulgaria					
Recovered (b)	* 392 000	* 392 000	* 392 000	* 392 000	* 392 000
Recovered (a)	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Croatia					
Recovered (a)	19 384	17 540	21 690	24 168	23 406
Czech Republic					
Recovered (a)	* 35 000	* 35 000	* 35 000	* 35 000	* 35 000
Denmark					
Recovered (a)	4 435	4 447	6 144	4 004	4 194

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2014	2015	2016	2017	2018
Finland					
Pyrites	353 000	353 000	206 000	291 000	271 000
Recovered (b)	336 168	348 640	349 504	344 441	343 377
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)	708 146	627 797	577 684	537 882	419 597
Recovered (c)	437 677	383 894	351 865	328 247	254 400
Greece					
Recovered (a)	227 140	154 990	190 000	326 100	* 330 000
Hungary					
Recovered (a)	* 54 000	* 54 000	* 54 000	* 54 000	* 54 000
Italy					
Recovered (a)(d)	740 000	740 000	550 000	511 000	* 510 000
Lithuania					
Recovered (a)	76 594	84 001	94 522	93 969	93 958
Netherlands					
Recovered (b)	* 120 000	* 107 000	* 112 000	* 86 000	* 96 000
Recovered (a)	* 410 000	* 515 000	* 530 000	* 520 000	* 520 000
Norway					
Recovered (b)	76 772	76 384	74 277	63 974	69 998
Recovered (a)	* 22 000	* 22 000	* 22 000	* 22 000	* 22 000
Poland					
Frasch	605 420	627 600	620 500	663 000	617 370
Recovered (b)	* 260 000	* 280 000	* 280 000	* 280 000	* 280 000
Recovered (a)	24 200	23 820	24 500	23 000	23 770
Portugal					
Recovered	* 21 000	* 21 000	* 21 000	* 21 000	* 21 000
Romania					
Recovered	* 47 000	* 46 000	* 44 000	* 42 000	* 42 000
Russia					
Pyrites	* 71 000	* 71 000	* 71 000	* 71 000	* 71 000
Recovered (a)	* 6 092 000	* 6 092 000	* 6 092 000	* 6 092 000	* 6 092 000
Recovered (c)	* 954 000	* 954 000	* 954 000	* 954 000	* 954 000
Sulphur ore	* 100 000	110 155	94 418	96 316	83 707
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)	* 539 000	* 539 000	* 539 000	* 539 000	* 539 000
Recovered (a)	* 515 000	* 515 000	* 515 000	* 515 000	* 515 000
Sweden					
Recovered (b)	205 616	192 499	187 264	190 014	200 122
Recovered (a)	86 538	95 172	86 312	91 018	86 967
Turkey					
Pyrites	42 849	22 271	61	31 482	* 30 000
Recovered (a)(c)	* 72 900	* 72 900	* 72 900	* 72 900	* 72 900
Sulphur ore	—	823	—	5 285	* 5 000
Ukraine					
Sulphur ore	* 120 000	* 120 000	* 120 000	* 120 000	* 120 000
United Kingdom					
Recovered (a)	134 000	135 000	133 000	133 000	129 000
Algeria					
Recovered (a)	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Egypt					
Recovered (a)	* 60 000	* 60 000	* 60 000	* 80 000	* 80 000
Libya					
Recovered (a)	143 000	—	—	133 300	* 135 000
Morocco					
Recovered	* 60 000	* 60 000	* 60 000	* 60 000	* 60 000
Namibia					
Recovered	—	12 068	62 633	72 283	78 612

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2014	2015	2016	2017	2018
South Africa					
Recovered (b)(a)	* 250 000	277 630	280 830	280 830	239 405
Zambia					
Recovered (b)	* 300 000	* 300 000	363 000	679 500	* 700 000
Canada					
Recovered (b)	590 000	558 000	635 300	524 000	532 500
Recovered (a)	5 252 000	5 187 000	4 746 100	4 802 900	4 792 100
Cuba					
Recovered	1 350	1 355	1 780	3 047	* 3 000
Recovered (a)	* 20 000	* 20 000	* 20 000	* 20 000	* 20 000
Mexico					
Recovered (b)	* 556 000	* 556 000	* 556 000	* 556 000	* 556 000
Recovered (a)	992 939	858 527	673 285	551 218	442 657
Trinidad & Tobago					
Recovered (a)	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
USA					
Recovered (b)	587 000	646 000	673 000	575 000	* 670 000
Recovered (a)	9 050 000	8 890 000	9 070 000	9 070 000	* 9 000 000
Argentina					
Recovered (b)	* 23 000	* 23 000	* 23 000	* 20 000	* 20 000
Brazil					
Pyrites	18 827	* 20 000	* 20 000	* 20 000	* 20 000
Recovered (b)	286 754	259 000	* 292 000	* 292 000	* 292 000
Recovered (a)	239 970	255 000	* 239 000	* 239 000	* 239 000
Chile					
Recovered (b)	1 513 923	1 488 326	1 595 595	1 524 437	1 476 456
Colombia					
Recovered (a)	6 222	8 170	7 653	6 980	* 7 000
Sulphur ore	48 513	76 239	76 331	64 856	* 24 000
Ecuador					
Recovered (a)(e)	* 5 000	* 5 000	* 5 000	* 5 000	* 5 000
Peru					
Recovered (d)	* 556 000	* 556 000	* 556 000	* 556 000	* 556 000
Venezuela					
Recovered (a)	* 460 000	* 450 000	* 400 000	* 360 000	* 260 000
Bahrain					
Recovered (a)	* 120 000	* 120 000	* 120 000	* 110 000	* 100 000
China					
Pyrites	* 7 140 000	* 6 570 000	* 6 770 000	* 6 800 000	* 6 800 000
Recovered	* 10 160 000	* 9 330 000	* 9 630 000	* 9 600 000	* 9 600 000
India					
Recovered (b)(f)	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000	* 1 200 000
Recovered (a)	429 258	473 322	560 826	825 173	* 895 000
Indonesia					
Recovered (b)	* 160 000	* 160 000	* 160 000	* 160 000	* 160 000
Recovered (a)	* 120 000	* 120 000	* 120 000	* 120 000	* 120 000
Iran					
Recovered (d)	2 100 000	2 200 000	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)	61 009	71 627	71 104	* 71 000	* 71 000
Japan					
Recovered (b)	1 691 409	1 629 493	1 700 085	1 583 867	1 710 961
Recovered (a)	1 750 938	1 733 338	1 817 790	1 788 620	1 697 355
Jordan					
Recovered (a)	* 490 000	* 490 000	* 490 000	* 490 000	* 490 000
Kazakhstan					
Recovered (b)	* 604 000	* 604 000	* 604 000	* 604 000	* 604 000
Recovered (a)	2 464 600	2 514 900	2 546 500	2 947 300	* 2 947 000
Korea (Rep. of)					
Recovered (b)	* 1 078 000	* 1 078 000	* 1 078 000	* 1 078 000	* 1 078 000
Recovered (a)	1 200 000	1 450 000	2 000 000	2 000 000	2 000 000
Kuwait					
Recovered (a)	* 990 000	* 990 000	* 990 000	* 850 000	* 850 000

Production of sulphur and pyrites

tonnes (sulphur content)

Country	2014	2015	2016	2017	2018
Oman					
Recovered (a)	* 50 000	* 50 000	* 50 000	* 50 000	* 50 000
Pakistan					
Sulphur ore (g)	35 672	19 730	14 869	23 740	22 040
Philippines					
Recovered (b)	* 169 900	* 169 900	* 169 000	* 169 000	* 169 000
Recovered (a)	* 45 000	* 45 000	* 45 000	* 45 000	* 45 000
Qatar					
Recovered (a)	* 1 760 000	* 1 724 000	* 1 733 000	* 1 678 000	* 1 649 000
Saudi Arabia					
Recovered (a)	* 3 600 000	* 3 800 000	* 3 900 000	* 3 700 000	* 3 900 000
Singapore					
Recovered (a)	* 300 000	* 300 000	* 300 000	* 300 000	* 300 000
Syria					
Recovered (a)	* 3 000	* 1 500	* 1 500	* 1 500	* 1 500
Taiwan					
Recovered	195 280	211 219	163 768	173 963	169 698
Thailand					
Recovered (b)	* 45 800	* 45 800	* 45 800	* 45 800	* 45 800
Recovered (a)	* 210 000	* 210 000	* 210 000	* 210 000	* 210 000
Turkmenistan					
Recovered (a)	* 410 000	* 410 000	* 410 000	* 410 000	* 410 000
United Arab Emirates					
Recovered (a)	* 2 530 000	* 2 530 000	* 2 530 000	* 2 530 000	* 2 530 000
Uzbekistan					
Recovered (b)	* 131 000	* 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	7 600 000	7 000 000	7 100 000	7 200 000	7 200 000
Frasch	600 000	600 000	600 000	700 000	600 000
Recovered	70 400 000	69 600 000	70 400 000	70 600 000	70 400 000
Sulphur ore	300 000	300 000	300 000	300 000	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	2014	2015	2016	2017	2018
Austria	131 108	122 326	123 040	123 558	127 866
Finland	380 821	332 174	345 739	354 819	374 398
France	350 000	350 000	* 370 000	* 370 000	* 250 000
Italy	* 165 000	* 165 000	* 165 000	* 165 000	* 165 000
North Macedonia	—	—	—	400	319
Portugal	14 942	11 204	11 699	13 600	10 144
Russia	* 150 000	* 150 000	* 150 000	* 150 000	* 150 000
Slovakia	3 000	1 000	700	13 988	43 000
Spain	—	—	—	11 500	15 500
Turkey					
Talc	5 048	9 681	8 559	3 882	* 4 000
Pyrophyllite	109 366	172 681	194 665	470 600	* 470 000
United Kingdom	4 907	5 430	2 997	3 218	1 640
Egypt (a)	31 066	21 674	* 21 000	* 21 000	* 20 000
South Africa					
Talc	4 827	4 569	4 462	3 728	3 897
Pyrophyllite	18 900	16 801	19 114	55 048	98 245
Sudan	* 3 000	3 000	4 250	* 4 500	* 4 500
Canada	81 000	181 000	217 000	217 000	268 000
Guatemala	3 368	3 779	2 733	1 982	2 187
Mexico	752 077	20 452	11 392	7 129	8 448
USA	608 000	615 000	578 000	610 000	* 620 000
Argentina (b)	* 25 000	* 25 000	14 216	* 14 000	* 14 000
Brazil (b)	531 938	481 687	494 157	* 500 000	* 500 000
Colombia (b)	562	55	103	59	—
Peru					
Talc	28 847	26 781	11 507	19 363	20 634
Pyrophyllite	17 859	26 209	17 872	22 760	26 675
Uruguay	360	590	290	100	* 100
Bhutan	12 601	5 807	2 261	1 293	2 042
China	* 1 870 000	* 1 846 000	* 1 800 000	* 1 800 000	* 1 800 000
India					
Pyrophyllite (c)	147 431	* 106 000	* 106 000	* 130 000	* 130 000
Steatite (c)	774 281	998 513	1 277 768	1 613 607	* 1 600 000
Iran (d)	112 500	137 135	118 960	82 095	* 85 000
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	5 484	6 371	2 247	2 834	1 887
Pyrophyllite	622 865	596 860	590 000	431 458	346 761
Nepal (e)	5 703	5 255	1 593	4 204	8 557
Pakistan (a)	89 022	116 223	125 985	152 279	141 504
Saudi Arabia					
Pyrophyllite	7 000	8 000	42 000	44 000	46 000
Taiwan	133	162	250	—	17
Thailand					
Talc	8 208	6 768	6 886	7 436	7 756
Pyrophyllite	49 100	45 500	63 500	54 000	50 920
Australia (a)	* 115 000	* 80 000	* 111 000	* 119 000	* 63 000
World total	7 600 000	7 100 000	7 400 000	8 000 000	7 900 000

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	2014	2015	2016	2017	2018
Russia					
Nb content	581	628	628	648	669
Ta content	40	32	49	45	44
Burundi					
Columbite-tantalite	106	53	32	74	* 75
Congo, Democratic Republic					
Columbite-tantalite	1 140	2 102	2 414	2 174	2 267
Ethiopia					
Tantalite (a)	46	59	63	65	* 70
Mozambique					
Columbite-tantalite	23	13	19	* 18	* 18
Nigeria					
Tantalite	* 60	* 60	28	19	920
Columbite	* 22	* 22	21	12	1 814
Rwanda					
Columbite-tantalite (b)	2 303	1 652	1 270	1 725	1 706
Uganda					
Columbite-tantalite	—	—	13	11	* 13
Canada					
Pyrochlore	* 13 000	* 11 600	* 11 600	* 11 600	* 11 600
Nb content	5 480	5 753	6 099	6 981	* 7 000
Bolivia					
Tantalite	23	1	—	9	59
Brazil					
Pyrochlore	* 170 000	152 709	132 275	153 169	* 150 000
Columbite-tantalite	* 10 000	21 975	10 518	12 455	* 12 500
China					
Columbite-tantalite	* 240	* 380	* 420	* 440	* 480
Malaysia					
Struverite	255	86	77	61	274
Australia					
Tantalite	—	250	38	74	84
World total concentrates (c)	* 200 000	* 200 000	* 160 000	* 190 000	* 190 000
Nb content	* 69 000	* 66 000	* 59 000	* 57 000	* 58 000
Ta content	* 1 100	* 1 300	* 1 200	* 1 300	* 1 600

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.

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

Production of refined tellurium

tonnes (metric)

Country	2014	2015	2016	2017	2018
Bulgaria	5	4	4	5	4
Russia	33	34	40	44	46
Sweden	31	33	39	35	45
Canada	9	9	18	17	* 17
USA	* 50	* 50	* 50	* 50	* 50
China	* 180	210	279	291	307
Japan	32	34	28	34	55

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	2014	2015	2016	2017	2018
Portugal	75	42	54	81	111
Russia	321	575	627	1 011	1 530
Spain	—	—	7	23	81
United Kingdom	—	—	160	255	* 230
Burundi	81	55	51	123	280
Congo, Democratic Republic	4 012	4 567	6 503	10 391	8 950
Egypt (a)	85	3	—	—	—
Niger	5	8	* 8	* 8	* 8
Nigeria	2 485	2 298	3 443	8 626	7 853
Rwanda (b)	3 751	2 423	2 236	2 999	2 979
Tanzania	59	134	104	68	6
Uganda	33	135	63	66	26
Bolivia	19 791	20 175	17 804	18 385	17 251
Brazil	25 534	18 900	15 183	17 081	* 17 000
Peru (c)	23 105	19 511	18 789	17 790	18 601
Burma	* 26 000	* 43 000	* 57 000	* 68 000	* 55 000
China	102 052	110 156	97 165	* 105 000	* 120 000
India (d)	19	10	9	13	* 16
Indonesia	88 300	70 400	69 500	83 200	84 000
Korea (Rep. of)	68	7	63	8	10
Laos	782	692	1 005	975	1 400
Malaysia	3 777	4 125	4 158	4 819	3 836
Mongolia (e)	* 60	* 3	* 25	* 16	* 26
Thailand	98	45	59	341	47
Vietnam	4 072	4 399	4 468	4 950	5 470
Australia	6 898	7 158	6 635	7 402	6 871
World total	311 000	309 000	305 000	352 000	352 000

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	2014	2015	2016	2017	2018
Belgium	9 718	8 788	8 474	9 652	9 329
Poland	2 263	2 059	2 903	3 380	3 817
Russia	—	—	—	800	1 000
Bolivia (a)	15 439	15 464	16 810	16 648	15 611
Brazil	22 334	16 531	17 235	16 500	* 16 500
Peru	24 460	20 396	19 390	17 906	18 255
China	187 094	167 204	182 498	182 176	177 717
India (b)	9	17	—	14	* —
Indonesia	* 69 800	* 67 400	* 66 900	78 070	83 015
Japan	1 746	1 688	1 620	1 624	1 647
Malaysia	34 971	30 209	26 802	27 172	27 085
Taiwan	* 2 600	* 2 700	* 2 800	* 3 000	* 2 800
Thailand	16 661	10 502	11 088	10 601	10 880
Vietnam	4 688	4 382	4 419	* 4 400	* 4 400
Australia	—	22	41	21	62
World total	392 000	347 000	361 000	372 000	372 000

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	2014	2015	2016	2017	2018
Norway					
Ilmenite	863 660	630 323	* 630 000	* 630 000	* 630 000
Russia					
Ilmenite	178 426	193 236	60 000	—	—
Ukraine					
Ilmenite	* 450 000	* 500 000	* 500 000	* 500 000	745 417
Rutile	* 110 000	* 90 000	* 90 000	* 90 000	106 858
Kenya					
Ilmenite	281 543	444 999	359 885	491 000	463 000
Rutile	52 465	78 947	69 975	87 167	98 132
Madagascar					
Ilmenite	333 736	166 290	267 962	430 479	381 924
Rutile	* 6 900	* 4 800	* 4 800	* 5 000	* 5 000
Mozambique					
Ilmenite	854 600	763 500	903 300	998 200	958 500
Rutile	6 100	6 000	7 800	9 100	8 200
Senegal					
Ilmenite	100 590	427 690	416 249	492 441	506 937
Leucoxene (a)	663	5 311	9 664	9 975	9 605
Sierra Leone					
Ilmenite	35 839	48 420	28 102	57 040	49 510
Rutile	115 078	126 021	148 541	165 470	108 320
South Africa					
Ilmenite (b)	* 1 105 000	* 1 280 000	* 1 020 000	* 550 000	* 500 000
Rutile	* 133 000	* 67 000	* 67 000	* 95 000	* 100 000

Production of titanium minerals

tonnes (metric)

Country	2014	2015	2016	2017	2018
Canada					
Ilmenite (b)(c)	* 2 500 000	* 1 900 000	* 1 800 000	* 2 300 000	* 2 000 000
USA	100 000	200 000	* 100 000	* 100 000	* 100 000
Brazil					
Ilmenite	81 278	78 991	63 815	* 60 000	* 60 000
Rutile	1 834	1 984	2 692	* 3 000	* 3 000
China					
Ilmenite	1 864 500	1 778 667	* 1 400 000	* 1 400 000	* 1 400 000
India					
Ilmenite (d)	643 128	626 135	594 978	* 580 000	* 580 000
Rutile (d)	15 617	16 723	14 898	* 14 600	* 14 600
Kazakhstan	* 17 000	* 17 000	* 17 000	* 17 000	* 17 000
Korea (Rep. of)					
Ilmenite	240 892	204 082	166 900	* 167 000	* 167 000
Malaysia					
Ilmenite	8 159	5 814	4 316	6 363	14 158
Rutile	3 069	198	3 810	5 266	5 070
Sri Lanka					
Ilmenite	32 972	39 439	26 159	53 734	60 847
Rutile	2 111	1 808	2 237	2 174	2 319
Vietnam					
Ilmenite	558 000	237 700	210 800	225 300	209 800
Australia					
Ilmenite (e)	1 138 000	1 146 935	765 399	693 763	543 210
Rutile (e)	340 700	294 600	284 772	227 462	204 761
Leucoxene (e)	241 000	246 000	73 380	57 148	69 183
World total					
Ilmenite (wt of concs)	11 400 000	10 700 000	9 300 000	9 700 000	8 800 000
Rutile (wt of concs)	800 000	700 000	700 000	700 000	700 000
All forms (TiO ₂ content)	6 300 000	5 900 000	5 100 000	5 300 000	4 800 000

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	2014	2015	2016	2017	2018
Austria	830	870	950	* 950	* 1 000
Portugal (a)	671	474	549	669	715
Russia	2 659	2 608	3 067	2 174	2 661
Spain	822	835	699	711	1 079
United Kingdom	—	195	923	1 370	* 1 240
Burundi	49	19	131	260	* 230
Congo, Democratic Republic	10	65	93	153	188
Rwanda (b)	1 342	1 081	1 040	923	1 178
Uganda	48	28	32	47	* 120
Zimbabwe	—	* 200	* 1 200	* 1 000	* —
Canada	2 689	2 114	—	—	—
Mexico	—	—	—	—	45
Bolivia	956	1 125	848	776	1 043
Brazil (c)	677	432	* 323	* 300	* 300
Peru	77	139	—	—	—
Burma (d)	* 143	* 140	* 170	* 310	* 290
China	65 369	66 545	63 956	71 737	59 932
Korea, Dem. P.R. of	* 70	* 70	* 50	* 300	* 1 370
Kyrgyzstan	* 100	* 100	* 100	* 100	* 100
Thailand (a)	110	38	37	52	31
Uzbekistan	* 300	* 300	* 300	* 300	* 300
Vietnam	4 134	5 123	6 357	6 483	5 486
Australia (e)	383	297	208	* 20	* 20
World total	81 400	82 800	81 000	88 600	77 300

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	2014	2015	2016	2017	2018
Czech Republic	165	134	128	59	34
Germany	33	—	45	34	—
Romania	* 77	* 77	* 50	* —	* —
Russia	2 990	3 055	3 005	2 917	2 904
Ukraine	* 926	* 1 200	* 1 005	* 550	* 1 180
Malawi	369	—	—	—	—
Namibia	3 311	2 950	3 657	4 846	5 882
Niger	4 156	4 115	3 478	3 485	2 910
South Africa	566	448	382	358	196
Canada	9 101	13 324	14 037	12 433	6 903
USA	1 884	1 287	1 123	941	565
Brazil	55	40	44	—	—
China	* 1 500	* 1 616	* 1 616	* 1 885	* 1 885
India	* 385	* 385	* 385	421	423
Kazakhstan	23 127	23 607	24 586	23 321	21 705
Pakistan	* 45	* 45	* 45	* 45	* 45
Uzbekistan	* 2 400	* 2 385	* 2 404	* 2 404	* 2 404
Australia	5 100	5 655	6 234	5 344	5 872
World total	56 200	60 300	62 200	59 000	52 900
World total (U ₃ O ₈ equivalent)	66 300	71 100	73 400	69 600	62 400

Note(s)

(1) Excluding uranium production from decommissioning operations.

Mine production of vanadium

tonnes (metal content)

Country	2014	2015	2016	2017	2018
Poland	3 040	3 080	2 930	2 720	2 640
Russia	15 125	16 196	16 886	18 636	17 052
South Africa	21 582	17 788	* 18 000	* 22 400	* 18 000
Brazil	578	3 254	4 461	5 206	5 505
China	* 48 000	* 45 000	* 41 000	* 40 000	* 40 000
Kazakhstan	* 1 000	* 1 000	* 1 000	* 1 000	* 1 000
World total	89 000	86 000	84 000	90 000	84 000

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	2014	2015	2016	2017	2018
Bulgaria	* 10 000	* 10 000	* 10 000	* 10 000	* 10 000
Russia	* 10 000	8 282	12 363	9 262	25 904
Turkey	716	425	1 050	1 618	* 1 600
Egypt	2 700	8 190	* —	* —	* —
Kenya	440	410	410	* 400	* 400
South Africa	143 007	138 290	166 483	166 084	141 346
Uganda	2 661	801	3 295	4 119	* 7 200
Zimbabwe (a)	29 767	60 868	29 020	23 302	33 161
Mexico	226	299	310	464	244
USA (a)	* 100 000	* 100 000	* 100 000	* 100 000	* 100 000
Argentina	* 90	* 90	* 100	* 100	* 100
Brazil (b)	58 000	49 000	72 000	* 70 000	* 70 000
China	* 15 000	* 15 000	* 15 000	* 15 000	* 15 000
India (c)	19 336	23 279	9 042	6 055	* 3 100

Note(s)

(a) Sold or used by producers

(b) Including beneficiated and directly shipped material

(c) Years ended 31 March following that stated

Production of wollastonite

tonnes (metric)

Country	2014	2015	2016	2017	2018
Finland	* 10 000	* 10 000	* 10 000	* 10 000	* 11 000
Spain	15 298	17 700	13 553	19 135	12 235
Mexico	54 579	57 451	63 683	98 449	145 814
USA	* 70 000	* 70 000	* 60 000	* 50 000	* 60 000
China	* 450 000	* 450 000	* 500 000	* 500 000	* 530 000
India (a)	186 524	175 348	166 186	153 049	* 169 000
Australia (b)	—	2 428	1 797	1 749	2 007

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	2014	2015	2016	2017	2018
Armenia	8 825	6 791	4 735	5 784	6 497
Bosnia & Herzegovina	7 837	8 946	9 670	10 235	10 603
Bulgaria (a)	11 872	15 616	18 795	19 232	21 700
Finland	46 100	25 332	45 852	66 284	85 335
Greece	23 085	13 174	18 866	17 300	21 400
Ireland, Republic of	282 600	236 300	147 797	130 580	131 742
Kosovo	5 514	3 986	4 814	4 468	3 619
Montenegro	7 200	7 068	8 100	8 800	9 700
North Macedonia	31 570	29 150	24 871	27 846	30 384
Poland	56 000	52 709	50 124	44 959	41 886
Portugal	67 378	61 921	69 527	71 356	75 435
Romania	* 3 300	* 3 000	* 1 600	* 800	* 300
Russia	192 000	206 000	248 000	292 000	315 000
Serbia	8 400	11 700	11 700	11 900	11 700
Slovakia	176	* 200	* 200	* 200	200
Spain	26 756	49 216	76 342	70 451	106 352
Sweden	221 841	246 983	258 264	251 244	237 715
Turkey	210 152	173 589	118 700	155 900	184 500
Algeria	—	50	314	* 500	* 500
Burkina Faso	64 976	68 804	81 422	92 731	99 162
Congo, Democratic Republic	12 737	12 675	12 587	12 377	1 047
Eritrea	—	—	40 900	95 400	125 000
Morocco	45 412	53 747	53 880	51 701	56 000
Namibia	173 665	123 529	124 749	123 112	100 904
Nigeria	* 7 000	* 7 000	* 9 660	* 6 840	11 700
South Africa	26 141	29 040	26 695	30 778	28 129
Sudan	* —	46	—	* —	* —
Tunisia	7 400	—	—	—	—
Canada	352 125	289 584	301 210	346 776	293 775
Cuba	—	—	—	—	* 40 000
Dominican Republic	—	4 655	3 636	3 920	4 038
Guatemala	13 394	14 810	14 975	6 100	—
Honduras	30 000	24 988	14 579	20 436	28 421
Mexico	659 878	786 774	661 646	671 444	662 355
USA	832 000	824 700	805 000	774 000	* 790 000
Argentina	47 981	33 787	26 680	26 800	20 000
Bolivia	450 542	443 172	489 293	527 206	519 630
Brazil	169 766	156 926	158 197	156 306	167 000
Chile	45 094	48 071	42 870	29 008	26 810
Peru	1 315 000	1 421 218	1 337 081	1 473 037	1 474 674
Burma	* 6 100	* 4 800	6 115	* 13 100	* 12 300
China	5 118 394	4 748 877	4 710 500	* 4 300 000	* 4 100 000
India (b)	766 730	740 737	755 778	783 992	* 723 000
Indonesia	700	19 300	8 500	13 900	20 100
Iran	* 150 000	168 200	157 300	140 000	130 000
Kazakhstan	378 100	369 300	357 000	345 000	345 000
Korea (Rep. of)	1 919	2 070	2 257	3 321	3 656
Korea, Dem. P.R. of	37 261	45 332	66 469	35 671	* 35 000
Laos	2 000	—	800	5 700	3 100
Mongolia	46 600	44 800	50 100	41 350	43 950
Pakistan (c)	—	—	7 702	19 457	26 979
Saudi Arabia	41 804	39 000	41 640	21 677	22 760
Tajikistan	* 54 300	50 400	73 900	41 231	84 213
Thailand	34 033	27 154	33 983	1 182	—
Uzbekistan	8 000	12 000	12 000	37 000	27 000
Vietnam	* 17 000	* 15 000	* 12 000	* 12 000	* 12 000
Australia	1 505 968	1 610 004	884 826	852 164	1 111 936
World total	13 600 000	13 400 000	12 500 000	12 300 000	12 400 000

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	2014	2015	2016	2017	2018
Belgium (a)	262 000	260 000	236 000	249 000	275 000
Bulgaria	76 293	75 095	75 811	73 715	75 150
Finland	302 024	305 717	290 599	284 992	295 029
France	171 000	169 000	149 000	166 000	155 000
Germany	168 000	173 000	168 000	174 000	180 000
Italy	138 100	140 200	139 500	128 800	131 600
Netherlands	290 000	291 000	283 000	248 000	268 000
Norway	165 600	162 878	170 541	172 086	190 570
Poland	154 000	161 500	161 200	162 247	159 739
Russia	223 000	229 600	247 300	256 700	254 600
Spain	498 000	509 000	507 000	523 000	526 000
Ukraine	8 100	700	100	—	—
Algeria	6 976	7 086	3 101	1 472	2 045
Namibia	118 665	71 818	90 739	83 105	58 176
Zambia	—	—	585	—	(a) 615
Canada	649 217	683 118	691 389	598 438	694 753
Mexico	320 923	326 642	321 159	327 003	336 378
USA	180 000	172 300	126 000	132 000	* 130 000
Argentina	29 100	30 300	—	—	—
Brazil	246 120	270 715	284 457	245 200	285 500
Peru	336 500	335 422	341 518	312 339	333 677
China	5 806 970	6 115 928	6 195 962	6 220 183	5 681 119
India (a)	732 792	758 944	672 010	791 461	* 688 000
Iran	145 000	138 000	135 000	140 000	130 000
Japan	583 021	566 619	533 689	523 919	521 110
Kazakhstan	324 946	323 848	325 820	331 018	317 965
Korea (Rep. of)	901 000	940 195	1 009 116	961 904	1 000 000
Korea, Dem. P.R. of	* 27 000	* 15 000	* 15 000	* 15 000	* 15 000
Thailand	65 694	74 121	72 813	30 018	—
Uzbekistan	72 000	55 000	68 000	70 000	59 000
Vietnam	10 800	10 500	10 800	10 900	* 10 900
Australia	481 573	489 030	464 176	462 095	489 967
World total	13 500 000	13 900 000	13 800 000	13 700 000	13 300 000

Note(s)

(a) Years ended 31 March following that stated

Production of zirconium minerals

tonnes (metric)

Country	2014	2015	2016	2017	2018
Russia (a)	7 900	7 334	7 800	7 200	7 400
Ukraine	* 27 000	* 25 000	* 22 000	* 25 000	21 614
Kenya	40 123	25 951	27 671	65 324	36 604
Madagascar	27 275	11 879	15 582	21 000	22 757
Mozambique	50 800	51 800	68 200	74 000	76 600
Nigeria	1 034	* 1 000	891	4 086	890
Senegal	9 040	45 248	52 627	61 562	64 278
Sierra Leone	2 416	1 389	* 1 400	* 1 400	* 1 400
South Africa	* 393 000	* 390 000	* 400 000	* 460 000	* 370 000
USA	* 70 000	50 000	* 50 000	50 000	* 100 000
Brazil (b)	23 659	22 647	21 302	* 20 000	* 20 000
China	* 33 500	* 33 500	* 33 500	* 33 500	* 33 500
India (c)	20 626	18 437	30 351	13 951	* 14 000
Indonesia (d)	* 21 000	* 31 000	* 35 000	* 29 000	* 54 000
Malaysia	677	826	653	1 595	509
Sri Lanka	1 335	614	7 749	24 486	24 500
Vietnam	* 7 000	* 1 000	* 6 000	* —	* 4 000
Australia (e)	581 600	607 836	620 136	583 339	404 310
World total	1 318 000	1 325 000	1 401 000	1 475 000	1 256 000

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	2014	2015	2016	2017	2018
Austria					
Sand and gravel (a)	30 276 160	29 469 566	29 347 490	29 658 112	29 110 797
Crushed rock (a)	26 946 973	24 744 662	24 862 807	25 451 296	27 684 134
Belgium					
Sand and gravel	* 19 000 000	* 19 000 000	* 20 000 000	* 19 000 000	* 20 000 000
Crushed rock	* 45 000 000	* 45 000 000	* 46 000 000	* 46 000 000	* 46 000 000
Bulgaria					
Sand and gravel	9 382 325	9 607 887	8 571 694	9 860 186	8 610 204
Crushed rock	22 190 713	27 515 503	19 379 125	16 444 761	21 468 893
Croatia					
Sand and gravel	3 496 693	3 544 899	3 444 036	3 766 684	3 646 945
Cyprus					
Crushed rock	4 039 087	3 941 378	5 482 913	7 034 430	7 978 133
Czech Republic					
Sand and gravel	17 668 000	19 546 000	18 338 000	19 848 000	20 473 000
Crushed rock	35 972 000	40 260 000	37 793 000	38 262 000	41 648 000
Denmark					
Sand and gravel	41 016 667	45 215 000	47 058 000	49 323 000	48 950 000
Crushed rock	223 000	233 000	232 000	283 000	537 000
Estonia					
Sand and gravel	3 164 640	7 035 400	7 269 100	9 857 700	9 136 000
Crushed rock	4 967 400	5 366 300	6 224 000	8 804 600	6 590 100
Finland					
Sand and gravel	* 32 000 000	* 32 000 000	* 35 000 000	* 28 200 000	* 28 000 000
Crushed rock	* 47 000 000	* 44 000 000	* 43 000 000	* 48 700 000	* 48 000 000
France					
Sand and gravel	126 598 000	117 875 000	120 382 000	123 865 000	* 123 900 000
Crushed rock	201 902 000	184 423 000	183 960 000	187 233 000	* 187 300 000
Germany					
Sand and gravel	238 000 000	239 000 000	247 000 000	257 000 000	259 000 000
Crushed rock	211 000 000	210 000 000	218 000 000	220 000 000	226 000 000
Greece					
Crushed rock	* 38 000 000	35 603 020	42 051 690	38 339 770	* 38 000 000
Hungary					
Sand and gravel	42 444 954	33 664 690	29 829 848	37 984 379	* 27 000 000
Crushed rock	8 526 891	10 213 538	9 002 304	9 097 923	* 9 100 000
Iceland					
Sand and gravel	* 291 000	* 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	* 23 000 000	* 23 000 000	* 23 000 000
Italy					
Sand and gravel	41 038 798	46 552 088	59 911 685	63 627 458	69 575 607
Crushed rock	39 669 853	54 850 643	52 783 855	55 355 009	28 736 677
Latvia					
Sand and gravel	12 491 577	9 716 013	9 181 594	11 417 545	13 668 753
Crushed rock	1 393 464	1 461 820	1 547 520	2 069 297	2 101 489
Lithuania					
Sand and gravel	7 164 096	7 751 342	8 227 013	9 805 230	9 992 563
Crushed rock	4 117 602	4 567 866	4 365 787	6 392 084	7 340 099
Malta					
Crushed rock	1 262 887	1 514 976	1 551 411	(b) 1 426 820	(b) 1 682 385
Montenegro					
Sand and gravel	289 469	258 120	178 906	173 670	55 611
Crushed rock	137 299	124 141	184 976	212 697	166 550
Netherlands					
Sand and gravel	48 000 000	61 900 000	55 900 000	43 600 000	* 40 000 000
Norway					
Sand and gravel	14 111 000	13 000 000	14 959 000	14 696 000	13 478 000
Crushed rock	64 828 000	61 000 000	70 043 000	75 845 000	80 301 000
Poland					
Sand and gravel (c)	* 136 000 000	* 140 000 000	* 140 000 000	* 153 000 000	* 153 000 000
Crushed rock	61 117 900	60 665 300	59 448 000	67 617 000	80 161 000
Portugal					
Sand and gravel	5 975 880	6 638 053	5 753 545	6 530 778	6 716 685
Crushed rock	26 539 817	25 339 949	25 939 048	28 784 558	29 517 766
Romania					
Sand and gravel	51 812 555	102 302 622	* 100 000 000	* 100 000 000	* 100 000 000
Crushed rock	35 115 670	40 091 390	* 40 000 000	* 40 000 000	* 40 000 000

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

tonnes (metric)

Country	2014	2015	2016	2017	2018
Slovakia					
Sand and gravel	3 863 467	1 199 550	1 306 800	1 743 489	2 096 000
Crushed rock	10 188 851	14 274 900	12 833 100	13 518 792	12 790 000
Slovenia					
Sand and gravel	2 799 006	2 943 870	1 833 732	2 047 403	1 810 666
Crushed rock	8 123 587	8 108 113	7 470 433	8 642 881	10 282 002
Spain					
Sand and gravel	33 600 000	34 000 000	31 000 000	37 000 000	41 500 000
Crushed rock	64 600 000	70 400 000	100 000 000	68 000 000	70 000 000
Sweden					
Sand and gravel	12 233 750	13 038 828	11 927 694	11 774 505	* 11 800 000
Crushed rock	68 034 725	75 271 803	75 720 385	84 467 197	* 84 500 000
Switzerland					
Sand and gravel	53 940 000	50 606 637	52 751 000	51 470 000	* 51 468 000
Crushed rock	2 401 627	2 463 037	2 324 800	2 194 123	2 199 875
United Kingdom					
Sand and gravel	61 158 000	66 443 000	68 075 000	67 548 000	69 300 000
Crushed rock (d)	108 708 000	119 401 000	125 301 000	125 739 000	128 600 000
European total	2 219 000 000	2 312 000 000	2 373 000 000	2 419 000 000	2 431 000 000

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.
- (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	2014	2015	2016	2017	2018
Austria	* 120 000	* 125 000	* 125 000	* 125 000	* 125 000
Belgium	* 900 000	* 900 000	* 850 000	800 584	809 079
Bulgaria	36 700	44 500	61 100	79 800	* 79 800
Cyprus	1 804 562	1 729 877	1 801 647	1 815 568	1 671 205
Czech Republic	2 792 101	2 919 190	3 188 086	3 236 047	3 514 288
Denmark	9 081	—	—	—	—
Estonia	721 000	356 000	328 900	517 900	505 300
France	13 146 000	12 513 000	12 528 000	12 357 000	* 13 000 000
Germany	23 871 000	23 355 000	23 423 000	* 23 400 000	* 23 400 000
Greece	7 025 675	* 6 000 000	5 891 157	7 088 107	6 548 049
Hungary	* 1 100 000	376 309	* 400 000	* 400 000	* 400 000
Italy	14 105 796	14 429 977	13 677 374	18 164 817	13 354 776
Latvia	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000	* 1 500 000
Luxembourg	* 700 000	* 700 000	* 700 000	* 700 000	* 700 000
Norway	1 364 866	1 284 156	1 306 292	1 461 477	1 429 400
Poland	11 865 500	11 278 400	12 075 300	12 996 500	14 221 000
Portugal	5 967 865	5 626 409	4 412 793	4 854 448	4 294 389
Romania	5 466 540	6 203 413	5 932 979	6 189 799	6 586 702
Serbia	1 122 964	1 218 213	1 311 629	* 1 300 000	* 1 300 000
Slovakia	* 1 600 000	* 1 700 000	* 1 700 000	* 1 800 000	* 1 900 000
Spain	16 968 987	16 985 662	17 341 318	17 304 352	18 266 325
Sweden	2 602 263	2 825 883	2 847 000	2 768 000	2 957 600
Turkey	58 598 068	61 971 380	67 856 234	70 812 559	70 343 788
United Kingdom	(a) 7 197 000	7 804 000	8 056 000	7 824 000	7 734 000
European total	181 000 000	182 000 000	187 000 000	197 000 000	195 000 000

Note(s)

(a) Great Britain only.

Production of finished cement

tonnes (metric)

Country	2014	2015	2016	2017	2018
Austria (a)	4 048 146	4 176 063	4 501 008	4 660 187	5 227 834
Belgium	6 364 000	6 275 000	6 255 000	6 491 000	* 6 500 000
Bulgaria (a)	1 770 508	2 040 853	1 951 286	2 064 792	2 215 912
Croatia	4 670 807	4 498 264	4 325 467	5 134 160	5 144 991
Cyprus	734 692	788 168	1 018 537	1 319 351	1 357 991
Czech Republic	3 691 000	3 781 000	3 937 000	4 033 854	4 427 713
Denmark	1 876 095	2 027 843	2 259 902	2 359 131	2 372 246
Estonia (a)	447 000	395 000	398 800	502 900	526 900
Finland (a)	1 255 468	1 188 387	1 335 248	1 510 974	1 462 240
France	16 426 000	15 597 000	15 934 000	16 851 000	* 17 000 000
Germany	32 099 000	31 160 000	32 674 000	33 991 150	33 654 985
Greece	5 563 414	5 291 113	6 680 078	6 334 960	* 6 400 000
Hungary	2 000 000	* 1 277 000	* 1 000 000	* 1 000 000	* 1 000 000
Ireland, Republic of	2 533 000	2 911 000	* 2 100 000	* 2 100 000	* 2 100 000
Italy	20 913 094	20 013 662	19 992 976	25 328 555	17 445 918
Latvia	1 197 000	1 018 000	* 1 000 000	* 1 000 000	* 1 000 000
Lithuania	902 733	979 565	1 009 936	1 023 437	1 150 635
Luxembourg	1 057 000	1 033 000	* 1 000 000	* 1 000 000	* 1 000 000
Netherlands	1 984 000	1 839 000	* 1 970 000	* 2 070 000	* 2 236 000
North Macedonia	660 035	671 542	855 295	900 836	920 810
Norway	1 693 379	1 647 566	1 745 614	1 924 388	1 856 800
Poland	15 594 900	15 265 200	15 782 400	17 254 400	18 957 000
Portugal (a)	5 480 202	5 050 802	4 100 010	3 792 733	3 963 088
Romania	7 621 129	8 356 162	8 037 717	8 441 574	8 951 154
Serbia	1 631 633	1 654 390	(a) 1 774 404	1 907 689	2 092 501
Slovakia	3 319 320	3 465 597	3 518 456	3 781 889	3 912 674
Slovenia	706 000	544 000	* 700 000	* 700 000	* 700 000
Spain	14 554 039	14 322 672	14 286 013	15 548 943	16 214 663
Sweden	2 883 710	2 766 983	2 795 000	3 067 400	3 152 300
Switzerland (b)	4 583 355	4 219 466	4 397 180	4 272 316	4 289 000
Turkey	72 412 441	71 418 945	75 403 325	80 552 257	72 544 430
United Kingdom	(c) 8 958 000	9 235 000	9 370 000	9 359 000	9 197 000
European total	250 000 000	245 000 000	252 000 000	270 000 000	259 000 000

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 total 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: Agrium; Alcoa SMZ; ALRO S.A; Aluar; Alumina Ltd; Aluminium Bahrain; Anglo Asian Mining Plc; AngloGold Ashanti; Arab Potash Company; ARMZ Uranium Holding Co; Ascendant Resources Inc; Asian Mineral Resources Ltd; Aura Minerals Inc; Autlan; Avesoro Resources Inc; AzerGold; B2Gold; Barrick Gold Corporation; BEB Erdgas und Erdöl GmbH & Co; Besra Gold Inc; BHP Group; Bikita Minerals; Boliden Group; Cámara Argentina del Acero; Camimex; Canadian Clay Products Inc; Cancero; Centamin Plc; Centerra Gold Inc; CI Resources Ltd; Conic Metals Corp; Dominion Salt; Dundee Precious Metals Inc; Elem; Emirates Global Aluminium; Endeavour Mining; Endiama EP; Eramet Group; ETI Aluminium Inc; EVRAZ Plc; Fenix Metals Ltd; First Quantum Mineral Ltd; Galaxy Resources; Gemfields Ltd; Glencore International AG; Grafitbergbau Kaisersberg GmbH; Gravita India Ltd; Grecian Magnesite SA; HeidelbergCement AG; Highlands Pacific Ltd; Hindalco Industries Ltd; Hudson Resources Inc; IAMGold Corporation; Inception Mining Inc; Israel Chemicals Company; 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; Malaysia Smelting Corporation; Managem Group; Mandalay Resources Ltd; Masan Resources Corporation; Maya Gold & Silver Inc; MedcoEnergy; Minera Alumbraera; MMG Limited; National Aluminium Company Ltd; Nedmag B.V.; Nemaska Lithium Inc; Nevsun Resources Ltd; Newcrest Mining Ltd; Newmont Mining Corporation; Nexa Resources S.A.; Nickel Asia Corporation; Nordgold; Norilsk Nickel; Norsk Hydro ASA; Northern Minerals; Nyrstar; OCP Group; OFZ Inc; OM Holdings Ltd; Orocobre Ltd; Orosur mining Inc; Orvana Minerals Corp; Outokumpu; Paladin Energy Ltd; Pan American; PanAust Ltd; PEMEX Petróleos Mexicanos; Peñoles; PhosAgro; Polymetal International PLC; PT Antam Tbk; PT Indonesia Asahan Aluminium; PT Merdeka Copper Gold Tbk, Indonesia; Qatalum; Qatar Steel Company; Rainbow Rare Earths Limited; Resolute Mining; Rio Tinto Ltd; Ronphos Corporation; Roxgold Inc;

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Information has also been obtained from the following organisations either by direct correspondence or by website consultation: Ministry of Mines and Petroleum, Afghanistan; National Agency of Natural Resource, Albania; Albanian Geological Survey, Albania; Institute of Statistics, Albania; Ministère de l'Energie et des Mines, Algeria; Office National des Statistiques, Algeria; Instituto Argentino del Petróleo y del Gas, Argentina; Statistical Committee of the Republic of Armenia; Department of Natural Resources and Mines (Queensland), Australia; Primary Industries and Resources SA (South Australia), Australia; Department of Primary Industries (Victoria), Australia; Department of Mines and Energy (Northern Territories), Australia; Mineral Resources Tasmania, Australia; Department of Mines Industry Regulation and Safety (Western Australia); NSW Department of Primary Industries (New South Wales), Australia; Office of chief economist, Australia; Statistik Austria; Federal Ministry of Science, Research and Economy, Austria; The State Statistical Committee of the Republic of Azerbaijan.

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Société Nationale des Hydrocarbures, Cameroon; la Banque des Etats de l'Afrique Centrale, Cameroon; Natural Resources Canada; Canadian Association of Petroleum Producers, Canada; The Chilean Copper Commission, Chile; Servicio Nacional de Geología y Minería, Chile; National Bureau of Statistics of China; China Non-Ferrous Metals Industry Association; Agencia Nacional de Minería, Columbia; Ministry of Mines and Energy, Columbia; Banque Centrale du Congo, Congo, Democratic Republic; Dirección de Geología y Minas, Costa Rica; Croatian Bureau of Statistics, Croatia; Ministry of Economy, Entrepreneurship and Crafts, Croatia; Oficina

Nacional de Estadísticas e Información, Cuba; Ministry of Agriculture Natural Resources and Environment, Cyprus; Czech Cement Association, Czech Republic; Czech Geological Survey, Czech Republic; Steel Union, Czech Republic.

Danish Energy Agency, Denmark; Statistics Denmark; Dirección General de Minería, Dominican Republic; Autoridade Nacional do Petróleo e Minerais, East Timor; Agencia de Regulación 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; Fédération Française 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; Bank of Ghana, Ghana; Ministry of Environment and Energy, Greece; Greek Institute of Geology and Mineral Exploration, Greece; Greek Statistical Authority, Greece; Greek Mining Enterprises Association, Greece; Ministerio de Energía y Minas, Guatemala; Direction Nationale de la Statistique, Guinea; Bank of Guyana.

Mining and Geological Survey of Hungary, Hungary; Hungarian Central Statistical Office, Hungary; Statistics Iceland; Indian Bureau of Mines, India; Ministry of Mines, India; Ministry of Steel, India; Office of the Salt Commissioner, 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 National Infrastructure, Energy and Water, Israel; Italian National Institute of Statistics, Italy; National Association of Non-Ferrous Metals Industries, Italy.

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