

MINERAL COMMODITY SUMMARIES 2017

Abrasives
Aluminum
Antimony
Arsenic
Asbestos
Barite
Bauxite
Beryllium
Bismuth
Boron
Bromine
Cadmium
Cement
Cesium
Chromium
Clays
Cobalt
Copper
Diamond
Diatomite
Feldspar

Fluorspar
Gallium
Garnet
Gemstones
Germanium
Gold
Graphite
Gypsum
Hafnium
Helium
Indium
Iodine
Iron and Steel
Iron Ore
Iron Oxide Pigments
Kyanite
Lead
Lime
Lithium
Magnesium
Manganese

Mercury
Mica
Molybdenum
Nickel
Niobium
Nitrogen
Palladium
Peat
Perlite
Phosphate Rock
Platinum
Potash
Pumice
Quartz Crystal
Rare Earths
Rhenium
Rubidium
Salt
Sand and Gravel
Scandium
Selenium

Silicon
Silver
Soda Ash
Stone
Strontium
Sulfur
Talc
Tantalum
Tellurium
Thallium
Thorium
Tin
Titanium
Tungsten
Vanadium
Vermiculite
Wollastonite
Yttrium
Zeolites
Zinc
Zirconium

Cover: 160913-N-KR702-410 STRAIT OF GEORGIA (Sept. 13, 2016) The Arleigh-Burke-class guided-missile destroyer USS Shoup (DDG 86) conducts a high-speed turn during a torpedo evasion exercise. Shoup is underway conducting routine training exercise. (U.S. Navy photo by Mass Communication Specialist 2nd Class/Released)

MINERAL COMMODITY SUMMARIES 2017

Abrasives	Fluorspar	Mercury	Silicon
Aluminum	Gallium	Mica	Silver
Antimony	Garnet	Molybdenum	Soda Ash
Arsenic	Gemstones	Nickel	Stone
Asbestos	Germanium	Niobium	Strontium
Barite	Gold	Nitrogen	Sulfur
Bauxite	Graphite	Palladium	Talc
Beryllium	Gypsum	Peat	Tantalum
Bismuth	Hafnium	Perlite	Tellurium
Boron	Helium	Phosphate Rock	Thallium
Bromine	Indium	Platinum	Thorium
Cadmium	Iodine	Potash	Tin
Cement	Iron and Steel	Pumice	Titanium
Cesium	Iron Ore	Quartz Crystal	Tungsten
Chromium	Iron Oxide Pigments	Rare Earths	Vanadium
Clays	Kyanite	Rhenium	Vermiculite
Cobalt	Lead	Rubidium	Wollastonite
Copper	Lime	Salt	Yttrium
Diamond	Lithium	Sand and Gravel	Zeolites
Diatomite	Magnesium	Scandium	Zinc
Feldspar	Manganese	Selenium	Zirconium

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GEMSTONES¹

(Data in million dollars unless otherwise noted)

Domestic Production and Use: The combined value of U.S. natural and synthetic gemstone output in 2016 was an estimated \$65.9 billion, a 4% increase compared with that of 2015. Domestic gemstone production included agate, beryl, coral, diamond, garnet, jade, jasper, opal, pearl, quartz, sapphire, shell, topaz, tourmaline, turquoise, and many other gem materials. In decreasing order of production value, Idaho, Arizona, Oregon, California, Montana, Arkansas, Maine, Colorado, North Carolina, Nevada, Texas, and Utah produced 90% of U.S. natural gemstones. Synthetic gemstones were manufactured by six firms in North Carolina, New York, Michigan, South Carolina, California, and Arizona, in decreasing order of production value. Major gemstone uses were carvings, gem and mineral collections, and jewelry. The apparent consumption in the table below is much lower than the actual consumption because the value of exports includes the value of reexports.

Salient Statistics—United States:	2012	2013	2014	2015	2016^e
Production: ²					
Natural ³	11.3	9.6	9.5	8.5	8.5
Laboratory-created (synthetic)	31.2	56.9	51.0	55.1	57.3
Imports for consumption	21,500	24,700	26,400	25,100	25,600
Exports, including reexports ⁴	16,900	19,400	21,300	18,500	19,500
Consumption, apparent	4,640	5,400	5,160	6,660	6,170
Price	Variable, depending on size, type, and quality				
Employment, mine, number ^e	1,100	1,100	1,100	1,100	1,100
Net import reliance ⁵ as a percentage of apparent consumption	99	99	99	99	99

Recycling: Gemstones are often recycled by being resold as estate jewelry, reset, or recut, but this report does not account for those stones.

Import Sources (2012–15 by value): Israel, 37%; India, 29%; Belgium, 19%; South Africa, 4%; and other, 11%. Diamond imports accounted for 92% of the total value of gem imports.

Tariff:	Item	Number	Normal Trade Relations 12–31–16
	Coral and similar materials, unworked	0508.00.0000	Free.
	Imitation gemstones	3926.90.4000	2.8% ad val.
	Pearls, imitation, not strung	7018.10.1000	4.0% ad val.
	Pearls, Imitation, glass beads	7018.10.2000	Free.
	Pearls, natural, graded, temporarily strung	7101.10.3000	Free.
	Pearls, natural, not elsewhere specified or included	7101.10.6000	Free.
	Pearls, cultured	7101.21.0000	Free.
	Diamond, unworked or sawn	7102.31.0000	Free.
	Diamond, ½ carat or less	7102.39.0010	Free.
	Diamond, cut, more than ½ carat	7102.39.0050	Free.
	Jadeite, unworked	7103.10.2020	Free.
	Other gemstones, unworked	7103.10.2080	Free.
	Other gemstones, other	7103.10.4080	10.5% ad val.
	Rubies, cut	7103.91.0010	Free.
	Sapphires, cut	7103.91.0020	Free.
	Emeralds, cut	7103.91.0030	Free.
	Jadeite, cut but not set	7103.99.1020	Free.
	Other gemstones, cut but not set	7103.99.1080	Free.
	Jadeite, otherwise worked	7103.99.5020	10.5% ad val.
	Other gemstones, otherwise worked	7103.99.5080	10.5% ad val.
	Synthetic gemstones, cut but not set	7104.90.1000	Free.
	Synthetic gemstones, other	7104.90.5000	6.4% ad val.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

GEMSTONES

Events, Trends, and Issues: In 2016, the U.S. market for gem-quality diamonds was estimated to be about \$23.5 billion, which was a slight increase compared with \$23.2 billion in 2015. The domestic market for natural, nondiamond gemstones was estimated to be about \$2.18 billion, which was an 11% increase compared with \$1.97 billion in 2015. The United States accounted for more than 35% of the world's diamond consumption and is expected to continue to dominate global gemstone demand.

Increases in U.S. synthetic gemstone production are the result of the addition of a new synthetic diamond manufacturing firm and the reopening of a synthetic gemstone manufacturing firm in California. A South Carolina synthetic diamond manufacturing firm added new manufacturing equipment that greatly increased its capacity. The synthetic diamond manufacturing firm that was in Florida moved its production facilities offshore to Singapore and its offices to New Jersey.

During 2016, several new diamond mines opened globally. Among them were two in Canada, the Gahcho Kué Mine in the Northwest Territories, which is expected to be one of the world's largest diamond mines, and the Renard Mine in Quebec. Four new mines opened in Lesotho—the Lihobong, Mothae, Kolo, and Lemphane Mines.

World Gem Diamond Mine Production and Reserves:

	Mine production ⁶		Reserves ⁷
	2015	2016 ^e	
United States	(⁸)	(⁸)	World reserves of diamond-bearing deposits are substantial. No reserve data are available for other gemstones.
Angola	8,110	8,100	
Australia	271	270	
Botswana	14,500	15,000	
Brazil	32	32	
Canada	11,700	13,000	
Congo (Brazzaville)	40	40	
Congo (Kinshasa)	3,200	2,800	
Ghana	174	170	
Guinea	134	134	
Guyana	118	118	
Lesotho	304	304	
Namibia	2,050	2,050	
Russia	23,500	23,500	
Sierra Leone	400	400	
South Africa	5,770	2,800	
Tanzania	163	163	
Zimbabwe	349	350	
Other countries	75	540	
World total (rounded)	70,900	70,000	

World Resources: Most diamond-bearing ore bodies have a diamond content that ranges from less than 1 carat per ton to about 6 carats per ton of ore. The major gem diamond reserves are in southern Africa, Australia, Canada, and Russia.

Substitutes: Plastics, glass, and other materials are substituted for natural gemstones. Synthetic gemstones (manufactured materials that have the same chemical and physical properties as gemstones) are common substitutes. Simulants (materials that appear to be gems, but differ in chemical and physical characteristics) also are frequently substituted for natural gemstones.

^eEstimated.

¹Excludes industrial diamond and garnet. See Diamond (Industrial) and Garnet (Industrial).

²Estimated minimum production.

³Includes production of freshwater shell.

⁴Reexports account for between 67% and 92% of the totals.

⁵Defined as imports – exports and reexports.

⁶Data in thousands of carats of gem diamond.

⁷See Appendix C for resource and reserve definitions and information concerning data sources.

⁸Less than ½ unit.