IRON OXIDE PIGMENTS

(Data in metric tons unless otherwise noted)

Domestic Production and Use: Iron oxide pigments (IOPs) were mined domestically by two companies in two States. Mine production, which was withheld to avoid disclosing company proprietary data, decreased in 2019 from that of 2018. Five companies, including the two producers of natural IOPs, processed and sold about 38,000 tons of finished natural and synthetic IOPs with an estimated value of $52 million, significantly below the most recent sales peak of 88,100 tons in 2007. About 59% of natural and synthetic finished IOPs were used in concrete and other construction materials; 11% in plastics; 7% in coatings and paints; 5% in foundry sands and other foundry uses; 3% each in animal food, industrial chemicals, and glass and ceramics; and 9% in other uses.

Salient Statistics—United States:	2015	2016	2017	2018	2019[e]
Mine production, crude	W	W	W	W	W
Sold or used, finished natural and synthetic IOP	53,500	48,500	47,300	48,200	38,000
Imports for consumption	176,000	179,000	179,000	179,000	160,000
Exports, pigment grade	8,930	15,800	13,500	11,100	9,900
Consumption, apparent[1]	221,000	212,000	213,000	216,000	190,000
Price, average value, dollars per kilogram[2]	1.46	1.46	1.46	1.58	1.40
Employment, mine and mill	55	60	60	60	55
Net import reliance[3] as a percentage of:					
Apparent consumption	W	W	W	W	W
Reported consumption	>50	>50	>50	>50	>50

Recycling: None.

Import Sources (2015–18): Natural: Spain, 43%; Cyprus, 36%; Austria, 10%; France, 9%; and other, 2%. Synthetic: China, 50%; Germany, 28%; Brazil, 6%, Canada, 4%, and other, 12%. Total: China, 48%; Germany, 28%; Brazil, 6%; Canada, 4%; and other, 14%.

Tariff: Item	Number	Normal Trade Relations 12–31–19
Natural:		
Micaceous iron oxides	2530.90.2000	2.9% ad val.
Earth colors	2530.90.8015	Free.
Iron oxides and hydroxides containing 70% or more by weight Fe_2O_3:		
Synthetic:		
Black	2821.10.0010	3.7% ad val.
Red	2821.10.0020	3.7% ad val.
Yellow	2821.10.0030	3.7% ad val.
Other	2821.10.0040	3.7% ad val.
Earth colors	2821.20.0000	5.5% ad val.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

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Events, Trends, and Issues: In 2019, domestic mine production of crude ntural IOPs decreased owing to a major producer reducing mine output to draw down stocks after excess crude production in 2016 and 2017. Production and sales of finished natural and synthetic IOPs decreased by about 21%. Production and sales of synthetic IOPs also decreased in 2019, owing in part to a decrease in natural-disaster-related construction and refurbishment projects. In the United States, residential construction, in which IOPs are commonly used to color concrete block and brick, ready-mixed concrete, and roofing tiles, remained about the same during the first 9 months of 2019 compared with that of the same period in 2018. Housing starts decreased slightly.

Exports of pigment-grade IOPs decreased by about 11% during the first 9 months of 2019 compared with that during the same period in 2018, mostly owing to a significant decrease in exports to Malaysia, the Netherlands, and Thailand. More than 87% of pigment-grade IOPs went to Mexico, China, Belgium, Chile, Brazil, Thailand, the United Kingdom, and Germany, in descending order of quantity. Exports of other grades of iron oxides and hydroxides, nearly double those of pigment grade, increased by about 47% during the first 9 months of 2019 compared with those of the same period in 2018. About 98% of exports of other grades of iron oxides and hydroxides went to Spain, Canada, China, Mexico, Israel, Argentina, and Australia in descending order of quantity. Total imports of natural and synthetic IOPs decreased slightly in 2019 compared with those in 2018.

World Mine Production and Reserves: Reserves for Pakistan were revised based on Government information.

	Mine production		Reserves[4]
	2018	2019[e]	
United States	W	W	Moderate
Austria (micaceous IOP)	3,500	3,500	NA
Cyprus (umber)	3,300	4,000	Moderate
France	8,000	8,000	NA
Germany[5]	370,000	360,000	Moderate
India (ocher)	2,000,000	2,000,000	37,000,000
Italy	35,000	9,000	NA
Pakistan (ocher)	70,000	70,000	100,000
Spain (ocher and red iron oxide)	18,000	18,000	Large
World total	[6]NA	[6]NA	Large

World Resources: Domestic and world resources for production of IOPs are adequate. Adequate resources are available worldwide for the manufacture of synthetic IOPs.

Substitutes: Milled IOPs are thought to be the most commonly used natural minerals for pigments. Because IOPs are color stable, low cost, and nontoxic, they can be economically used for imparting black, brown, red, and yellow coloring in large and relatively low-value applications. Other minerals may be used as colorants, but they generally cannot compete with IOPs because of their higher costs and more limited availability. Synthetic IOPs are widely used as colorants and compete with natural IOPs in many color applications. Organic colorants are used for some colorant applications, but many of the organic compounds fade over time from exposure to sunlight.

[e]Estimated. NA Not available. W Withheld to avoid disclosing company proprietary data.

[1]Defined as sold or used finished natural and synthetic IOPs + imports – exports.

[2]Average unit value for finished iron oxide pigments sold or used by U.S. producers.

[3]Defined as imports – exports.

[4]See Appendix C for resource and reserve definitions and information concerning data sources.

[5]Includes natural and synthetic IOP.

[6]A significant number of other countries, including Azerbaijan, Brazil, China, Honduras, Iran, Kazakhstan, Lithuania, Paraguay, Russia, South Africa, Turkey, Ukraine, and the United Kingdom, are thought to produce IOPs, but output was not reported and no basis was available to make reliable estimates of production.