

CHROMIUM

(Data in thousand metric tons gross weight unless otherwise noted)

Domestic Production and Use: In 2013, the United States was expected to consume about 6% of world chromite ore production in various forms of imported materials, such as chromite ore, chromium chemicals, chromium ferroalloys, chromium metal, and stainless steel. One U.S. company mined chromite ore in Oregon from which it produced foundry sand. Imported chromite ore was consumed by one chemical firm to produce chromium chemicals. One company produced chromium metal. Stainless- and heat-resisting-steel producers were the leading consumers of ferrochromium. Stainless steels and superalloys require chromium. The value of chromium material consumption in 2012 was \$952 million as measured by the value of net imports, excluding stainless steel, and was expected to be about \$780 million in 2013.

Salient Statistics—United States: ¹	2009	2010	2011	2012	2013^e
Production:					
Mine	—	—	—	NA	NA
Recycling ²	141	144	147	146	236
Imports for consumption	273	499	531	554	459
Exports	280	274	232	234	224
Government stockpile releases	25	15	4	4	4
Consumption:					
Reported (includes recycling)	369	396	400	402	493
Apparent ³ (includes recycling)	160	384	450	470	471
Unit value, average annual import (dollars per metric ton):					
Chromite ore (gross quantity)	227	212	355	392	360
Ferrochromium (chromium content)	2,085	2,564	2,603	2,362	2,195
Chromium metal (gross quantity)	9,896	11,322	14,090	13,333	11,379
Stocks, yearend, held by U.S. consumers	7	7	8	8	8
Net import reliance ⁴ as a percentage of apparent consumption	12	63	67	69	50

Recycling: In 2013, recycled chromium (contained in reported stainless steel scrap receipts) accounted for 50% of apparent consumption.

Import Sources (2009–12): Chromite mineral: South Africa, 100%. Chromium-containing scrap: Canada, 61%; Mexico, 34%; and other, 5%. Chromium primary metal: South Africa, 29%; Kazakhstan, 20%; Russia, 12%; China, 5%; and other 34%. Total imports: South Africa, 36%; Kazakhstan, 16%; Russia, 10%; Mexico, 5%; and other, 33%.

Tariff: ⁵	Item	Number	Normal Trade Relations
			12–31–13
	Ore and concentrate	2610.00.0000	Free.
	Ferrochromium:		
	Carbon more than 4%	7202.41.0000	1.9% ad val.
	Carbon more than 3%	7202.49.1000	1.9% ad val.
	Other:		
	Carbon more than 0.5%	7202.49.5010	3.1% ad val.
	Other	7202.49.5090	3.1% ad val.
	Ferrochromium silicon	7202.50.0000	10% ad val.
	Chromium metal:		
	Unwrought, powder	8112.21.0000	3% ad val.
	Waste and scrap	8112.22.0000	Free.
	Other	8112.29.0000	3% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

Government Stockpile: In FY 2014, the DLA Strategic Materials announced maximum disposal limits for chromium materials of 88,050 t of ferrochromium and 454 t of chromium metal.

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Stockpile Status—9–30–13⁶

Material	Uncommitted inventory	Authorized for disposal	Disposal plan FY 2013	Disposals FY 2013	Average chromium content
Ferrochromium:					
High-carbon	88.6	—	⁷ 90.7	*8.92	71.4%
Low-carbon	45.6	—	(⁷)	*5.24	71.4%
Chromium metal	4.09	—	0.454	—	100%

Events, Trends, and Issues: China is the leading chromium-consuming country and the leading stainless steel producer. Chromium is consumed in the form of ferrochromium to produce stainless steel. China produced 17 to 18 million metric tons of stainless steel and produced 3 million metric tons of high-carbon ferrochromium, the leading chromium ferroalloy used to make stainless steel. Anticipating a 500,000 ton-per-year-increase in stainless steel production, China's ferrochromium industry increased production capacity by 1.5 million metric tons. China's chromite ore imports were expected to increase to support increased ferrochromium production as were its ferrochromium imports to supplement that domestically produced for stainless steel production. South Africa was the leading chromite ore and ferrochromium producer upon whom world stainless steel producers depend directly or indirectly for chromium supply. South Africa's electrical power generating group declared an emergency because of the country's constrained electrical power supply. The power group negotiated short-term buyback deals with ferrochromium producers.

World Mine Production and Reserves:

	Mine production ⁸		Reserves ⁹ (shipping grade) ¹⁰
	<u>2012</u>	<u>2013^e</u>	
United States	NA	NA	620
India	3,900	3,900	54,000
Kazakhstan	4,000	4,000	230,000
South Africa	11,000	11,000	200,000
Other countries	<u>6,700</u>	<u>7,100</u>	NA
World total (rounded)	<u>25,600</u>	<u>26,000</u>	>480,000

World Resources: World resources are greater than 12 billion tons of shipping-grade chromite, sufficient to meet conceivable demand for centuries. About 95% of the world's chromium resources is geographically concentrated in Kazakhstan and southern Africa; U.S. chromium resources are mostly in the Stillwater Complex in Montana.

Substitutes: Chromium has no substitute in stainless steel, the leading end use, or in superalloys, the major strategic end use. Chromium-containing scrap can substitute for ferrochromium in some metallurgical uses.

^eEstimated. NA Not available. — Zero.

¹Data in thousand metric tons of contained chromium unless otherwise noted.

²Recycling production is based on reported stainless steel scrap receipts.

³Calculated consumption of chromium; equal to production (from mines and recycling) + imports – exports + stock adjustments.

⁴Defined as imports – exports + adjustments for Government and industry stock changes.

⁵In addition to the tariff items listed, certain imported chromium materials (see 26 U.S.C. sec. 4661, 4662, and 4672) are subject to excise tax.

⁶See Appendix B for definitions.

⁷Disposal plan for ferrochromium without distinction between high-carbon and low-carbon ferrochromium; total included in high-carbon.

⁸Mine production units are thousand metric tons, gross weight, of marketable chromite ore.

⁹See Appendix C for resource/reserve definitions and information concerning data sources.

¹⁰Reserves units are thousand metric tons of shipping-grade chromite ore, which is deposit quantity and grade normalized to 45% Cr₂O₃.

*Corrections posted on March 27, 2014.