CHROMIUM

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

<u>Domestic Production and Use</u>: In 2007, the United States consumed about 11% 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. Imported chromite was consumed by one chemical firm to produce chromium chemicals. One company produced ferrochromium and chromium metal. Stainless- and heat-resisting-steel producers were the leading consumers of ferrochromium. Superalloys require chromium. The value of chromium material consumption was about \$408 million as measured by the value of net imports excluding stainless steel.

Salient Statistics—United States:1	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	2007 ^e
Production:	·		·	· 	· · · · · · · · · · · · · · · · · · ·
Primary		_	_	W	W
Secondary	250	233	255	235	240
Imports for consumption	441	489	503	520	510
Exports	188	171	220	212	210
Government stockpile releases	83	94	91	103	90
Consumption:					
Reported (includes scrap)	424	444	431	437	440
Apparent ² (includes scrap)	585	647	629	645	630
Unit value, average annual import (dollars per metric ton):					
Chromite ore (gross weight)	54	114	140	141	175
Ferrochromium (chromium content)	835	1,322	1,425	1,290	1,555
Chromium metal (gross weight)	5,271	5,823	8,007	8,181	7,859
Stocks, yearend, held by U.S consumers	10	8	9	10	10
Net import reliance ³ as a percentage of apparent					
consumption	57	64	59	64	62

Recycling: In 2007, recycled chromium (that contained in reported stainless steel scrap receipts adjusted for stainless steel and chromium metal scrap trade) accounted for 38% of apparent consumption.

<u>Import Sources (2003-06):</u> Chromium contained in chromite ore and chromium ferroalloys and metal: South Africa, 34%; Kazakhstan, 18%; Russia, 7%; Zimbabwe, 6%; and other, 35%.

Tariff: ⁴ Item	Number	Normal Trade Relations 12-31-07
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).

<u>Government Stockpile</u>: In fiscal year (FY) 2007, which ended on September 30, 2007, the Defense Logistics Agency, Defense National Stockpile Center (DNSC), disposed of 152,000 tons of high-carbon ferrochromium, 72,500 tons of low-carbon ferrochromium, and 139 tons of chromium metal. Metallurgical-grade chromite ore stocks were exhausted in FY 2002; chemical- and refractory-grade chromite ore stocks were exhausted in FY 2004; ferrochromium silicon stocks were exhausted in FY 2002. The DNSC announced maximum disposal limits for FY 2008 of about 45,000 tons of refractory-grade chromite ore, 136,000 tons of ferrochromium (high- and low-carbon combined), and 907 tons of chromium metal. At the current maximum disposal rate, ferrochromium stocks will be exhausted in FY 2011, and chromium metal in FY 2013.

CHROMIUM

Stockpile Status—9-30-075

Uncommitted inventory	Committed inventory	Authorized for disposal	Disposal plan FY 2007	Disposals FY 2007	chromium content
_	_		4.54	_	28.6%
_	_	_		_	^e 23.9%
113	_	265	⁶ 136	152	71.4%
61		134	(⁶)	72.5	71.4%
5.15		5.28	0.907	0.139	100%
	inventory — — 113 61	inventory inventory — — — — — — — — — — — — — — — — — — —	inventory inventory for disposal — — — — — — 113 — 265 61 — 134	inventory inventory for disposal FY 2007	inventory inventory for disposal FY 2007 FY 2007 — — 4.54 — — — 84.4 — 113 — 265 6136 152 61 — 134 (6) 72.5

Events, Trends, and Issues: The price of ferrochromium reached historically high levels in 2007. China's role as a chromium consumer grew along with its stainless steel production industry. China's importance as a consumer of raw materials increased owing to its strong economic growth and the expansion of its stainless steel production. China's growth was generally recognized as the leading cause of increased chromium demand. Chinese stainless steel production exceeded that of the United States beginning in 2004 and by 2007 was 142% greater than that of the United States.

World Mine Production, Reserves, and Reserve Base:

	Mine production ⁷		Reserves ⁸	Reserve base8
	<u>2006</u>	2007 ^e	(shipping grade) ⁹	
United States	W	W	110	120
India	3,600	3,600	25,000	57,000
Kazakhstan	3,600	3,600	290,000	470,000
South Africa	7,418	7,500	160,000	270,000
Other countries	4,970	5,000	<u>NA</u>	<u>NA</u>
World total (rounded)	19,600	20,000	NA	NA

<u>World Resources</u>: 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.

<u>Substitutes</u>: 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 metallurgical uses.

^eEstimated. NA Not available. W Withheld to avoid disclosing company proprietary data. — Zero.

¹Data in thousand metric tons of contained chromium unless otherwise noted. Revisions (to 2003-06 production, trade, and apparent consumption) principally based on the reevaluation of import and export data by adding stainless steel mill products, which account for an increasing amount of chromium introduced to the U.S. economy, and on accounting for the role of stainless steel scrap trade in secondary production.

²Calculated consumption of chromium; equal to production (from mines and scrap) + imports – exports + stock adjustments.

³Defined as imports – exports + adjustments for Government and industry stock changes.

⁴In 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. ⁵See Appendix B for definitions

⁶Disposal plan for ferrochromium without distinction between high-carbon and low-carbon ferrochromium; total included in high-carbon.

⁷Mine production units are thousand metric tons, gross weight, of marketable chromite ore.

⁸See Appendix C for definitions.

⁹Reserves and reserve base units are thousand metric tons of shipping-grade chromite ore, which is deposit quantity and grade normalized to 45% Cr₂O₃.