

CHROMIUM

(Data in thousand metric tons, chromium content, unless otherwise specified)

Domestic Production and Use: In 2024, the United States consumed an estimated 4% of world chromite ore production in various forms of imported materials, such as chromite ore, chromium chemicals, ferrochromium, chromium metal, and stainless steel. Imported chromite ore was consumed by one chemical company to produce chromium chemicals. Stainless-steel and heat-resisting-steel producers were the leading consumers of ferrochromium. Stainless steels and superalloys require the addition of chromium via ferrochromium or chromium-containing scrap. The value of chromium material consumption was estimated to be \$900 million in 2024 (as measured by the value of net imports, excluding stainless steel), which was a 6% increase from \$846 million in 2023.

<u>Salient Statistics—United States:</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024^e</u>
Production:					
Mine	—	—	—	—	—
Secondary ¹	119	114	91	126	100
Imports for consumption ²	448	571	610	451	500
Exports ²	138	114	132	148	160
Shipments from Government stockpile ³	5	7	5	NA	NA
Consumption (includes recycling):					
Reported	387	364	275	^e 290	300
Apparent ⁴	433	579	574	429	440
Price: ⁵					
Chromite ore (gross weight), dollars per metric ton	158	199	277	321	340
Ferrochromium (chromium content), dollars per pound ⁶	0.89	1.50	3.19	2.55	1.80
Chromium metal (gross weight), dollars per pound	3.10	4.23	7.20	5.05	5.60
Stocks, consumer, yearend	6	6	5	^e 5	5
Net import reliance ⁷ as a percentage of apparent consumption	73	80	84	71	77

Recycling: In 2024, recycled chromium (contained in reported stainless-steel scrap receipts) accounted for 23% of apparent consumption.

Import Sources (2020–23): Chromite (ores and concentrates): South Africa, 96%; Turkey, 3%; and other, 1%. Chromium-containing scrap:⁸ Canada, 51%; Mexico, 43%; and other, 6%. Chromium (primary metal):⁹ South Africa, 25%; Kazakhstan, 14%; Finland, 7%; Russia, 6%; and other, 48%. Chromium-containing chemicals: Kazakhstan, 24%; China,¹⁰ 18%; Germany, 17%; Italy, 12%; and other, 29%. Total imports: South Africa, 32%; Kazakhstan, 11%; Canada, 6%; Finland, 6%; and other, 45%.

<u>Tariff:</u>	<u>Item</u>	<u>Number</u>	<u>Normal Trade Relations</u> <u>12–31–24</u>
Chromium ores and concentrates:			
	Not more than 40% chromic oxide (Cr ₂ O ₃)	2610.00.0020	Free.
	More than 40% but less than 46% Cr ₂ O ₃	2610.00.0040	Free.
	More than or equal to 46% Cr ₂ O ₃	2610.00.0060	Free.
Ferrochromium:			
	More than 4% carbon	7202.41.0000	1.9% ad valorem.
	More than 3% but less than 4% carbon	7202.49.1000	1.9% ad valorem.
	More than 0.5% but less than 3% carbon	7202.49.5010	3.1% ad valorem.
	Not more than 0.5% carbon	7202.49.5090	3.1% ad valorem.
	Ferrosilicon chromium	7202.50.0000	10% ad valorem.
	Stainless-steel scrap	7204.21.0000	Free.
Chromium metal:			
	Unwrought, powder	8112.21.0000	3% ad valorem.
	Waste and scrap	8112.22.0000	Free.
	Other	8112.29.0000	3% ad valorem.

Depletion Allowance: 22% (domestic), 14% (foreign).

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Government Stockpile (gross weight):¹¹

<u>Material</u>	<u>FY 2024</u>		<u>FY 2025</u>	
	<u>Potential acquisitions</u>	<u>Potential disposals</u>	<u>Potential acquisitions</u>	<u>Potential disposals</u>
Ferrochromium ¹²	—	21.8	—	21.8
Chromium metal	—	0.454	—	0.454

Events, Trends, and Issues: South Africa was the leading chromite ore producer. Global chromite ore mine production was estimated to have increased by 4 in% 2024 compared with production in 2023. Production in South Africa, the world's leading producer of chromite, increased by an estimated 7% compared with production in 2023, largely owing to an increase in the average price of chromite ore. However, challenges related to deep-level mining, increased labor costs, ongoing issues with rail transportation, and an unreliable supply of electricity could affect production in South Africa.

China was the leading ferrochromium- and stainless-steel-producing country and the leading chromium-consuming country. However, the production of stainless steel in China has been affected by oversupply, decreases in consumer demand, and escalating trade tensions, which have led to decreases in the price of ferrochromium.

World Mine Production (gross weight) and Reserves: Reserves for Kazakhstan were revised based on a Government report.

	<u>Mine production (marketable)</u>		<u>Reserves¹³ (shipping grade)¹⁴</u>
	<u>2023</u>	<u>2024^e</u>	
United States	—	—	630
Brazil	1,420	1,400	6,600
Finland	1,910	1,900	8,300
India ^e	4,100	4,100	79,000
Kazakhstan ^e	6,000	6,500	320,000
South Africa	19,700	21,000	200,000
Turkey	8,160	8,000	27,000
Zimbabwe	1,070	1,100	540,000
Other countries	<u>2,880</u>	<u>2,900</u>	NA
World total (rounded)	45,200	47,000	>1,200,000

World Resources:¹³ World resources are greater than 12 billion tons of shipping-grade chromite, sufficient to meet conceivable demand for centuries. World chromium resources are heavily geographically concentrated (95%) in Kazakhstan and southern Africa; United States 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.

¹Secondary production is based on reported receipts of all types of stainless-steel scrap.

²Includes chromium chemicals, chromium metal, chromite ores, ferrochromium, ferrosilicon chromium, and stainless-steel products and scrap.

³Defined as change in total inventory from prior yearend inventory. Beginning in 2023, Government stock changes no longer available.

⁴Defined for 2020–22 as production (from mines and secondary) + imports – exports ± adjustments for Government and industry stock changes. Beginning in 2023, Government stock changes no longer included.

⁵Source: Argus Media Group, Argus Non-Ferrous Markets.

⁶Excludes ferrosilicon chromium.

⁷Defined for 2020–22 as imports – exports ± adjustments for Government and industry stock changes. Beginning in 2023, Government stock changes no longer included.

⁸Includes chromium metal scrap and stainless-steel scrap.

⁹Includes chromium metal, ferrochromium, and stainless steel.

¹⁰Includes Hong Kong.

¹¹See Appendix B for definitions.

¹²High-carbon and low-carbon ferrochromium, combined.

¹³See Appendix C for resource and reserve definitions and information concerning data sources.

¹⁴Units are thousand metric tons gross weight of shipping-grade chromite ore, which is deposit quantity and grade normalized to 45% Cr₂O₃, except for the United States, where grade is normalized to 7% Cr₂O₃, and Finland, where grade is normalized to 26% Cr₂O₃.