

# **CHROMIUM AVAILABILITY IN MARKET ECONOMY COUNTRIES AND NETWORK FLOW MODEL ANALYSIS OF WORLD CHROMIUM SUPPLY**

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## **ABSTRACT**

This report analyzes the availability of chromium in the form of ferroalloy products (high-carbon and low-carbon ferrochromium and ferrochromium-silicon) and chromite products (metallurgical, chemical, refractory, and foundry sands) in market economy countries (MEC's). A total of 873.5 Mmt of in situ material, containing 202.5 Mmt of chromium, in 10 MEC countries was analyzed for availability as of the January 1989 study date. Extraction and beneficiation of this in situ material would result in 475.4 Mmt of marketable chromite products. As analyzed, 288.5 Mmt of these chromite products would be available for export or for internal chemical and refractory use and 186.9 Mmt would be smelted in-country to produce 74.3 Mmt of high-carbon ferrochromium, 3.9 Mmt of low-carbon ferrochromium, and 2.0 Mmt of ferrochromium-silicon, all available for export.

A network flow model, which includes centrally planned economy countries (CPEC's), was also constructed to analyze world chromium supply and demand interactions for the period 1986 through 1994 and to address a hypothetical North American embargo on direct imports of all South African chromium products beginning in mid-1990.

The model shows capacity constraints developing in the MEC high-carbon ferrochromium