

IRON AND STEEL SCRAP¹

(Data in million metric tons of metal, unless otherwise noted)

Domestic Production and Use: Total value of 1997 domestic purchases (receipts of ferrous scrap by all domestic consumers from brokers, dealers, and other outside sources) and exports was estimated at \$8 billion, about the same as in 1996. Manufacturers of pig iron, raw steel, and steel castings accounted for about three-fourths of scrap consumption by the domestic steel industry, using scrap together with pig iron to produce steel products for the construction, transportation, oil and gas, machinery, container, appliance, and various other consumer industries. The ferrous castings industry consumed most of the remainder to produce cast iron and steel products, such as motor blocks, pipe, and machinery parts. Relatively small quantities were used for producing ferroalloys, for the precipitation of copper, and by the chemical industry; these uses totaled less than 1 million tons.

Salient Statistics—United States:	1993	1994	1995	1996	1997^e
Production: Home scrap	22	20	20	20	21
Purchased scrap ²	54	58	59	57	57
Imports for consumption ³	1.6	1.9	2.3	2.9	3
Exports ³	10.0	9.0	10.5	9.1	9
Consumption: Reported	68	70	72	72	70
Price, average, dollars per metric ton delivered:					
No. 1 Heavy Melting composite price, Iron Age					
Average: Pittsburgh, Philadelphia, Chicago	109.98	124.58	131.29	126.02	124
Stocks, consumer, yearend	3.7	4.1	4.2	5.2	4.6
Employment, dealers, brokers, processors, ⁴ number	37,000	37,000	37,000	37,000	38,000
Net import reliance ⁵ as a percent of apparent consumption	E	E	E	E	E

Recycling: All iron and steel scrap is recycled material that is a vital raw material for the production of new steel and cast iron products. The steel and foundry industries in the United States have been structured to recycle scrap, and, as a result, are highly dependent upon scrap. The steel industry in North America has been recycling steel scrap for over 200 years. About 16,000 car dismantlers and 2,000 scrap processors are currently operating. In the United States alone, nearly 70 million tons of steel apparently was recycled in steel mills and foundries in 1997. Recycling of scrap plays an important role in the conservation of energy, because the remelting of scrap requires much less energy than the production of iron or steel products from iron ore. Also, consumption of iron and steel scrap by remelting reduces the burden on landfill disposal facilities and prevents the accumulation of abandoned steel products in the environment. Recycled scrap consists of approximately 30% home scrap (new recirculating scrap from current operations), 24% prompt scrap (produced in steel-product manufacturing plants), and 46% obsolete (old) scrap.

Import Sources (1993-96): Canada, 77%; Venezuela, 8%; Mexico, 6%; Japan, 3%; and other, 6%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/97	Non-MFN⁶ 12/31/97
Iron and steel waste and scrap:			
No. 1 bundles	7204.41.0020	Free	74¢/t.
No. 1 Heavy Melting	7204.49.0020	Free	74¢/t.
No. 2 Heavy Melting	7204.49.0040	Free	74¢/t.
Shredded	7204.49.0070	Free	74¢/t.

Depletion Allowance: Not applicable.

Government Stockpile: None.

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Events, Trends, and Issues: Raw steel production in 1997 was an estimated 96.5 million tons, only slightly more than that produced in 1996. Net shipments of steel mill products were estimated at about 95 million tons compared with 96.5 million tons for 1996.

The domestic ferrous castings industry shipped an estimated 10 million tons of all types of iron castings in 1997 and an estimated 1.2 million tons of steel castings, including investment castings.

Scrap prices in the United States continued at fairly high levels throughout 1997 as a result of strong demand, but were slightly lower than 1996 prices. Composite prices published by Iron Age Scrap Price Bulletin for No. 1 Heavy Melting steel scrap delivered to purchasers in Chicago, Philadelphia, and Pittsburgh averaged about \$124 per metric ton.

As reported by Iron Age Scrap Price Bulletin, the average price for nickel-bearing stainless steel scrap delivered to purchasers in Pittsburgh was about \$820 per metric ton in 1997, significantly higher than the 1996 average price of \$712 per metric ton.

Total exports of ferrous scrap decreased to about 8.9 million metric tons, having an estimated value of about \$1.3 billion, down from the 1996 figure of 9.1 million tons.

The problem of accidental meltings of radioactive sources contained in ferrous scrap, primarily lost or discarded shielded radioactive gauges, continues to be the concern of steelmakers. In the United States, 128 steelmaking mills use ferrous scrap in electric arc and basic oxygen furnaces, and most, if not all, perform radiation monitoring of incoming ferrous scrap. Hundreds of accidental meltings have been prevented because radioactive materials were discovered before they were melted. Over the period 1994 to June 30, 1997, 24 radioactive materials were detected and 4 were not detected and melted. During the period 1983 to June 30, 1997, 18 meltings of radioactive material occurred. The costs associated with melting a radioactive source, including decontaminating a facility, disposing and storing radioactive electric furnace dust, and shutdown of steel production, can be as high as \$23 million per melt. The Nuclear Regulatory Commission (NRC)-State Working Group on Regulation of Radioactive Materials submitted recommendations to the NRC concerning the control of and accountability for licensed radioactive devices in November 1996. Subsequently, the NRC directed its staff to develop a plan to, among other things, quantify the risks associated with unaccounted for devices. The staff proposed a survey of steel mills in order to assess the risk of licensed radioactive materials entering the metal scrap stream.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal is a global environmental treaty, sponsored by the United Nations Environmental Program and in force since 1992, that regulates the transboundary movements of hazardous wastes and ensures the environmentally sound management and disposal of hazardous wastes. The Technical Working Group (TWG), a subsidiary body of the Conference of the Parties of the Basel Convention, was formed in 1995 to prepare a list of specific wastes characterized as hazardous under the Basel Convention. Hazardous material may not be shipped to developing countries for recycling, and any such material destined for final disposal is banned from international trade. The U.S. ferrous scrap industry is concerned because unless ferrous scrap is excluded from the list of hazardous materials, businesses active in the export of scrap will be adversely affected. The TWG will present the result of its work at the Fourth Meeting of the Conference of the Parties to be held in February 1998 in Kuching, Sarawak.

World Mine Production, Reserves, and Reserve Base: Not applicable.

World Resources: Not applicable.

Substitutes: About 1.6 million tons of direct-reduced iron was used in the United States in 1997 as a substitute for iron and steel scrap.

^eEstimated. E Net exporter.

¹See also Iron Ore and Iron and Steel.

²Receipts - shipments by consumers + exports - imports.

³Includes used rails for rerolling and other uses, and ships, boats, and other vessels for scrapping.

⁴Estimated, based on 1992 Census of Wholesale Trade.

⁵Defined as imports - exports + adjustments for Government and industry stock changes.

⁶See Appendix B.