IRON AND STEEL SCRAP

By Michael Fenton

Iron and steel scrap is a vital raw material for the production of new steel and cast iron products. Because of the ready availability of scrap from manufacturing operations and from the recovery of products that have reached the end of their useful lives, the steel industry and the foundry industry in the United States have been structured to recycle scrap, and, as a result, are highly dependent upon scrap.

The recycling of steel scrap plays an important role in the conservation of energy because remelting of scrap requires much less energy than the production of iron or steel products from iron ore. In addition, the 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.

Consumption

Brokers, dealers, and other outside sources supplied domestic consumers in 1995 with 50 million metric tons¹ of all types of ferrous scrap at an estimated delivered value of nearly \$6.8 billion, while exporting 10.4 million tons (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) valued at \$1.7 billion. In 1994, domestic consumers received 49.0 million tons at a delivered value of approximately \$6.2 billion; exports totaled 8.8 million tons valued at \$1.3 billion. For 1995, this represented a tonnage increase of about 2% for received quantities. The total value of received and exported scrap grades increased about 13%.

Raw steel production was 95.2 million tons in 1995 compared with 91.2 million tons in 1994. The shares of raw steel produced by electric and basic oxygen furnaces were 40% and 60% in 1995, respectively, with electric furnace production increasing by only 1 percentage point. Continuous cast steel production represented 91% of total raw steel production in 1995 compared with 90% in 1994. Raw steel production capability was 102 million tons in 1995 compared with 98.1 million tons in 1994. Raw steel capability utilization was 93.3% in 1995 and 93.0% in 1994.

Net shipments of all grades of steel mill products were 88.4 million tons in 1995, 2.4% over the 86.3 million tons shipped in 1994. Imports of steel mill products decreased from 27.3 million tons in 1994 to 22.1 million tons in 1995. Exports of steel mill products increased from 3.5 million tons in 1994 to 6.4 million tons in 1995. The U.S. apparent supply of steel mill products decreased from 104.2 million tons in 1994 to 102.9 million tons in 1995. Imports of steel mill products, as a share of the U.S. market, decreased from 26% in 1994 to 21% in

1995. Pig iron production increased from 49.4 million tons in 1994 to 50.9 million tons in 1995.

Iron castings shipments, as reported by the Bureau of the Census, totaled an estimated 13.0 million tons in 1995 compared with 13.2 million tons (revised) in 1994. Steel castings shipments (including investment castings) totaled 0.9 million tons in 1995 compared with 1.0 million tons (revised) in 1994.

In 1995, steel mills accounted for 84% of all scrap received from brokers, dealers, and other outside sources; steel foundries received less than 2%; and iron castings producers and miscellaneous users received 15%. The apparent total domestic consumption of ferrous scrap in 1995 was composed of 51 million tons net receipts (total receipts minus shipments) and 20 million tons of home scrap. Stocks of ferrous scrap at consumers' plants increased a little over 2% to 4.2 million tons; in 1994, the total domestic consumption was 70 million tons. The total market for U.S. produced scrap (net receipts plus exports minus imports) was 68.3 million tons in 1995 compared with 57 million tons in 1994.

Domestic data for ferrous scrap were developed by the U.S. Geological Survey from voluntary monthly or annual surveys of U.S. scrap consuming operations. For manufacturers of pig iron and raw steel, about 71% of the known establishments responded to the surveys. Responses to surveys represented about 80% of estimated total scrap consumption by this class of consumers. The remaining 20% of scrap consumption was estimated, based on prior reports and other information. For manufacturers of steel castings and iron foundries and miscellaneous users, about 36% of the surveyed establishments responded to the annual survey, representing about 63% of estimated scrap consumption by these scrap consumers. Total consumption for these two classes of consumers was estimated using statistical methods, prior reports, and other information. Actual survey data accounted for about 65% of total estimated scrap consumption by all classes of scrap consumers.

Transportation

Transportation of scrap metal increased in importance in steel production, particularly at the new minimills. Inconsistent railroad freight-car availability was a continuing problem as railroads increased freight rates dramatically and demanded specific levels of guaranteed business. Some producers resorted to purchase or lease of their own rail cars, trucks, and barges in an attempt to solve the problems of increasing transportation costs and irregular supply of rail cars.

Prices

The average composite delivered price per metric ton, calculated from prices per long ton published monthly by American Metal Market (AMM), for No. 1 heavy melting steel scrap was \$135.03 in 1995, ranging from a low of \$131.06 in July to a high of \$140.86 in August. Calculated from prices per long ton published weekly by Iron Age Scrap Price Bulletin (IA), the average composite delivered price per metric ton of No. 1 heavy melting steel scrap was \$131.29 in 1995, ranging from \$126.06 in December to \$136.80 in August. The average composite price published in AMM for No. 1 heavy melting steel scrap in 1995 was higher than that in 1994 by 6.5%, whereas prices published in IA rose by only 5.4%.

Based on weekly quotations by IA for 18-8 (18% chromium, 8% nickel) stainless steel scrap (bundles and solids) delivered to consumers in the Pittsburgh, PA, area, the average price increased 48%, from \$708 per ton in 1994 to \$1,045 per ton in 1995.

In 1995, the average value for total ferrous scrap exports (excluding used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) increased 14% to nearly \$163 per ton compared with that of 1994, while that of total imports increased almost 8% to nearly \$140 per ton.

Foreign Trade

Foreign trade valuation continued to be reported on f.a.s. (free alongside ship) basis for exports and on customs value basis for imports. The U.S. trade surplus in 1995 for all classes of ferrous scrap (including used rails for rerolling and other uses and ships, boats, and other vessels for scrapping) was \$1,393 million in value and 8.2 million tons in quantity. This represented an increase of 35% in value and 15% in quantity compared with the 1994 surplus of \$1,034 million in value and 7.1 million tons in quantity.

Total U.S. exports of carbon steel and cast iron scrap (excluding used rails for rerolling and other uses; ships, boats, and other vessels for scrapping; stainless steel; and alloy steel) in 1995 went to 75 countries (34% annual increase) and totaled 9.39 million tons (17% increase) valued at \$1,260 million (25% increase) for an average of \$134 per ton. The largest tonnages went to the Republic of Korea, 3.16 million tons; Turkey, 1.39 million tons; Canada, 1.28 million tons; Japan, 666,000 tons; India, 625,000 tons; and Mexico, 606,000 tons. These six countries received 82% of the total quantity, valued at \$1,011 million, which was 80% of the total value.

Total U.S. exports of stainless steel scrap in 1995 went to 42 countries (14% annual increase) and consisted of 368,000 tons (23% increase) valued at \$325 million (71% increase) averaging \$883 per ton. The largest tonnages went to the Republic of Korea, 106,000 tons; Spain, 68,700 tons; Canada, 57,800 tons; Japan, 27,800 tons; Belgium, 22,900 tons; and Taiwan, 17,000 tons. These six countries received 82% of the total quantity, valued at \$275 million, which was 85% of the

total value.

U.S. exports of alloy steel scrap (excluding stainless steel) in 1995 were shipped to 44 countries (7% increase) and consisted of 682,000 tons (48% increase) valued at \$114 million (66% increase) for an average of \$167 per ton. The largest tonnages went to Canada, 315,000 tons; Mexico, 215,000 tons (387% increase); and China, 40,800 tons. Three countries received 84% of the total quantity, valued at \$90.4 million, which was 79% of the total value.

World Review

Iron and steel scrap is an important raw material for the steel and foundry industries. Since scrap comes from such sources as old buildings, industrial machinery, discarded cars and consumer durables, and manufacturing operations, the mature industrialized economies are the main exporters of scrap. The main trade flows of scrap are from heavily industrialized and developed North America and northern Europe to lesser developed countries of southern Europe and the Pacific rim. The United States continued to be the leading exporting country of iron and steel scrap. Other major exporters of ferrous scrap were France, Germany, and the United Kingdom. The most significant importing nations were Turkey, Italy, and Spain, followed by the developing nations of Asia: the Republic of Korea, China, India, Taiwan, Thailand, and Indonesia.

Outlook

Over the short term, world-wide steel production and consumption are expected to increase, primarily as a result of economic growth in the relatively underdeveloped countries of Asia, the former Soviet Union, eastern Europe, and Latin America. In the United States and other countries with highly developed economies, steel consumption tends to expand much more slowly than overall economic growth and to contract when economic growth is weak. Therefore, demand for steel in Canada, Europe, and the United States should remain at about the current level during 1996. The global ferrous scrap market is expected to follow these general economic patterns and continue to be steady and strong, with scrap usage in 1996 generally about the same, and perhaps greater in some areas, than in 1995.

New electric furnace steel plants with a total capacity of about 10 million tons per year were under construction in the United States during 1995, with startups scheduled through 1997. Increased capacity is expected to put pressure on scrap supply, thereby forcing prices up somewhat. However, there would seem to be a ceiling at which scrap costs would become prohibitive for some steel producers operating in an increasingly flooded steel market. It seems possible that some of the announced new facilities may not come on stream unless enough new mill production can be sold in foreign markets.

The ferrous scrap alternatives of pig iron, direct-reduced iron, and hot-briquetted iron will continue to increase in importance in steel production as scrap prices rise, and the availability and prices of these competitive alternatives may temper increases in the price of scrap. Price is not the only consideration in the decision to use scrap alternatives. Producers of steel products requiring low levels of residual elements increasingly will turn to iron-ore-based products to dilute the residual content that is intrinsic in scrap. The availability of pig iron and other alternatives is not expected to reduce demand for scrap. These raw materials will ensure and facilitate the use of scrap by enabling its use as a greater overall proportion of the source of iron for steelmaking.

¹All quantities are in metric tons unless otherwise specified.

OTHER SOURCES OF INFORMATION

U.S. Geological Survey Publications

Monthly and annual publications on Iron and Steel, Iron Ore, and Iron and Steel Slag.

Other Sources

American Foundrymen's Society (AFS). American Iron and Steel Institute (AISI). American Metal Market. Bureau International De La Recuperation (BIR). Center for Materials Production (CMP). Institute of Scrap Recycling Industries Inc. (ISRI). International Iron and Steel Institute (IISI). Metal Bulletin (London). National Recycling Coalition (NRC). Steel Can Recycling Institute (SCRI). Steel Manufacturers Association (SMA).

SALIENT U.S. IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON STATISTICS 1/

(Thousand metric tons unless otherwise specified)

		1991	1992	1993	1994	1995
Manufacturers of pig iron and raw steel and castings	: 2/					
Ferrous scrap consumption		49,000	50,000	53,000	54,000	56,000
Pig iron consumption		44,000	47,000	48,000	50,000	51,000
Direct-reduced iron consumption		910	1,100	1,500	1,500	1,500
Net receipts of ferrous scrap 3/		32,000	33,000	37,000	40,000	42,000
Home scrap production 4/		17,000	17,000	16,000	14,000	15,000
Ending stocks of ferrous scrap, Dec. 31		3,400	3,100	3,200	3,600	3,700
Manufacturers of steel castings: 5/						
Ferrous scrap consumption		1,600	1,600	1,900	2,000	2,000
Pig iron consumption		14	13	9	10	10
Net receipts of ferrous scrap 3/		1,100	1,100	1,300	1,400	1,300
Home scrap production 4/		550	530	610	660	680
Ending stocks of ferrous scrap, Dec. 31		160	170	86	95 r/	93
Iron foundries and miscellaneous users: 5/						
Ferrous scrap consumption		11,000	11,000	13,000	14,000	13,000
Pig iron consumption		660	620	670	1,000	1,100
Direct-reduced iron consumption		12	11	3	2	W
Net receipts of ferrous scrap 3/		7,600	8,000	7,900	8,400	8,300
Home scrap production 4/		3,400	3,300	4,600	5,100	4,900
Ending stocks of ferrous scrap, Dec. 31		560	520	370	370 r/	390
Totals, all manufacturing types:						
Ferrous scrap consumption		62.000	63,000	68,000	70.000	72.000
Pig iron consumption		45,000	48,000	49,000	51,000	52,000
Direct-reduced iron consumption		920	1,100	1,500	1,500	1,500
Net receipts of ferrous scrap 3/		41,000	42,000	46,000	50,000	51,000
Home scrap production 4/		21,000	21,000	22,000	20,000	20,000
Ending stocks, Dec. 31:		,	,	,	,	
Ferrous scrap at consumer plants		4,100	3,800	3,700	4,100	4,200
Pig iron at consumer and supplier plants		190	180	220	400	630
Direct-reduced iron at consumer plants		100	130	200	240	190
Exports: 6/		100	150	200	210	170
Ferrous scrap (includes tinplate and terneplate) 7/		9,500	9,260	9,810	8,810	10,400
Value	thousands	\$1,230,000	\$1,100,000	\$1,320,000	\$1,270,000	\$1,700,000
Pig iron (all grades)	mousands	16	33	27	56	54
Value	thousands	\$1,700	\$3,200	\$3,040	\$6,780	\$6,450
Direct-reduced iron (steelmaking grade)	mousands	4	9	17	17	5
Value	thousands	\$2,870	\$2,020	\$1,860	\$1,850	\$490
Imports for consumption: 6/	mousands	\$2,070	\$2,020	\$1,000	\$1,050	φ+70
Ferrous scrap (includes tinplate and terneplate) 7/		1,070	1,320	1,390	1,740 r/	2,090
Value	thousands	\$143,000	\$148,000	\$162,000	\$218,000 r/	\$284,000
Pig iron (all grades)	ulousallus	434	497	828	2,500	2,360
Value	thousands	\$75,300	\$72,800	\$117,000	\$344,000	\$391,000
Direct-reduced iron (steelmaking grade)	ulousallus	<u>\$75,500</u> 365	542	1,090	1,170	<u>\$391,000</u> 1,190
	thousands	\$40,600	\$54,000	\$104,000	\$138,000	\$145,000
Value	thousands		\$34,000	\$104,000	\$158,000	\$145,00

r/ Revised. W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to two significant digits, except trade data which are rounded to three significant digits; may not add to totals shown. Data are not entirely comparable due to changes in collection and estimation methods in 1993.

2/ Includes manufacturers of raw steel that also produce steel castings.

3/ Net receipts of scrap is defined as receipts from brokers, dealers, and other outside sources, plus receipts from other own-company plants, minus shipments.

4/ Home scrap production includes recirculating scrap resulting from current operations and obsolete home scrap.

5/ Some consumers in the "Manufacturers of steel castings" category also produce iron castings; some consumers in the "Iron foundries and miscellaneous users" category also produce steel castings.

6/ Source: Bureau of the Census. Export valuation is "free alongside ship" (f.a.s.) value, and import valuation is customs value.

7/ Excludes used rails for rerolling and other uses, and ships, boats and other vessels for scrapping.

TABLE 2 U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP, BY GRADE 1/, IN 1995

(Thousand metric tons)

	Receipts of	scrap	Production of h	iome scrap			
	From brokers,	From other	Recirculating		Consumption		
	dealers and	own-	scrap from		of both pur-		Ending
	other outside	company	current	Obsolete	chased and	Shipments	stocks,
Grade	sources	plants	operations	scrap 2/	home scrap	of scrap	Dec. 31
Manfacturers of pig iron and raw steel and castings:			<u> </u>		^		
Carbon steel:							
Low-phosphorus plate and							
punchings	450		1		430	22	15
Cut structural and plate	3,400	17	560	67	4,000	55	290
No. 1 heavy melting steel	6,700	280	3,900	14	11,000	120	710
No. 2 heavy melting steel	5,200	43	620	3	5,800	5	530
No. 1 and electric furnace	,				,		
bundles	5,800	450	1,800	(3/)	7,500	560	470
No. 2 and all other bundles	1,400	10	7		1,400		100
Electric furnace, 1 foot and	,				,		
under (not bundles)	23		110		95	43	2
Railroad rails	140		41		180		5
Turnings and borings	2,000	3	180		2,200	10	130
Slag scrap	860	100	1,700	1	2,200	340	95
Shredded or fragmentized	7,300	820	330		8,500	(3/)	550
No. 1 busheling	3,300	820	140		3,500	(3/)	190
Steel cans (post consumer)	190	9	140		210		190
All other carbon steel scrap	2,400	110	3,500	9	5,300	500	280
Stainless steel scrap	660	110	450		1,100	4	44
Alloy steel (except stainless)	190	95	430 510		780	8	53
Ingot mold and stool scrap	190	95	120	81	89	8 140	26
Machinery and cupola cast iron	52		120	(3/)	50	3	6
	52 170			. ,			8
Cast-iron borings	9		(3/)	(3/)	180	(3/)	
Motor blocks					(4/)		(4/)
Other iron scrap	400	35	360	1	800	130	110
Other mixed scrap	880	(3/)	430		1,200	81	73
Total	42,000	2,100	15,000	180	56,000	2,100	3,700
Manufacturers of steel castings:							
Carbon steel:							
Low-phosphorus plate and	200	(2.)		(2.)	150	(2.)	
punchings	380	(3/)	64	(3/)	450	(3/)	17
Cut structural and plate	220	1	7	(3/)	220	(3/)	14
No. 1 heavy melting steel	110	10	88		210	4	8
No. 2 heavy melting steel	17		11		26		2
No. 1 and electric furnace							
bundles	41				41		(3/)
No. 2 and all other bundles							
Electric furnace, 1 foot and							
under (not bundles)	1	5	(3/)		6		(3/)
Railroad rails	7		1		7		1
Turnings and borings	39		8		47		1
Slag scrap	13		4		18		11
Shredded or fragmentized	79				77		3
No. 1 busheling	100		6		110		5
Steel cans (post consumer)	5		27		33		(3/)
All other carbon steel scrap	140	(3/)	320	2	460	(3/)	8
Stainless steel scrap	36		36	(3/)	71	1	5
Alloy steel (except stainless)	74	(3/)	83		150	(3/)	11
Ingot mold and stool scrap	10				9		1
Machinery and cupola cast iron		(3/)	(3/)		(3/)		(3/)
Cast-iron borings	(3/)		1		1		(3/)
Motor blocks	(3/)		(3/)	(3/)	(3/)		(3/)
Other iron scrap	10	(3/)	9	(3/)	18	1	2
Other mixed scrap	37	(57)	2	14	52	(3/)	3
`							93
Total See footnotes at end of table	1,300	16	670	17	2,000	6	

See footnotes at end of table.

TABLE 2--(Continued) U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF IRON AND STEEL SCRAP, BY GRADE 1/, IN 1995

(Thousand metric tons)

	Receipts of	<u> </u>	Production of h	ome scrap			
	From brokers,	From other	Recirculating		Consumption		
	dealers and	own-	scrap from		of both pur-		Ending
	other outside	company	current	Obsolete	chased and	Shipments	stocks,
Grade	sources	plants	operations	scrap 2/	home scrap	of scrap	Dec. 31
Iron foundries and miscellaneous users:							
Carbon steel:							
Low-phosphorus plate and							
punchings	870	1	10	(3/)	880		16
Cut structural and plate	1,300	43	3	(3/)	1,300	(3/)	49
No. 1 heavy melting steel	200	5	18	(3/)	220	2	9
No. 2 heavy melting steel	140	(3/)			140		3
No. 1 and electric furnace							
bundles	160	120	32		310		10
No. 2 and all other bundles	170		1		170	1	4
Electric furnace, 1 foot and							
under (not bundles)	150	1	1		150	1	4
Railroad rails	170		9	(3/)	180		8
Turnings and borings	100	98	4		210	4	9
Slag scrap	73		1		72		5
Shredded or fragmentized	1,400	87			1,500		56
No. 1 busheling	790	120	39		900	38	25
Steel cans (post consumer)	28				28		1
All other carbon steel scrap	110	(3/)	31		140	(3/)	7
Stainless steel scrap	30	(5/)	2		5	(3/)	1
Alloy steel (except stainless)	30		1		13	(3/)	2
Ingot mold and stool scrap	91		99		190	1	13
Machinery and cupola cast iron	740	26	320		1,100	2	48
J	340	20 54	38	1	420	10	40 9
Cast-iron borings		54 14		-	420 940		
Motor blocks	280		640			(3/)	16
Other iron scrap	290	190	3,400		3,900	8	54
Other mixed scrap	300	1	250	(3/)	530	1	41
Total	7,600	750	4,900	1	13,000	68	390
Totals for all manufacturing types:							
Carbon steel:							
Low-phosphorus plate and							
punchings	1,700	1	74	(3/)	1,800	22	47
Cut structural and plate	4,800	60	570	67	5,500	55	350
No. 1 heavy melting steel	7,000	290	4,000	14	11,000	120	730
No. 2 heavy melting steel	5,400	43	640	3	5,900	5	530
No. 1 and electric furnace							
bundles	6,000	570	1,800	(3/)	7,900	560	480
No. 2 and all other bundles	1,500	10	9		1,600	1	110
Electric furnace, 1 foot and							
under (not bundles)	170	6	120		250	44	7
Railroad rails	310		51	(3/)	360		13
Turnings and borings	2,100	100	190		2,400	13	140
Slag scrap	950	100	1,700	1	2,500	340	110
Shredded or fragmentized	8,800	910	330		10,000	(3/)	610
No. 1 busheling	4,300	200	180		4,500	110	220
Steel cans (post consumer)	230	9	28		270		7
All other carbon steel scrap	2,700	110	3,800	11	5,900	500	300
Stainless steel scrap	700	12	490	(3/)	1,200	5	50
Alloy steel (except stainless)	280	95	590		940	9	66
Ingot mold and stool scrap	110		220	81	280	140	40
Machinery and cupola cast iron	790	26	320	1	1,100	4	54
Cast-iron borings	510	54	40	1	600	10	17
Motor blocks	290	14	640	(3/)	950	(3/)	17
Other iron scrap	700	220	3,800	(3/)	4,700	140	170
Other mixed scrap	1,200	220	680	14	1,800	82	120
CHICI IIIACU SCIAD	1,200	1	000	14	1,000	02	120

1/Data are rounded to two significant digits; may not add to totals shown.

2/ Obsolete home scrap includes ingot molds, stools, and scrap from old equipment, buildings, etc.

3/ Less than 1/2 unit.

4/ Withheld to avoid disclosing company proprietary data; included in "Other iron scrap."

TABLE 3 U.S. CONSUMER RECEIPTS, PRODUCTION, CONSUMPTION, SHIPMENTS, AND STOCKS OF PIG IRON AND DIRECT-REDUCED IRON IN 1995 1/

(Thousand metric tons)

				Stocks,
Receipts	Production	Consumption	Shipments	Dec. 31
3,600 2/	51,000	51,000	2,700	510
1,500 3/		1,500	1	190
10		10	(4/)	1
1,100		1,100	18	120
W		W		
4,700	51,000	52,000	2,700	630
1,500		1,500	1	190
	3,600 2/ 1,500 3/ 10 1,100 W 4,700	3,600 2/ 51,000 1,500 3/ 10 1,100 W 4,700 51,000	3,600 2/ 51,000 51,000 1,500 3/ 1,500 10 10 1,100 1,100 W W 4,700 51,000 52,000	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

W Withheld to avoid disclosing company proprietary data.

 $1/\operatorname{Data}$ are rounded to two significant digits; may not add to totals shown.

2/ Includes 1,300 tons purchased by electric furnace steel producers.

3/ Includes 600 tons purchased by integrated steel producers.

4/ Less than 1/2 unit.

TABLE 4 U.S. CONSUMPTION OF IRON AND STEEL SCRAP, PIG IRON, AND DIRECT-REDUCED IRON (DRI) IN 1995, BY TYPE OF FURNACE OR OTHER USE 1/

(Thousand metric tons)

	Manufac	turers of pig i	iron and	Mar	ufacturers of	of	Iro	n foundries a	nd	1	Totals for all	
	raw s	steel and casti	ings	ste	el castings		mise	cellaneous us	ers	man	manufacturing types	
		Pig			Pig			Pig			Pig	
	Scrap	iron	DRI	Scrap	iron	DRI	Scrap	iron	DRI	Scrap	iron	DRI
Blast furnace	1,600		560							1,600		560
Basic oxygen process	16,000	50,000	110							16,000	50,000	110
Electric furnace	39,000	1,200	880	2,000	10		5,100	550		46,000	1,700	880
Cupola furnace	8	W					8,100	500	W	8,100	500	W
Other (including air												
furnaces)	47	(2/)		4			(2/)	2		77	(2/)	
Direct castings 3/		72									72	
Total	56,000	51,000	1,500	2,000	10		13,000	1,100	W	72,000	52,000	1,500

W Withheld to avoid disclosing company proprietary data.

1/ Data are rounded to two significant digits; may not add to totals shown.

2/ Withheld to avoid disclosing company proprietary data; included in "Electric furnace."

3/ Includes ingot molds and stools.

IRON AND STEEL SCRAP SUPPLY 1/ AVAILABLE FOR CONSUMPTION IN 1995, BY REGION AND STATE 2/

(Thousand metric tons)

	Receipts	of scrap	Production of h	nome scrap		
	From brokers,	· · · · · · · · · · · · · · · · · · ·	Recirculating	<u> </u>		New supply
	dealers, and	From other	scrap resulting		Shipments	available
	other outside	own company	from current	Obsolete	of	for
Region and state	sources	plants	operations	scrap 3/	scrap 4/	consumption
New England and Middle Atlantic:				-		
Connecticut, Maine, Massachusetts,						
New Hampshire, Rhode Island, Vermont	58		23	(5/)	(5/)	81
New Jersey and New York	1,600	14	98		3	1,700
Pennsylvania	4,100	94	2,700	67	35	6,900
Total	5,800	110	2,800	67	38	8,700
North Central:						
Illinois	4,300	100	1,400	15	210	5,600
Indiana	3,800	160	4,800	40	670	8,200
Iowa, Nebraska, South Dakota	1,300	30	220		W	1,600
Kansas and Missouri	1,000	1	170			1,200
Michigan	3,500	660	2,000	(5/)	160	6,000
Minnesota	380	150	150	(5/)	W	670
Ohio	6,200	930	2,600	40	810	9,000
Wisconsin	1,200	10	970	(5/)	(5/)	2,200
Total	22,000	2,000	12,000	96	1,900	34,000
South Atlantic:						
Delaware and Maryland	670	W	520		W	1,100
Florida and Georgia	1,300	(5/)	200		2	1,500
North Carolina and South Carolina	1,700	W	200	W		1,900
Virginia and West Virginia	1,500	120	590	W	W	2,100
Total	5,100	120	1,500	1	130	6,600
South Central:						
Alabama and Mississippi	2,600	W	980	W	W	3,600
Arkansas, Louisiana, Oklahoma	4,700	W	270	W	W	5,000
Kentucky and Tennessee	2,500	W	750		W	3,200
Texas	4,200	540	760	8	10	5,500
Total	14,000	550	2,800	26	110	17,000
Mountain and Pacific:						
Arizona, Colorado, Idaho, Montana, Utah	1,700	W	550	W	W	2,300
California, Oregon, Washington	2,200	W	270	W	W	2,400
Total	3,900	1	820	5	18	4,700
Grand total	50,000	2,800	20,000	190	2,200	72,000

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Supply available for consumption is a net figure computed by adding production to receipts and deducting scrap shipped during the year. The difference in stock levels at the beginning and end of the year is not taken into consideration.

2/ Data are rounded to two significant digits; may not add to totals shown.

3/ Obsolete scrap includes ingot molds, stools and scrap from old equipment, buildings, etc.

4/ Includes scrap shipped, transferred, or otherwise disposed of during the year.

5/ Less than 1/2 unit.

U.S. CONSUMPTION OF IRON AND STEEL SCRAP 1/ AND PIG IRON 2/ IN 1995, BY REGION AND STATE 3/

(Thousand metric tons)

	Maufact	urers of			Iron fou	Indries	Totals f	or all
	pig iron a	and raw	Manufac	turers of	and m	iscel-	manufac	turing
	steel and	castings	steel ca	stings	laneous	susers	type	es
Region and state	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iron	Scrap	Pig iror
New England and Middle Atlantic:	-		-		-		-	
Connecticut, Maine, Massachusetts,								
New Hampshire, New Jersey,								
New York, Rhode Island, Vermont	1,400	28,000	18	(4/)	400	30	1,800	58
Pennsylvania	6,100	2,900	230	3	630	82	6,900	3,000
Total	7,400	2,900	250	3	1,000	110	8,700	3,100
North Central:								
Illinois	5,000	2,700	82	1	460	36	5,600	2,700
Indiana	7,200	18,000	93	(4/)	1,200	160	8,500	18,000
Iowa, Kansas, Minnesota, Missouri,								
Nebraska, South Dakota, Wisconsin	2,400	26	490	2	2,600	290	5,500	320
Michigan	3,100	6,100	37	(4/)	2,900	130	6,000	6,200
Ohio	7,200	9,800	430	2	1,300	100	8,900	9,900
Total	25,000	36,000	1,100	5	8,400	720	34,000	37,000
South Atlantic:	·	· · · ·						
Delaware, Maryland, Virginia,								
West Virginia	2,700	5,100	5	W	570	W	3,300	5,100
Florida, Georgia, North Carolina,								
South Carolina	3,000	100	2	W	430	W	3,400	150
Total	5,600	5,200	6	1	1,000	70	6,700	5,300
South Central:	·	·					÷	
Alabama, Kentucky, Mississippi,								
Tennessee	4,500	4,400	360	(4/)	1,900	100	6,800	4,500
Arkansas, Louisiana, Oklahoma	4,800	W	25	W	140	W	5,000	480
Texas	4,800	W	82	W	460	W	5,300	150
Total	14,000	4,900	470	(4/)	2,500	150	17,000	5,100
Mountain and Pacific:								
Arizona, Colorado, Idaho,								
Montana, Utah	2,200	W	21	(4/)	130	W	2,300	2,000
California, Oregon, Washington	2,100	W	140	(4/)	210	W	2,400	49
Total	4,200	2,100	160	(4/)	330	8	4,700	2,100
Grand total	56,000	51,000	2,000	10	13,000	1,100	72,000	52,000
			,	-	,	,	,	,

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Includes recirculating scrap resulting from current operations and home-generated obsolete scrap.

2/ Includes molten pig iron used for ingot molds and direct castings.

3/ Data are rounded to two significant digits; may not add to totals shown.

4/ Less than 1/2 unit.

TABLE 7U.S. CONSUMER STOCKS OF IRON AND STEEL SCRAP AND PIG IRON, DECEMBER 31, 1995,
BY REGION AND STATE 1/

(Thousand metric tons)

		a. i. i		<i>a</i>	Other		
	Carbon	Stainless	Alloy	Cast	grades of	Total	
Region and state	steel 2/	steel	steel 3/	iron 4/	scrap	scrap	Pig iron
New England and Middle Atlantic:							
Connecticut, Maine, Massachusetts,							
New Hampshire, Rhode Island, Vermont	1	W	W	1	W	3	W
New Jersey and New York	78	W	W	3	W	85	W
Pennsylvania	290	35	28	26	6	390	14
Total	370	37	29	30	7	470	17
North Central:							
Illinois	400	W	W	15	1	420	7
Indiana	450	W	W	110	13	590	180
Iowa, Kansas, Missouri, Nebraska, South Dakota	150	(5/)	5	5	28	190	12
Michigan	120	(5/)	1	22	4	150	13
Minnesota and Wisconsin	63	2	1	9	(5/)	75	72
Ohio	400	4	15	30	2	460	40
Total	1,600	11	23	200	48	1,900	330
South Atlantic:							
Delaware, Maryland, Virginia, West Virginia	170	(5/)	W	5	W	180	W
Florida, Georgia, North Carolina, South Carolina	180	(5/)	W	19	W	200	W
Total	350	(5/)	3	24	10	380	73
South Central:							
Alabama, Kentucky, Mississippi, Tennessee	350	(5/)	W	21	W	380	W
Arkansas, Louisiana, Oklahoma	360	(5/)	W	4	W	360	W
Texas	350	(5/)	W	13	W	370	W
Total	1,000	1	7	37	13	1,100	180
Mountain and Pacific:							
Arizona, Colorado, Idaho, Montana, Utah	150	(5/)	1	3		150	W
California, Oregon, Washington	140	(5/)	4	7	41	190	W
Total	290	1	5	9	41	350	24
Grand total	3,700	50	66	300	120	4,200	630

W Withheld to avoid disclosing company proprietary data; included in "Total."

 $1/\operatorname{Data}$ are rounded to two significant digits; may not add to totals shown.

2/ Excludes rerolling rails.

3/ Excludes stainless steel.

4/ Includes borings.

5/ Less than 1/2 unit.

TABLE 8

U.S. AVERAGE MONTHLY PRICE AND COMPOSITE PRICE FOR NO. 1 HEAVY MELTING STEEL, WITH ANNUAL AVERAGES FOR 1994 AND 1995 1/

(Dollars per metric ton)

				Composite
Month	Chicago	Philadelphia	Pittsburgh	price
January	149.65	118.89	150.68	139.74
February	145.17	119.09	145.17	136.48
March	137.99	119.13	137.30	131.47
April	139.27	121.06	137.30	132.54
May	142.22	126.96	137.30	135.49
June	139.40	126.77	131.39	132.52
July	139.27	122.53	131.39	131.06
August	147.39	125.10	150.09	140.86
September	142.61	129.82	143.64	138.69
October	139.27	129.65	140.25	136.39
November	134.34	124.01	135.33	131.23
December	134.34	125.98	141.23	133.85
Annual average:				
1995	140.91	124.08	140.09	135.03
1994	129.83	116.01	134.60	126.81

1/Calculated by the U.S. Geological Survey for prices published in American Metal Market.

TABLE 9 U.S. EXPORTS OF IRON AND STEEL SCRAP, 1/ BY COUNTRY 2/

(Thousand metric tons and thousand dollars)

	1994	1	199:	5
Country	Quantity	Value	Quantity	Value
Belgium	11	6,810	24	23,600
Canada	1,680	209,000	1,650	222,000
China	447	65,500	199	48,600
Colombia	51	5,400	24	2,520
Germany	5	1,050	3	1,080
Greece	24	3,260	25	3,340
Hong Kong	51	11,800	106	23,900
India	435	58,400	647	95,800
Indonesia	33	5,000	45	7,470
Italy	66	9,280	125	19,700
Japan	537	84,900	709	131,000
Korea, Republic of	2,570	357,000	3,270	524,000
Malaysia	375	51,500	386	52,500
Mexico	664	82,900	821	110,000
Netherlands	22	9,960	16	16,100
Pakistan	3	1,030	6	1,550
Peru	22	2,590	(3/)	77
Philippines	7	2,300	45	8,800
Singapore	3	676	3	1,970
South Africa	6	4,360	26	8,950
Spain	71	46,300	88	68,600
Sweden	27	15,600	13	8,520
Taiwan	138	23,600	147	33,700
Thailand	120	17,400	423	61,500
Turkey	1,180	150,000	1,390	190,000
United Kingdom	27	7,430	26	5,260
Venezuela	173	22,600	144	19,100
Other	63	9,450	73	9,160
Total	8,810	1,270,000	10,400	1,700,000

1/Data are rounded to three significant digits; may not add to totals shown. 2/ Excludes used rails for rerolling and other uses, and ships, boats and other vessels for scrapping. Export valuation is "free alongside ship" (f.a.s.) value. The U.S. exported scrap to 65 countries in 1994 and 75 countries in 1995.

3/ Less than 1/2 unit.

Source: Bureau of the Census.

TABLE 10 U.S. EXPORTS OF IRON AND STEEL SCRAP, 1/ BY CUSTOMS DISTRICT 2/

(Thousand metric tons and thousand dollars)

	199	4	199	5
Customs district	Quantity	Value	Quantity	Value
Boston, MA	540	69,900	649	83,700
Buffalo, NY	132	33,400	104	42,500
Chicago, IL	- 1	195	18	2,030
Cleveland, OH	- 11	1,630	10	1,880
Columbia - Snake	114	19,000	150	24,000
Detroit, MI	285	45,100	309	55,300
Honolulu, HI	109	14,700	102	15,600
Houston-Galveston, TX	- 68	33,800	81	54,000
Laredo, TX	352	43,400	419	52,900
Los Angeles, CA	1,380	202,000	1,910	337,000
Miami, FL	122	14,900	102	15,000
New Orleans, LA	- 79	50,600	94	83,800
New York, NY	1,600	225,000	1,950	287,000
Norfolk, VA	165	15,800	229	25,900
Pembina, ND	- 580	67,300	421	49,500
Philadelphia, PA	427	53,500	533	69,700
Portland, ME	- 298	38,100	310	40,600
Providence, RI	358	44,500	459	61,400
San Francisco, CA	- 873	135,000	918	169,000
Seattle, WA	330	50,300	403	70,600
Tampa, FL	- 151	19,700	268	38,100
Other	- 840	88,100	996	117,000
Total	8,810	1,270,000	10,400	1,700,000

1/ Excludes used rails for rerolling and other uses, and ships, boats and other vessels for scrapping. Export

valuation is "free alongside ship" (f.a.s.) value.

2/ Data are rounded to three significant digits; may not add to totals shown.

TABLE 11 U.S. EXPORTS OF IRON AND STEEL SCRAP, BY CLASS 1/ 2/

(Thousand metric tons and thousand dollars)

	199	4	199	5
Class	Quantity	Value	Quantity	Value
No. 1 heavy melting scrap	1,900	245,000	2,400	332,000
No. 2 heavy melting scrap	723	88,500	735	95,200
No. 1 bundles	117	15,100	189	24,800
No. 2 bundles	218	23,400	232	28,500
Shredded steel scrap	2,330	307,000	2,850	410,000
Borings, shovelings and turnings	222	21,500	277	29,100
Cut plate and structural	371	50,100	516	75,600
Tinned iron or steel	82	16,900	88	24,700
Remelting scrap ingots	2	1,300	8	2,230
Stainless steel scrap	299	190,000	368	325,000
Other alloy steel scrap	462	68,500	682	114,000
Other steel scrap 3/	878	98,700	1,040	118,000
Iron scrap	1,210	139,000	1,050	118,000
Total	8,810	1,270,000	10,400	1,700,000
Ships, boats, and other vessels for scrapping	106	9,420	6	875
Used rails for rerolling and other uses 4/	35	8,900	23	5,960
Total exports	8,950	1,280,000	10,500	1,710,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Export valuation is on a "free alongside ship" (f.a.s.) value.

3/ Includes tinplate and terneplate.

4/ Includes mixed (used plus new) rails. See Table 15 for details.

Source: Bureau of the Census.

TABLE 12 U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY COUNTRY $1/\ 2/$

(Thousand metric tons and thousand dollars)

	1994		1995	
Country	Quantity	Value	Quantity	Value
Bahamas, The	(3/)	18	2	111
Belgium	30	3,960	(3/)	141
Brazil	27	1,760	23	1,530
Canada	1,340	164,000	1,610	217,000
China	(3/)	22	7	1,020
Colombia	(3/)	65	(3/)	101
Costa Rica	2	187	(3/)	8
Dominican Republic	(3/)	6	7	836
France	3	333	1	114
Germany	2	675	21	3,190
Israel			1	63
Jamaica	5	486	9	936
Japan	61	8,290	67	9,630
Korea, Republic of	(3/)	4	(3/)	12
Mexico	116	22,500	165	34,300
Netherlands	2	1,260	(3/)	8
Panama	2	158	4	571
Philippines	(3/)	2	(3/)	77
Poland	13	1,590	(3/)	10
Russia	13	1,470	13	1,640
Singapore	1	62	(3/)	2
Switzerland	(3/)	35	(3/)	37
Trinidad and Tobago	(3/)	40	1	140
United Kingdom	(3/)	136	2	275
Venezuela	113 r/	10,300 r/	152	11,300
Other	12	1,220	1	575
Total	1,740 r/	218,000 r/	2,090	284,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Excludes used rails for rerolling and other uses and ships, boats and other vessels for scrapping. Import valuation is customs value. The U.S. imported scrap from 40 countries in 1994 and 42 countries in 1995.

3/ Less than 1/2 unit.

Source: Bureau of the Census.

U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CUSTOMS DISTRICT $1/\,2/$

(Thousand metric tons and thousand dollars)

	1994		1995	5
Customs district	Quantity	Value	Quantity	Value
Baltimore, MD	29	1,880	22	1,270
Buffalo, NY	294	42,500	405	66,100
Charleston, SC	2	316	54	6,460
Chicago, IL	24 r/	2,210	59	5,710
Cleveland, OH	56	5,910	59	7,210
Detroit, MI	679	80,000	887	109,000
El Paso, TX	17	2,490	41	5,260
Laredo, TX	82	17,000	73	21,900
New Orleans, LA	141 r/	15,500 r/	44	4,880
New York, NY	2	958	1	141
Ogdensburg, NY	25	4,530	20	4,180
Pembina, ND	4	1,360	4	2,720
San Diego, CA	19	3,130	49	6,870
Seattle, WA	338	34,100	311	32,500
Other	30	6,310	57	9,520
Total	1,740 r/	218,000 r/	2,090	284,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Excludes used rails for rerolling and other uses, and ships, boats and other vessels for scrapping. Import valuation is customs value.

Source: Bureau of the Census.

TABLE 14 U.S. IMPORTS FOR CONSUMPTION OF IRON AND STEEL SCRAP, BY CLASS $1/\,2/$

(Thousand metric tons and thousand dollars)

	1994		1995	5
Class	Quantity	Value	Quantity	Value
No. 1 heavy melting scrap	52	6,110	52	5,900
No. 2 heavy melting scrap	22	2,600	22	2,490
No. 1 bundles	148	16,300	208	22,800
No. 2 bundles	- 19	2,020	31	3,600
Shredded steel scrap	- 84	10,800	104	14,100
Borings, shovelings and turnings	- 117	10,100	124	11,500
Cut plate and structural	107	7,880	133	9,140
Tinned iron or steel	- 9	1,410	16	2,390
Remelting scrap ingots	68 r/	10,700 r/	63	9,830
Stainless steel scrap	- 43	20,200	43	33,800
Other alloy steel scrap	182	24,900	252	33,500
Other steel scrap 3/	748	85,600	896	112,000
Iron scrap	145	19,600	143	23,100
Total	1,740 r/	218,000 r/	2,090	284,000
Ships, boats, and other vessels for scrapping	(4/)	210	(4/)	2,010
Used rails for rerolling and other uses	183	31,500	186	31,400
Total imports	1,930 r/	250,000 r/	2,270	317,000

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Import valuation is customs value.

3/ Includes tinplate and terneplate.

4/ Less than 1/2 unit.

Source: Bureau of the Census.

U.S. EXPORTS OF USED RAILS FOR REROLLING AND OTHER USES, BY COUNTRY $1/\,2/$

	1994		1995	
	Quantity	Value	Quantity	Value
	(metric	(thousand	(metric	(thousand
Country	tons)	dollars)	tons)	dollars)
Brazil	155	147	287	62
Canada	891	395	2,720	1,020
Chile	134	97	71	113
Dominican Republic			218	57
Germany	11	10		
Guatemala	483	97		
Italy			102	106
Japan			13	3
Malaysia			705	185
Mexico	31,500	7,240	18,100	3,860
Panama	3	9	4	5
Taiwan	45	13		
Other	1,350	887	993	548
Total	34,600	8,900	23,200	5,960

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Exports contain mixed (used plus new) rails totaling 1,380 metric tons valued at \$1,180,000 in 1994 and 610 metric tons valued at \$639,000 in 1995. Export valuation is "free alongside ship" (f.a.s.) value.

Source: Bureau of the Census.

TABLE 16

U.S. IMPORTS FOR CONSUMPTION OF USED RAILS FOR REROLLING AND OTHER USES, BY COUNTRY $1/\,2/$

	1994		1995	
	Quantity	Value	Quantity	Value
	(metric	(thousand	(metric	(thousand
Country	tons)	dollars)	tons)	dollars)
Canada	58,600	11,500	58,100	11,000
France	18	11		
Germany	7,130	3,930		
Japan	315	290	1,950	957
Mexico	6	11		
Nicaragua	4,400	438		
Poland	40,100	5,750	18,400	5,270
Russia	72,900	9,520	108,000	14,200
United Kingdom	42	72	1	2
Other			9	36
Total	183,000	31,500	186,000	31,400

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Import valuation is customs value.

Source: Bureau of the Census.

TABLE 17
U.S. EXPORTS OF DIRECT REDUCED IRON (DRI), BY COUNTRY 1/2/

	1994	1994		
	Quantity	Value	Quantity	Value
	(metric	(thousand	(metric	(thousand
Country	tons)	dollars)	tons)	dollars)
Argentina	1820	193	319	34
Brazil	3400	359		
Canada	480	51		
Germany	667	70.8		
Hong Kong	161	17.1		
Japan	409	43.3	775	82
Korea, Republic of	25	2.6		
Mexico	6,700	710	285	30
Taiwan	975	101		
Venezuela	224	23.7		
Other	2590	275	3220	344
Total	17,500	1,850	4,600	490

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data are for steelmaking grade DRI only.

Source: Bureau of the Census.

U.S. IMPORTS FOR CONSUMPTION OF DIRECT REDUCED IRON (DRI), BY COUNTRY $1\!/\!2\!/$

	1994		1995	
	Quantity	Value	Quantity	Value
	(metric	(thousand	(metric	(thousand
Country	tons)	dollars)	tons)	dollars)
Canada	122	19	430	48
China			1,500	159
Russia	26,600	2,860	33,700	4,550
Ukraine			60,300	7,820
Venezuela	1,140,000	135,000	1,090,000	133,000
Total	1,170,000	138,000	1,190,000	145,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data are for steelmaking grade DRI only.

Source: Bureau of the Census.

TABLE 19U.S. EXPORTS OF PIG IRON, BY COUNTRY 1/2/

	1994		1995		
	Quantity	Value	Quantity	Value	
	(metric	(thousand	(metric	(thousand	
Country	tons)	dollars)	tons)	dollars)	
Argentina			707	62	
Australia			2,400	211	
Bermuda	210	19		-	
Brazil			2,770	244	
Canada	4,970	1,010	3,750	894	
China			82	18	
Germany	569	50		-	
Hong Kong	455	40	73	15	
India			292	35	
Japan	5,200	458		-	
Korea, Republic of	57	5	1,350	119	
Mexico	43,900	5,060	32,200	3,730	
Netherlands	222	20	273	27	
Peru			984	87	
Singapore	36	3	722	64	
United Kingdom	78	7	6,660	586	
Venezuela	515	42	1,680	290	
Other	146	58	484	63	
Total	56,400	6,780	54,400	6,450	

 $1/\operatorname{Data}$ are rounded to three significant digits; may not add to totals shown.

2/ Includes the following grades of pig iron: less than or equal to 0.5 percent phosphorus content; greater than 0.5 percent phosporus content; and alloy grade. Export valuation is "free alongside ship" (f.a.s.) value.

Source: Bureau of the Census.

TABLE 20

U.S. IMPORTS FOR CONSUMPTION OF PIG IRON, BY COUNTRY $1/\ 2/$

	1994		1995	
	Quantity	Value	Quantity	Value
	(metric	(thousand	(metric	(thousand
Country	tons)	dollars)	tons)	dollars)
Brazil	1,230,000	175,000	1,530,000	253,000
Canada	64,100	16,400	88,100	25,400
China			57,400	8,590
Cote d'Ivoire			1,280	274
Estonia	32,500	3,630	39,400	5,910
Japan	47,800	6,390	37,500	5,780
Latvia	49,000	5,840		
Lithuania	8,060	1,060		
Mexico			66	15
Russia	678,000	84,100	256,000	38,000
South Africa	66,600	11,800	82,600	17,100
Swaziland			49	15
Switzerland			17,100	3,600
Ukraine	324,000	40,000	253,000	33,600
Total	2,500,000	344,000	2,360,000	391,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes the following grades of pig iron: less than or equal to 0.5 percent phosphorus content; greater than 0.5 percent phosporus content; and alloy grade. Import valuation is customs value.