

Mineral Industry Surveys

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MANGANESE IN JANUARY 2016

Preliminary data for January 2016 indicated that domestic consumption of manganese ore containing more than 20% manganese, exclusive of that consumed at iron and steel plants, was 32,600 metric tons (t) (gross weight). This was a 10% decrease compared with the amount consumed in December 2015 (36,300 t), and 50% less than that consumed in January 2015 (65,700 t). Industry stocks of ore at the end of January 2016 were estimated to be 154,000 t, which was a 6% decrease from the amount at the end of December 2015 (165.000 t).

Combined U.S. imports of manganese dioxide and manganese ore (contained weight) were 99% less than those in December 2015 and in January 2016 (table 2). The amounts of manganese ore (gross weight) that were consumed and imported from January 2014 through January 2016 are shown in figure 1.

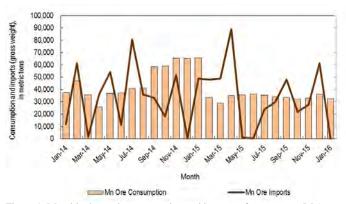


Figure 1. Monthly domestic consumption and imports of manganese (Mn) ore from January 2015 through January 2016. Sources: U.S. Census Bureau and U.S. Geological Survey.

Average spot-market prices for three grades of manganese ore delivered to China from January 2014 through January 2016 are shown in figure 2. In January 2016, the average monthly spot prices were \$1.73 per metric ton unit, 36%-39% grade; \$1.84 per metric ton unit, 44% grade; and \$1.94 per metric ton unit,

46% grade (fig. 2, table 1). These were all significantly lower than manganese ore prices at the start of 2015—58% less for both the 44% and 46% grades and 53% less for the 36%-39% grade. Compared with January 2014 prices, the average monthly prices were considerably lower—65% less for the 44% ore grade, 64% less for the 46% ore grade, and 61% less than the 36%-39% ore grade.

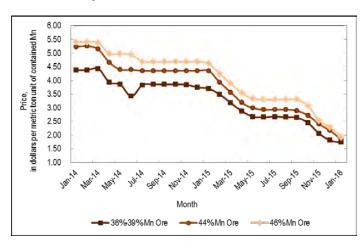


Figure 2. Average monthly spot prices for manganese (Mn) ore deliveries to China from January 2014 through January 2016. Prices are reported in dollars per metric ton unit of contained Mn. Source: CRU Ryan's Notes.

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TABLE 1
PRICES FOR MANGANESE FERROALLOYS, METAL, AND ORE IN JANUARY 2016

| | | High | Low | Average |
|---|---|--------|--------|---------|
| Manganese ferroalloys: ¹ | | | | |
| High-carbon ferromanganese, 75% manganese | dollars per long ton of contained manganese | 820.00 | 760.00 | 787.50 |
| Medium-carbon ferromanganese, 85% manganese | cents per pound of contained manganese | 83.00 | 82.00 | 82.50 |
| Silicomanganese, 65% manganese | do. | 38.00 | 34.00 | 36.25 |
| Manganese metal, 99.9% manganese flake ² | cents per pound | 87.00 | 84.00 | 85.56 |
| Manganese ore: ^{3, 4} | | | | _ |
| 36%-39% manganese | dollars per metric ton unit contained manganese | 1.95 | 1.50 | 1.73 |
| 44% manganese | do. | 2.20 | 1.80 | 1.84 |
| 46% manganese | do. | 2.30 | 1.90 | 1.94 |

do. Ditto.

 $\label{eq:table 2} \textbf{TABLE 2}$ SELECTED U.S. FOREIGN TRADE IN MANGANESE 1

(Metric tons, manganese content)²

| | Impo | Imports for consumption | | Exports | | |
|---------------|---------|-------------------------|--------|---------|------------|-------|
| | Ore and | Ferroalloy | | | Ferroalloy | |
| | dioxide | and metal | Total | Ore | and metal | Total |
| 2015, January | 25,200 | 53,800 | 78,900 | 9 | 894 | 903 |
| 2016, January | 252 | 53,700 | 53,900 | 29 | 1,970 | 2,000 |

Data are rounded to no more than three significant digits; may not add to totals shown.

¹Platts Metals Week; in U.S. warehouse; average prices reported for all transactions during the month.

²CRU Ryan's Notes North American transaction prices, electrolytic manganese metal flake, 99.99% manganese, free-on-board producing point or Chicag warehouse; average prices reported for all transactions during the month.

³CRU Ryan's Notes, cost and freight, China; average prices reported for all transactions during the month.

⁴To determine dollars per metric ton of ore (gross weight), multiply the manganese content percentage by the price; that is, by 46 when the manganese co

²As reported except as estimated for imports of manganese dioxide and manganese waste and scrap and for exports from gross weights.

 ${\it TABLE~3} \\ {\it U.S.~IMPORTS~FOR~CONSUMPTION~OF~SILICOMANGANESE~IN~JANUARY~2016}^1$

(Metric tons)

| | Gross | Mn | Customs |
|--------------|--------|---------|--------------------|
| Source | weight | content | value ² |
| Australia | 5,210 | 3,420 | \$3,040,000 |
| Brazil | 807 | 552 | 523,000 |
| Georgia | 15,600 | 11,200 | 12,300,000 |
| India | 282 | 169 | 302,000 |
| Mexico | 2,870 | 1,870 | 2,030,000 |
| Norway | 1,250 | 753 | 1,410,000 |
| Russia | 14 | 9 3 | 20,400 |
| South Africa | 7,800 | 5,080 | 5,810,000 |
| Spain | 98 | 63 | 84,100 |
| Total | 33,900 | 23,100 | 25,500,000 |
| | | | |

¹Data are rounded to no more than three significant digits; may not add to totals shown.

Source: U.S. Census Bureau.

 ${\it TABLE~4} \\ {\it U.S.~IMPORTS~FOR~CONSUMPTION~OF~FERROMANGANESE~IN~JANUARY~2016}^1$

(Metric tons)

| | Gross | Mn | Customs |
|-------------------------|--------|---------|--------------------|
| Source | weight | content | value ² |
| Low carbon: | | | |
| China | 773 | 722 | \$1,170,000 |
| Germany | 25 | 24 | 54,400 |
| Korea, Republic of | 900 | 828 | 1,530,000 |
| Mexico | 500 | 402 | 559,000 |
| Norway | 2,070 | 1,670 | 2,390,000 |
| South Africa | 50 | 46 | 82,000 |
| Total | 4,320 | 3,690 | 5,790,000 |
| Medium carbon, 1%–2% C: | | | |
| Australia | 1,930 | 1,550 | 1,750,000 |
| Korea, Republic of | 6,000 | 4,800 | 6,980,000 |
| Mexico | 858 | 671 | 1,100,000 |
| Norway | 700 | 569 | 705,000 |
| South Africa | 2,570 | 2,080 | 3,730,000 |
| Total | 12,100 | 9,670 | 14,300,000 |
| High carbon: | | | |
| Australia | 10,900 | 8,130 | 9,720,000 |
| Canada | 19 | 14 | 47,000 |
| Georgia | 5,000 | 3,760 | 3,440,000 |
| Korea, Republic of | 633 | 492 | 912,000 |
| Norway | 255 | 198 | 368,000 |
| South Africa | 2,590 | 1,980 | 1,980,000 |
| Ukraine | 78 | 49 | 89,200 |
| Total | 19,500 | 14,600 | 16,600,000 |
| Grand total | 35,900 | 28,000 | 36,600,000 |
| | | | |

¹Data rounded to no more than three significant digits; may not add to totals shown.

²Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

³Adjusted by the U.S. Geological Survey based on the stochiometric ratio of silicomanganese (66.17%)

²Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance and other charges incurred in bringing the material into the United States.

TABLE 5 U.S. IMPORTS FOR CONSUMPTION OF MANGANESE ORE (20% OR MORE Mn) IN JANUARY $2016^{\rm l}$

(Metric tons)

| | Gross | Mn | Customs |
|---|--------|---------|--------------------|
| Source | weight | content | value ² |
| More than 20%, but less than 47% manganese: | | | |
| 47% or more manganese: | | | |
| Brazil | 53 | 27 | \$25,200 |
| Morocco | 39 | 22 | 51,100 |
| South Africa | (3) | (3) | 2,690 |
| Total | 91 | 49 | 78,900 |
| Grand total | 91 | 49 | 78,900 |

⁻⁻ Zero.

Source: U.S. Census Bureau.

 ${\it TABLE~6} \\ {\it U.S.~IMPORTS~FOR~CONSUMPTION~OF~MANGANESE~DIOXIDE} \\ {\it IN~JANUARY~2016}^1 \\$

(Metric tons, gross weight)

| - | | Customs |
|-----------|----------|--------------------|
| Source | Quantity | value ² |
| Belgium | 37 | \$62,200 |
| Brazil | 10 | 17,500 |
| India | 17 | 33,900 |
| Japan | 263 | 618,000 |
| Singapore | | 19,100 |
| Total | 338 | 751,000 |

¹Data rounded to no more than three significant digits; may not add to totals shown. ²Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

¹Data rounded to no more than three significant digits; may not add to totals shown.

²Customs value generally represents a value in the foreign country and therefore excludes U.S.

import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

³Less than ½ unit.

$\label{eq:table 7} \mbox{U.S. IMPORTS FOR CONSUMPTION OF MANGANESE METAL } \mbox{IN JANUARY $2016}^1$

(Metric tons)

| Source | Gross weight | Customs value ² |
|----------------------------------|-----------------|----------------------------|
| Unwrought flake: | | |
| China | 572 | \$1,950,000 |
| Japan | 16 | 54,800 |
| South Africa | 594 | 1,120,000 |
| Total | 1,180 | 3,130,000 |
| Unwrought powder: | | |
| Mexico | | 71,900 |
| South Africa | 178 | 507,000 |
| Total | 199 | 579,000 |
| Unwrought, other: | | |
| China | 1,070 | 1,800,000 |
| Germany | 19 | 35,800 |
| South Africa | 81 | 173,000 |
| Total | 1,170 | 2,010,000 |
| Other manganese, wrought: | | |
| China | (3) | 3,000 |
| Germany | 12 | 116,000 |
| Japan | (3) | 11,100 |
| Total | 12 | 131,000 |
| Metallic waste and scrap, Canada | 66 | 15,900 |
| Grand total | 2,630 | 5,860,000 |

¹Data rounded to no more than three significant digits; may not add to totals shown.

²Customs value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the material into the United States.

³Less than ½ unit.

TABLE 8 U.S. EXPORTS OF MANGANESE ORE (20% OR MORE Mn), FERROMANGANESE, SILICOMANGANESE, AND MANGANESE METAL BY COUNTRIES OF DESTINATION IN JANUARY $2016^{1.2}$

| | | F.a.s. ³ |
|---|---------------|---------------------|
| | Gross weight | value |
| Source | (metric tons) | (thousands) |
| Ore and concentrates with 20% or more manganese: | | |
| Canada | 19 | \$15 |
| Korea, Republic of | 3 | 17 |
| Mexico | 4 | 13 |
| Netherlands | 32 | 134 |
| Total | 58 | 180 |
| Ferromanganese: | | |
| 2% or less carbon: | | |
| Canada | | 10 |
| Colombia | 2 | 4 |
| Total | 8 | 14 |
| More than 2% carbon: | | |
| Canada | 1,820 | 1,520 |
| Total | 1,820 | 1,520 |
| Silicomanganese: | | |
| Canada | 18 | 23 |
| Mexico | 1 | 4 |
| Venezuela | 3 | 5 |
| Total | 22 | 32 |
| Metal, including alloys and waste and scrap: ⁴ | | |
| Canada | 4 | 9 |
| Costa Rica | (5) | 6 |
| Germany | 20 | 82 |
| India | 12 | 188 |
| Malaysia | 460 | 189 |
| Mexico | (5) | 13 |
| Netherlands | 18 | 71 |
| United Kingdom | 2 | 11 |
| Total | 517 | 569 |
| Grand total | 2,420 | 2,320 |

¹Presentation of monthly data is based on the January quantities of the leading countries.

 $^{^2\}mbox{Data}$ rounded to no more than three significant digits; may not add to totals shown.

³Free alongside ship.

 $^{^4\}mbox{Includes}$ manganese-aluminum, other alloys, and waste and scrap.

⁵Less than ½ unit.

TABLE 9 $\mbox{U.s. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS } \\ \mbox{IN JANUARY 2016, BY CLASS}^1$

| | | | Principal sources |
|-------------------------------------|---------------|--------------------|--------------------------------|
| | | 2 | and destinations: |
| | Gross weight | Value ² | gross weight (metric tons); |
| Class | (metric tons) | (thousands) | value ² (thousands) |
| Imports for consumption: | | | |
| Manganese oxides other than dioxide | 1,240 | \$628 | Brazil 1,020; \$310 |
| Manganites, manganates, and | | | |
| other permanganates | | | |
| Potassium permanganate | 36 | 91 | India 36; \$91 |
| Sodium permanganate | 58 | 137 | China 58; \$137 |
| Sulfates, basket category, | | | |
| including manganese sulfate | 4,950 | 4,000 | Mexico 1,720; \$1,490 |
| Exports: | | | |
| Manganese dioxide | 349 | 548 | Canada 244; \$176 |
| Manganese oxides other than dioxide | 595 | 1,100 | Canada 167; \$238 |
| Manganites, manganates, and | | | |
| other permanganates | 3 | 16 | Canada 2; \$4 |
| Potassium permanganate | 208 | 516 | Belgium 91; \$213 |
| Sodium permanganate | 20 | 78 | Mexico 18; \$64 |
| Sulfates, basket category, | | | |
| including manganese sulfate | 1,720 | 1,170 | Canada 1,390; \$521 |
| 7 | | | |

⁻⁻ Zero.

¹Data are rounded to no more than three significant digits.

²For imports, customs value; for exports, free alongside ship value.