

# Mineral Industry Surveys

#### For information, contact:

Daniel M. Flanagan, Copper Commodity Specialist National Minerals Information Center U.S. Geological Survey 989 National Center Reston, VA 20192

Telephone: (703) 648-7726, Fax: (703) 648-7757

Email: dflanagan@usgs.gov

Sheema Merchant (Data) Telephone: (703) 659-9944 Fax: (703) 648-7975 Email: smerchant@usgs.gov

**Internet:** https://www.usgs.gov/centers/nmic

#### **COPPER IN AUGUST 2019**

In August 2019, mine production of recoverable copper in the United States was 114,000 metric tons (t). The average daily mine production was 3,690 t, a slight decrease from that in July and 6% higher than that in August 2018 (fig. 1). Year-to-date recoverable mine output through August 2019 was 847,000 t, an increase of 4% relative to the same period in 2018 (table 2).

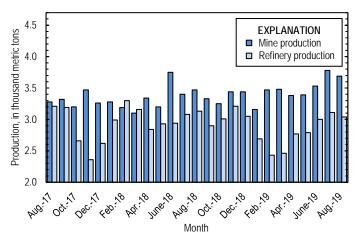


Figure 1. Average daily U.S. copper mine (recoverable) and refinery production from August 2017 through August 2019.

Smelter production in August 2019 was 49,200 t. The average daily smelter output was 1,590 t, 43% more than that in July and an increase of 7% compared with the daily average in August 2018. Year-to-date output through August 2019 was 312,000 t, 14% lower than that through August 2018 (table 3).

Total domestic refinery production was 94,100 t in August 2019; data for electrolytic and electrowon output, as well as refined production from scrap, are in table 4. The average daily refinery production was 3,040 t, slightly less than that in July and 3% lower than that in August 2018 (fig. 1). Year-to-date refinery production through August 2019 was 678,000 t, a decrease of 8% relative to the same period in 2018 (table 4).

#### **Prices**

The average August 2019 COMEX spot copper price was \$2.57 per pound, a decrease of 4% from \$2.69 per pound, the price in July 2019 and August 2018 (fig. 2, table 11). The average price of New York dealers' number 2 scrap in August 2019 was \$1.82 per pound, slightly less than \$1.86 per pound in July and a decline of 3% from \$1.88 per pound in August 2018 (fig. 2, table 12).

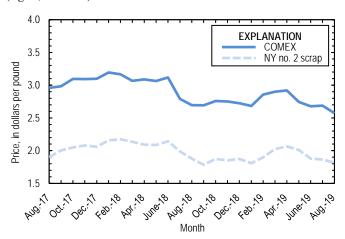


Figure 2. Monthly average COMEX copper price and New York no. 2 copper scrap price from August 2017 through August 2019. Sources: American Metal Market, Platts Metals Week.

#### Stocks

Refined copper stocks in the United States rose for the second consecutive month and totaled 119,000 t at the end of August 2019, a slight increase compared with those in July and 66% less than those in August 2018. Wire-rod stocks fell by 38%, COMEX stocks increased by 11%, and London Metal Exchange Ltd. stocks in U.S. warehouses were 17% higher compared with those at the end of July (fig. 3, table 10). Copper traders in the United States reported weak demand owing to low automotive sales and slowing activity in the construction and housing industries (Bera, 2019).

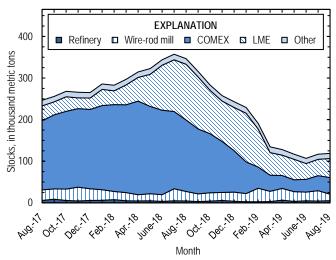


Figure 3. Monthly domestic refined copper stocks, by type, from August 2017 through August 2019. Sources: American Metal Market, London Metal Exchange Ltd., and U.S. Geological Survey.

#### **Industry News**

Chile.—Corporación Nacional del Cobre de Chile (Codelco) began underground operations at the Chuquicamata Mine on August 14. Codelco expected the expansion to produce 320,000 t of copper per year by 2026 and to extend the mine life by 40 years. Open pit mining at the site, ongoing since 1915, was anticipated to cease in 2020. The Chuquicamata Mine produced 321,000 t of copper in 2018 and was one of the leading global copper operations (Corporación Nacional del Cobre de Chile, 2019, p. 28; Rostás, 2019).

Congo (Kinshasa).—Glencore plc (Switzerland) announced that it would place the Mutanda copper-cobalt mine on care and maintenance at yearend 2019 owing to low cobalt prices. In the first half of 2019, output from the Mutanda Mine was 53,700 t of copper, a decrease of 47% from 102,000 t during the first half of the prior year. The operation accounted for about 17% of mined copper capacity in Congo (Kinshasa) in 2018 (Decena,

2019; Glencore plc, 2019, p. 11; International Copper Study Group, 2019, p. 84, 90).

**Peru.**—Copper export shipments from the port of Matarani resumed on August 10 following a three-week blockade by protestors objecting to the issuance of a construction permit for Southern Copper Corp.'s (Phoenix, AZ) Tia Maria project. The protests, which halted shipments from four copper mines that account for about half of Peru's copper output, ended after the Government of Peru suspended the permit for further evaluation (Aquino, 2019).

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 $\label{table 1} \textbf{TABLE 1}$  SALIENT STATISTICS OF THE COPPER INDUSTRY IN THE UNITED STATES  $^1$ 

(Metric tons of copper content, unless otherwise specified)

|  |                    |                   |         | 201     | 9       |           |
|--|--------------------|-------------------|---------|---------|---------|-----------|
|  | Source             | -<br>-            |         |         |         | January-  |
|  | table <sup>2</sup> | 2018 <sup>p</sup> | June    | July    | August  | August    |
| Production:  |                    |                   |         |         |         |           |
| Primary:   |                    |                   |         |         |         |           |
| Mine, recoverable  | (2)                | 1,220,000         | 106,000 | 117,000 | 114,000 | 847,000   |
| Smelter  | (3)                | 536,000           | 51,800  | 34,500  | 49,200  | 312,000   |
| Refinery:  |                    |                   |         |         |         |           |
| Electrolytic, domestic and foreign                           | (4)                | 538,000           | 40,600  | 45,100  | 41,800  | 294,000   |
| Electrowon   | (4)                | 532,000           | 45,900  | 47,600  | 46,500  | 353,000   |
| Total  | (4)                | 1,070,000         | 86,500  | 92,600  | 88,300  | 646,000   |
| Secondary recoverable copper: <sup>3</sup>                   |                    |                   |         |         |         |           |
| Refineries   | (5)                | 41,200            | 3,480   | 3,860   | 5,860   | 31,300    |
| Ingot makers <sup>4</sup>                                    | (5)                | 56,800            | 4,730   | 4,730   | 4,730   | 37,900    |
| Brass and wire-rod mills                                     | (5)                | 652,000           | 54,900  | 52,700  | 55,800  | 439,000   |
| Foundries, etc. <sup>4</sup>                                 | (5)                | 36,300            | 3,030   | 3,030   | 3,030   | 24,200    |
| Consumption:   |                    |                   |         |         |         |           |
| Apparent   | (8)                | 1,800,000         | 150,000 | 154,000 | 145,000 | 1,210,000 |
| Refined (reported)   | (7)                | 1,810,000         | 150,000 | 147,000 | 155,000 | 1,230,000 |
| Purchased copper-base scrap (gross weight)                   | (9)                | 918,000           | 77,500  | 75,600  | 80,900  | 623,000   |
| Stocks at end of period:                                     |                    |                   |         |         |         |           |
| Total refined  | (10)               | 243,000           | 107,000 | 117,000 | 119,000 | 119,000   |
| Blister, etc.  | (10)               | 9,230             | 13,600  | 15,500  | 14,500  | 14,500    |
| Price, U.S. producers cathode (cents per pound) <sup>5</sup> | (11)               | 298.737           | 274.968 | 275.657 | 264.293 | 282.958   |
| Imports: <sup>6</sup>  |                    |                   |         |         |         |           |
| Ore and concentrates   | (13)               | 32,200            | 7,360   | 3,240   | 2,270   | 22,300    |
| Refined  | (13)               | 778,000           | 55,200  | 68,200  | 50,600  | 427,000   |
| Exports: <sup>6</sup>  |                    |                   |         |         |         |           |
| Ore and concentrates   | (14)               | 253,000           | 27,900  | 25,800  | 28,100  | 223,000   |
| Refined  | (14)               | 190,000           | 13,800  | 9,810   | 6,960   | 91,100    |

<sup>&</sup>lt;sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Numbers in parentheses refer to the tables where these data are located.

<sup>&</sup>lt;sup>3</sup>Copper recovered from copper-base scrap only.

<sup>&</sup>lt;sup>4</sup>Estimated based on the monthly average of 2017 annual data.

<sup>&</sup>lt;sup>5</sup>Source: Platts Metals Week.

<sup>&</sup>lt;sup>6</sup>Source: U.S. Census Bureau.

 $\mbox{TABLE 2} \\ \mbox{MINE PRODUCTION OF RECOVERABLE COPPER IN THE UNITED STATES}^1$ 

|                    | Re      | coverable cop       | per       |            | Contained copper          |           |
|--------------------|---------|---------------------|-----------|------------|---------------------------|-----------|
| Period             | Arizona | Others <sup>2</sup> | Total     | Electrowon | Concentrates <sup>3</sup> | Total     |
| 2018: <sup>p</sup> |         |                     |           |            |                           |           |
| January-August     | 540,000 | 272,000             | 812,000   | 357,000    | 471,000                   | 829,000   |
| August             | 69,100  | 38,600              | 108,000   | 45,500     | 64,600                    | 110,000   |
| September          | 63,000  | 36,800              | 99,800    | 43,000     | 59,100                    | 102,000   |
| October            | 64,000  | 36,900              | 101,000   | 43,100     | 59,800                    | 103,000   |
| November           | 65,200  | 38,000              | 103,000   | 43,000     | 62,400                    | 105,000   |
| December           | 69,300  | 37,300              | 107,000   | 45,800     | 63,000                    | 109,000   |
| January-December   | 801,000 | 421,000             | 1,220,000 | 532,000    | 716,000                   | 1,250,000 |
| 2019:              |         |                     |           |            |                           |           |
| January            | 67,900  | 29,900              | 97,800    | 42,400     | 57,600                    | 99,900    |
| February           | 63,600  | 33,500              | 97,100    | 39,800     | 59,500                    | 99,200    |
| March              | 72,300  | 35,500              | 108,000   | 44,600     | 65,700                    | 110,000   |
| April              | 69,700  | 31,600              | 101,000   | 41,300     | 62,300                    | 104,000   |
| May                | 71,500  | 33,700              | 105,000   | 44,700     | 62,800                    | 108,000   |
| June               | 73,400  | 32,400              | 106,000   | 45,900     | 62,100                    | 108,000   |
| July               | 79,200  | 38,000              | 117,000   | 47,600     | 72,300                    | 120,000   |
| August             | 77,300  | 37,200              | 114,000   | 46,500     | 70,500                    | 117,000   |
| January-August     | 575,000 | 272,000             | 847,000   | 353,000    | 513,000                   | 865,000   |

<sup>&</sup>lt;sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Includes production from Michigan, Missouri, Montana, Nevada, New Mexico, and Utah.

<sup>&</sup>lt;sup>3</sup>Includes copper content of precipitates and other metal concentrates.

## $\label{eq:table 3} \text{COPPER PRODUCED AT SMELTERS IN}$ THE UNITED STATES $^{1,\,2}$

(Metric tons, copper content)

|                    | Anode      |
|--------------------|------------|
| Period             | production |
| 2018: <sup>p</sup> | •          |
| January-August     | 361,000    |
| August             | 46,100     |
| September          | 40,800     |
| October            | 48,200     |
| November           | 45,300     |
| December           | 40,600     |
| January-December   | 536,000    |
| 2019:              |            |
| January            | 34,700     |
| February           | 17,700     |
| March              | 37,000     |
| April              | 32,900     |
| May                | 54,100     |
| June               | 51,800     |
| July               | 34,500     |
| August             | 49,200     |
| January-August     | 312,000    |

<sup>&</sup>lt;sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Includes blister and copper anode from primary or secondary sources.

<sup>&</sup>lt;sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 4 PRODUCTION OF REFINED COPPER, BY SOURCE AND METHOD OF RECOVERY  $^{\rm l}$ 

|                    | Pri                  | mary materials |           |        |           |
|--------------------|----------------------|----------------|-----------|--------|-----------|
|                    | Electrolytically     |                |           |        | Total     |
| Period             | refined <sup>2</sup> | Electrowon     | Total     | Scrap  | refined   |
| 2018: <sup>p</sup> |                      |                |           |        |           |
| January-August     | 356,000              | 357,000        | 713,000   | 26,300 | 740,000   |
| August             | 48,400               | 45,500         | 93,900    | 3,220  | 97,100    |
| September          | 40,200               | 43,000         | 83,200    | 3,810  | 87,000    |
| October            | 46,100               | 43,100         | 89,200    | 4,180  | 93,400    |
| November           | 50,000               | 43,000         | 93,000    | 3,370  | 96,400    |
| December           | 45,300               | 45,800         | 91,200    | 3,520  | 94,700    |
| January-December   | 538,000              | 532,000        | 1,070,000 | 41,200 | 1,110,000 |
| 2019:              |                      |                |           |        |           |
| January            | 37,100               | 42,400         | 79,500    | 3,770  | 83,200    |
| February           | 25,000               | 39,800         | 64,800    | 3,330  | 68,100    |
| March              | 27,800               | 44,600         | 72,400    | 3,950  | 76,300    |
| April              | 38,100               | 41,300         | 79,400    | 3,600  | 83,000    |
| May                | 38,300               | 44,700         | 83,000    | 3,470  | 86,500    |
| June               | 40,600               | 45,900         | 86,500    | 3,480  | 90,000    |
| July               | 45,100               | 47,600         | 92,600    | 3,860  | 96,500    |
| August             | 41,800               | 46,500         | 88,300    | 5,860  | 94,100    |
| January-August     | 294,000              | 353,000        | 646,000   | 31,300 | 678,000   |

Preliminary.

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

From domestic and foreign source materials.

 ${\it TABLE~5}$  COPPER RECOVERABLE IN UNALLOYED AND ALLOYED FORM FROM PURCHASED COPPER-BASE SCRAP  $^{\rm I}$ 

(Metric tons, copper content)

|                    | Refine                 | eries <sup>2</sup> | Ingot m   | akers <sup>3</sup> | Brass and wi | re-rod mills | Foundrie  | es, etc. <sup>3</sup> |                    |
|--------------------|------------------------|--------------------|-----------|--------------------|--------------|--------------|-----------|-----------------------|--------------------|
| Period             | New scrap <sup>e</sup> | Old scrap          | New scrap | Old scrap          | New scrap    | Old scrap    | New scrap | Old scrap             | Total <sup>4</sup> |
| 2018: <sup>p</sup> |                        |                    |           |                    |              |              |           |                       |                    |
| January-August     | 13,400                 | 12,900             | 5,680     | 32,200             | 407,000      | 25,300       | 17,600    | 6,640                 | 521,000            |
| August             | 1,680                  | 1,540              | 710       | 4,020              | 51,600       | 3,220        | 2,200     | 830                   | 65,700             |
| September          | 1,680                  | 2,130              | 710       | 4,020              | 51,900       | 2,850        | 2,200     | 830                   | 66,300             |
| October            | 1,680                  | 2,500              | 710       | 4,020              | 52,700       | 3,490        | 2,200     | 830                   | 68,100             |
| November           | 1,680                  | 1,690              | 710       | 4,020              | 53,900       | 1,470        | 2,200     | 830                   | 66,500             |
| December           | 1,680                  | 1,840              | 710       | 4,020              | 50,800       | 2,700        | 2,200     | 830                   | 64,800             |
| January-December   | 20,100                 | 21,000             | 8,520     | 48,300             | 617,000      | 35,800       | 26,400    | 9,960                 | 787,000            |
| 2019:              |                        |                    |           |                    |              |              |           |                       |                    |
| January            | 1,680                  | 2,100              | 710       | 4,020              | 52,100       | 3,520        | 2,200     | 830                   | 67,200             |
| February           | 1,680                  | 1,660              | 710       | 4,020              | 51,900       | 3,170        | 2,200     | 830                   | 66,200             |
| March              | 1,680                  | 2,270              | 710       | 4,020              | 52,200       | 3,310        | 2,200     | 830                   | 67,200             |
| April              | 1,680                  | 1,930              | 710       | 4,020              | 51,400       | 3,340        | 2,200     | 830                   | 66,100             |
| May                | 1,680                  | 1,790              | 710       | 4,020              | 51,600       | 3,330        | 2,200     | 830                   | 66,100             |
| June               | 1,680                  | 1,800              | 710       | 4,020              | 51,400       | 3,550        | 2,200     | 830                   | 66,100             |
| July               | 1,680                  | 2,190              | 710       | 4,020              | 49,100       | 3,590        | 2,200     | 830                   | 64,300             |
| August             | 1,680                  | 4,180              | 710       | 4,020              | 52,800       | 3,030        | 2,200     | 830                   | 69,400             |
| January-August     | 13,400                 | 17,900             | 5,680     | 32,200             | 412,000      | 26,800       | 17,600    | 6,640                 | 533,000            |

<sup>&</sup>lt;sup>e</sup>Estimated <sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Electrolytically refined and fire refined from scrap based on source of material at smelter or refinery level.

<sup>&</sup>lt;sup>3</sup>Monthly data estimated based on the monthly average of 2017 annual data.

<sup>&</sup>lt;sup>4</sup>Does not include an estimate, based on reported 2017 annual data, of 3,190 tons per month from new scrap and 2,560 tons per month from old scrap of copper recovered from scrap other than copper-base.

 ${\it TABLE~6}$  PRODUCTION, SHIPMENTS, AND STOCKS OF BRASS AND WIRE-ROD SEMIFABRICATES  $^1$ 

|                    | Pro         | duction        | Shi         | pments         | Stocks, e   | end of period  |
|--------------------|-------------|----------------|-------------|----------------|-------------|----------------|
| Period             | Brass mills | Wire-rod mills | Brass mills | Wire-rod mills | Brass mills | Wire-rod mills |
| 2018: <sup>p</sup> |             |                |             |                |             |                |
| January-August     | 589,000     | 896,000        | 590,000     | 899,000        | 28,300      | 23,900         |
| August             | 73,800      | 124,000        | 74,200      | 120,000        | 28,300      | 23,900         |
| September          | 73,500      | 110,000        | 73,300      | 111,000        | 28,400      | 23,000         |
| October            | 74,300      | 114,000        | 73,900      | 120,000        | 28,800      | 16,900         |
| November           | 73,500      | 113,000        | 73,400      | 108,000        | 28,900      | 21,300         |
| December           | 73,800      | 97,700         | 73,000      | 92,100         | 29,700      | 27,000         |
| January-December   | 884,000     | 1,330,000      | 884,000     | 1,330,000      | 29,700      | 27,000         |
| 2019:              |             |                |             |                |             |                |
| January            | 74,200      | 113,000        | 73,800      | 116,000        | 30,000      | 23,700         |
| February           | 73,500      | 103,000        | 73,600      | 110,000        | 29,900      | 17,100         |
| March              | 74,200      | 117,000        | 73,800      | 112,000        | 30,400      | 22,400         |
| April              | 73,700      | 104,000        | 73,900      | 111,000        | 30,200      | 23,800         |
| May                | 73,800      | 116,000        | 74,100      | 112,000        | 29,800      | 28,400         |
| June               | 73,600      | 109,000        | 73,500      | 116,000        | 30,000      | 22,100         |
| July               | 70,300      | 110,000        | 70,900      | 113,000        | 29,400      | 25,200         |
| August             | 73,800      | 112,000        | 73,700      | 116,000        | 29,500      | 22,700         |
| January-August     | 587,000     | 885,000        | 587,000     | 904,000        | 29,500      | 22,700         |

Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

## $\label{eq:table 7} \textbf{CONSUMPTION OF REFINED COPPER}^1$

|                    | Brass   | Wire-rod  | Other               |           |
|--------------------|---------|-----------|---------------------|-----------|
| Period             | mills   | mills     | plants <sup>2</sup> | Total     |
| 2018: <sup>p</sup> |         |           |                     |           |
| January-August     | 279,000 | 886,000   | 41,400              | 1,210,000 |
| August             | 35,100  | 121,000   | 5,170               | 161,000   |
| September          | 35,100  | 122,000   | 5,170               | 163,000   |
| October            | 34,900  | 112,000   | 5,170               | 152,000   |
| November           | 34,700  | 113,000   | 5,170               | 153,000   |
| December           | 34,600  | 98,000    | 5,170               | 138,000   |
| January-December   | 419,000 | 1,330,000 | 62,100              | 1,810,000 |
| 2019:              |         |           |                     |           |
| January            | 34,900  | 116,000   | 5,170               | 156,000   |
| February           | 34,800  | 106,000   | 5,170               | 146,000   |
| March              | 34,900  | 123,000   | 5,170               | 163,000   |
| April              | 34,900  | 119,000   | 5,170               | 159,000   |
| May                | 35,400  | 114,000   | 5,170               | 154,000   |
| June               | 34,200  | 110,000   | 5,170               | 150,000   |
| July               | 34,100  | 107,000   | 5,170               | 147,000   |
| August             | 34,000  | 116,000   | 5,170               | 155,000   |
| January-August     | 277,000 | 912,000   | 41,400              | 1,230,000 |

<sup>&</sup>lt;sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Monthly consumption data by ingot makers, chemical plants, foundries, and miscellaneous manufacturers are estimated based on the monthly average of 2017 annual data.

TABLE 8  $\mbox{U.s. APPARENT CONSUMPTION OF COPPER}^1$ 

|                    | Refined copper          | Copper in              | Refined general      | Refined              | Stock change  | Apparent    |
|--------------------|-------------------------|------------------------|----------------------|----------------------|---------------|-------------|
| Period             | production <sup>2</sup> | old scrap <sup>3</sup> | imports <sup>4</sup> | exports <sup>4</sup> | during period | consumption |
| 2018: <sup>p</sup> |                         |                        |                      |                      |               |             |
| January-August     | 713,000                 | 97,400                 | 535,000              | 94,600               | 81,600        | 1,170,000   |
| August             | 93,900                  | 12,200                 | 48,300               | 15,700               | -10,200       | 149,000     |
| September          | 83,200                  | 12,400                 | 62,300               | 15,600               | -30,900       | 173,000     |
| October            | 89,200                  | 13,400                 | 54,400               | 31,000               | -32,900       | 159,000     |
| November           | 93,000                  | 10,600                 | 51,000               | 36,200               | -25,400       | 144,000     |
| December           | 91,200                  | 12,000                 | 44,800               | 12,400               | -14,900       | 150,000     |
| January-December   | 1,070,000               | 146,000                | 747,000              | 190,000              | -22,500       | 1,800,000   |
| 2019:              |                         |                        |                      |                      |               |             |
| January            | 79,500                  | 13,000                 | 57,600               | 12,600               | -13,800       | 151,000     |
| February           | 64,800                  | 12,200                 | 37,000               | 13,100               | -37,900       | 139,000     |
| March              | 72,400                  | 13,000                 | 39,900               | 10,200               | -56,500       | 172,000     |
| April              | 79,400                  | 12,700                 | 65,000               | 13,500               | -6,390        | 150,000     |
| May                | 83,000                  | 12,500                 | 52,000               | 11,000               | -11,300       | 148,000     |
| June               | 86,500                  | 12,800                 | 54,800               | 13,800               | -10,100       | 150,000     |
| July               | 92,600                  | 13,200                 | 68,200               | 9,810                | 10,000        | 154,000     |
| August             | 88,300                  | 14,600                 | 51,100               | 6,960                | 1,810         | 145,000     |
| January-August     | 646,000                 | 104,000                | 426,000              | 91,100               | -124,000      | 1,210,000   |

<sup>&</sup>lt;sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Includes electrowon production and electrolytically-refined copper from primary materials. All refined copper consumed in scrap form is included in "Copper in old scrap."

<sup>&</sup>lt;sup>3</sup>Includes reported monthly production of copper from old scrap of copper-base, an estimate for annual reporters, and a monthly average of copper from non-copper-base materials based on 2017 annual data.

<sup>&</sup>lt;sup>4</sup>Source: U.S. Census Bureau.

TABLE 9 CONSUMPTION OF PURCHASED COPPER-BASE SCRAP<sup>1</sup>

|                    | Smelt                  | ters      |           |                    | Brass     | and                  |           |                       |             |
|--------------------|------------------------|-----------|-----------|--------------------|-----------|----------------------|-----------|-----------------------|-------------|
|                    | and refi               | neries    | Ingot m   | akers <sup>2</sup> | wire-roo  | l mills <sup>3</sup> | Foundrie  | es, etc. <sup>2</sup> | Total scrap |
| Period             | New scrap <sup>e</sup> | Old scrap | New scrap | Old scrap          | New scrap | Old scrap            | New scrap | Old scrap             | used        |
| 2018: <sup>p</sup> |                        |           |           |                    |           |                      |           |                       |             |
| January-August     | 13,800                 | 13,300    | 16,200    | 40,300             | 471,000   | 25,900               | 21,000    | 7,480                 | 609,000     |
| August             | 1,730                  | 1,590     | 2,030     | 5,040              | 59,600    | 3,320                | 2,620     | 935                   | 76,800      |
| September          | 1,730                  | 2,200     | 2,030     | 5,040              | 59,900    | 2,970                | 2,620     | 935                   | 77,500      |
| October            | 1,730                  | 1,590     | 2,030     | 5,040              | 60,700    | 3,580                | 2,620     | 935                   | 78,200      |
| November           | 1,730                  | 1,750     | 2,030     | 5,040              | 61,900    | 1,510                | 2,620     | 935                   | 77,500      |
| December           | 1,730                  | 1,900     | 2,030     | 5,040              | 58,700    | 2,770                | 2,620     | 935                   | 75,800      |
| January-December   | 20,800                 | 20,700    | 24,400    | 60,500             | 712,000   | 36,800               | 31,500    | 11,200                | 918,000     |
| 2019:              |                        |           |           |                    |           |                      |           |                       |             |
| January            | 1,730                  | 2,160     | 2,030     | 5,040              | 60,100    | 3,610                | 2,620     | 935                   | 78,300      |
| February           | 1,730                  | 1,710     | 2,030     | 5,040              | 59,900    | 3,260                | 2,620     | 935                   | 77,200      |
| March              | 1,730                  | 2,340     | 2,030     | 5,040              | 60,200    | 3,410                | 2,620     | 935                   | 78,300      |
| April              | 1,730                  | 1,990     | 2,030     | 5,040              | 59,400    | 3,450                | 2,620     | 935                   | 77,200      |
| May                | 1,730                  | 1,850     | 2,030     | 5,040              | 59,700    | 3,540                | 2,620     | 935                   | 77,500      |
| June               | 1,730                  | 1,850     | 2,030     | 5,040              | 59,400    | 3,910                | 2,620     | 935                   | 77,500      |
| July               | 1,730                  | 2,260     | 2,030     | 5,040              | 57,100    | 3,880                | 2,620     | 935                   | 75,600      |
| August             | 1,730                  | 4,310     | 2,030     | 5,040              | 61,000    | 3,240                | 2,620     | 935                   | 80,900      |
| January-August     | 13,800                 | 18,500    | 16,200    | 40,300             | 477,000   | 28,300               | 21,000    | 7,480                 | 623,000     |

<sup>&</sup>lt;sup>e</sup>Estimated. <sup>p</sup>Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Monthly data estimated based on the monthly average of 2017 annual data. <sup>3</sup>Consumption at brass and wire-rod mills assumed equal to receipts.

### $\label{eq:table 10} \text{COPPER STOCKS AT END OF PERIOD}^1$

|                    |                     | Refined copper          |           |                          |                    |         |                  |         |
|--------------------|---------------------|-------------------------|-----------|--------------------------|--------------------|---------|------------------|---------|
|                    | Crude               |                         | Wire-rod  |                          |                    |         |                  | Total   |
| Period             | copper <sup>2</sup> | Refineries <sup>3</sup> | $mills^3$ | Brass mills <sup>3</sup> | Other <sup>4</sup> | Comex   | LME <sup>5</sup> | refined |
| 2018: <sup>p</sup> |                     |                         |           |                          |                    |         |                  |         |
| August             | 9,010               | 4,600                   | 22,600    | 7,890                    | 5,350              | 172,000 | 134,000          | 347,000 |
| September          | 9,110               | 3,120                   | 18,500    | 7,710                    | 5,350              | 156,000 | 125,000          | 316,000 |
| October            | 8,940               | 4,290                   | 19,900    | 7,460                    | 5,350              | 142,000 | 104,000          | 283,000 |
| November           | 7,380               | 5,580                   | 19,200    | 7,660                    | 5,350              | 123,000 | 96,900           | 258,000 |
| December           | 9,230               | 3,850                   | 21,800    | 8,210                    | 5,350              | 99,600  | 104,000          | 243,000 |
| 2019:              |                     |                         |           |                          |                    |         |                  |         |
| January            | 9,550               | 2,700                   | 19,700    | 8,370                    | 5,350              | 76,100  | 117,000          | 229,000 |
| February           | 10,200              | 2,750                   | 32,300    | 8,270                    | 5,350              | 51,200  | 91,300           | 191,000 |
| March              | 15,000              | 2,970                   | 24,800    | 8,400                    | 5,350              | 38,700  | 54,400           | 135,000 |
| April              | 8,860               | 6,630                   | 28,100    | 8,370                    | 5,350              | 31,100  | 48,600           | 128,000 |
| May                | 9,210               | 3,550                   | 23,200    | 7,250                    | 5,350              | 28,700  | 49,000           | 117,000 |
| June               | 13,600              | 5,000                   | 20,700    | 7,120                    | 5,350              | 30,700  | 38,000           | 107,000 |
| July               | 15,500              | 4,350                   | 25,000    | 7,070                    | 5,350              | 36,000  | 39,200           | 117,000 |
| August             | 14,500              | 5,280                   | 15,400    | 6,930                    | 5,350              | 40,000  | 45,700           | 119,000 |

Preliminary.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Copper content of blister and anode.

<sup>&</sup>lt;sup>3</sup>Stocks of refined copper as reported; no estimates are made for nonrespondents.

<sup>&</sup>lt;sup>4</sup>Monthly estimates based on 2017 annual data, comprising stocks at ingot makers, chemical plants, foundries, and miscellaneous manufacturers.

<sup>&</sup>lt;sup>5</sup>London Metal Exchange Ltd., U.S. warehouses.

#### TABLE 11 AVERAGE PRICE OF COPPER IN THE UNITED STATES AND ON THE LONDON METAL EXCHANGE

#### (Cents per pound)

|                |                      | Comex                 | LME        |
|----------------|----------------------|-----------------------|------------|
|                | U.S. producers       | first                 | cash price |
| Period         | cathode <sup>1</sup> | position <sup>2</sup> | Grade A    |
| 2018:          |                      |                       |            |
| August         | 276.087              | 269.387               | 273.936    |
| September      | 276.107              | 269.232               | 273.044    |
| October        | 282.498              | 275.935               | 281.918    |
| November       | 281.598              | 275.098               | 280.882    |
| December       | 279.026              | 272.338               | 276.397    |
| Year           | 298.737              | 292.567               | 295.960    |
| 2019:          |                      |                       |            |
| January        | 275.588              | 268.238               | 269.052    |
| February       | 293.129              | 285.566               | 284.754    |
| March          | 297.974              | 289.974               | 292.581    |
| April          | 299.820              | 292.007               | 292.317    |
| May            | 282.232              | 274.282               | 273.412    |
| June           | 274.968              | 267.843               | 266.166    |
| July           | 275.657              | 268.657               | 269.397    |
| August         | 264.293              | 257.243               | 258.890    |
| January-August | 282.958              | 275.476               | 275.821    |

<sup>&</sup>lt;sup>1</sup>Sum of "Comex high grade first position" and "NY dealer premium cathode."

<sup>2</sup>Listed as "Comex high grade first position."

Source: Platts Metals Week.

TABLE 12 AVERAGE BUYING PRICES FOR COPPER SCRAP

#### (Cents per pound)

|                |             |             | Dealers | New York)                 |
|----------------|-------------|-------------|---------|---------------------------|
|                | Brass mills | Refiners    | No. 2   | Red brass<br>turnings and |
| Period         | No. 1 scrap | No. 2 scrap | scrap   | borings                   |
| 2018:          |             |             |         |                           |
| August         | 261.00      | 229.07      | 187.80  | 145.43                    |
| September      | 261.16      | 228.50      | 178.45  | 141.47                    |
| October        | 267.65      | 239.80      | 187.50  | 141.00                    |
| November       | 267.50      | 240.10      | 185.00  | 130.00                    |
| December       | 264.52      | 238.72      | 187.50  | 141.00                    |
| Year           | 283.19      | 254.90      | 200.31  | 150.76                    |
| 2019:          |             |             |         |                           |
| January        | 260.33      | 235.19      | 180.79  | 139.00                    |
| February       | 278.66      | 252.39      | 189.82  | 140.42                    |
| March          | 282.69      | 253.31      | 202.50  | 145.00                    |
| April          | 284.26      | 252.17      | 206.50  | 147.00                    |
| May            | 265.41      | 231.95      | 201.05  | 143.18                    |
| June           | 257.40      | 225.70      | 188.00  | 138.00                    |
| July           | 258.48      | 227.95      | 186.32  | 138.00                    |
| August         | 247.20      | 217.00      | 181.68  | 134.18                    |
| January-August | 266.80      | 236.96      | 192.08  | 140.60                    |

Source: American Metal Market.

 ${\it TABLE~13}$  U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY  ${\it CLASS}^1$ 

(Metric tons, copper content)

|                     | Ore and concentrates <sup>2</sup> |          |        | Matte, ash, and precipitates <sup>3</sup> |                  |        |      | Blister and and  | odes   | Refined |        |          |
|---------------------|-----------------------------------|----------|--------|---|------------------|--------|------|------------------|--------|---------|--------|----------|
|                     |                                   | 2019     |        |   | 2019<br>January– |        |      | 2019<br>January– |        | -       | 2019   |          |
| Country or          |                                   | January- |        |   |                  |        |      |                  |        |         |        | January- |
| locality            | 2018                              | August   | August | 2018                                      | August           | August | 2018 | August           | August | 2018    | August | August   |
| Belgium             |                                   |          |        | 283                                       |                  | 228    |      |                  |        | 10,100  |        | 2,300    |
| Bolivia             |                                   |          |        |   |                  |        |      |                  |        | 1,460   |        | 1,390    |
| Canada              | 40                                | (4)      | (4)    | 613                                       | 15               | 218    | (4)  | (4)              | (4)    | 172,000 | 12,900 | 86,900   |
| Chile               |                                   |          |        |   |                  |        |      |                  |        | 483,000 | 27,400 | 275,000  |
| China               | 8                                 |          |        | 2   |                  |        |      |                  | (4)    | 111     | (4)    | 189      |
| Congo (Brazzaville) |                                   |          |        |   |                  |        |      |                  |        | 1,040   |        |          |
| Congo (Kinshasa)    |                                   |          |        |   |                  |        |      |                  |        | 3,380   |        |          |
| Finland             |                                   |          |        |   |                  |        | 292  | 16               | 174    |         |        | 38       |
| Germany             |                                   |          |        |   |                  |        | (4)  |                  |        | 1,260   | 262    | 1,400    |
| Japan               |                                   |          |        | 10  |                  | 50     | 2    | (4)              | (4)    | 3,990   | 207    | 1,880    |
| Malaysia            |                                   |          |        |   |                  |        | 54   |                  |        |         |        |          |
| Mexico              | 32,100                            | 2,270    | 22,300 | 539                                       | (4)              | 59     |      |                  | (4)    | 63,100  | 7,790  | 52,700   |
| Netherlands         |                                   |          |        | 115                                       |                  |        | 2    |                  | 3      | (4)     | (4)    | (4)      |
| Peru                |                                   |          |        |   |                  |        |      |                  |        | 19,100  | 2,010  | 5,010    |
| Saudi Arabia        |                                   |          |        | 85  |                  | 98     |      |                  |        |         |        |          |
| Zambia              |                                   |          |        |   |                  |        |      |                  |        | 18,900  |        | 683      |
| Other               |                                   |          | 2      | 175                                       | 2                | 537    | 5    | 36               | 39     | 562     | 75     | 129      |
| Total               | 32,200                            | 2,270    | 22,300 | 1,820                                     | 16               | 1,190  | 355  | 52               | 217    | 778,000 | 50,600 | 427,000  |

<sup>--</sup> Zero.

 $<sup>^{1}\</sup>mathrm{Data}$  are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Copper ore and concentrates only; excludes copper contained in ore and concentrates of other metals.

<sup>&</sup>lt;sup>3</sup>Copper matte, ash, and precipitates only; excludes the copper content of mattes and ashes of other metals.

<sup>&</sup>lt;sup>4</sup>Less than ½ unit.

 ${\it TABLE~14} \\ {\it U.S.~EXPORTS~OF~COPPER~(UNMANUFACTURED),~BY~CLASS}^1$ 

(Metric tons, copper content)

| -                  | Ore and concentrates <sup>2</sup> |          |         | Matte, | ash, and precipita |        | Blister and ano | des      | Refined |         |        |          |
|--------------------|-----------------------------------|----------|---------|--------|--------------------|--------|-----------------|----------|---------|---------|--------|----------|
|                    |                                   | 2019     |         |        | 2019               |        |                 | 2019     |         |         | 2019   |          |
| Country or         |                                   | January- |         | -      | January–           |        |                 | January- |         |         |        | January- |
| locality           | 2018                              | August   | August  | 2018   | August             | August | 2018            | August   | August  | 2018    | August | August   |
| Belgium            | 20                                | 19       | 111     | 2,150  | 350                | 1,820  | 226             | 15       | 320     |         |        | 29       |
| Brazil             | 3,040                             | 3,200    | 5,370   |        |                    |        | 62              |          | 39      | 23      |        | 1        |
| Bulgaria           | 2,990                             |          | 11,200  |        |                    |        |                 |          |         |         |        |          |
| Canada             | 17,200                            | 1,750    | 9,250   | 19,500 | 582                | 11,000 | 4,320           | 123      | 3,130   | 37,300  | 1,290  | 22,500   |
| China              | 47,500                            |          | 7       | 1,650  |                    | 90     | 210             | 12       | 153     | 47,600  | 1      | 7        |
| Germany            | 4,810                             |          |         | 1,130  | 74                 | 398    | 282             |          | 226     | 2       |        | 1        |
| Hong Kong          |                                   |          |         |        |                    | 19     | 462             | 20       | 259     | (4)     | 19     | 20       |
| India              |                                   |          |         | 44     |                    |        | 585             | 20       | 196     | 9       |        | 36       |
| Italy              | 1                                 |          |         | 10     |                    |        | 281             | 42       | 130     | 24      | (4)    | 26       |
| Japan              | 13,500                            |          | 10,100  | 230    |                    | 8      | 36              | 20       | 23      | 14      | 1      | 4        |
| Korea, Republic of | 4,690                             |          | 6,910   | 817    |                    | 74     | 1,680           | 136      | 1,140   | 2,200   |        | 180      |
| Malaysia           | 545                               |          | 35      | 413    |                    |        | 178             |          | 119     | 62      |        | 4        |
| Mexico             | 147,000                           | 23,100   | 165,000 | 1,430  | 1                  | 1,210  | 80              | 1        | 25      | 102,000 | 5,620  | 68,200   |
| Philippines        | 1,180                             |          | 4,720   |        |                    |        | 42              | 8        | 41      | (4)     |        | 2        |
| Slovakia           |                                   |          |         | 526    | 97                 | 643    |                 |          |         |         |        |          |
| Spain              | 10,500                            |          | 10,100  | 210    |                    |        | 101             |          | 40      | 1       |        |          |
| Other              | 120                               | 11       | 499     | 1,850  | 34                 | 512    | 503             | 58       | 721     | 278     | 25     | 135      |
| Total              | 253,000                           | 28,100   | 223,000 | 30,000 | 1,140              | 15,700 | 9,060           | 454      | 6,560   | 190,000 | 6,960  | 91,100   |

<sup>--</sup> Zero.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>&</sup>lt;sup>2</sup>Copper ore and concentrates only; excludes copper contained in ore and concentrates of other metals.

<sup>&</sup>lt;sup>3</sup>Copper matte, ash, and precipitates only; excludes the copper content of mattes and ashes of other metals.

<sup>&</sup>lt;sup>4</sup>Less than ½ unit.

 $\label{eq:table 15} \text{U.S. IMPORTS FOR CONSUMPTION OF COPPER SCRAP}^1$ 

|                    |             | Unalloyed | Alloyed  |         |        |          |  |
|--------------------|-------------|-----------|----------|---------|--------|----------|--|
|                    | <del></del> | 201       | 19       |         | 2019   |          |  |
| Country or         |             |           | January- |         |        | January- |  |
| locality           | 2018        | August    | August   | 2018    | August | August   |  |
| Bahamas            | 23          |           |          | 569     | 64     | 536      |  |
| Canada             | 16,800      | 1,370     | 11,300   | 72,000  | 3,320  | 37,500   |  |
| Chile              | 177         |           |          | 321     | 38     | 1,280    |  |
| Colombia           | 367         |           | 121      | 926     | 123    | 829      |  |
| Costa Rica         | 459         | 87        | 358      | 750     | 192    | 777      |  |
| Dominican Republic | 80          | 29        | 416      | 901     | 186    | 1,470    |  |
| Guatemala          | 92          |           | 8        | 501     | 47     | 494      |  |
| Honduras           | 5           | 5         | 39       | 589     | 74     | 362      |  |
| Hong Kong          | 7           |           | 16       | 1,450   |        | 229      |  |
| Japan              | 278         | 1         | 959      | 52      |        |          |  |
| Mexico             | 10,800      | 855       | 8,370    | 38,600  | 3,610  | 28,200   |  |
| Pakistan           | 567         |           | 94       |         |        |          |  |
| Panama             | 1,020       | 57        | 445      | 640     | 41     | 292      |  |
| Spain              |             |           |          | 637     |        |          |  |
| Venezuela          | 2,540       |           | 28       | 646     | 164    | 435      |  |
| Other              | 1,270       | 106       | 631      | 4,150   | 255    | 3,260    |  |
| Total              | 34,500      | 2,510     | 22,800   | 123,000 | 8,120  | 75,700   |  |

<sup>--</sup> Zero.

 $<sup>^{1}\</sup>mathrm{Data}$  are rounded to no more than three significant digits; may not add to totals shown.

TABLE 16
U.S. EXPORTS OF COPPER SCRAP<sup>1</sup>

|                    |         |                |        | Unalloyed      | Alloyed |                   |         |         |                     |        |                       |         |
|--------------------|---------|----------------|--------|----------------|---------|-------------------|---------|---------|---------------------|--------|-----------------------|---------|
|                    | 2019    |                |        |                |         |                   |         |         | 2019                |        |                       |         |
|                    |         | No. 1 January— |        | No. 2 January— |         | Other<br>January– |         |         | Segregated January– |        | Unsegregated January- |         |
| Country or         |         |                |        |                |         |                   |         |         |                     |        |                       |         |
| locality           | 2018    | August         | August | August         | August  | August            | August  | 2018    | August              | August | August                | August  |
| Belgium            | 19,500  | 542            | 4,550  | 1,050          | 7,780   | 231               | 1,710   | 11,800  |                     | 597    | 1,330                 | 8,820   |
| Canada             | 51,900  |                |        |                |         | 4,220             | 33,000  | 40,200  |                     |        | 3,140                 | 33,000  |
| China              | 193,000 | 1,580          | 19,900 | 2,000          | 21,700  | 1,100             | 18,100  | 78,600  | 39                  | 5,170  | 1,150                 | 6,440   |
| Germany            | 24,000  | 2,050          | 12,600 | 847            | 5,650   | 197               | 1,560   | 13,300  | 42                  | 1,060  | 1,490                 | 8,890   |
| Greece             | 7,630   | 383            | 4,810  | 27             | 455     | 140               | 1,070   | 1,150   |                     | 198    | 23                    | 262     |
| Hong Kong          | 20,700  | 754            | 5,540  | 481            | 4,630   | 548               | 6,070   | 23,600  | 969                 | 7,710  | 2,230                 | 15,900  |
| India              | 14,000  | 373            | 1,910  | 700            | 2,820   | 496               | 5,410   | 34,300  | 3,270               | 20,800 | 1,570                 | 9,170   |
| Japan              | 29,300  | 510            | 4,240  | 1,160          | 9,760   | 327               | 2,440   | 26,700  | 327                 | 4,140  | 981                   | 10,800  |
| Korea, Republic of | 45,800  | 2,390          | 14,000 | 577            | 3,230   | 1,580             | 8,710   | 25,900  | 920                 | 8,190  | 862                   | 8,120   |
| Malaysia           | 47,800  | 835            | 8,590  | 2,450          | 12,400  | 1,830             | 22,400  | 71,800  | 1,690               | 21,900 | 13,500                | 83,000  |
| Netherlands        | 8,030   | 19             | 559    | 19             | 414     | 393               | 2,590   | 2,280   | 35                  | 216    | 17                    | 599     |
| Pakistan           | 1,450   | 23             | 382    | 5              | 519     |                   | 57      | 16,500  | 52                  | 411    | 2,550                 | 11,500  |
| Spain              | 760     | 25             | 289    |                | 161     | 79                | 413     | 10,100  | 151                 | 2,120  | 362                   | 4,450   |
| Taiwan             | 17,100  | 654            | 5,880  | 269            | 1,350   | 861               | 4,290   | 18,300  | 167                 | 3,980  | 777                   | 8,420   |
| Thailand           | 3,000   | 174            | 619    | 80             | 745     | 152               | 965     | 11,100  | 81                  | 357    | 917                   | 10,000  |
| Other              | 25,700  | 1,250          | 10,100 | 752            | 5,440   | 762               | 4,200   | 17,900  | 253                 | 2,610  | 2,160                 | 13,100  |
| Total              | 509,000 | 11,600         | 93,900 | 10,400         | 77,100  | 12,900            | 113,000 | 403,000 | 8,010               | 79,500 | 33,100                | 232,000 |

<sup>--</sup> Zero.

<sup>&</sup>lt;sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.