

# Mineral Industry Surveys

## For information, contact:

Kim B. Shedd, Cobalt Commodity Specialist  
National Minerals Information Center  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4974, Fax: (703) 648-7757  
Email: ksheddd@usgs.gov

Annie Hwang (Data)  
Telephone: (703) 648-7952  
Fax: (703) 648-7975  
Email: ahwang@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals/>

## COBALT IN AUGUST 2018

The amount of cobalt contained in U.S. imports of cobalt metals and chemicals in January through August 2018 was 7% more than that imported during the same period in 2017 (table 2). The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals in January through August 2018 was 65% more than that exported during the same period in 2017 (table 4).

## Prices

In August, the monthly average U.S. spot cobalt price decreased by 3% from that in July 2018 and was 9% higher than that in August 2017. The monthly average LME cash mean price decreased by 11% from that in July 2018 and was 9% higher than that in August 2017. The following listed prices are for cobalt metal in August, in dollars per pound.

| Type                       | Price range | Average price |
|----------------------------|-------------|---------------|
| U.S. spot <sup>1</sup>     | 32.00–36.00 | 33.20         |
| LME cash mean <sup>2</sup> | 24.83–30.39 | 28.65         |

<sup>1</sup>Source: Platts Metals Week, minimum 99.8% cobalt cathode.

<sup>2</sup>London Metal Exchange, mean of the cash buyer and cash seller price, minimum 99.3% cobalt briquettes, cathode, ingot, or rounds (converted from dollars per metric ton and rounded to the nearest cent).

*List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <http://minerals.usgs.gov/minerals/>.*

TABLE 1  
REPORTED CONSUMPTION AND STOCKS OF COBALT MATERIALS<sup>1</sup>

(Metric tons, contained cobalt)

| Period                        | Consumption,<br>U.S. industry <sup>2</sup> | Stocks, end of period         |                                    |                     |                       |       |
|-------------------------------|--|-------------------------------|------------------------------------|---------------------|-----------------------|-------|
|                               |  | U.S.<br>industry <sup>2</sup> | U.S.<br>Government <sup>3, 4</sup> | LME <sup>3, 5</sup> |                       | Total |
|                               |  |                               |                                    | U.S.<br>warehouse   | Non-U.S.<br>warehouse |       |
| 2017:                         |  |                               |                                    |                     |                       |       |
| August                        | 732  | 966                           | 302                                | 191                 | 553                   | 744   |
| September                     | 731  | 978                           | 302                                | 183                 | 622                   | 805   |
| October                       | 724  | 985                           | 302                                | 167                 | 583                   | 750   |
| November                      | 701  | 977                           | 302                                | 163                 | 562                   | 725   |
| December                      | 705  | 996                           | 302                                | 160                 | 420                   | 580   |
| January–August                | 5,850                                      | 966                           | 302                                | 191                 | 553                   | 744   |
| January–December <sup>6</sup> | 8,710                                      | 996                           | 302                                | 160                 | 420                   | 580   |
| 2018:                         |  |                               |                                    |                     |                       |       |
| January                       | 717  | 1,000                         | 302                                | 159                 | 385                   | 544   |
| February                      | 697  | 1,010                         | 302                                | 159                 | 360                   | 519   |
| March                         | 746  | 962                           | 302                                | 141                 | 397                   | 538   |
| April                         | 742  | 934                           | 302                                | 141                 | 446                   | 587   |
| May                           | NA   | NA                            | 302                                | 139                 | 471                   | 610   |
| June                          | NA   | NA                            | 302                                | 135                 | 501                   | 636   |
| July                          | NA   | NA                            | 302                                | 131                 | 520                   | 651   |
| August                        | NA   | NA                            | 302                                | 131                 | 559                   | 690   |
| January–August                | NA   | NA                            | 302                                | 131                 | 559                   | 690   |

<sup>2</sup>Preliminary. NA Not available.

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

<sup>2</sup>Data for cobalt metal, metal powder, oxide and other chemical compounds, and scrap reported by U.S. cobalt processors and consumers. Includes estimates.

<sup>3</sup>Cobalt metal.

<sup>4</sup>Data from Defense Logistics Agency Strategic Materials.

<sup>5</sup>London Metal Exchange.

<sup>6</sup>U.S. industry data based on monthly reports.

TABLE 2  
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY OR LOCALITY<sup>1</sup>

| Period and country or<br>locality of origin | Metals <sup>2</sup>              |                                   | Oxides and hydroxides            |                                   | Salts and compounds <sup>3</sup> |                                   | Total cobalt<br>content for<br>the period <sup>5</sup><br>(metric tons) | Cobalt<br>content,<br>year to<br>date <sup>5,6</sup><br>(metric tons) |
|---|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|---|---|
|   | Gross<br>weight<br>(metric tons) | Value <sup>4</sup><br>(thousands) | Gross<br>weight<br>(metric tons) | Value <sup>4</sup><br>(thousands) | Gross<br>weight<br>(metric tons) | Value <sup>4</sup><br>(thousands) |   |   |
| 2017:                                       |                                  |                                   |                                  |                                   |                                  |                                   |   |   |
| August                                      | 569                              | \$31,300                          | 202                              | \$8,180                           | 297                              | \$3,660                           | 800   | 7,880   |
| September                                   | 788                              | 45,300                            | 139                              | 5,970                             | 234                              | 2,500                             | 963   | 8,840   |
| October                                     | 875                              | 51,900                            | 104                              | 4,670                             | 187                              | 2,730                             | 1,000   | 9,850   |
| November                                    | 1,090                            | 63,800                            | 250                              | 10,900                            | 187                              | 3,450                             | 1,340   | 11,200  |
| December                                    | 507                              | 28,300                            | 201                              | 9,330                             | 218                              | 3,430                             | 723   | 11,900  |
| January–August                              | 6,270 <sup>r</sup>               | 276,000                           | 1,420                            | 45,700                            | 1,870                            | 22,100                            | 7,880 <sup>r</sup>  | XX  |
| January–December                            | 9,530                            | 465,000                           | 2,120                            | 76,600                            | 2,690                            | 34,200                            | 11,900  | XX  |
| 2018:                                       |                                  |                                   |                                  |                                   |                                  |                                   |   |   |
| January                                     | 1,150                            | 70,900                            | 135                              | 6,220                             | 345                              | 4,790                             | 1,350   | 1,350   |
| February                                    | 902                              | 62,500                            | 176                              | 9,700                             | 271                              | 2,970                             | 1,110   | 2,470   |
| March                                       | 782                              | 47,500                            | 304                              | 17,000                            | 933                              | 6,980                             | 1,280   | 3,750   |
| April                                       | 922                              | 71,600                            | 149                              | 8,700                             | 454                              | 4,900                             | 1,180   | 4,930   |
| May   | 731                              | 51,300                            | 172                              | 9,950                             | 225                              | 3,070                             | 933   | 5,860   |
| June  | 767                              | 54,700                            | 122                              | 7,620                             | 832                              | 5,400                             | 1,100   | 6,960   |
| July  | 577                              | 43,000                            | 133                              | 7,820                             | 204                              | 1,170                             | 731   | 7,690   |
| August:                                     |                                  |                                   |                                  |                                   |                                  |                                   |   |   |
| Australia                                   | --                               | --                                | --                               | --                                | --                               | --                                | --  | 506   |
| Belgium                                     | 3                                | 358                               | 21                               | 1,100                             | --                               | --                                | 18  | 329   |
| Brazil                                      | --                               | --                                | 9                                | 376                               | (7)                              | 8                                 | 7   | 150   |
| Canada                                      | 90                               | 6,980                             | (7)                              | 10                                | --                               | --                                | 90  | 1,120   |
| China                                       | 173                              | 13,500                            | 3                                | 130                               | 14                               | 277                               | 179   | 1,100   |
| Finland                                     | 58                               | 4,830                             | 23                               | 1,230                             | (7)                              | 5                                 | 75  | 1,190   |
| France                                      | 4                                | 314                               | --                               | --                                | --                               | --                                | 4   | 13  |
| Germany                                     | 7                                | 354                               | (7)                              | 5                                 | --                               | --                                | 7   | 33  |
| Hong Kong                                   | --                               | --                                | --                               | --                                | --                               | --                                | --  | 46  |
| Italy                                       | --                               | --                                | --                               | --                                | --                               | --                                | --  | 10  |
| Japan                                       | 116                              | 8,460                             | --                               | --                                | --                               | --                                | 116   | 1,330   |
| Madagascar                                  | 105                              | 9,150                             | --                               | --                                | --                               | --                                | 105   | 462   |
| Morocco                                     | 20                               | 1,550                             | --                               | --                                | --                               | --                                | 20  | 160   |
| Netherlands                                 | --                               | --                                | --                               | --                                | --                               | --                                | --  | 4   |
| Norway                                      | 64                               | 2,670                             | --                               | --                                | --                               | --                                | 64  | 1,190   |
| Russia                                      | --                               | --                                | --                               | --                                | --                               | --                                | --  | 180   |
| South Africa                                | 32                               | 239                               | --                               | --                                | --                               | --                                | 32  | 225   |
| Taiwan                                      | --                               | --                                | --                               | --                                | --                               | --                                | --  | 22  |
| United Kingdom                              | (7)                              | 13                                | (7)                              | 6                                 | 21                               | 191                               | 7   | 329   |
| Other                                       | (7)                              | 14                                | (7)                              | 21                                | (7)                              | 2                                 | 1   | 8   |
| Total                                       | 674                              | 48,400                            | 56                               | 2,880                             | 35                               | 484                               | 724   | 8,410   |
| January–August                              | 6,500                            | 450,000                           | 1,250                            | 69,900                            | 3,300                            | 29,800                            | 8,410   | XX  |

<sup>r</sup>Revised. XX Not applicable. -- Zero.

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

<sup>2</sup>Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder; may include intermediate products of cobalt metallurgy.

<sup>3</sup>Includes cobalt acetates, cobalt carbonates, cobalt chlorides, and cobalt sulfates.

<sup>4</sup>Customs value.

<sup>5</sup>Estimated from gross weights.

<sup>6</sup>May include revisions to previously published data.

<sup>7</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY OR LOCALITY<sup>1</sup>

| Period and country or locality of origin | Unwrought cobalt alloys       |                                   | Cobalt waste and scrap        |                                   | Wrought cobalt and cobalt articles |                                   |
|--|-------------------------------|-----------------------------------|-------------------------------|-----------------------------------|------------------------------------|-----------------------------------|
|  | Gross weight<br>(metric tons) | Value <sup>2</sup><br>(thousands) | Gross weight<br>(metric tons) | Value <sup>2</sup><br>(thousands) | Gross weight<br>(metric tons)      | Value <sup>2</sup><br>(thousands) |
| 2017:                                    |                               |                                   |                               |                                   |                                    |                                   |
| August                                   | 12                            | \$484                             | 102                           | \$1,580                           | 24                                 | \$2,510                           |
| September                                | 24                            | 1,140                             | 119                           | 1,750                             | 20                                 | 2,680                             |
| October                                  | 45                            | 2,110                             | 181                           | 2,790                             | 13                                 | 2,780                             |
| November                                 | 27                            | 1,260                             | 103                           | 1,100                             | 20                                 | 3,040                             |
| December                                 | 50                            | 2,270                             | 124                           | 2,060                             | 15                                 | 2,750                             |
| January–August                           | 271                           | 11,700                            | 1,020                         | 15,500                            | 140 <sup>r</sup>                   | 19,200 <sup>r</sup>               |
| January–December                         | 418                           | 18,400                            | 1,550                         | 23,300                            | 208                                | 30,500                            |
| 2018:                                    |                               |                                   |                               |                                   |                                    |                                   |
| January                                  | 42                            | 2,040                             | 198                           | 3,090                             | 19                                 | 3,330                             |
| February                                 | 63                            | 3,230                             | 161                           | 2,780                             | 22                                 | 2,870                             |
| March                                    | 38                            | 2,070                             | 258                           | 3,650                             | 41                                 | 4,760                             |
| April                                    | 45                            | 2,550                             | 164                           | 3,760                             | 21                                 | 2,600                             |
| May                                      | 85                            | 4,150                             | 207                           | 3,190                             | 51                                 | 4,850                             |
| June                                     | 38                            | 2,480                             | 212                           | 3,860                             | 24                                 | 3,350                             |
| July                                     | 26                            | 1,770                             | 226                           | 4,080                             | 24                                 | 4,050                             |
| August:                                  |                               |                                   |                               |                                   |                                    |                                   |
| Belgium                                  | 6                             | 441                               | --                            | --                                | (3)                                | 4                                 |
| Canada                                   | (3)                           | 63                                | 2                             | 6                                 | 3                                  | 988                               |
| France                                   | 1                             | 86                                | 8                             | 192                               | 5                                  | 572                               |
| India                                    | --                            | --                                | --                            | --                                | 6                                  | 218                               |
| Ireland                                  | --                            | --                                | 50                            | 454                               | (3)                                | 88                                |
| Japan                                    | --                            | --                                | 9                             | 343                               | (3)                                | 13                                |
| Korea, Republic of                       | --                            | --                                | 2                             | 60                                | --                                 | --                                |
| Mexico                                   | --                            | --                                | 6                             | 94                                | (3)                                | 35                                |
| Netherlands                              | --                            | --                                | 13                            | 147                               | --                                 | --                                |
| Singapore                                | --                            | --                                | 18                            | 364                               | --                                 | --                                |
| Taiwan                                   | --                            | --                                | 3                             | 116                               | (3)                                | 5                                 |
| Tunisia                                  | --                            | --                                | 11                            | 103                               | (3)                                | 4                                 |
| United Arab Emirates                     | --                            | --                                | 10                            | 209                               | --                                 | --                                |
| United Kingdom                           | 17                            | 1,090                             | 44                            | 737                               | 7                                  | 583                               |
| Other                                    | (3)                           | 39                                | 2                             | 58                                | 1                                  | 326                               |
| Total                                    | 25                            | 1,720                             | 179                           | 2,880                             | 23                                 | 2,830                             |
| January–August                           | 362                           | 20,000                            | 1,600                         | 27,300                            | 226                                | 28,600                            |

<sup>r</sup>Revised. -- Zero.

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

<sup>2</sup>Customs value.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF COBALT MATERIALS<sup>1</sup>

| Period           | Unwrought cobalt, powders,<br>matte, waste and scrap <sup>2</sup> |                                   | Oxides and hydroxides            |                                   | Salts and compounds <sup>3</sup> |                                   | Total cobalt<br>content for<br>the period <sup>5</sup><br>(metric tons) | Cobalt<br>content,<br>year to<br>date <sup>5, 6</sup><br>(metric tons) |
|------------------|---|-----------------------------------|----------------------------------|-----------------------------------|----------------------------------|-----------------------------------|---|--|
|                  | Gross<br>weight<br>(metric tons)                                  | Value <sup>4</sup><br>(thousands) | Gross<br>weight<br>(metric tons) | Value <sup>4</sup><br>(thousands) | Gross<br>weight<br>(metric tons) | Value <sup>4</sup><br>(thousands) |   |  |
| 2017:            |   |                                   |                                  |                                   |                                  |                                   |   |  |
| August           | 347   | \$8,490                           | 4                                | \$138                             | 19                               | \$277                             | 354   | 3,480  |
| September        | 368   | 10,100                            | 13                               | 576                               | 19                               | 20                                | 382   | 3,870  |
| October          | 485   | 13,600                            | 7                                | 235                               | 19                               | 281                               | 494   | 4,360  |
| November         | 841   | 11,200                            | 4                                | 169                               | 20                               | 295                               | 849   | 5,210  |
| December         | 507   | 11,600                            | 11                               | 507                               | 19                               | 330                               | 520   | 5,730  |
| January–August   | 3,340   | 70,700                            | 165                              | 1,600                             | 127                              | 1,590                             | 3,480   | XX   |
| January–December | 5,540   | 117,000                           | 200                              | 3,090                             | 205                              | 2,510                             | 5,730   | XX   |
| 2018:            |   |                                   |                                  |                                   |                                  |                                   |   |  |
| January          | 308   | 8,990                             | 1                                | 58                                | 19                               | 280                               | 314   | 314  |
| February         | 973   | 11,800                            | 19                               | 353                               | 16                               | 276                               | 991   | 1,300  |
| March            | 1,310   | 17,700                            | 4                                | 190                               | --                               | --                                | 1,310   | 2,610  |
| April            | 530   | 16,200                            | 5                                | 290                               | 38                               | 555                               | 543   | 3,160  |
| May              | 990   | 22,000                            | 7                                | 412                               | 21                               | 833                               | 1,000   | 4,160  |
| June             | 336   | 12,000                            | 5                                | 180                               | 1                                | 12                                | 340   | 4,500  |
| July             | 605   | 19,100                            | 12                               | 686                               | 12                               | 35                                | 616   | 5,110  |
| August           | 626   | 19,700                            | 2                                | 83                                | 59                               | 851                               | 642   | 5,760  |
| January–August   | 5,680   | 127,000                           | 56                               | 2,250                             | 165                              | 2,840                             | 5,760   | XX   |

XX Not applicable. -- Zero.

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

<sup>2</sup>May include other intermediate products of cobalt metallurgy and unwrought cobalt alloys.

<sup>3</sup>Cobalt acetates and cobalt chlorides.

<sup>4</sup>Free alongside ship (f.a.s.) value.

<sup>5</sup>Estimated from gross weights.

<sup>6</sup>May include revisions to previously published data.

Source: U.S. Census Bureau.

TABLE 5  
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE,  
AND CONCENTRATES<sup>1</sup>

| Period           | Wrought cobalt and<br>cobalt articles |                                   | Cobalt ore and<br>concentrates   |                                   |
|------------------|---------------------------------------|-----------------------------------|----------------------------------|-----------------------------------|
|                  | Gross<br>weight<br>(metric tons)      | Value <sup>2</sup><br>(thousands) | Gross<br>weight<br>(metric tons) | Value <sup>2</sup><br>(thousands) |
| 2017:            |                                       |                                   |                                  |                                   |
| August           | 115                                   | \$9,010                           | 6                                | \$30                              |
| September        | 98                                    | 9,000                             | 1                                | 5                                 |
| October          | 107                                   | 8,340                             | --                               | --                                |
| November         | 85                                    | 10,200                            | --                               | --                                |
| December         | 94                                    | 10,400                            | 3                                | 7                                 |
| January–August   | 802                                   | 64,300                            | 249                              | 1,030                             |
| January–December | 1,190                                 | 102,000                           | 253                              | 1,040                             |
| 2018:            |                                       |                                   |                                  |                                   |
| January          | 98                                    | 9,690                             | --                               | --                                |
| February         | 99                                    | 10,100                            | (3)                              | 4                                 |
| March            | 88                                    | 10,700                            | --                               | --                                |
| April            | 70                                    | 6,970                             | (3)                              | 3                                 |
| May              | 69                                    | 8,500                             | --                               | --                                |
| June             | 109                                   | 11,800                            | 2                                | 83                                |
| July             | 92                                    | 9,850                             | 35                               | 302                               |
| August           | 85                                    | 9,340                             | --                               | --                                |
| January–August   | 710                                   | 77,000                            | 37                               | 391                               |

-- Zero.

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

<sup>2</sup>Free alongside ship (f.a.s.) value.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.