

# Mineral Industry Surveys

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## COBALT IN DECEMBER 2016

On the basis of preliminary data, U.S. cobalt consumption in 2016 was slightly more than consumption during 2015. The amount of cobalt contained in U.S. imports of cobalt metals and chemicals in 2016 was 12% more than revised imports during 2015. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals in 2016 was 9% more than revised exports during 2015.

**Prices**

In December, the monthly average U.S. spot cobalt price increased for the sixth consecutive month and was 38% higher than that in January. The monthly average LME cash mean price increased for the eighth consecutive month and was 36% higher than that in January. The following listed prices are for cobalt metal in December, in dollars per pound.

Type	Price range	Average price
U.S. spot <sup>1</sup>	14.00–15.70	14.91
LME cash mean <sup>2</sup>	13.55–14.88	14.34

<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).

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

(Metric tons, contained cobalt)

Period	Consumption, U.S. industry <sup>p, 2</sup>	Stocks, end of period				Total
		U.S. industry <sup>p, 2</sup>	U.S. Government <sup>3, 4</sup>	LME <sup>3, 5</sup>		
				U.S. warehouse	Non-U.S. warehouse	
2015:						
December	701	1,050	301	165	465	630
January–December <sup>6</sup>	8,450	1,050	301	165	465	630
Year <sup>7</sup>	8,780	1,080	301	165	465	630
2016:						
January	720	1,060	301	169	450	619
February	713	1,050	301	169	445	614
March	705	1,070	301	193	458	651
April	718	1,050	301	197	457	654
May	734	1,050	301	186	451	637
June	712	1,030	301	190	455	645
July	708	1,020	301	190	454	644
August	693	1,040	301	190	440	630
September	698	1,030	301	190	435	625
October	734	1,040	301	195	425	620
November	711	1,040	301	195	429	624
December	724	1,020	301	195	496	691
January–December	8,570	1,020	301	195	496	691

<sup>p</sup>Preliminary.

<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.

<sup>7</sup>U.S. industry data include annual reports.

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

Period and country of origin	Metals <sup>2</sup>		Oxides and hydroxides		Salts and compounds <sup>3</sup>		Total cobalt content for the period <sup>5</sup> (metric tons)	Cobalt content, year to date <sup>5,6</sup> (metric tons)
	Gross weight (metric tons)	Value <sup>4</sup> (thousands)	Gross weight (metric tons)	Value <sup>4</sup> (thousands)	Gross weight (metric tons)	Value <sup>4</sup> (thousands)		
2015:								
December	714	\$17,900	112	\$2,410	142	\$1,550	841	11,400
January–December	9,290	267,000	1,750	40,200	2,630	26,300	11,400	XX
2016:								
January	612	14,200	100	1,980	104	1,340	720	720
February	1,050	23,100	171	3,010	106	1,160	1,210	1,930
March	720	17,500	173	3,260	170	1,860	903	2,830
April	701	18,400	190	3,680	194	1,790	899	3,730
May	643	15,500	145	2,790	347	3,390	857	4,590
June	920	22,100	147	2,750	221	2,270	1,100	5,690
July	767	18,900	106	2,310	241	1,990	918	6,600
August	1,240	30,100	243	4,690	225	2,230	1,480	8,090
September	724	17,800	223	4,650	95	814	912	9,000
October	787	20,600	156	3,300	167	1,630	956	9,950
November	1,120	28,700	99	2,210	103	756	1,220	11,200
December:								
Australia	156	4,300	--	--	--	--	156	603
Austria	--	--	--	--	--	--	--	1
Belgium	6	299	104	2,370	--	--	81	477
Brazil	--	--	--	--	10	127	3	40
Canada	126	3,530	--	--	--	--	126	1,370
China	172	4,620	25	556	81	569	212	919
Croatia	--	--	--	--	--	--	--	(7)
Finland	82	2,250	41	898	53	587	130	1,010
France	(7)	6	--	--	--	--	(7)	31
Germany	8	281	--	--	--	--	8	85
India	--	--	--	--	--	--	--	21
Ireland	--	--	--	--	--	--	--	1
Italy	--	--	--	--	--	--	--	(7)
Japan	132	3,440	--	--	--	--	132	1,750
Korea, Republic of	--	--	--	--	--	--	--	1
Kuwait	--	--	--	--	--	--	--	5
Macao	--	--	--	--	--	--	--	40
Madagascar	168	4,740	--	--	--	--	168	1,150
Morocco	40	1,110	--	--	--	--	40	377
Netherlands	--	--	--	--	--	--	--	10
New Caledonia	--	--	--	--	--	--	--	18
Norway	330	9,560	--	--	--	--	330	2,430
Peru	--	--	--	--	--	--	--	5
Philippines	--	--	--	--	--	--	--	3
Russia	--	--	--	--	--	--	--	678
Singapore	--	--	--	--	--	--	--	29
Slovakia	--	--	--	--	--	--	--	30
South Africa	--	--	--	--	--	--	--	197
Sweden	14	142	--	--	--	--	14	14
Taiwan	--	--	--	--	--	--	--	3
United Kingdom	(7)	15	39	865	5	54	30	507
Zambia	220	5,710	--	--	--	--	220	1,030
Total	1,450	40,000	209	4,690	149	1,340	1,650	12,800
January–December	10,700	267,000	1,960	39,300	2,120	20,600	12,800	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>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<sup>1</sup>

Period and country of origin	Unwrought cobalt alloys		Cobalt waste and scrap		Wrought cobalt and cobalt articles	
	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Gross weight (metric tons)	Value <sup>2</sup> (thousands)
2015:						
December	236	\$5,990	59	\$940	24	\$1,450
January–December	1,250	39,700	812	12,100	211	21,800
2016:						
January	82	2,600	43	698	10	1,590
February	109	3,460	58	793	13	1,550
March	91	2,750	82	1,150	11	1,440
April	67	2,080	43	619	9	1,540
May	75	2,860	64	896	7	1,310
June	78	2,090	77	1,090	15	2,150
July	70	2,360	74	1,230	6	1,360
August	60	1,770	115	1,600	15	1,700
September	24	1,040	114	1,410	21	2,220
October	51	2,010	155	1,550	27	2,760
November	67	2,450	94	1,230	25	2,390
December:						
Belgium	(3)	8	(3)	19	--	--
Brazil	--	--	8	35	--	--
Canada	(3)	2	5	57	2	528
China	--	--	5	160	1	251
Finland	1	31	--	--	--	--
France	(3)	3	4	65	2	718
Germany	--	--	8	110	2	246
India	--	--	--	--	(3)	8
Ireland	--	--	16	282	(3)	28
Italy	2	58	--	--	--	--
Japan	--	--	8	101	(3)	54
Korea	--	--	1	9	(3)	2
Mexico	--	--	(3)	4	(3)	7
Norway	3	125	--	--	--	--
Singapore	--	--	1	16	--	--
Switzerland	--	--	--	--	1	30
Taiwan	--	--	3	64	--	--
Tunisia	--	--	15	173	--	--
United Kingdom	37	1,310	35	458	1	77
Total	43	1,540	108	1,550	8	1,950
January–December	820	27,000	1,030	13,800	167	22,000

-- 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, matte, waste and scrap <sup>2</sup>		Oxides and hydroxides		Salts and compounds <sup>3</sup>		Total cobalt content for the period <sup>5</sup> (metric tons)	Cobalt content, year to date <sup>5,6</sup> (metric tons)
	Gross weight (metric tons)	Value <sup>4</sup> (thousands)	Gross weight (metric tons)	Value <sup>4</sup> (thousands)	Gross weight (metric tons)	Value <sup>4</sup> (thousands)		
2015:								
December	322	\$7,020	--	--	19	\$150	327	3,830
January–December	3,640	87,000	192	\$2,690	180	1,400	3,830	XX
2016:								
January	305	5,930	7	118	10	43	312	312
February	336	6,600	4	45	33	107	347	659
March	289	6,850	72	236	19	132	345	1,000
April	399	7,530	2	51	29	130	408	1,410
May	317	7,170	4	39	75	371	337	1,750
June	303	6,100	10	214	68	356	327	2,080
July	311	5,570	--	--	--	--	311	2,390
August	458	8,030	21	256	39	202	483	2,870
September	275	5,480	6	130	8	66	281	3,150
October	273	5,240	4	143	(7)	6	275	3,430
November	360	6,160	1	52	24	102	367	3,790
December	362	7,430	2	100	9	86	365	4,160
January–December	3,990	78,100	134	1,380	314	1,600	4,160	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.

<sup>7</sup>Less than ½ unit.

Source: U.S. Census Bureau.

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

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Gross weight (metric tons)	Value <sup>2</sup> (thousands)
2015:				
December	143	\$7,730	--	--
January–December	1,890	108,000	6	\$35
2016:				
January	117	6,880	--	--
February	128	7,360	--	--
March	163	9,110	--	--
April	140	8,190	--	--
May	109	8,370	--	--
June	137	9,970	--	--
July	106	7,830	(3)	4
August	80	6,520	2	59
September	93	7,780	(3)	3
October	120	8,000	--	--
November	90	7,910	--	--
December	103	8,490	--	--
January–December	1,390	96,400	2	65

-- 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.