

# Mineral Industry Surveys

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## COBALT IN DECEMBER 2013

Preliminary data indicate that U.S. cobalt consumption during 2013 was slightly less than consumption during 2012. The amount of cobalt contained in U.S. imports of cobalt metals and chemicals during 2013 was 5% less than that imported during 2012. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals during 2013 was slightly more than that exported during 2012.

## Prices

Prices for cobalt metal, in dollars per pound, in December 2013 are listed below.

Type	Price range	Average price
U.S. spot <sup>1</sup>	11.75–12.75	12.25
LME cash mean <sup>2</sup>	11.45–13.15	12.06

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

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

TABLE 1  
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS<sup>1</sup>

(Metric tons, contained cobalt)

Period	Metal <sup>2</sup>	Oxide and other chemical compounds <sup>3</sup>	Scrap	Total
2012: <sup>P</sup>				
December	311	176	181	668
January–December <sup>4</sup>	3,760	2,160	2,160	8,070
Year <sup>5</sup>	4,050	2,210	2,160	8,420
2013:				
January	311	180	182	673
February	308	179	182	669
March	304	180	182	666
April	304	186	182	672
May	286	183	182	651
June	287	175	182	645
July	295	182	182	659
August	288	183	182	653
September	276	177	182	634
October	277	188	182	647
November	284	179	182	645
December	295	173	182	649
January–December	3,510	2,170	2,180	7,860

<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>Includes metal powder.

<sup>3</sup>Data may include other cobalt materials.

TABLE 2  
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE<sup>1</sup>

(Metric tons, contained cobalt)

End use	2012 <sup>P</sup>		2013	
	January–December <sup>2</sup>	Year <sup>3</sup>	December	January–December <sup>2,4</sup>
Steel	536	548	45	536
Superalloys	3,810	4,040	301	3,580
Magnetic alloys	252	285	21	253
Other alloys <sup>5</sup>	W	414	W	W
Cemented carbides <sup>6</sup>	774	774	65	774
Chemical and ceramic uses <sup>7</sup>	2,240	2,300	180	2,260
Miscellaneous and unspecified	460	63	38	460
Total	8,070	8,420	649	7,860

<sup>P</sup>Preliminary. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

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

<sup>2</sup>Data based on monthly reports.

<sup>3</sup>Includes annual reports.

<sup>4</sup>May include revisions to previously published data.

<sup>5</sup>Includes nonferrous alloys, welding materials, and wear-resistant alloys.

<sup>6</sup>Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

<sup>7</sup>Includes catalysts, driers in paints or related usages, feed or nutritive additives, glass decolorizer,

TABLE 3  
U.S. REPORTED STOCKS OF COBALT MATERIALS<sup>1</sup>

(Metric tons, contained cobalt)

Period	U.S. industry <sup>p, 2</sup>			U.S. Government, metal <sup>6</sup>	LME, <sup>3</sup> metal		Total
	Metal and scrap <sup>4</sup>	Oxide and other chemical compounds <sup>5</sup>	Total		U.S. warehouse	Non-U.S. warehouse	
2012:							
December <sup>7</sup>	527	168	695	301	51	378	429
Yearend <sup>8</sup>	542	179	721	301	51	378	429
2013:							
January	520	180	700	301	48	387	435
February	541	170	711	301	44	386	430
March	565	168	733	301	44	407	451
April	556	171	727	301	46	392	438
May	550	167	718	301	46	369	415
June	558	162	720	301	46	418	464
July	553	164	716	301	46	436	482
August	550	164	713	301	46	497	543
September	559	198	756	301	46	488	534
October	555	204	759	301	46	487	533
November	554	221	775	301	41	481	522
December	553	223	776	301	41	519	560

<sup>p</sup>Preliminary. W Withheld to avoid disclosing company proprietary data.

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

<sup>2</sup>Stocks reported by cobalt processors and consumers.

<sup>3</sup>London Metal Exchange.

<sup>4</sup>Includes metal powder.

<sup>5</sup>Data may include other cobalt materials.

<sup>6</sup>Data from Defense Logistics Agency, DLA Strategic Materials; uncommitted material only.

<sup>7</sup>Data based on monthly reports.

<sup>8</sup>U.S. industry data include annual reports.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY<sup>1</sup>

(Metric tons, gross weight of material, except as noted)

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>	Cobalt content, year to date <sup>5, 6</sup>
	Quantity	Value <sup>4</sup> (thousands)	Quantity	Value <sup>4</sup> (thousands)	Quantity	Value <sup>4</sup> (thousands)		
2012:								
December	611	\$16,700	124	\$2,750	98	\$881	732	11,100
January–December	8,750	264,000	2,320	51,200	1,810	20,900	11,100	XX
2013:								
January	684	17,300	149	3,260	85	793	816	816
February	758	18,500	141	2,690	163	2,310	917	1,730
March	677	17,400	225	4,490	117	923	873	2,610
April	861	22,500	187	4,060	120	1,310	1,030	3,640
May	581	15,300	191	4,000	124	1,300	759	4,400
June	525	14,100	262	5,910	118	1,350	757	5,160
July	887	24,600	224	5,060	147	1,580	1,100	6,250
August	729	20,800	212	4,860	234	2,680	963	7,220
September	680	19,800	197	4,430	91	1,380	858	8,070
October	647	17,700	283	6,630	103	1,230	887	8,960
November	476	13,700	202	4,640	63	773	645	9,610
December:								
Australia	78	1,950	--	--	--	--	78	521
Austria	1	64	--	--	--	--	1	13
Belgium	5	184	34	886	7	141	33	464
Brazil	44	1,090	--	--	4	42	45	341
Canada	5	292	--	--	--	--	5	303
China	184	5,090	(7)	3	4	33	185	2,120
Congo (Kinshasa)	--	--	7	231	--	--	5	60
Finland	--	--	--	--	--	--	--	927
France	(7)	5	--	--	--	--	(7)	36
Germany	(7)	14	3	247	--	--	2	13
Hong Kong	--	--	--	--	--	--	--	4
India	--	--	--	--	--	--	--	39
Ireland	(7)	4	--	--	--	--	(7)	1
Italy	--	--	--	--	--	--	--	3
Japan	82	2,190	--	--	--	--	82	838
Korea, Republic of	(7)	3	--	--	--	--	(7)	52
Madagascar	64	1,680	--	--	--	--	64	600
Morocco	10	246	--	--	--	--	10	171
Netherlands	--	--	--	--	--	--	--	5
Norway	130	3,690	--	--	--	--	130	1,310
Peru	--	--	--	--	--	--	--	1
Russia	80	2,210	--	--	--	--	80	877
South Africa	2	59	--	--	--	--	2	328
Spain	(7)	4	--	--	--	--	(7)	(7)
Sweden	3	154	--	--	--	--	3	9
Taiwan	--	--	--	--	--	--	--	20
Uganda	--	--	--	--	--	--	--	30
United Arab Emirates	--	--	--	--	--	--	--	3
United Kingdom	(7)	7	104	2,240	12	164	79	762
Zambia	40	976	--	--	--	--	40	600
Total	729	19,900	148	3,600	27	380	845	10,500
January–December	8,230	222,000	2,420	53,600	1,390	16,000	10,500	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 5  
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY<sup>1</sup>

(Metric tons, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Cobalt waste and scrap		Wrought cobalt and cobalt articles	
	Quantity	Value <sup>2</sup> (thousands)	Quantity	Value <sup>2</sup> (thousands)	Quantity	Value <sup>2</sup> (thousands)
2012:						
December	76	\$2,140	57	\$751	13	\$1,360
January–December	856	27,600	820	12,800	279	28,400
2013:						
January	87	2,650	43	565	15	1,560
February	80	2,300	58	709	15	1,910
March	50	1,470	45	635	17	1,960
April	89	2,890	52	1,230	26	2,470
May	87	3,260	65	985	15	1,680
June	59	1,830	63	840	21	2,000
July	37	1,310	50	637	26	2,580
August	128	4,000	58	1,170	16	2,320
September	112	3,270	64	1,040	43	3,020
October	87	2,900	63	821	20	2,690
November	93	2,790	33	335	20	2,190
December:						
Austria	--	--	--	--	(3)	13
Belgium	1	26	9	476	(3)	25
Canada	53	1,380	11	91	5	826
China	--	--	--	--	1	149
Finland	(3)	19	--	--	--	--
France	--	--	17	229	5	381
Germany	1	88	--	--	8	873
Ireland	--	--	21	200	--	--
Israel	--	--	--	--	(3)	32
Japan	--	--	9	90	(3)	19
Korea, Republic of	--	--	2	32	--	--
Norway	--	--	13	518	--	--
Switzerland	--	--	--	--	(3)	29
Taiwan	--	--	--	--	(3)	10
United Kingdom	5	120	20	302	1	63
Total	59	1,630	104	1,940	21	2,420
January–December	967	30,300	698	10,900	254	26,800

-- 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 6  
U.S. EXPORTS OF COBALT MATERIALS<sup>1</sup>

(Metric tons, gross weight of material, except as noted)

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>	Cobalt content, year to date <sup>5,6</sup>
	Quantity	Value <sup>4</sup> (thousands)	Quantity	Value <sup>4</sup> (thousands)	Quantity	Value <sup>4</sup> (thousands)		
2012:								
December	287	\$8,090	33	\$397	20	\$154	316	3,760
January–December	3,420	106,000	397	2,540	226	3,580	3,760	XX
2013:								
January	276	8,200	32	108	--	--	299	299
February	252	6,850	6	81	20	164	261	560
March	319	9,270	48	875	23	189	360	919
April	281	8,050	3	88	19	162	288	1,210
May	343	9,570	3	92	24	225	351	1,560
June	264	7,090	52	713	2	34	302	1,860
July	265	7,110	20	520	1	13	279	2,140
August	346	7,770	53	118	39	359	393	2,530
September	250	7,060	35	83	39	332	285	2,820
October	283	7,710	16	324	38	334	303	3,120
November	314	9,880	110	649	19	173	399	3,520
December	305	8,440	31	600	20	169	332	3,850
January–December	3,500	97,000	409	4,250	243	2,150	3,850	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 7  
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE,  
AND CONCENTRATES<sup>1</sup>

(Metric tons, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value <sup>2</sup> (thousands)	Quantity	Value <sup>2</sup> (thousands)
2012:				
December	231	\$11,300	--	--
January–December	1,820	106,000	35	\$428
2013:				
January	152	8,390	1	30
February	206	9,230	--	--
March	236	11,900	63	95
April	155	8,080	--	--
May	229	10,900	85	121
June	197	10,100	(3)	4
July	174	9,160	--	--
August	260	11,900	--	--
September	119	7,300	--	--
October	158	8,790	157	355
November	154	9,080	--	--
December	153	8,950	150	330
January–December	2,190	114,000	456	935

-- 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.