

# Mineral Industry Surveys

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## COBALT IN SEPTEMBER 2013

U.S. cobalt consumption during January through September 2013 was slightly less than consumption during the same period in 2012. The amount of cobalt contained in U.S. imports of cobalt metals and chemicals during January through September 2013 was 6% less than that imported during the same period in 2012. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals during January through September 2013 was slightly less than that exported during the same period in 2012.

## Prices

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

Type	Price range	Average price
U.S. spot <sup>1</sup>	12.50–14.70	13.89
LME cash mean <sup>2</sup>	11.80–13.89	12.85

<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>				
September	297	185	191	672
October	331	182	181	694
November	329	174	163	666
December	311	176	181	668
January–September	2,790 <sup>r</sup>	1,630	1,630 <sup>r</sup>	6,040 <sup>r</sup>
January–December	3,760	2,160	2,160	8,070
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 <sup>r</sup>	175	182	645
July	295	182	182	659
August	288 <sup>r</sup>	183	182	653 <sup>r</sup>
September	276	177	182	634
January–September	2,660	1,630	1,640	5,920

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<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– September	January– December <sup>2,3</sup>	September	January– September
Steel	402	536	45	402
Superalloys	2,840 <sup>r</sup>	3,810	282	2,710
Magnetic alloys	189	252	21	190
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	580 <sup>r</sup>	774	64	580
Chemical and ceramic uses <sup>6</sup>	1,690	2,240	185	1,690
Miscellaneous and unspecified	345 <sup>r</sup>	460	38	345
Total	6,040 <sup>r</sup>	8,070	634	5,920

<sup>p</sup>Preliminary. <sup>r</sup>Revised. 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>May include revisions to previously published data.

<sup>4</sup>Includes nonferrous alloys, welding materials, and wear-resistant alloys.

<sup>5</sup>Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

<sup>6</sup>Includes catalysts, driers in paints or related usages, feed or nutritive additives, glass decolorizer, ground coat frit, pigments, and other uses.

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:							
September	529	168	697	301	31	350	381
October	516	172	687	301	31	367	398
November	533	171	704	301	51	367	418
December	527	168	695	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	551	164	715	301	46	497	543
September	555	197	751	301	46	488	534

<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>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.

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:								
September	671	\$18,900	112	\$2,420	124	\$1,470	796	8,600
October	774	22,200	208	4,940	78	798	948	9,550
November	622	18,700	144	3,410	144	1,500	770	10,300
December	611	16,700	124	2,750	98	881	732	11,100
January–September	6,750	207,000	1,840	40,100	1,490	17,800	8,600	XX
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:								
Australia	4	72	--	--	--	--	4	309
Austria	1	38	--	--	--	--	1	10
Belgium	--	--	34	792	--	--	24	349
Brazil	(7)	9	--	--	(7)	3	(7)	272
Canada	23	724	18	465	--	--	36	248
China	297	8,340	44	961	--	--	329	1,690
Congo (Kinshasa)	--	--	16	286	--	--	12	41
Finland	70	2,280	12	261	67	1,120	109	746
France	(7)	7	--	--	--	--	(7)	31
Germany	2	88	--	--	--	--	2	10
Hong Kong	--	--	--	--	--	--	--	4
India	--	--	--	--	20	200	5	39
Ireland	(7)	5	--	--	--	--	(7)	1
Italy	(7)	2	--	--	--	--	(7)	2
Japan	39	1,110	--	--	--	--	39	564
Korea, Republic of	(7)	3	2	59	--	--	1	47
Madagascar	22	626	--	--	--	--	22	451
Morocco	10	262	--	--	--	--	10	131
Netherlands	--	--	--	--	--	--	--	5
Norway	104	3,090	--	--	--	--	104	1,050
Peru	--	--	--	--	2	44	1	1
Russia	42	1,080	--	--	--	--	42	697
South Africa	44	1,520	--	--	--	--	44	300
Sweden	--	--	--	--	--	--	--	6
Taiwan	(7)	3	--	--	--	--	(7)	20
Uganda	--	--	--	--	--	--	--	30
United Arab Emirates	--	--	--	--	--	--	--	3
United Kingdom	(7)	19	72	1,600	2	15	53	528
Zambia	20	480	--	--	--	--	20	480
Total	680	19,800	197	4,430	91	1,380	858	8,070
January–September	6,380	170,000	1,790	38,800	1,200	13,600	8,070	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:						
September	55	\$1,780	55	\$690	24	\$2,480
October	56	1,990	54	777	21	2,410
November	89	2,620	88	1,470	20	1,750
December	76	2,140	57	751	13	1,360
January–September	634	20,900	621	9,830	225	22,900
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:						
Austria	--	--	--	--	(3)	13
Belgium	15	477	1	28	(3)	2
Canada	91	2,490	1	11	2	426
China	--	--	--	--	3	336
Denmark	--	--	--	--	(3)	5
France	--	--	(3)	2	3	192
Germany	3	194	3	52	5	791
Ireland	--	--	21	248	(3)	3
Japan	(3)	5	1	7	(3)	11
Mexico	--	--	(3)	3	--	--
Netherlands	--	--	--	--	5	79
New Zealand	--	--	(3)	3	--	--
Norway	--	--	--	--	18	711
Singapore	(3)	8	--	--	--	--
Taiwan	--	--	--	--	(3)	13
United Kingdom	3	91	38	685	8	441
Total	112	3,270	64	1,040	43	3,020
January–September	729	23,000	497	7,810	193	19,500

-- 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>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
		(thousands)		(thousands)		(thousands)		
2012:								
September	392	\$10,600	36	\$229	19	\$158	423	2,880
October	279	9,010	(7)	9	40	320	289	3,170
November	265	7,410	(7)	12	58	526	279	3,450
December	287	8,090	33	397	20	154	316	3,760
January–September	2,590	81,900	364	2,120	109	2,580	2,880	XX
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
January–September	2,600	71,000	252	2,680	166	1,480	2,820	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 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:				
September	117	\$7,570	--	--
October	198	10,900	1	\$36
November	180	9,400	1	35
December	231	11,300	--	--
January–September	1,210	74,600	33	357
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	--	--
January–September	1,730	87,000	149	250

-- 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.