

# Mineral Industry Surveys

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## COBALT IN DECEMBER 2010

Preliminary data for 2010 indicate that U.S. cobalt consumption was 7% higher than that consumed during 2009, according to the U.S. Geological Survey. U.S. cobalt consumption during the quarter ending December 31, 2010, was 3% higher than that consumed during the quarter ending September 30, 2010, and 7% higher than that consumed during the quarter ending December 31, 2009.

The amount of cobalt contained in U.S. imports of cobalt metals and chemicals was 49% higher during January through November 2010 than that during the same period in 2009. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals during January through November 2010 was 11% higher than that during the same period in 2009.

London Metal Exchange stocks are included in table 3.

### Prices

Prices for cobalt metal, in dollars per pound, in December 2010 are listed below.

Type	Price range	Average price
U.S. spot <sup>1</sup>	16.00-19.00	17.55
LME cash mean <sup>2</sup>	XX	17.33

XX Not applicable.

<sup>1</sup>Source: Platts Metals Week, 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
2009:				
December	236	168	157	560
January-December <sup>4</sup>	2,980	2,070	1,780	6,840
Year <sup>5</sup>	3,540	2,130	1,790	7,460
2010:				
January	282 <sup>r</sup>	170	156	608 <sup>r</sup>
February	301 <sup>r</sup>	170	148	620 <sup>r</sup>
March	302 <sup>r</sup>	171	159	633 <sup>r</sup>
April	295 <sup>r</sup>	170	156	621 <sup>r</sup>
May	259 <sup>r</sup>	176	160	595 <sup>r</sup>
June	279 <sup>r</sup>	179	159	617 <sup>r</sup>
July	241 <sup>r</sup>	168	179	588 <sup>r</sup>
August	250 <sup>r</sup>	172	162	583 <sup>r</sup>
September	256 <sup>r</sup>	181	159	596 <sup>r</sup>
October	261 <sup>r</sup>	174	154	588 <sup>r</sup>
November	293 <sup>r</sup>	176	164	633 <sup>r</sup>
December	218	185	203	606
January-December <sup>4</sup>	3,240	2,090	1,960	7,290

<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.

<sup>4</sup>Data based on monthly reports.

<sup>5</sup>Includes annual reports.

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

(Metric tons, contained cobalt)

End use	2009		2010	
	January- December <sup>2</sup>	Year <sup>3</sup>	December	January- December <sup>4</sup>
Steel	499	510	48	576
Superalloys	3,180	3,680	269	3,370
Magnetic alloys	259	295	22	256
Other alloys <sup>5</sup>	W	221	W	W
Cemented carbides <sup>6</sup>	503	503	55	660
Chemical and ceramic uses <sup>7</sup>	2,130	2,190	190	2,150
Miscellaneous and unspecified	270	63	22	270
Total	6,840	7,460	606	7,290

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 prior month(s).

<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, 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>2</sup>				U.S. Government, metal <sup>6</sup>	LME <sup>3</sup> , metal		
	Metal <sup>4</sup>	Oxide and other chemical compounds <sup>5</sup>	Scrap	Total		U.S.	Non-U.S.	Total
						warehouse	warehouse	
2009:								
December <sup>7</sup>	255	161	66	482	293	XX	XX	XX
Yearend <sup>8</sup>	347	171	68	587	XX	XX	XX	XX
2010:								
January	269 <sup>r</sup>	176	57	502 <sup>r</sup>	293	XX	XX	XX
February	278 <sup>r</sup>	172	66	515 <sup>r</sup>	293	--	--	--
March	321 <sup>r</sup>	167	65	553 <sup>r</sup>	301	--	--	--
April	320 <sup>r</sup>	173	62	554 <sup>r</sup>	301	--	38	38
May	313 <sup>r</sup>	166	65	545 <sup>r</sup>	301	--	113	113
June	303 <sup>r</sup>	161	69	533 <sup>r</sup>	301	20	132	152
July	289 <sup>r</sup>	159	83	530 <sup>r</sup>	301	25	163	188
August	291 <sup>r</sup>	176	91	558 <sup>r</sup>	301	50	162	212
September	292 <sup>r</sup>	172	91	554 <sup>r</sup>	301	42	132	174
October	267 <sup>r</sup>	173	97	538 <sup>r</sup>	301	32	174	206
November	273 <sup>r</sup>	168	101	542 <sup>r</sup>	301	31	183	214
December <sup>7</sup>	323	153	98	574	301	23	255	278

<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>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 (formerly Defense National Stockpile Center); uncommitted material only.

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

<sup>8</sup>Includes 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>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
		(thousands)		(thousands)		(thousands)		
2009:								
November	371	\$13,800	167	\$4,660	215	\$2,640	563	6,890
December	610	23,000	118	3,860	269	3,280	785	7,680
January-November	5,260	175,000	1,340	33,700	1,860	24,100	6,890	XX
January-December	5,870	198,000	1,460	37,500	2,130	27,300	7,680	XX
2010:								
January	661	26,100	174	5,050	332	3,220	882	882
February	1,050	39,500	97	2,610	394	3,610	1,240	2,130
March	606	27,500	168	4,640	513	5,640	902	3,030
April	836	32,300	159	4,650	304	2,250	1,040	4,070
May	726	31,800	260	7,790	273	3,490	1,000	5,070
June	504	23,100	155	4,900	172	2,130	668	5,740
July	896	35,900	128	3,430	107	1,410	1,020	6,760
August	800	30,800	227	6,940	61	705	982	7,740
September	571	22,600	138	3,820	175	2,250	729	8,470
October	671	26,100	148	4,410	94	1,090	808	9,280
November:								
Australia	89	3,370	--	--	--	--	89	711
Belgium	8	390	69	2,580	--	--	58	470
Brazil	--	--	--	--	11	74	3	147
Canada	8	466	34	1,380	--	--	33	422
China	309	11,800	30	940	5	41	332	2,660
Congo (Kinshasa)	44	1,550	--	--	--	--	44	456
Finland	9	427	11	357	87	1,310	48	796
France	1	66	--	--	--	--	1	32
Germany	1	26	1	118	--	--	2	20
India	10	408	--	--	38	331	20	159
Japan	22	916	2	51	--	--	23	273
Morocco	20	739	--	--	--	--	20	225
Norway	172	7,220	--	--	--	--	172	1,110
Russia	60	2,520	--	--	--	--	60	1,410
South Africa	--	--	1	28	--	--	1	317
Uganda	--	--	--	--	--	--	--	148
United Kingdom	3	128	76	2,380	6	67	59	390
Zambia	29	1,150	--	--	--	--	29	480
Other	5	134	--	--	--	--	5	53
Total	790	31,300	224	7,830	147	1,820	998	10,300
January-November	8,120	327,000	1,880	56,100	2,570	27,600	10,300	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 prior months.

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)
2009:						
November	(3)	\$16	55	\$633	5	\$818
December	1	126	81	1,320	6	873
January-November	386	10,100	569	7,800	148	14,800
January-December	387	10,300	650	9,120	154	15,700
2010:						
January	1	41	96	1,470	5	771
February	23	1,130	85	1,340	10	815
March	2	128	95	1,900	47	2,800
April	20	860	46	642	12	1,180
May	1	79	79	1,080	7	1,040
June	(3)	22	83	1,340	16	1,460
July	22	925	62	1,010	17	1,640
August	12	537	94	1,180	17	1,780
September	1	60	25	461	16	1,750
October	56	2,200	36	669	29	2,670
November:						
Belgium	--	--	--	--	1	72
Canada	37	1,550	1	13	2	591
China	--	--	--	--	(3)	5
Finland	1	94	--	--	--	--
France	--	--	--	--	3	309
Germany	(3)	34	16	155	1	255
India	--	--	6	112	--	--
Ireland	--	--	13	240	--	--
Japan	--	--	8	140	(3)	13
Korea, Republic of	--	--	(3)	8	--	--
Mexico	--	--	1	13	--	--
Switzerland	--	--	--	--	(3)	13
Taiwan	--	--	5	16	--	--
Thailand	--	--	2	45	--	--
Tunisia	--	--	6	65	--	--
United Kingdom	(3)	82	7	113	5	394
Total	38	1,760	64	920	13	1,650
January-November	176	7,740	763	12,000	189	17,500

-- 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)		
2009:								
November	171	\$5,500	26	\$676	18	\$170	194	2,280
December	144	5,420	8	373	57	576	163	2,440
January-November	1,970	71,800	217	5,180	602	7,800	2,280	XX
January-December	2,120	77,300	225	5,550	659	8,370	2,440	XX
2010:								
January	183	6,030	75	253	31	1,340	244	244
February	211	6,990	12	444	43	825	230	474
March	210	7,490	58	562	34	380	260	734
April	216	6,340	87	296	39	535	287	1,020
May	173	6,040	11	349	61	609	196	1,220
June	190	6,120	3	113	37	399	202	1,420
July	198	7,440	6	164	30	326	209	1,630
August	235	7,150	2	51	1	17	236	1,860
September	254	6,090	(7)	14	49	512	266	2,130
October	222	6,510	3	87	41	764	234	2,360
November	143	4,530	1	32	34	387	152	2,520
January-November	2,230	70,700	258	2,360	399	6,090	2,520	XX

XX Not applicable.

<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 prior months.

<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)
2009:				
November	114	\$6,050	128	\$724
December	118	6,540	25	1,080
January-November	1,220	72,000	1,870	5,270
January-December	1,340	78,500	1,900	6,360
2010:				
January	141	7,440	269	2,050
February	142	7,080	890	1,900
March	147	8,090	22	263
April	162	9,490	(3)	8
May	135	8,310	20	914
June	174	9,800	135	378
July	106	6,510	226	503
August	126	7,140	64	2,180
September	134	7,870	675	1,630
October	148	8,190	31	2,150
November	139	8,250	4	229
January-November	1,550	88,200	2,340	12,200

<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.