

# Mineral Industry Surveys

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## COBALT IN DECEMBER 2011

Preliminary data for 2011 indicate that U.S. cobalt consumption was 13% higher than that consumed during 2010. The amount of cobalt contained in U.S. imports of cobalt metals and chemicals during January through November 2011 was 5% less than that imported during the same period in 2010. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals during January through November 2011 was 25% more than that exported during the same period in 2010.

## Prices

Prices for cobalt metal, in dollars per pound, in December 2011 are listed below.

Type	Price range	Average price
U.S. spot <sup>1</sup>	13.75-15.25	14.48
LME cash mean <sup>2</sup>	XX	14.06

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	Oxide and other chemical		Scrap	Total
	Metal <sup>2</sup>	compounds <sup>3</sup>		
2010:				
December	223	187	206	616
January–December <sup>4</sup>	3,300	2,120	1,990	7,420
Year <sup>5</sup>	3,860	2,180	2,000	8,030
2011:				
January	247	176	209	633
February	256	180	219	654
March	427	179	164	769
April	341	174	170	685
May	491	182	173	846
June	577	181	194	952
July	274	176	177	626
August	307	178	170	655
September	299	176	183	657
October	284	182	183	649
November	263	173	183	619
December	255	176	183	614
January–December	4,020	2,130	2,210	8,360

<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	2010		2011	
	January–December <sup>2</sup>	Year <sup>3</sup>	December	January–December <sup>4</sup>
Steel	535	550	45	535
Superalloys	3,350	3,740	277	4,300
Magnetic alloys	258	357	21	252
Other alloys <sup>5</sup>	W	364	W	W
Cemented carbides <sup>6</sup>	696	696	65	786
Chemical and ceramic uses <sup>7</sup>	2,210	2,260	183	2,220
Miscellaneous and unspecified	371	63	23	271
Total	7,420	8,030	614	8,360

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, 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		Total
	Metal <sup>4</sup>	Oxide and other chemical compounds <sup>5</sup>	Scrap	Total		U.S. warehouse	Non-U.S. warehouse	
2010; December <sup>7</sup>	W	163	W	563	301	23	255	278
Yearend <sup>8</sup>	W	173	W	630	301	23	255	278
2011:								
January	W	158	W	516	301	19	287	306
February	W	169	W	487	301	13	219	232
March	W	160	W	539	301	88	210	298
April	W	158	W	600	301	108	283	391
May	W	169	W	583	301	108	255	363
June	W	170	W	587	301	30	219	249
July	W	168	W	606	301	35	227	262
August	W	165	W	628	301	35	262	297
September	W	170	W	612	301	33	264	297
October	W	164	W	597	301	30	293	323
November	W	171	W	614	301	40	279	319
December	W	192	W	629	301	43	261	304

W Withheld to avoid disclosing company proprietary data; included in "Total U.S. industry."

<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)		
2010:								
November	790	\$31,300	224	\$7,830	147	\$1,820	998	10,300
December	632	22,600	137	4,650	166	1,330	776	11,100
January–November	8,120	327,000	1,880	56,100	2,570	27,600	10,300	XX
January–December	8,750	350,000	2,010	60,700	2,740	28,900	11,100	XX
2011:								
January	812	29,700	202	6,300	242	2,480	1,030	1,030
February	812	31,500	158	4,670	219	3,020	1,000	2,030
March	876	35,400	113	3,630	280	2,560	1,050	3,080
April	502	20,400	189	3,930	280	3,990	735	3,820
May	575	22,000	284	6,880	117	1,490	815	4,630
June	715	27,800	207	4,860	144	2,030	918	5,550
July	305	12,200	281	5,430	247	2,890	586	6,140
August	804	28,600	118	3,030	143	1,600	932	7,070
September	637	22,000	222	5,980	131	1,270	835	7,900
October	773	27,900	288	6,100	161	1,370	1,030	8,930
November:								
Australia	79	2,560	--	--	--	--	79	743
Belgium	(7)	7	15	410	--	--	11	392
Brazil	80	2,270	--	--	3	19	80	320
Canada	36	1,280	130	2,000	--	--	130	964
China	24	818	45	1,120	4	39	58	1,980
Congo (Kinshasa)	20	587	--	--	--	--	20	273
Finland	16	767	26	716	55	576	51	867
France	(7)	29	(7)	3	--	--	(7)	15
Germany	(7)	5	1	26	--	--	1	9
India	20	719	--	--	40	343	31	255
Japan	10	398	--	--	--	--	10	209
Morocco	20	669	--	--	--	--	20	180
Norway	78	2,700	--	--	--	--	78	1,050
Russia	60	1,960	--	--	--	--	60	911
South Africa	20	373	--	--	--	--	20	173
Sweden	--	--	--	--	--	--	--	8
Uganda	13	410	--	--	--	--	13	81
United Kingdom	1	39	18	473	21	349	21	291
Zambia	100	3,120	--	--	--	--	100	977
Other	(7)	10	(7)	3	(7)	2	(7)	11
Total	577	18,700	235	4,750	124	1,330	784	9,710
January–November	7,390	276,000	2,300	55,600	2,090	24,000	9,710	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)
2010:						
November	38	\$1,760	64	\$920	13	\$1,650
December	26	1,150	56	872	13	1,570
January–November	176	7,740	763	12,000	189	17,500
January–December	202	8,890	819	12,900	202	19,100
2011:						
January	40	1,540	61	686	14	1,840
February	64	2,420	35	657	26	2,240
March	56	2,140	74	1,430	23	2,600
April	44	1,520	119	2,040	21	2,410
May	52	1,990	87	1,200	16	1,820
June	68	2,570	43	891	20	1,950
July	50	1,670	53	938	24	2,230
August	77	2,880	55	996	16	2,400
September	94	3,500	40	519	25	2,530
October	67	2,390	71	1,240	26	2,510
November:						
Canada	56	1,790	--	--	4	863
China	6	264	--	--	5	534
France	--	--	5	49	3	232
Germany	(3)	23	13	290	1	220
Ireland	--	--	17	270	--	--
Japan	(3)	3	8	139	(3)	25
Korea, Republic of	--	--	2	32	--	--
Mexico	(3)	5	1	22	--	--
Singapore	--	--	(3)	3	--	--
Spain	--	--	(3)	5	--	--
Sweden	--	--	--	--	(3)	2
Taiwan	--	--	(3)	8	--	--
United Kingdom	(3)	25	--	--	7	547
Total	63	2,110	47	817	19	2,420
January–November	673	24,700	686	11,400	229	25,000

-- 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 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)		
2010:								
November	143	\$4,530	1	\$32	34	\$387	152	2,520
December	113	4,300	(7)	12	37	412	122	2,640
January–November	2,230	70,700	258	2,360	399	6,090	2,520	XX
January–December	2,350	75,000	258	2,380	436	6,510	2,640	XX
2011:								
January	238	7,810	19	422	53	549	264	264
February	217	6,840	6	187	32	350	229	493
March	414	9,120	40	184	34	405	451	944
April	228	7,950	49	958	42	417	273	1,220
May	340	9,470	(7)	17	25	300	346	1,560
June	204	8,070	18	55	27	312	223	1,790
July	282	9,380	47	120	65	736	332	2,120
August	194	7,440	(7)	20	33	368	202	2,320
September	246	7,550	6	199	14	160	253	2,570
October	225	8,300	71	229	38	413	285	2,860
November	249	6,860	55	246	38	555	298	3,160
January–November	2,840	88,800	312	2,640	401	4,570	3,160	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 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)
2010:				
November	139	\$8,250	4	\$229
December	125	8,050	277	801
January–November	1,550	88,200	2,340	12,200
January–December	1,680	96,200	2,610	13,000
2011:				
January	103	6,360	20	50
February	121	7,040	--	--
March	123	7,400	--	--
April	124	7,200	600	1,050
May	115	6,560	4	141
June	98	5,960	3	119
July	128	7,340	40	163
August	98	6,260	2	4
September	111	6,670	--	--
October	117	7,370	38	42
November	99	5,920	--	--
January–November	1,240	74,100	707	1,570

-- 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.

Source: U.S. Census Bureau.