

# Mineral Industry Surveys

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**For information, contact:**

Kim B. Shedd, Cobalt Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4974, Fax: (703) 648-7757  
E-mail: kshed@usgs.gov

Jo-Ann Sterling (Data)  
Telephone: (703) 648-7953  
Fax: (703) 648-7975  
E-mail: jsterlin@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## COBALT IN MAY 2005

Preliminary data for 2004 and 2005 indicate that U.S. cobalt consumption during January through May 2005 was 7% higher than that consumed during the first 5 months of 2004, according to the U.S. Geological Survey. The amount of cobalt contained in U.S. imports of cobalt metals and chemicals was 12% higher in January through April 2005 than that during the same period in 2004. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals was 26% lower in January through April 2005 than that during the same period in 2004.

**Price**

U.S. spot prices for electrolytic cobalt, in dollars per pound from Platts Metals Week, are listed below.

<u>Date</u>	<u>Price range</u>
June 9	14.00-14.95
June 16	13.25-13.80
June 23	12.80-13.30
June 30	13.00-13.50
July 7	14.00-15.50

<u>Month</u>	<u>Average price</u>
June	13.93

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
2004:				
May	220	156	172	547
June	223	179	171	573
July	245	155	162	562
August	234	161	162	557
September	232	163	162	558
October	304	154	162	620
November	257	159	162	578
December	260	164	162	587
January-May <sup>f</sup>	1,150	886	846	2,890
January-December <sup>4</sup>	2,910	2,020	1,990	6,920
2005:				
January	281	175	168	624
February	296	178	168	641
March	247	200	168	615
April	262	176	168	606
May	260	181	168	609
January-May	1,350	910	840	3,100

<sup>f</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.

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

(Metric tons, contained cobalt)

End use	2004		2005	
	January- May <sup>f</sup>	January- December <sup>2</sup>	May	January- May <sup>3</sup>
Steel	177	440	50	249
Superalloys	1,260	3,100	273	1,390
Magnetic alloys	141	344	18	95
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	293	700	60	319
Chemical and ceramic uses <sup>6</sup>	904	2,060	184	927
Miscellaneous and unspecified	113	270	23	113
Total	2,890	6,920	609	3,100

<sup>f</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 prior months.

<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	Industry <sup>2</sup>			Total	U.S. Government, metal <sup>5</sup>
	Metal <sup>3</sup>	Oxide and other chemical compounds <sup>4</sup>	Scrap		
2004:					
May	338	202	104	644	2,860
June	334	202	104	640	2,800
July	343	189	104	636	2,740
August	329	201	104	634	2,730
September	332	196	104	631	2,700
October	308	217	104	629	2,700
November	324	216	104	644	2,700
December <sup>6</sup>	323	210	104	637	2,660
2005:					
January	349	200	154	703	2,590
February	349	210	154	713	2,540
March	344	195	154	692	2,340
April	341	207	154	702	2,220
May	349	200	154	703	2,180

<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>Includes metal powder.

<sup>4</sup>Data may include other cobalt materials.

<sup>5</sup>Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

<sup>6</sup>Data based on monthly reports.

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

(Kilograms, 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 month <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>		
2004:								
April	591,000	\$28,000,000	81,100	\$2,630,000	130,000	\$1,910,000	690,000	3,190,000
May	404,000	20,300,000	40,100	1,760,000	38,900	613,000	446,000	3,640,000
June	609,000	30,600,000	148,000	6,170,000	158,000	2,240,000	763,000	4,400,000
July	458,000	18,700,000	117,000	4,790,000	182,000	2,210,000	599,000	5,000,000
August	371,000	20,100,000	102,000	3,960,000	124,000	1,860,000	483,000	5,480,000
September	666,000	32,600,000	101,000	3,770,000	196,000	2,430,000	799,000	6,280,000
October	598,000	27,500,000	124,000	4,550,000	146,000	2,090,000	731,000	7,010,000
November	578,000	25,300,000	98,200	3,540,000	97,200	1,400,000	678,000	7,690,000
December:	907,000	35,300,000	90,400	3,020,000	175,000	2,290,000	1,030,000	8,720,000
January-April	2,660,000	100,000,000	477,000	13,600,000	599,000	6,950,000	3,190,000	XX
January-December	7,250,000	311,000,000	1,300,000	45,100,000	1,720,000	22,100,000	8,720,000	XX
2005:								
January	727,000	27,000,000	128,000	4,010,000	230,000	2,860,000	897,000	897,000
February	892,000	35,600,000	95,400	2,660,000	191,000	2,730,000	1,030,000	1,930,000
March	544,000	21,000,000	183,000	5,640,000	215,000	2,690,000	747,000	2,680,000
April:								
Australia	55,500	1,950,000	--	--	--	--	55,500	89,700
Belgium	35,100	1,280,000	28,800	821,000	18,100	292,000	64,100	320,000
Brazil	60,000	2,020,000	--	--	--	--	60,000	80,000
Canada	84,000	3,440,000	--	--	--	--	84,000	359,000
China	49,700	1,990,000	35,000	765,000	40,100	515,000	89,400	318,000
Colombia	--	--	--	--	--	--	--	176
Congo (Kinshasa)	--	--	--	--	--	--	--	19,900
Finland	10,700	501,000	450	13,300	8,400	134,000	14,500	286,000
France	2,430	196,000	1,050	40,900	--	--	3,180	16,900
Germany	1,350	60,900	405	44,800	--	--	1,640	6,100
India	--	--	--	--	16,200	118,000	4,370	33,000
Japan	37,700	1,590,000	--	--	--	--	37,700	91,000
Korea, Republic of	6,380	72,000	--	--	--	--	6,380	6,440
Morocco	40,000	1,410,000	--	--	--	--	40,000	90,000
Norway	314,000	11,100,000	--	--	--	--	314,000	999,000
Philippines	--	--	--	--	--	--	--	11,200
Russia	18,100	600,000	--	--	--	--	18,100	244,000
South Africa	8,500	300,000	--	--	--	--	8,500	131,000
Sweden	895	44,000	--	--	--	--	895	895
Switzerland	--	--	--	--	--	--	--	1
Taiwan	--	--	--	--	--	--	--	1,440
Uganda	20,600	651,000	--	--	--	--	20,600	60,300
United Kingdom	934	57,100	9,430	261,000	15,800	175,000	11,800	87,400
Zambia	72,400	2,550,000	--	--	--	--	72,400	333,000
Total	818,000	29,800,000	75,100	1,950,000	98,600	1,230,000	907,000	3,590,000
January-April	2,980,000	113,000,000	481,000	14,300,000	734,000	9,510,000	3,590,000	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, with adjustments by the U.S. Geological Survey.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY <sup>1</sup>

(Kilograms, 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>	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
2004:						
April	13,300	\$548,000	123,000	\$1,190,000	10,400	\$843,000
May	9,330	299,000	78,000	514,000	15,000	1,020,000
June	3,330	163,000	111,000	1,510,000	15,700	1,170,000
July	14,100	687,000	57,400	955,000	20,400	1,430,000
August	949	62,800	118,000	1,380,000	9,380	858,000
September	7,310	106,000	39,400	411,000	29,500	1,760,000
October	5,710	318,000	55,400	579,000	11,300	856,000
November	6,500	366,000	38,200	366,000	38,900	2,570,000
December	1,650	76,700	93,600	815,000	27,500	1,990,000
January-April	26,600	1,130,000	427,000	4,340,000	62,400	3,790,000
January-December	75,500	3,210,000	1,020,000	10,900,000	230,000	15,400,000
2005:						
January	5,110	190,000	72,000	463,000	12,400	938,000
February	89	16,700	24,100	380,000	18,800	1,360,000
March	1,100	52,200	82,000	887,000	15,800	1,100,000
April:						
Australia	--	--	--	--	15,000	602,000
Austria	130	10,900	--	--	--	--
Belgium	--	--	--	--	50	49,300
Canada	--	--	--	--	2,060	344,000
China	--	--	--	--	86	8,300
Czech Republic	--	--	--	--	2	3,710
France	--	--	12,200	214,000	747	114,000
Germany	--	--	16,600	58,800	964	138,000
Ireland	--	--	13,000	186,000	--	--
Japan	500	31,000	--	--	2,310	117,000
Singapore	--	--	321	5,180	--	--
Switzerland	--	--	--	--	19	46,200
Tunisia	--	--	2,770	42,400	--	--
United Kingdom	445	23,200	2,570	65,100	10,400	609,000
Total	1,080	65,100	47,400	571,000	31,700	2,030,000
January-April	7,370	324,000	225,000	2,300,000	78,700	5,430,000

-- 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.

Source: U.S. Census Bureau.

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

(Kilograms, 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 month <sup>5</sup>	Cobalt content, year to date <sup>3,6</sup>
	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
2004:								
April	154,000	\$6,530,000	14,600	\$531,000	82,700	\$867,000	185,000	960,000
May	205,000	8,000,000	62,000	3,130,000	14,600	166,000	254,000	1,210,000
June	134,000	5,520,000	11,300	440,000	17,700	215,000	147,000	1,360,000
July	203,000	8,580,000	15,400	527,000	41,700	480,000	224,000	1,580,000
August	289,000	7,150,000	41,100	2,060,000	66,200	683,000	334,000	1,920,000
September	118,000	5,300,000	2,450	66,300	29,100	270,000	127,000	2,050,000
October	127,000	4,700,000	20,100	671,000	12,700	136,000	145,000	2,190,000
November	119,000	5,750,000	20,700	693,000	125,000	360,000	164,000	2,360,000
December	130,000	4,350,000	7,690	180,000	56,000	381,000	149,000	2,500,000
January-April	784,000	30,000,000	143,000	6,070,000	303,000	2,790,000	960,000	XX
January-December	2,110,000	79,400,000	324,000	13,800,000	666,000	5,490,000	2,500,000	XX
2005:								
January	122,000	5,590,000	27,300	596,000	59,600	398,000	156,000	156,000
February	120,000	3,990,000	52,200	1,610,000	118,000	363,000	186,000	342,000
March	107,000	4,650,000	57,500	1,260,000	145,000	489,000	183,000	525,000
April	154,000	6,380,000	36,900	862,000	36,500	380,000	189,000	714,000
January-April	503,000	20,600,000	174,000	4,320,000	360,000	1,630,000	714,000	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>Year to date may include revisions to prior months.

Source: U.S. Census Bureau, with adjustments by the U.S. Geological Survey.

TABLE 7  
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES<sup>1</sup>

(Kilograms, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value <sup>2</sup>	Quantity	Value <sup>2</sup>
2004:				
April	78,100	\$3,300,000	110,000	\$1,600,000
May	129,000	4,920,000	103,000	2,250,000
June	113,000	3,610,000	22,700	1,190,000
July	89,600	3,520,000	14,100	709,000
August	135,000	4,480,000	47,000	568,000
September	69,000	3,720,000	2,500	96,800
October	107,000	5,210,000	12,700	134,000
November	119,000	5,090,000	34,800	213,000
December	85,300	4,620,000	25,300	60,100
January-April	301,000	13,200,000	655,000	15,400,000
January-December	1,150,000	48,400,000	917,000	20,600,000
2005:				
January	184,000	6,490,000	69,000	2,800,000
February	235,000	8,710,000	8,390	254,000
March	147,000	6,540,000	40,700	556,000
April	184,000	6,530,000	33,000	818,000
January-April	750,000	28,300,000	151,000	4,420,000

<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, with adjustments by the U.S. Geological Survey.