

# Mineral Industry Surveys

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## COBALT IN AUGUST 2006

Revised data for 2005 and 2006 indicate that U.S. cobalt consumption during January through August 2006 was nearly equal in amount to that consumed during the first 8 months of 2005, according to the U.S. Geological Survey.

The amount of cobalt contained in U.S. imports of cobalt metals and chemicals was 9% higher in January through July 2006 than that imported during the same period in 2005. The amount of cobalt contained in U.S. exports of unwrought cobalt and chemicals was 18% higher in January through July 2006 than that exported during the same period in 2005.

**Update**

Prices for electrolytic cobalt, in dollars per pound from Platts Metals Week, are listed below.

<u>Date</u>	<u>Price range</u>
September 14	19.25-19.75
September 21	19.25-19.75
September 28	19.00-19.75
October 5	19.50-20.50
October 12	18.25-19.25
October 19	17.25-18.25
October 26	16.30-17.25
November 2	16.00-16.50

<u>Month</u>	<u>Average price</u>
July	14.56
August	18.00
September	19.56
October	18.32

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
2005:				
August <sup>r</sup>	325	150	175	650
September <sup>r</sup>	325	158	162	646
October	318 <sup>r</sup>	154	172 <sup>r</sup>	644 <sup>r</sup>
November <sup>r</sup>	310	146	174	630
December <sup>r</sup>	312	147	164	622
January-August <sup>r</sup>	2,520	1,250	1,350	5,120
January-December <sup>r, 4</sup>	3,790	1,850	2,020	7,660
Year <sup>5</sup>	4,550	1,860	2,030	8,430
2006:				
January	323 <sup>r</sup>	149	173	646
February	316 <sup>r</sup>	151	167 <sup>r</sup>	633
March	320 <sup>r</sup>	153	172 <sup>r</sup>	645
April	298 <sup>r</sup>	146	175 <sup>r</sup>	619
May	314 <sup>r</sup>	161	180 <sup>r</sup>	655
June	309 <sup>r</sup>	156	168 <sup>r</sup>	633
July <sup>r</sup>	304	148	161	613
August	308	158	179	644
January-August	2,490	1,220	1,380	5,090

<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	2005			2006	
	January- August <sup>r</sup>	January- December <sup>r, 2</sup>	Year <sup>3</sup>	August	January- August <sup>4</sup>
Steel	478	714	857	57	457
Superalloys	2,400	3,590	4,140	307	2,430
Magnetic alloys	188	287	337	24	195
Other alloys <sup>5</sup>	W	W	227	W	W
Cemented carbides <sup>6</sup>	507	761	763	62	487
Chemical and ceramic uses <sup>7</sup>	1,370	2,040	2,040	172	1,340
Miscellaneous and unspecified	182	272	63	23	182
Total	5,120	7,660	8,430	644	5,090

<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>Includes annual reports.

<sup>4</sup>Includes revisions to prior months' 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	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		
2005:					
August	309 <sup>r</sup>	202 <sup>r</sup>	84 <sup>r</sup>	595 <sup>r</sup>	1,870
September	320 <sup>r</sup>	198 <sup>r</sup>	81 <sup>r</sup>	600 <sup>r</sup>	1,810
October	308 <sup>r</sup>	191 <sup>r</sup>	78 <sup>r</sup>	577 <sup>r</sup>	1,670
November	294 <sup>r</sup>	192 <sup>r</sup>	64 <sup>r</sup>	549 <sup>r</sup>	1,560
December <sup>6</sup>	296 <sup>r</sup>	189 <sup>r</sup>	70 <sup>r</sup>	555 <sup>r</sup>	1,550
Year end <sup>7</sup>	383	209	72	664	1,550
2006:					
January	311	187	80	578	1,520
February	321	183	81	585	1,500
March	335	176	84	595	1,480
April	339	173	74	586	1,480
May	334	183	57 <sup>r</sup>	574 <sup>r</sup>	1,480
June	340	170	65 <sup>r</sup>	575 <sup>r</sup>	1,480
July	336 <sup>r</sup>	169	69 <sup>r</sup>	573 <sup>r</sup>	1,470
August	329	167	65	561	1,470

<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>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.

<sup>7</sup>Includes annual 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>		
2005:								
July	712,000	\$22,600,000	119,000	\$2,920,000	120,000	\$1,130,000	835,000	6,450,000
August	829,000	23,900,000	82,500	2,210,000	150,000	1,690,000	946,000	7,400,000
September	846,000	26,800,000	113,000	2,770,000	167,000	1,400,000	980,000	8,380,000
October	846,000	26,500,000	111,000	2,610,000	237,000	2,640,000	1,010,000	9,390,000
November	971,000	28,300,000	116,000	2,790,000	158,000	1,840,000	1,120,000	10,500,000
December	379,000	11,000,000	108,000	2,380,000	271,000	2,850,000	555,000	11,100,000
January-July	5,480,000	196,000,000	779,000	22,400,000	1,210,000	14,400,000	6,450,000	XX
January-December	9,350,000	312,000,000	1,310,000	35,100,000	2,200,000	24,800,000	11,100,000	XX
2006:								
January	906,000	25,000,000	79,300	1,890,000	245,000	2,830,000	1,060,000	1,060,000
February	571,000	15,600,000	102,000	2,200,000	317,000	3,720,000	775,000	1,830,000
March	1,160,000	30,300,000	115,000	2,620,000	196,000	2,230,000	1,320,000	3,150,000
April	942,000	26,500,000	121,000	2,850,000	165,000	1,640,000	1,090,000	4,240,000
May	640,000	19,300,000	102,000	2,360,000	195,000	2,450,000	790,000	5,030,000
June	969,000	29,500,000	42,700	1,220,000	278,000	2,310,000	1,080,000	6,110,000
July:								
Australia	26,000	812,000	--	--	--	--	26,000	269,000
Belgium	24,800	766,000	40,300	1,050,000	2,400	23,800	54,400	319,000
Brazil	30,000	913,000	--	--	--	--	30,000	176,000
Canada	66,000	1,500,000	--	--	--	--	66,000	586,000
China	77,200	2,220,000	5,200	116,000	7,000	59,900	82,700	773,000
Congo (Kinshasa)	--	--	--	--	--	--	--	9,980
Cote d'Ivoire	--	--	--	--	--	--	--	2,590
Finland	13,700	542,000	28,300	698,000	179,000	2,400,000	104,000	535,000
France	1,120	82,800	2,160	93,800	--	--	2,670	26,200
Germany	45	4,800	--	--	--	--	45	14,300
India	5,000	165,000	--	--	50,400	284,000	18,600	95,300
Italy	130	17,400	--	--	--	--	130	261
Japan	11,300	375,000	40	3,480	--	--	11,400	103,000
Korea, Republic of	--	--	--	--	--	--	--	907
Kyrgyzstan	--	--	--	--	--	--	--	736
Morocco	51,000	1,530,000	--	--	--	--	51,000	211,000
Norway	161,000	5,020,000	--	--	--	--	161,000	1,440,000
Philippines	--	--	--	--	--	--	--	19,500
Russia	176,000	5,070,000	--	--	--	--	176,000	1,590,000
South Africa	2,570	78,700	--	--	42,300	217,000	12,700	70,900
Sweden	--	--	--	--	--	--	--	2,180
Taiwan	--	--	--	--	--	--	--	360
Uganda	9,900	293,000	--	--	--	--	9,900	69,300
United Kingdom	2	3,650	9,500	269,000	5,440	47,800	8,150	134,000
Zambia	86,000	2,410,000	--	--	--	--	86,000	559,000
Total	741,000	21,800,000	85,500	2,230,000	286,000	3,030,000	900,000	7,010,000
January-July	5,930,000	168,000,000	648,000	15,400,000	1,680,000	18,200,000	7,010,000	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>
2005:						
July	1,990	\$95,700	17,100	\$276,000	27,300	\$1,730,000
August	675	42,800	91,800	856,000	12,400	1,060,000
September	23,500	711,000	42,700	495,000	18,300	1,150,000
October	10,700	372,000	88,200	594,000	18,700	1,520,000
November	10,100	410,000	100,000	1,090,000	36,900	2,190,000
December	35,200	350,000	53,600	363,000	21,700	1,510,000
January-July	20,900	800,000	438,000	4,480,000	148,000	10,300,000
January-December	101,000	2,690,000	815,000	7,880,000	256,000	17,700,000
2006:						
January	385	14,000	59,800	1,090,000	14,600	1,140,000
February	1,380	53,700	68,200	441,000	12,700	1,080,000
March	1,570	74,900	55,200	731,000	25,100	1,940,000
April	1,050	60,800	29,000	421,000	26,700	1,820,000
May	864	78,800	26,800	450,000	23,600	1,690,000
June	233	19,300	149,000	1,780,000	23,300	1,680,000
July:						
Belgium	1,850	12,500	--	--	--	--
Canada	16	3,730	2,850	25,600	2,140	406,000
France	--	--	--	--	1,460	150,000
Germany	--	--	--	--	2,960	382,000
Ireland	--	--	15,700	248,000	--	--
Japan	--	--	3,200	46,900	3,350	119,000
Netherlands	--	--	--	--	3,660	236,000
Singapore	--	--	318	6,250	--	--
United Kingdom	90	10,200	25,900	192,000	10,100	630,000
Total	1,950	26,400	47,900	519,000	23,700	1,920,000
January-July	7,440	328,000	436,000	5,430,000	150,000	11,300,000

-- 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>5, 6</sup>
	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>	Quantity	Value <sup>4</sup>		
2005:								
July	174,000	\$5,280,000	39,700	\$818,000	75,200	\$621,000	221,000	1,470,000
August	170,000	5,560,000	25,500	581,000	18,900	137,000	193,000	1,660,000
September	108,000	4,050,000	154,000	1,780,000	30,400	229,000	226,000	1,890,000
October	147,000	6,240,000	68,000	1,610,000	18,400	119,000	201,000	2,090,000
November	103,000	4,030,000	57,700	1,480,000	88,900	390,000	166,000	2,260,000
December	90,100	3,130,000	110,000	2,410,000	49,200	275,000	181,000	2,440,000
January-July	1,050,000	37,600,000	414,000	9,250,000	498,000	2,670,000	1,470,000	XX
January-December	1,670,000	60,600,000	829,000	17,100,000	704,000	3,820,000	2,440,000	XX
2006:								
January	96,100	3,850,000	108,000	2,610,000	51,500	317,000	187,000	187,000
February	96,200	3,960,000	91,800	2,170,000	43,400	308,000	173,000	359,000
March	232,000	9,530,000	93,800	2,030,000	76,300	518,000	318,000	678,000
April	326,000	12,700,000	123,000	2,710,000	19,900	177,000	419,000	1,100,000
May	134,000	4,780,000	83,300	2,060,000	79,800	461,000	213,000	1,310,000
June	157,000	3,980,000	66,000	1,680,000	50,300	111,000	217,000	1,530,000
July	150,000	4,890,000	63,300	1,370,000	33,200	224,000	203,000	1,730,000
January-July	1,190,000	43,700,000	629,000	14,600,000	354,000	2,120,000	1,730,000	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>
2005:				
July	224,000	\$8,410,000	--	--
August	213,000	7,950,000	242,000	\$1,870,000
September	147,000	6,370,000	139,000	1,720,000
October	222,000	8,360,000	41,800	1,050,000
November	216,000	8,370,000	--	--
December	204,000	8,800,000	69,200	562,000
January-July	1,330,000	52,000,000	237,000	6,920,000
January-December	2,340,000	91,800,000	729,000	12,100,000
2006:				
January	188,000	7,160,000	5,150	129,000
February	157,000	7,530,000	6,390	139,000
March	219,000	8,340,000	28,000	893,000
April	183,000	8,250,000	69,200	1,170,000
May	115,000	5,260,000	19,700	493,000
June	112,000	6,110,000	31,800	423,000
July	130,000	7,020,000	81,200	1,320,000
January-July	1,100,000	49,700,000	241,000	4,570,000

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