

# Mineral Industry Surveys

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## COBALT IN SEPTEMBER 2006

U.S. cobalt consumption during the quarter ending September 30, 2006, was nearly equal in amount to that consumed during the quarter ending June 30, 2006, according to the U.S. Geological Survey. U.S. cobalt consumption during the first three quarters of 2006 was nearly equal in amount to that consumed during the first three quarters of 2005.

The amount of cobalt contained in U.S. imports of cobalt metals and chemicals was 6% higher in January through August 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 17% higher in January through August 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>
November 9	15.30-16.00

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:				
September	325	158	162	646
October	318	154	172	644
November	310	146	174	630
December	312	147	164	622
January-September <sup>r</sup>	2,850	1,410	1,510	5,770
January-December <sup>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	149	173	646
February	316	151	167	633
March	320	153	172	645
April	298	146	175	619
May	314	161	180	655
June	309	156	168	633
July <sup>r</sup>	304	148	161	613
August	308	158	179	644
September	298	153	179	630
January-September	2,790	1,370	1,550	5,720

<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- September <sup>r</sup>	January- December <sup>2</sup>	Year <sup>3</sup>	September	January- September <sup>4</sup>
Steel	538	714	857	57	514
Superalloys	2,700	3,590	4,140	296	2,720
Magnetic alloys	213	287	337	25	220
Other alloys <sup>5</sup>	W	W	227	W	W
Cemented carbides <sup>6</sup>	570	761	763	61	547
Chemical and ceramic uses <sup>7</sup>	1,540	2,040	2,040	168	1,510
Miscellaneous and unspecified	205	272	63	23	205
Total	5,770	7,660	8,430	630	5,720

<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>				U.S. Government, metal <sup>5</sup>
	Metal <sup>3</sup>	Oxide and other chemical compounds <sup>4</sup>	Scrap	Total	
2005:					
September	320	198	81	600	1,810
October	308	191	78	577	1,670
November	294	192	64	549	1,560
December <sup>6</sup>	296	189	70	555	1,550
Yearend <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	574	1,480
June	340	170	65	575	1,480
July	336	169	69	573	1,470
August	328 <sup>r</sup>	167	65	560 <sup>r</sup>	1,470
September	327	164	65	556	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:								
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-August	6,310,000	220,000,000	862,000	24,600,000	1,360,000	16,000,000	7,400,000	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	741,000	21,800,000	85,500	2,230,000	286,000	3,030,000	900,000	7,010,000
August:								
Australia	10,000	180,000	--	--	--	--	10,000	279,000
Belgium	42,500	1,240,000	28,200	687,000	11,200	92,600	65,800	385,000
Brazil	--	--	--	--	--	--	--	176,000
Canada	101,000	3,190,000	--	--	--	--	101,000	687,000
China	65,300	2,200,000	19,500	450,000	48,200	328,000	92,600	866,000
Congo (Kinshasa)	21,000	504,000	--	--	--	--	21,000	31,000
Cote d'Ivoire	--	--	--	--	--	--	--	2,590
Finland	18,500	624,000	43,300	1,070,000	58,600	668,000	70,800	606,000
France	1,930	146,000	--	--	--	--	1,930	28,100
Germany	2,400	159,000	648	53,700	--	--	2,860	17,200
India	--	--	--	--	18,000	101,000	4,860	100,000
Italy	--	--	--	--	--	--	--	261
Japan	7,020	289,000	--	--	--	--	7,020	110,000
Korea, Republic of	50	3,250	--	--	--	--	50	957
Kyrgyzstan	--	--	--	--	--	--	--	736
Morocco	8,000	237,000	--	--	--	--	8,000	219,000
Norway	190,000	5,730,000	--	--	--	--	190,000	1,630,000
Philippines	--	--	--	--	--	--	--	19,500
Russia	107,000	3,330,000	--	--	--	--	107,000	1,700,000
South Africa	20,500	613,000	--	--	42,400	217,000	30,700	102,000
Sweden	--	--	--	--	--	--	--	2,180
Switzerland	47	2,010	--	--	--	--	47	47
Taiwan	--	--	--	--	--	--	--	360
Uganda	20,000	593,000	--	--	--	--	20,000	89,300
United Kingdom	1,370	52,300	--	--	38,300	441,000	13,300	147,000
Zambia	77,400	2,230,000	--	--	--	--	77,400	636,000
Total	694,000	21,300,000	91,700	2,260,000	217,000	1,850,000	825,000	7,840,000
January-August	6,630,000	189,000,000	739,000	17,600,000	1,900,000	20,100,000	7,840,000	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:						
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-August	21,600	843,000	530,000	5,340,000	160,000	11,300,000
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	1,950	26,400	47,900	519,000	23,700	1,920,000
August:						
Australia	20,000	613,000	--	--	--	--
Belgium	800	21,200	--	--	--	--
Canada	--	--	1,400	25,500	2,220	452,000
Czech Republic	--	--	--	--	7	4,700
Finland	192	24,800	--	--	--	--
France	--	--	4,270	63,300	3,570	260,000
Germany	--	--	30,800	397,000	141	21,100
India	--	--	--	--	651	36,300
Ireland	--	--	7,320	116,000	--	--
Japan	--	--	1,100	17,700	1,350	84,200
Mexico	--	--	1,640	16,600	--	--
Singapore	--	--	1,470	24,600	--	--
Tunisia	--	--	3,280	47,500	--	--
United Kingdom	174	16,300	--	--	10,300	615,000
Total	21,200	675,000	51,300	708,000	18,300	1,470,000
January-August	28,600	1,000,000	487,000	6,140,000	168,000	12,700,000

-- 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:								
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-August	1,220,000	43,100,000	440,000	9,840,000	517,000	2,810,000	1,660,000	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
August	130,000	3,650,000	91,000	2,180,000	64,900	390,000	211,000	1,940,000
January-August	1,320,000	47,400,000	720,000	16,800,000	419,000	2,510,000	1,940,000	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:				
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-August	1,550,000	59,900,000	479,000	8,790,000
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
August	140,000	6,350,000	6,690	162,000
January-August	1,240,000	56,000,000	248,000	4,730,000

-- 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.