

# Mineral Industry Surveys

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## COBALT IN JULY 2009

Preliminary data for 2008 and 2009 indicate that U.S. cobalt consumption during January through July 2009 was 8% lower than that consumed during the first 7 months of 2008, according to the U.S. Geological Survey.

The amount of cobalt contained in U.S. imports of cobalt metals and chemicals was 38% lower during January through June 2009 than that imported during the same period in 2008. The amount of cobalt contained in U.S. exports of unwrought

cobalt and chemicals during January through June 2009 was 11% lower than that exported during the same period in 2008.

### Update

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

<u>Month</u>	<u>Price range</u>	<u>Average price</u>
July 2009	16.25-20.50	18.54

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
2008:				
July	317	181	150	648
August	310	187	166	663
September	312	185	154	651
October	314	182	170	667
November	316	178	147	641
December	299	176	148	624
January-July <sup>†</sup>	2,260	1,290	1,130	4,680
January-December <sup>†, 4</sup>	3,810	2,190	1,920	7,920
2009:				
January	290	180	149	619
February	302	181	143	626
March	294	180	146	621
April	289	178	146	613
May	274	177	148	600
June	285	195	143	623
July	286	185	143	614
January-July	2,020	1,280	1,020	4,320

<sup>†</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	2008		2009	
	January- July	January- December <sup>2</sup>	July	January- July <sup>3</sup>
Steel	308 <sup>†</sup>	534	53	374
Superalloys	2,200 <sup>†</sup>	3,700	267	1,900
Magnetic alloys	173	291	23	156
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	462	780	59	416
Chemical and ceramic uses <sup>6</sup>	1,380 <sup>†</sup>	2,350	190	1,310
Miscellaneous and unspecified	158	270	22	158
Total	4,680 <sup>†</sup>	7,920	614	4,320

<sup>†</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 revisions to prior months' data.

<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		
2008:					
July	295	175	53	523	606
August	294	171	53	518	576
September	302	171	57	530	497
October	277	189	50	516	497
November	287	188	61	535	497
December <sup>6</sup>	273	193	69	535	473
2009:					
January	273	191	87	551	455
February	327	186	81	594	455
March	306	182	88	577	455
April	304	181	104	589	455
May	310	181	101	592	455
June	306	166	114	587	380
July	309	164	101	574	310

<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; uncommitted material only.

<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 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>		
2008:								
June	875,000	\$79,000,000	135,000	\$8,430,000	523,000	\$6,670,000	1,140,000	5,780,000
July	550,000	46,100,000	100,000	6,750,000	589,000	5,000,000	793,000	6,580,000
August	523,000	40,600,000	91,500	5,770,000	529,000	4,120,000	748,000	7,320,000
September	799,000	51,000,000	77,100	4,210,000	536,000	4,180,000	1,010,000	8,340,000
October	791,000	53,000,000	80,600	4,020,000	248,000	2,200,000	922,000	9,260,000
November	685,000	43,600,000	148,000	4,710,000	234,000	2,610,000	862,000	10,100,000
December	490,000	23,200,000	96,900	3,460,000	33,400	422,000	570,000	10,700,000
January-June	4,590,000	361,000,000	516,000	34,400,000	2,540,000	31,400,000	5,780,000	XX
January-December	8,430,000	618,000,000	1,110,000	63,400,000	4,710,000	49,900,000	10,700,000	XX
2009:								
January	345,000	10,500,000	37,700	901,000	101,000	1,360,000	410,000	410,000
February	574,000	18,600,000	23,400	757,000	161,000	1,730,000	644,000	1,050,000
March	424,000	12,300,000	109,000	2,720,000	139,000	1,610,000	549,000	1,600,000
April	469,000	15,200,000	98,400	2,280,000	251,000	3,610,000	635,000	2,240,000
May	546,000	18,100,000	181,000	3,280,000	116,000	1,790,000	722,000	2,960,000
June:								
Australia	80,000	2,410,000	--	--	--	--	80,000	197,000
Belgium	1,180	37,100	74,000	3,370,000	--	--	54,500	273,000
Brazil	20,000	635,000	--	--	--	--	20,000	90,400
Canada	--	--	85,900	1,300,000	--	--	61,900	379,000
China	500	25,200	15,000	445,000	8,200	87,700	13,400	626,000
Congo (Kinshasa)	20,000	570,000	--	--	--	--	20,000	91,000
Finland	42,800	1,740,000	16,200	434,000	97,400	1,400,000	94,100	321,000
France	835	44,400	--	--	--	--	835	5,100
Germany	667	36,800	--	--	--	--	667	1,850
Hong Kong	--	--	--	--	--	--	--	9,720
India	--	--	--	--	36,000	270,000	9,720	19,400
Japan	32,400	1,130,000	--	--	--	--	32,400	91,000
Korea, Republic of	--	--	--	--	--	--	--	1,840
Mexico	--	--	--	--	--	--	--	2,880
Morocco	20,000	629,000	--	--	--	--	20,000	125,000
Norway	110,000	3,520,000	--	--	--	--	110,000	644,000
Peru	--	--	--	--	--	--	--	234
Philippines	--	--	--	--	--	--	--	120
Russia	76,100	2,340,000	--	--	--	--	76,100	420,000
South Africa	1,000	31,500	--	--	--	--	1,000	4,040
Spain	--	--	--	--	--	--	--	3,400
Sweden	--	--	--	--	--	--	--	500
Taiwan	--	--	--	--	--	--	--	9,500
Uganda	--	--	--	--	--	--	--	19,400
United Kingdom	20,100	602,000	17,500	563,000	16,500	281,000	40,100	86,900
Zambia	10,200	290,000	--	--	--	--	10,200	183,000
Total	436,000	14,000,000	209,000	6,120,000	158,000	2,040,000	645,000	3,610,000
January-June	2,790,000	88,800,000	658,000	16,100,000	925,000	12,100,000	3,610,000	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.

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>
<b>2008:</b>						
June	14,300	\$776,000	117,000	\$2,130,000	28,900	\$3,070,000
July	12,300	700,000	145,000	3,430,000	27,200	2,540,000
August	1,900	156,000	56,400	1,110,000	39,300	3,580,000
September	214	40,700	34,800	613,000	27,600	2,900,000
October	20,600	1,150,000	85,000	1,330,000	33,900	2,390,000
November	44	6,220	59,700	875,000	26,200	2,930,000
December	21,000	1,030,000	60,400	836,000	48,800	2,450,000
January-June	58,600	3,260,000	672,000	14,500,000	142,000	13,600,000
January-December	115,000	6,340,000	1,110,000	22,700,000	345,000	30,400,000
<b>2009:</b>						
January	29,300	694,000	68,900	992,000	9,430	1,470,000
February	59,500	2,360,000	31,500	490,000	20,600	2,190,000
March	40,300	1,030,000	57,800	865,000	20,100	1,800,000
April	109,000	1,870,000	79,100	969,000	10,400	1,220,000
May	93,800	2,650,000	31,500	438,000	33,200	2,020,000
<b>June:</b>						
Belgium	--	--	--	--	150	11,000
Canada	23,000	619,000	--	--	1,460	336,000
China	--	--	--	--	1,080	168,000
Czech Republic	--	--	--	--	11	6,070
France	57	3,800	3,270	34,100	141	107,000
Germany	--	--	--	--	516	197,000
Ireland	--	--	20,800	302,000	--	--
Japan	540	24,000	7,920	97,100	1,270	46,000
Mexico	--	--	1,400	69,700	--	--
Tunisia	--	--	1,180	27,700	--	--
United Kingdom	--	--	892	15,400	4,510	326,000
Total	23,600	646,000	35,400	546,000	9,130	1,200,000
January-June	356,000	9,250,000	304,000	4,300,000	103,000	9,900,000

-- 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 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>		
2008:								
June	180,000	\$9,470,000	21,100	\$785,000	3,520	\$43,400	196,000	1,460,000
July	181,000	9,410,000	54,800	2,930,000	32,900	624,000	229,000	1,690,000
August	239,000	16,200,000	34,800	2,090,000	3,200	37,600	265,000	1,960,000
September	197,000	8,740,000	52,600	1,530,000	14,600	208,000	239,000	2,190,000
October	227,000	6,780,000	36,300	1,060,000	36,300	496,000	262,000	2,460,000
November	156,000	7,090,000	22,800	334,000	56,200	356,000	186,000	2,640,000
December	174,000	10,900,000	31,800	929,000	43,600	658,000	207,000	2,850,000
January-June	1,210,000	52,400,000	298,000	10,600,000	159,000	3,940,000	1,460,000	XX
January-December	2,380,000	112,000,000	531,000	19,400,000	346,000	6,320,000	2,850,000	XX
2009:								
January	222,000	12,600,000	49,900	1,120,000	28,100	12,300	264,000	264,000
February	138,000	5,180,000	19,500	357,000	23,600	176,000	158,000	423,000
March	166,000	7,080,000	25,600	412,000	24,600	577,000	190,000	613,000
April	164,000	5,560,000	15,300	337,000	5,800	83,300	176,000	789,000
May	261,000	7,070,000	15,000	506,000	33,600	155,000	280,000	1,070,000
June	222,000	6,130,000	11,300	158,000	8,750	69,500	232,000	1,300,000
January-June	1,170,000	43,600,000	137,000	2,890,000	124,000	1,070,000	1,300,000	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.

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>
2008:				
June	117,000	\$9,900,000	103,000	\$9,940,000
July	93,600	7,990,000	4,610	300,000
August	109,000	8,800,000	6,190	307,000
September	98,200	8,120,000	147,000	4,360,000
October	133,000	9,580,000	158,000	843,000
November	146,000	10,500,000	17,000	436,000
December	91,200	6,230,000	2,000	106,000
January-June	695,000	52,600,000	305,000	22,200,000
January-December	1,370,000	104,000,000	640,000	28,500,000
2009:				
January	90,300	5,710,000	5,710	10,500
February	118,000	6,500,000	41,500	54,100
March	148,000	8,680,000	--	--
April	82,800	5,620,000	30,500	454,000
May	114,000	6,890,000	125,000	305,000
June	71,900	4,350,000	50,500	262,000
January-June	625,000	37,700,000	253,000	1,090,000

-- 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.