

# Mineral Industry Surveys

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## COBALT IN JULY 2003

U.S. reported consumption of cobalt during January through July 2003 was nearly equal in amount to consumption during the first 7 months of 2002, according to the U.S. Geological Survey. The cobalt content of U.S. imports of cobalt metals and chemicals was 19% lower in January through June 2003 than that of imports during the same period in 2002. The cobalt content of U.S. exports of unwrought cobalt and chemicals was 18% higher in January through June 2003 than that during the same period in 2002. Trade data for July 2003 will be available in a subsequent issue.

**Price**

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

<u>Date</u>	<u>Price range</u>
September 4	9.75-10.00
September 11	9.75-10.10
September 18	9.80-10.20

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
2002:				
July	230	105	223	557
August	239	113	223	574
September	229	118	223	570
October	228	101	223	552
November	253	100	223	576
December	226	100	222	548
January-July <sup>r</sup>	1,800	732	1,560	4,090
January-December <sup>4</sup>	2,980	1,260	2,670	6,920
2003:				
January	257 <sup>r</sup>	155	167	579 <sup>r</sup>
February	250 <sup>r</sup>	160	167	578
March	249 <sup>r</sup>	170	167	587 <sup>r</sup>
April	253 <sup>r</sup>	164	167	584 <sup>r</sup>
May	264	166	167	597 <sup>r</sup>
June	253	169	167	589 <sup>r</sup>
July	245	158	167	570
January-July	1,770	1,140	1,170	4,090

<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.

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

(Metric tons, contained cobalt)

End use	2002		2003	
	January-July	January-December <sup>2</sup>	July	January-July <sup>3</sup>
Steel	260 <sup>r</sup>	418	30	217
Superalloys	1,980 <sup>r</sup>	3,300	256	1,850
Magnetic alloys	213 <sup>r</sup>	364	31	214
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	360 <sup>r</sup>	617	56	392
Chemical and ceramic uses <sup>6</sup>	1,130 <sup>r</sup>	1,940	174	1,260
Miscellaneous and unspecified	159 <sup>r</sup>	272	23	160
Total	4,090 <sup>r</sup>	6,920	570	4,090

<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>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 usage, feed or nutritive additive, 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		
2002:					
July	375	217	188	779	6,950
August	421	224	188	834	6,890
September	434	211	188	832	6,860
October	412	208	188	808	6,800
November	403	203	188	794	6,740
December <sup>6</sup>	456	222	188	867	6,680
2003:					
January	434	222	188	844	6,360
February	411	210	188	809	6,200
March	405	209	188	801	6,170
April	368	200	188	756	5,750
May	374	206	188	768	5,450
June	375	199	188	762	5,240
July	369	216	188	773	5,040

<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>		
2002:								
June	560,000	\$10,200,000	82,600	\$1,330,000	163,000	\$831,000	669,000	4,930,000
July	569,000	9,910,000	102,000	1,730,000	253,000	1,090,000	713,000	5,640,000
August	309,000	5,510,000	81,600	1,400,000	188,000	886,000	421,000	6,060,000
September	599,000	9,120,000	115,000	1,690,000	235,000	815,000	744,000	6,810,000
October	574,000	9,710,000	106,000	1,480,000	274,000	942,000	725,000	7,530,000
November	321,000	5,550,000	77,000	1,040,000	195,000	657,000	430,000	7,960,000
December	415,000	6,480,000	90,600	1,220,000	147,000	587,000	520,000	8,480,000
January-December	6,840,000	114,000,000	1,300,000	20,000,000	2,580,000	10,500,000	8,480,000	XX
2003:								
January	384,000	6,640,000	65,200	1,020,000	66,300	234,000	449,000	449,000
February	511,000	8,840,000	121,000	1,630,000	91,100	382,000	623,000	1,070,000
March	794,000	13,700,000	124,000	2,050,000	68,100	424,000	903,000	1,970,000
April	556,000	10,500,000	119,000	2,000,000	144,000	739,000	681,000	2,660,000
May	546,000	10,700,000	237,000	4,210,000	127,000	764,000	755,000	3,410,000
June:								
Australia	20,000	357,000	--	--	--	--	20,000	99,000
Austria	--	--	--	--	--	--	--	1,760
Belgium	1,870	73,300	41,400	859,000	--	--	31,700	459,000
Brazil	--	--	--	--	--	--	--	133,000
Canada	14,000	420,000	--	--	--	--	14,000	355,000
China	--	--	13,000	167,000	--	--	9,360	37,700
Congo (Kinshasa)	8,100	143,000	--	--	--	--	8,100	75,700
Finland	69,800	1,460,000	31,500	492,000	68,100	318,000	110,000	648,000
France	946	56,900	2,900	88,300	--	--	3,030	31,700
Germany	2,010	72,900	608	52,400	--	--	2,450	9,380
India	--	--	--	--	--	--	--	5,400
Ireland	--	--	--	--	--	--	--	6,160
Japan	8,640	233,000	--	--	4,580	42,700	9,780	56,300
Korea, Republic of	1,080	38,500	--	--	--	--	1,080	2,490
Luxembourg	--	--	--	--	--	--	--	4,580
Morocco	--	--	--	--	--	--	--	20,000
Norway	175,000	3,470,000	--	--	--	--	175,000	825,000
Philippines	--	--	--	--	24,100	229,000	7,860	25,000
Russia	128,000	2,390,000	--	--	--	--	128,000	748,000
South Africa	--	--	12,100	156,000	--	--	8,690	97,300
Sweden	--	--	--	--	--	--	--	17,900
Switzerland	375	16,100	--	--	--	--	375	4,010
Taiwan	--	--	--	--	--	--	--	120
Uganda	--	--	--	--	--	--	--	5,100
United Kingdom	1,430	52,800	6,920	149,000	36,000	207,000	15,900	133,000
Zambia	23,000	426,000	--	--	--	--	23,000	177,000
Total	454,000	9,210,000	108,000	1,960,000	133,000	797,000	568,000	3,980,000

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>
2002:						
June	679	\$24,700	21,000	\$161,000	13,200	\$855,000
July	11,400	135,000	5,780	63,600	18,900	1,060,000
August	1,860	126,000	10,000	87,900	14,100 <sup>3</sup>	811,000 <sup>3</sup>
September	21,300	241,000	20,600	168,000	14,600	779,000
October	4,680	84,800	34,700	169,000	12,300	854,000
November	200	13,900	9,310	96,000	19,300	1,010,000
December	843	45,700	6,550	100,000	16,600	960,000
January-December	56,900	1,310,000	206,000	1,720,000	231,000	11,600,000
2003:						
January	2,270	99,800	11,900	168,000	12,600	659,000
February	844	31,600	2,820	43,100	14,800	722,000
March	1,910	68,700	79,300	536,000	12,200	953,000
April	5,170	152,000	20,500	253,000	15,500	933,000
May	1,510	46,000	55,100	558,000	20,400	1,220,000
June:						
Belgium	--	--	2,470	46,400	--	--
Brazil	--	--	--	--	52	22,100
Canada	--	--	4,720	97,000	2,120	371,000
France	--	--	--	--	2,040	213,000
Germany	2,740	14,000	--	--	461	82,500
Ireland	--	--	7,670	109,000	--	--
Japan	271	19,900	--	--	1,590	39,700
Mexico	--	--	--	--	180	6,290
Singapore	--	--	--	--	12	3,260
Tunisia	--	--	283	3,450	--	--
United Kingdom	--	--	--	--	7,300	309,000
Total	3,010	33,900	15,100	256,000	13,700	1,050,000

-- 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>All or part of these data have been referred to the U.S. Census Bureau for verification.

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

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>		
2002:								
June	233,000	\$4,800,000	71,400	\$663,000	29,800	\$208,000	292,000	1,080,000
July	69,700	1,680,000	62,800	1,150,000	12,200	52,700	118,000	1,200,000
August	132,000	3,180,000	71,100	765,000	16,600	75,100	188,000	1,390,000
September	110,000	2,380,000	46,600	511,000	12,700	59,500	146,000	1,530,000
October	99,400	2,900,000	84,700	926,000	5,970	24,600	162,000	1,700,000
November	173,000	3,520,000	47,000	741,000	61,700	233,000	221,000	1,920,000
December	110,000	1,730,000	44,100	606,000	95,000	244,000	165,000	2,080,000
January-December	1,600,000	34,800,000	558,000	7,040,000	329,000	1,430,000	2,080,000	XX
2003:								
January	151,000	2,800,000	39,200	475,000	17,100	82,000	183,000	183,000
February	143,000	2,820,000	23,700	336,000	54,200	316,000	173,000	357,000
March	110,000	3,110,000	44,800	459,000	17,000	102,000	146,000	503,000
April	205,000	3,330,000	66,000	936,000	146,000	672,000	288,000	791,000
May	220,000	3,600,000	14,200	340,000	27,800	158,000	237,000	1,030,000
June	232,000	4,770,000	18,600	238,000	9,710	54,600	248,000	1,280,000

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>
2002:				
June	68,100	\$2,340,000	2,610 <sup>3</sup>	\$25,700 <sup>3</sup>
July	87,100	2,630,000	27,700 <sup>3</sup>	110,000 <sup>3</sup>
August	83,300	2,570,000	5,290 <sup>3</sup>	70,600 <sup>3</sup>
September	90,600	2,500,000	1,780 <sup>3</sup>	20,700 <sup>3</sup>
October	60,000	1,940,000	16,300 <sup>3</sup>	87,800 <sup>3</sup>
November	51,400	1,880,000	158 <sup>3</sup>	5,450 <sup>3</sup>
December	64,700	1,650,000	10,200 <sup>3</sup>	61,000 <sup>3</sup>
January-December	923,000	26,600,000	307,000	1,310,000
2003:				
January	76,900	2,700,000	817 <sup>3</sup>	8,240 <sup>3</sup>
February	55,600	1,540,000	4,020 <sup>3</sup>	44,500 <sup>3</sup>
March	124,000	3,740,000	100 <sup>3</sup>	3,850 <sup>3</sup>
April	71,900	2,210,000	2,680 <sup>3</sup>	24,100 <sup>3</sup>
May	56,100	2,060,000	53,000 <sup>3</sup>	705,000 <sup>3</sup>
June	100,000	2,940,000	238,000 <sup>3</sup>	257,000 <sup>3</sup>

<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.

<sup>3</sup>All or part of these data have been referred to the U.S. Census Bureau for verification.

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