

# 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: kshedd@usgs.gov

Jo-Ann Sterling (Data)  
Telephone: (703) 649-7953  
Fax: (703) 648-7975  
E-mail: jsterlin@usgs.gov

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

## COBALT IN AUGUST 2003

Reported consumption of cobalt in the United States during January through August 2003 was nearly equal in amount to consumption during the first 8 months of 2002, according to the U.S. Geological Survey. The cobalt content of U.S. imports of cobalt metals and chemicals was 16% lower in January through July 2003 than that of imports during the same period in 2002. The cobalt content of U.S. exports of unwrought cobalt and chemicals was 26% higher in January through July 2003 than that of exports during the same period in 2002. Trade data for August 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 25	9.95-10.40
October 2	10.00-10.50

  

<u>Month</u>	<u>Average price</u>
September	9.99

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:				
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-August <sup>r</sup>	2,040	844	1,780	4,670
January-December <sup>4</sup>	2,980	1,260	2,670	6,920
2003:				
January	259 <sup>r</sup>	155	167	581 <sup>r</sup>
February	252 <sup>r</sup>	160	167	579 <sup>r</sup>
March	251 <sup>r</sup>	170	167	588 <sup>r</sup>
April	254 <sup>r</sup>	164	167	586 <sup>r</sup>
May	266 <sup>r</sup>	166	167	599 <sup>r</sup>
June	254 <sup>r</sup>	169	167	591 <sup>r</sup>
July	250 <sup>r</sup>	158	167	574 <sup>r</sup>
August	254	163	167	584
January-August	2,040	1,310	1,340	4,680

<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- August	January- December <sup>2</sup>	August	January- August <sup>3</sup>
Steel	297 <sup>r</sup>	418	29	246
Superalloys	2,240 <sup>r</sup>	3,300	263	2,110
Magnetic alloys	242 <sup>r</sup>	364	33	257
Other alloys <sup>4</sup>	W	W	W	W
Cemented carbides <sup>5</sup>	412 <sup>r</sup>	617	57	449
Chemical and ceramic uses <sup>6</sup>	1,300 <sup>r</sup>	1,940	179	1,430
Miscellaneous and unspecified	182 <sup>r</sup>	272	23	182
Total	4,670 <sup>r</sup>	6,920	584	4,680

<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:					
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	425 <sup>r</sup>	222	188	836 <sup>r</sup>	6,360
February	402 <sup>r</sup>	210	188	800 <sup>r</sup>	6,200
March	396 <sup>r</sup>	209	188	793 <sup>r</sup>	6,170
April	359 <sup>r</sup>	200	188	748 <sup>r</sup>	5,750
May	366 <sup>r</sup>	206	188	760 <sup>r</sup>	5,450
June	366 <sup>r</sup>	200 <sup>r</sup>	188	754 <sup>r</sup>	5,240
July	369	216	188	773	5,040
August	389	208	188	784	4,990

<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.

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:								
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	454,000	9,210,000	108,000	1,960,000	133,000	797,000	568,000	3,980,000
July:								
Australia	27,900	488,000	--	--	--	--	27,900	127,000
Austria	--	--	--	--	--	--	--	1,760
Belgium	17,600	605,000	27,200	474,000	--	--	37,200	496,000
Brazil	--	--	--	--	--	--	--	133,000
Canada	13,100	216,000	--	--	--	--	13,100	369,000
China	22,000	440,000	12,000	122,000	870	19,600	31,000	68,700
Congo (Kinshasa)	40,000	614,000	--	--	--	--	40,000	116,000
Finland	29,000	707,000	27,800	448,000	69,200	403,000	69,000	717,000
France	2,890	158,000	4,880	168,000	--	--	6,400	38,100
Germany	720	21,000	--	--	--	--	720	10,100
India	--	--	--	--	--	--	--	5,400
Ireland	--	--	--	--	--	--	--	6,160
Japan	20,100	510,000	--	--	8,270	80,300	22,100	78,400
Korea, Republic of	1,250	51,500	--	--	--	--	1,250	3,740
Luxembourg	--	--	--	--	--	--	--	4,580
Morocco	--	--	--	--	--	--	--	20,000
Netherlands	20,000	412,000	--	--	--	--	20,000	20,000
Norway	191,000	3,980,000	--	--	--	--	191,000	1,020,000
Philippines	--	--	--	--	16,300	110,000	4,830	29,800
Russia	169,000	3,180,000	--	--	--	--	169,000	917,000
South Africa	--	--	--	--	--	--	--	97,300
Sweden	908	23,400	--	--	--	--	908	18,800
Switzerland	743	52,800	3	4,660	--	--	745	4,760
Taiwan	120	5,040	--	--	--	--	120	240
Uganda	--	--	--	--	--	--	--	5,100
United Kingdom	815	17,300	32,200	471,000	35,000	211,000	32,500	166,000
Zambia	85,000	1,540,000	--	--	--	--	85,000	262,000
Total	641,000	13,000,000	104,000	1,690,000	130,000	824,000	752,000	4,730,000

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:						
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	3,010	33,900	15,100	256,000	13,700	1,050,000
July:						
Belgium	130	4,240	1,520	28,000	2,800	126,000
Brazil	--	--	--	--	263	13,200
Canada	--	--	--	--	1,970	288,000
China	--	--	--	--	1	3,260
France	--	--	--	--	1,290	63,400
Germany	--	--	--	--	1,750	324,000
Ireland	--	--	4,800	66,000	--	--
Japan	100	10,400	--	--	1,050	68,700
Mexico	--	--	--	--	140	4,600
United Kingdom	--	--	24,300	81,500	9,140	385,000
Total	230	14,600	30,600	175,000	18,400	1,280,000

-- 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:								
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
July	191,000	6,570,000	43,000	845,000	41,800	294,000	232,000	1,510,000

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:				
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>4</sup>	8,240 <sup>4</sup>
February	55,600	1,540,000	4,020 <sup>4</sup>	44,500 <sup>4</sup>
March	124,000	3,740,000	100 <sup>4</sup>	3,860 <sup>4</sup>
April	71,900	2,210,000	2,680 <sup>4</sup>	24,100 <sup>4</sup>
May	56,100	2,060,000	53,000 <sup>4</sup>	705,000 <sup>4</sup>
June	100,000	2,940,000	238,000 <sup>4</sup>	257,000 <sup>4</sup>
July	69,200	2,240,000	33,100 <sup>4</sup>	372,000 <sup>4</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>Data no longer in question.

<sup>4</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.