

Mineral Industry Surveys

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COBALT IN NOVEMBER 2003

Reported consumption of cobalt in the United States during January through November 2003 was nearly equal in amount to consumption during the first 11 months of 2002, according to the U.S. Geological Survey. The cobalt content of U.S. imports of cobalt metals and chemicals was 11% lower in January through October 2003 than that of imports during the same period in 2002. The cobalt content of U.S. exports of unwrought cobalt and chemicals was 29% higher in January through October 2003 than that of exports during the same period in 2002. Trade data for November 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>
December 18	18.00-18.50
December 23	20.00-21.50
December 30	20.50-21.50
January 8	23.00-24.00

<u>Month</u>	<u>Average price</u>
December	18.85

TABLE 1
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS¹

(Metric tons, contained cobalt)

Period	Metal ²	Oxide and other chemical compounds ³	Scrap	Total
2002:				
November	253	100	223	576
December	226	100	222	548
January-November	2,750	1,160	2,450	6,370
January-December ⁴	2,980	1,260	2,670	6,920
2003:				
January	259	155	167	581
February	252	160	167	579
March	251	170	167	588
April	254	164	167	585
May	266	166	167	599
June	254	169	167	590
July	250	157	167	574
August	254	164	167	585
September	259	168	167	594
October	252	165 ^r	167	584 ^r
November	265	155	167	587
January-November	2,820	1,790	1,840	6,450

^rRevised.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes metal powder.

³Data may include other cobalt materials.

⁴Data based on monthly reports.

TABLE 2
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE¹

(Metric tons, contained cobalt)

End use	2002		2003	
	January- November	January- December ²	November	January- November ³
Steel	388 ^r	418	29	335
Superalloys	3,050 ^r	3,300	277	2,920
Magnetic alloys	333 ^r	364	32	354
Other alloys ⁴	W	W	W	W
Cemented carbides ⁵	566 ^r	617	56	622
Chemical and ceramic uses ⁶	1,780 ^r	1,940	171	1,970
Miscellaneous and unspecified	250 ^r	272	23	250
Total	6,370 ^r	6,920	587	6,450

^rRevised. W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Data based on monthly reports.

³May include revisions to prior months.

⁴Includes nonferrous alloys, welding materials, and wear-resistant alloys.

⁵Includes diamond tool matrices, cemented and sintered carbides, and cast carbide dies or parts.

⁶Includes 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 MATERIALS¹

(Metric tons, contained cobalt)

Period	Industry ²			Total	U.S. Government, metal ⁵
	Metal ³	Oxide and other chemical compounds ⁴	Scrap		
2002:					
November	403	203	188	794	6,740
December ⁶	456	222	188	867	6,680
2003:					
January	425	222	188	836	6,360
February	402	210	188	800	6,200
March	396	209	188	793	6,170
April	359	200	188	748	5,750
May	366	206	188	760	5,450
June	366	200	188	754	5,240
July	369	216	188	773	5,040
August	389	208	188	784	4,990
September	402	206	188	795	4,930
October	396	203	188	787	4,750
November	368	203	187	759	4,640

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Stocks reported by cobalt processors and consumers.

³Includes metal powder.

⁴Data may include other cobalt materials.

⁵Data from Defense National Stockpile Center. Includes material committed for sale pending shipment.

⁶Data based on monthly reports.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY¹

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals ²		Oxides and hydroxides		Salts and compounds ³		Total cobalt content for the month ⁵	Cobalt content, year to date ^{5, 6}
	Quantity	Value ⁴	Quantity	Value ⁴	Quantity	Value ⁴		
2002:								
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	641,000	13,000,000	104,000	1,690,000	130,000	824,000	752,000	4,730,000
August	390,000 ⁷	8,440,000 ⁷	59,100	963,000	70,700	480,000	452,000	5,180,000
September	712,000	14,000,000	92,800	1,560,000	166,000	1,160,000	831,000	6,010,000
October:								
Australia	40,000	753,000	--	--	--	--	40,000	222,000
Austria	--	--	--	--	--	--	--	1,760
Belgium	32,300	1,010,000	18,000	365,000	4,000	27,300	46,300	598,000
Brazil	60,000	1,180,000	--	--	--	--	60,000	224,000
Canada	1,000	30,000	--	--	--	--	1,000	377,000
China	22,000	453,000	14,000	145,000	6,000	57,800	34,400	211,000
Congo (Kinshasa)	14,900	265,000	--	--	--	--	14,900	178,000
Finland	46,300	1,340,000	26,900	484,000	116,000	782,000	102,000	963,000
France	992	56,900	1,500	67,800	--	--	2,070	52,500
Germany	2,510	60,900	--	--	--	--	2,510	30,800
India	--	--	--	--	--	--	--	10,800
Ireland	--	--	--	--	--	--	--	6,160
Japan	8,640	236,000	--	--	10,100	106,000	11,200	117,000
Korea, Republic of	24,000	155,000	--	--	--	--	24,000	27,900
Luxembourg	--	--	--	--	--	--	--	4,580
Morocco	--	--	--	--	--	--	--	20,000
Netherlands	--	--	--	--	--	--	--	20,000
Norway	104,000	2,280,000	--	--	--	--	104,000	1,430,000
Philippines	--	--	--	--	--	--	--	29,900
Russia	142,000	2,770,000	--	--	--	--	142,000	1,340,000
Saudi Arabia	--	--	--	--	--	--	--	1,700
South Africa	4,000	82,300	--	--	--	--	4,000	102,000
Sweden	2,820	62,800	--	--	--	--	2,820	21,600
Switzerland	515	22,100	--	--	--	--	515	6,200
Taiwan	--	--	--	--	--	--	--	240
Uganda	--	--	--	--	--	--	--	5,100
United Kingdom	100	8,720	39,500	602,000	16,000	85,900	32,800	226,000
Zambia	20,000	370,000	--	--	--	--	20,000	434,000
Total	526,000	11,100,000	100,000	1,660,000	152,000	1,060,000	644,000	6,660,000

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder; may include intermediate products of cobalt metallurgy.

³Includes cobalt acetates, cobalt carbonates, cobalt chlorides, and cobalt sulfates.

⁴Customs value.

⁵Estimated from gross weights.

⁶May include revisions to prior months.

⁷All 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 5
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY¹

(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 ²	Quantity	Value ²	Quantity	Value ²
2002:						
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	230	14,600	30,600	175,000	18,400	1,280,000
August	440	23,500	86,200	618,000	14,400	787,000
September	475	13,000	10,700	126,000	9,410	646,000
October:						
Austria	250	13,100	--	--	--	--
Belgium	--	--	8,410	164,000	1	2,500
Canada	--	--	--	--	2,260	380,000
China	--	--	--	--	10	4,880
France	--	--	--	--	1,430	111,000
Germany	7,920	71,100	17,700	63,500	991	58,200
India	--	--	--	--	886	20,900
Ireland	--	--	4,840	65,600	--	--
Japan	--	--	--	--	979	26,400
Switzerland	--	--	--	--	1	3,200
United Kingdom	--	--	16,900	30,400	4,740	203,000
Total	8,170	84,200	47,900	324,000	11,300	810,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Customs value.

³All 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 MATERIALS¹

(Kilograms, gross weight of material, except as noted)

Period	Unwrought cobalt, powders, matte, waste and scrap ²		Oxides and hydroxides		Salts and compounds ³		Total cobalt content for the month ⁵	Cobalt content, year to date ^{5, 6}
	Quantity	Value ⁴	Quantity	Value ⁴	Quantity	Value ⁴		
2002:								
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
August	187,000	4,270,000	17,400	338,000	56,600	324,000	213,000	1,720,000
September	227,000	3,980,000	15,200	191,000	10,000	57,100	240,000	1,960,000
October	184,000	2,890,000	9,310	166,000	118,000	603,000	219,000	2,180,000

XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include other intermediate products of cobalt metallurgy and unwrought cobalt alloys.

³Cobalt acetates and cobalt chlorides.

⁴Free alongside ship (f.a.s.) value.

⁵Estimated from gross weights.

⁶Year 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 CONCENTRATES¹

(Kilograms, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value ²	Quantity	Value ²
2002:				
October	60,000	\$1,940,000	16,300	\$87,800
November	51,400	1,880,000	158	5,450
December	64,700	1,650,000	10,200	61,000
January-December	923,000	26,600,000	307,000	1,310,000
2003:				
January	76,900	2,700,000	817 ³	8,240 ³
February	55,600	1,540,000	4,020 ³	44,500 ³
March	124,000	3,740,000	100 ³	3,860 ³
April	71,900	2,210,000	2,680 ³	24,100 ³
May	56,100	2,060,000	53,000 ³	705,000 ³
June	100,000	2,940,000	238,000 ³	257,000 ³
July	69,200	2,240,000	33,100 ³	372,000 ³
August	65,500	2,720,000	73,700 ³	473,000 ³
September	89,600	3,090,000	32,100 ³	149,000 ³
October	116,000	3,150,000	74,400 ³	979,000 ³

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Free alongside ship (f.a.s.) value.

³All 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.