



Mineral Industry Surveys

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NICKEL IN FEBRUARY 2003

In February, reported domestic nickel consumption on a daily average basis was 3% less than that of January, according to the U.S. Geological Survey. Average daily nickel consumption of cathode, pellets, briquets, and ferronickel for stainless steel was 68.2 metric tons per day (t/d)—17% greater than the 58.4 t/d (revised) for January, but 13% less than the 78.1 t/d for February 2002. Consumption of elemental nickel to make superalloys increased by 29% from January levels, but consumption to make corrosion-resistant nickel alloys declined by 45%. Sales to plating companies averaged 30.0 t/d, about 4% more than the January sales figure.

On February 28, U.S. consumer stocks of cathode, pellets, briquets, and powder totaled 1,560 metric tons (t)—about the same tonnage as on January 31, but 8% less than the 1,700 t reported for yearend 2002. Stocks in London Metal Exchange (LME) warehouses worldwide totaled 13,260 t—41% less than the tonnage on January 31. LME stocks were at their lowest levels since May 2001, but significant tonnages of cathode were reportedly in transit to LME warehouses in Rotterdam from the Russian Arctic operations of MMC Norilsk Nickel. Preliminary data collected by the International Nickel Study Group indicated that, at the end of January, world nickel producers (excluding those in Austria, China, the former Yugoslavia, and the Ural area of Russia) had approximately 93,200 t of nickel in primary products in stock, of which 65,500 t or 70% were Class I materials. Class I materials are refined products with a nickel (Ni) content of 99% or greater (electrolytic cathode, pellets, briquets, rondelles, powder, etc.). Class II materials include ferronickel, oxide sinter, and East Asian utility nickel—products with a Ni content less than 99%.

Percentages reported in the above paragraphs may not be verifiable owing to concealment of individual company proprietary data and late reporting of data.

The United States imported 7,720 t of primary nickel in January, 10% less than the 8,560 t reported for December 2002. Class I materials accounted for 89% of total primary imports received during January. Trade data for February will appear in a subsequent report.

Update

Australia—Higher nickel prices rekindle interest in shelved projects and spur new exploration.—The recent rise in the world price of nickel has encouraged several Australian mining companies to reevaluate some of their less studied nickel properties. Nickel deposits that have byproduct gold resources are receiving special attention because the price of gold is currently at a 3-year high. Several junior exploration companies with nickel interests were considering mergers to improve their prospects.

Sherlock Bay Project.—In January 2003, Central Kalgoorlie Gold Mines Limited (CKGM) released updated information about its Sherlock Bay nickel-copper project on the northern coast of Western Australia. CKGM is a junior exploration company headquartered in Perth. The Sherlock Bay mining tenements are in the heart of the West Pilbara about 65 kilometers (km) east-southeast of Karratha and Nickel Bay. The tenements are roughly midway between the North West Coastal Highway and the Indian Ocean, and are less than 10 km from a major east-west power transmission line and the Northwest Shelf gas pipeline. The property is close to a key iron ore railroad and lies halfway between the iron ore loading docks at Dampier and Port Hedland.

Texas Gulf Inc. drilled parts of the Sherlock property in 1972-73 and identified 75 million metric tons (Mt) of disseminated sulfide resources averaging 0.5% Ni and 0.1% copper. Subsequent drilling indicated that low-grade sulfide mineralization extends at least to a depth of 1,200 meters (m). Four separate ore zones have been identified along 2 km of strike. The nickel mineralization occurs in andesitic and rhyolitic rocks adjacent to the Sherlock ultramafic intrusion of Archean Age. Poseidon NL also was active in the Sherlock area during the 1970's and early 1990's (Central Kalgoorlie Gold Mines Limited, 2003^{§1}; RM Capital Pty. Ltd., 2003). WMC Resources Limited has shown that large tonnage, low grade nickel deposits can be mined successfully. More than 45% of WMC's feed currently comes from its low grade Mount

¹References that include a section mark (§) are found in the Internet References Cited section.

Keith deposit in the Northern Goldfields region. According to WMC, Mount Keith has an estimated 299 Mt of proven and probable ore reserves (excluding stockpiles) averaging 0.56% Ni and 176 Mt of additional resources averaging 0.55% Ni. In 2002, the Mount Keith operations produced concentrates containing 43,192 t of Ni (WMC Resources Limited, 2003, p. 62-65).

On April 23, 2003, CKGM began drilling the northeast section of the Sherlock deposit at a point where the tabular ore body is steeply dipping. The new drill site is in an area where three holes drilled 30 years ago by Texas Gulf intercepted nickel sulfide mineralization at depths of 30 to 60 meters (m).

On March 24, 2003, Exxon Mobil Corporation announced that exploratory drilling in the offshore Jansz natural gas field had revealed the presence of a world-class gas resource. The discovery well is about 200 km northwest of Karratha in a permit area shared by Chevron Texaco Corporation and Exxon Mobil (Exxon Mobil Corp., 2003§). The huge natural gas field could provide CKGM with abundant, inexpensive gas for future ore processing facilities.

Cat Camp, Emily Ann, and other Lake Johnston projects.—CKGM also has nickel leases in the Eastern Goldfields area of Western Australia. The company's Cat Camp tenements are 25 km northwest of the new Emily Ann nickel mine operated by LionOre Australia (Nickel) Ltd. LionOre began mining the Emily Ann in the fourth quarter of 2001 and commissioned the concentrating plant in the second quarter of 2002. Concentrate is currently being trucked to the port of Esperance for shipment to the Canadian operations of Inco Limited (LionOre Mining International Ltd., 2003a§).

In January 2003, LionOre Nickel announced plans to develop the Maggie Hays nickel deposit 3 km south of Emily Ann. At that time, Lion Ore had a 31% interest in the Maggie Hays. In March, LionOre purchased the remaining 69% from its joint venture partner, BHP Billiton Dlc of the United Kingdom. Maggie Hays is scheduled to begin production in the fourth quarter of 2004. According to LionOre officials, Emily Ann has 1.0 Mt of reserves averaging 3.41% Ni and an additional 0.6 Mt of other indicated resources averaging 3.95% Ni. The Maggie Hayes property has 10.8 Mt of indicated resources averaging 1.50% Ni. The entire area is part of the Lake Johnston Greenstone Belt and has several promising gold exploration targets in addition to the nickel discoveries (LionOre Mining International Ltd., 2003b§). Monarch Resources Ltd. of Perth also has been actively exploring the Lake Johnston Greenstone Belt. Monarch has been using induced polarization in conjunction with high-resolution airborne magnetic surveying to identify future nickel prospects.

Dalrymple and LionOre to merge.—On June 4, 2003, LionOre Mining International Limited and Dalrymple Resources NL announced plans to merge. Under the merger

agreement, Dalrymple shareholders would receive one LionOre share for every 2.92 Dalrymple shares. The proposed merger would consolidate nickel and gold assets held by the two companies in the North Eastern Goldfields region. The recently discovered Waterloo and Amorac nickel sulfide deposits would be among the assets consolidated. LionOre has grown dramatically since 1988 and is now ranked among the top 100 mining companies of the world. The merger was to be completed by September 2003 and would give Dalrymple shareholders greater trading liquidity. The Australian Foreign Investment Review Board and the Supreme Court of Western Australia must still approve the merger (Mine Box, 2003a§).

Australian Mines Ltd. expands drilling program at the Blair Mine.—Australian Mines Ltd. has launched a diamond drilling program at the closed Blair Mine site, 30 km southeast of Kalgoorlie. The drilling program was launched after an electromagnetic (EM) geophysical survey identified three strong EM targets in the vicinity of the mine. The survey data were obtained by running the logging receiver down old diamond core holes. WMC operated the Blair Mine from 1989 to 1999, when it sold the mine to Macmahon Underground Pty. Ltd. The Blair Mine has been on care and maintenance since 2001, when mining was suspended because of low nickel prices. Officials of Australian Mines Ltd. (formerly West Musgrave Mining Ltd.) believe that the down-hole survey data indicate the presence of undiscovered high-grade massive sulfide mineralization. Drilling to date has identified 260,000 t of resources grading 2.6% Ni (Mine Box, 2003b§)

References Cited

- RM Capital Pty. Ltd., 2003, Central Kalgoorlie Gold Mines Ltd (CKG)—Sherlock Bay—timely acquisition: Perth, Australia, RM Capital Pty. Ltd., January 7, 6 p.
- WMC Resources Limited, 2003, Business Performance Report—2002: Southbank, Australia, WMC Limited, 65 p.

Internet References Cited

- Central Kalgoorlie Gold Mines Limited, 2003 (January), Sherlock Bay nickel copper project, technical presentation, 16 slides, accessed June 2, 2003, at URL http://www.centralkalgoorlie.com.au/projects_sherlock.html.
- Exxon Mobil Corporation, 2003 (March 24), Exxon Mobil announces world-class gas discovery in Australia, accessed June 2, 2003, at URL http://www.exxonmobil.com/Corporate/Newsroom/Newsreleases/xom_nr_240303.asp.
- LionOre Mining International Ltd., 2003a, Lake Johnston operations (Emily Ann), accessed June 9, 2003, at URL <http://www.lionore.com/australia/EmilyAnn.asp>.
- LionOre Mining International Ltd., 2003b, Maggie Hays deposit, accessed June 9, 2003, at URL <http://www.lionore.com/australia/MaggieHays.asp>.
- Mine Box, 2003a (June 4), LionOre and Dalrymple to merge, accessed June 4, 2003, at URL <http://www.minebox.com.au/news.asp?NID=2667>
- Mine Box, 2003b (February 3), West Musgrave acquiring Blair Nickel, accessed June 4, 2003, at URL <http://www.minebox.com.au/news.asp?NID=2209>.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE¹

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total	Total year to date
2002:					
February	4,780 ^r	890	275 ^r	5,950 ^r	11,900 ^r
March	4,820 ^r	723	370 ^r	5,910 ^r	17,800 ^r
April	5,150 ^r	879	280 ^r	6,310 ^r	24,100 ^r
May	4,810 ^r	722	81 ^r	5,620 ^r	29,700 ^r
June	5,230 ^r	873	254 ^r	6,360 ^r	36,100 ^r
July	5,290 ^r	730	266 ^r	6,280 ^r	42,300 ^r
August	5,310 ^r	843	230 ^r	6,390 ^r	48,700 ^r
September	5,210 ^r	754	59 ^r	6,030 ^r	54,800 ^r
October	5,410 ^r	750	62 ^r	6,220 ^r	61,000 ^r
November	4,910 ^r	632	58 ^r	5,600 ^r	66,600 ^r
December	4,830 ^r	505	53 ^r	5,390 ^r	72,000 ^r
January-December	60,600 ^r	9,080	2,270 ^r	72,000 ^r	XX
2003:					
January	5,010 ^r	529	23 ^r	5,560 ^r	5,560 ^r
February:					
Steel:					
Stainless and heat resisting	1,590	390	W	1,980	3,800
Alloy (excludes stainless)	195	--	W	195	641
Superalloys	1,080	--	W	1,080	2,030
Copper-nickel alloys	W	--	--	W	W
Electric, magnetic, and expansion alloys	28	--	W	28	42
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	839	--	--	839	1,730
Chemical and chemical uses	W	--	--	W	W
Other uses	777	--	23	800	2,240
Total reported	4,510 ²	390	23	4,920	10,500
Total all companies (calc) ³	XX	XX	XX	7,570	16,100
2003: January-February	9,520	919	45	10,500	XX
2002: January-February	9,650	1,660	561	11,900	XX

¹Revised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero

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

²Of consumption, 3,390 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

³Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (65.01%) to apparent primary consumption for 2001.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS,
BY FORM AND USE ^{1,2}

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder		Ferronickel	Oxide-sinter, salts, and other forms	Total
2002:					
February		2,110	454	106	2,670
March		2,340	494	135	2,970
April		2,490	513	94	3,100
May		2,250	82	127	2,460
June		1,840	63	138	2,040
July		1,580	98	97	1,770
August		1,910	112	83	2,100
September		2,370	89	78	2,530
October		1,990	140	76	2,210
November		1,820	93	84	2,000
December		1,700	60	81	1,840
2003:					
January		1,560 ^r	100	44	1,700 ^r
February:					
Steel (stainless, heat resisting and alloy)		423	(3)	(3)	423
Nonferrous alloys ⁴		1,120	(3)	(3)	1,120
Foundry (cast irons)		(3)	--	--	(3)
Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses		20	54	34	108
Total		1,560	54	34	1,650

^rRevised. -- Zero.

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

²Stocks held by companies that consume nickel in more than one end-use category are credited to the major category. Stocks are subject to revisions owing to inventory adjustments.

³Included in the "Chemical and unspecified uses" category.

⁴Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE ¹

(Metric tons, nickel content)

Period	Consumption			Stocks		
	Ferrous scrap ²	Nonferrous scrap ³	Total scrap	Ferrous scrap ²	Nonferrous scrap ³	Total scrap
2002:						
February	4,870	810	5,680	3,140	88	3,230
March	5,150	767	5,920	2,950	102	3,050
April	5,180	740	5,920	2,980	109	3,090
May	5,020	620	5,640	3,690	97	3,790
June	6,380	549	6,930	3,300	103	3,410
July	5,950	715	6,660	3,280	97	3,380
August	6,110	688	6,800	3,110	105	3,210
September	4,820	623	5,440	3,400	110	3,510
October	5,210	649	5,860	3,540	102	3,640
November	4,640	520	5,160	3,240	100	3,340
December	3,920	663	4,580	3,210	98	3,310
January-December	62,200	8,130	70,300	XX	XX	XX
2003:						
January	4,750	660	5,410	3,430	103	3,530
February	4,040	705	4,740	3,140	98	3,240
2003: January-February	8,780	1,370	10,100	XX	XX	XX
2002: January-February	9,830	1,590	11,400	XX	XX	XX

XX Not applicable.

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

²Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

³Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

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

(Metric tons, nickel content)²

Period and country of origin	Cathodes pellets, and briquets	Powder and flakes	Ferro-nickel	Metal-lurgical-grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date ⁴	Wrought nickel
2002:										
January	6,550	597	446	400	443	283	244	8,960	8,960	74
February	11,900	427	620	128	341	235	235	13,900	22,900	109
March	5,760	813	679	54	315	275	277	8,180	31,000	30
April	6,220	551	983	--	221	349	274	8,590	39,600	116
May	6,600	590	1,240	14	221	477	298	9,450	49,100	53
June	8,950	391	1,160	238	174	460	228	11,600	60,700	43
July	11,800	627	1,080	214	367	874	225	15,200	75,900	69
August	7,750	603	1,790	127	152	762	171	11,400	87,200	72
September	13,000	566	1,570	2	160	641	194	16,200	103,000	85
October	5,140	609	1,010	11	230	564	183	7,740	111,000	106
November	6,560	684	991	27	181	627	222	9,300	120,000	51
December	6,970	512	750	16	225	530	312	9,310	130,000	70
January-December	97,200	6,970	12,300	1,230	3,030	6,080	2,860	130,000	XX	878
2003:										
January:										
Australia	1,040	--	--	--	--	--	--	1,040	1,040	--
Brazil	80	--	--	--	--	2	--	82	82	--
Canada	4,170	375	--	10	105	166	--	4,830	4,830	(5)
Colombia	--	--	240	--	--	2	--	242	242	--
Dominican Republic	--	--	261	--	--	2	--	263	263	--
Finland	240	124	--	--	--	--	81	445	445	--
France	98	--	--	--	30	--	16	144	144	30
Germany	--	1	--	--	61	--	30	92	92	12
Japan	--	3	--	--	5	--	29	37	37	10
Mexico	--	--	--	--	1	141	--	142	142	--
New Caledonia	--	--	100	--	--	--	--	100	100	--
Norway	24	--	--	--	--	--	--	24	24	--
Russia	252	390	--	--	--	--	--	642	642	--
South Africa	--	--	--	--	--	--	--	--	--	--
Sweden	--	3	--	--	--	--	--	3	3	--
United Kingdom	11	23	4	--	126	3	13	180	180	(5)
Venezuela	--	--	--	--	--	--	--	--	--	--
Zimbabwe	40	--	--	--	--	--	--	40	40	--
Other	--	9	--	--	13	6	54	82	82	3
Total	5,950	928	605	10	341	322	223	8,380	8,380	55

XX Not applicable. -- Zero.

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

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%), sulfates (22%), and other salts (22%), supported catalysts (22%), and oxide, sesquioxide and hydroxide (65%).

³Excludes wrought nickel.

⁴May include revisions for prior months.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of destination	Cathodes pellets, and briquets	Powder and flakes	Ferro-nickel	Metal-lurgical-grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date	Wrought nickel
2002:										
January	344	135	6	122	1,110	1,030	233	2,990	2,990	192
February	170	81	3	152	989	3,720	229	5,350	8,330	167
March	245	151	(4)	64	1,470	2,040	219	4,190	12,500	262
April	186	113	--	68	1,280	3,890	226	5,770	18,300	139
May	65	119	10	111	1,360	1,900	213	3,780	22,100	271
June	105	134	(4)	19	1,550	2,500	155	4,470	26,500	283
July	131	139	1	9	1,560	2,040	204	4,080	30,600	200
August	76	222	1	42	826	1,510	168	2,840	33,400	230
September	164	122	2	55	718	1,660	153	2,880	36,300	249
October	113	99	8	34	1,010	1,840	167	3,280	39,600	221
November	64	95	8	6	830	1,470	184	2,650	42,300	181
December	75	65	7	3	983	2,080	423	3,630	45,900	175
January-December	1,740	1,480	46	685	13,700	25,700	2,570	45,900	XX	2,570
2003:										
January:										
Australia	--	--	--	--	17	--	--	17	17	--
Belgium	--	3	--	--	43	4	--	50	50	11
Canada	21	19	--	8	672	290	50	1,060	1,060	4
China	--	(4)	10	--	--	266	2	278	278	--
Germany	--	8	--	(4)	18	1	2	29	29	1
India	--	1	--	--	--	15	16	32	32	--
Italy	--	2	--	--	--	--	--	2	2	26
Japan	--	1	--	--	52	72	15	140	140	36
Korea, Republic of	--	1	--	--	--	425	46	472	472	19
Mexico	33	5	--	--	--	3	97	138	138	22
Netherlands	--	(4)	--	--	--	6	--	6	6	1
South Africa	--	--	--	3	--	--	(4)	3	3	--
Spain	--	--	--	--	--	994	--	994	994	--
Sweden	--	--	--	--	32	2	--	34	34	--
Taiwan	1	(4)	--	--	--	466	4	471	471	5
United Kingdom	--	7	--	--	19	56	4	86	86	321
Other	37	11	--	(4)	--	459	31	538	538	140
Total	92	58	10	11	853	3,060	267	4,350	4,350	586

XX Not applicable. -- Zero.

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

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemical category includes chlorides (25%), and other salts (22%), supported catalysts (22%), and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of origin	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2002:									
January	353	231	399	329	--	203	155	1,670	1,670
February	183	177	408	227	1	248	154	1,400	3,070
March	256	207	407	293	(2)	327	159	1,650	4,710
April	390	229	531	254	(2)	233	151	1,790	6,500
May	179	248	456	289	1	337	162	1,670	8,170
June	232	293	401	286	15	511	122	1,860	10,000
July	133	259	624	361	31	124	196	1,730	11,800
August	170	217	360	356	34	180	161	1,480	13,200
September	64	153	412	207	35	243	131	1,250	14,500
October	180	150	400	212	28	106	117	1,190	15,700
November	231	279	324	348	28	194	149	1,550	17,200
December	170	192	510	353	21	147	153	1,550	18,800
January-December	2,540	2,640	5,230	3,520	194	2,850	1,810	18,800	XX
2003:									
January:									
Australia	30	47	--	--	--	--	--	77	77
Belgium	1	--	--	--	(2)	--	1	2	2
Canada	--	1	--	(2)	--	2	3	6	6
China	--	--	--	(2)	--	--	18	18	18
France	--	--	103	--	--	1	1	105	105
Germany	5	35	151	182	(2)	72	4	449	449
Italy	--	138	--	(2)	--	2	1	141	141
Japan	(2)	--	1	--	--	42	2	45	45
Mexico	--	--	--	--	--	--	49	49	49
Netherlands	--	--	--	--	--	--	3	3	3
South Africa	--	--	--	--	--	--	--	--	--
Sweden	--	9	135	1	--	7	--	152	152
United Kingdom	18	17	10	148	--	6	4	203	203
Other	--	5	27	1	(2)	(2)	5	38	38
Total	54	252	427	332	(2)	132	91	1,290	1,290

XX Not applicable. -- Zero.

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

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of destination	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2002:									
January	861	599	93	572	9	134	247	2,520	2,520
February	808	600	106	596	43	115	340	2,610	5,120
March	884	626	178	505	11	197	653	3,050	8,180
April	618	451	96	476	12	204	278	2,130	10,300
May	862	495	99	638	32	136	297	2,560	12,900
June	1,070	393	142	567	8	127	363	2,670	15,500
July	437	518	94	392	8	144	307	1,900	17,400
August	951	527	142	545	15	128	426	2,730	20,200
September	788	568	174	733	4	133	333	2,730	22,900
October	290	507	146	717	3	187	320	2,170	25,100
November	739	418	174	546	10	147	295	2,330	27,400
December	415	316	78	302	14	115	426	1,660	29,100
January-December	8,720	6,020	1,520	6,590	169	1,770	4,290	29,100	XX
2003:									
January:									
Australia	(2)	1	1	1	--	--	(2)	3	3
Belgium	1	36	--	5	--	--	1	42	42
Canada	2	61	21	46	2	115	69	316	316
France	65	43	23	11	(2)	(2)	1	143	143
Germany	513	36	2	9	--	2	13	577	577
India	6	1	--	11	--	--	(2)	17	17
Ireland	--	--	(2)	--	--	--	1	1	1
Italy	9	1	3	5	--	(2)	2	21	21
Japan	7	9	2	10	--	5	3	36	36
Korea, Republic of	16	7	(2)	17	2	3	(2)	45	45
Mexico	2	1	63	(2)	--	54	52	173	173
Netherlands	39	1	(2)	1	--	--	1	41	41
Singapore	1	1	1	(2)	(2)	1	(2)	5	5
Spain	14	--	1	10	--	1	2	27	27
Sweden	--	(2)	--	2	--	--	(2)	2	2
Switzerland	26	(2)	(2)	19	--	3	1	50	50
Taiwan	1	(2)	--	19	--	3	4	28	28
United Kingdom	23	125	3	36	--	15	3	205	205
Other	4	52	18	34	8	29	39	184	184
Total	729	375	138	236	12	231	192	1,920	1,920

XX Not applicable. -- Zero.

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

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND
WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
February 2003:		
Stainless and heat resisting steels	80	20
Alloy steels	99	1
Superalloys	83	17
Copper-nickel alloys	98	2
Other nickel-base alloys	100	(1)

¹Less than 1/2 unit.

TABLE 9
NICKEL PRICES

Date	Platts Metals Week			18/8 Stainless	American
	Cathode NY Dealer \$/lb.	LME Cash \$/t	LME Cash \$/lb.	steel scrap Free market \$/long ton (gw)	18/8 Stainless steel scrap Pittsburgh \$/long ton (gw)
2002:					
Average for month of:					
February	2.745	6,023.250	2.732	XX	625
March	2.963	6,537.500	2.965	XX	643
April	3.163	6,958.214	3.156	XX	705
May	3.130	6,761.364	3.067	XX	731
June	3.213	7,119.861	3.230	XX	725
July	3.268	7,142.717	3.240	XX	748
August	3.094	6,717.143	3.047	XX	755
September	3.053	6,640.238	3.012	XX	733
October	3.118	6,804.457	3.086	XX	729
November	3.349	7,313.929	3.318	XX	716
December	3.308	7,193.158	3.263	XX	755
Yearly average	3.095	6,771.751	3.072	XX	703
2003:					
Average for week ending:					
February 7	3.83-3.94	8,362.000	3.793	830-850	835-845
February 14	3.95-4.06	8,512.500	3.861	830-850	835-845
February 21	3.95-4.11	8,634.000	3.916	830-850	835-845
February 28	4.18-4.27	8,983.500	4.075	830-850	835-845
March 7	4.14-4.25	8,852.500	4.015	870-890	880-890
March 14	3.87-4.07	8,460.500	3.838	875-895	880-890
March 21	3.78-3.92	8,223.500	3.730	880-900	880-890
March 28	3.67-3.90	8,067.500	3.659	885-895	880-890
April 4	3.65-3.73	7,859.500	3.565	885-895	880-890
April 11	3.63-3.78	7,855.000	3.563	885-895	880-890
April 18	3.69-3.83	8,068.750	3.660	885-895	880-890
April 25	3.65-3.83	7,885.000	3.577	860-880	880-890
Average for month of:					
January	3.580	8,026.020	3.641	XX	757
February	3.978	8,623.000	3.911	840	840
March	3.865	8,378.810	3.801	886	885

XX Not applicable.

NOTE

On February 6, 2003, Platts Metals Week began assessing a weekly North American Free Market 18-8 stainless steel scrap price. The price is being published as a range, in dollars per long ton (gross weight), reflecting the majority of spot business. Specifications are: material sold in bundles and solids, minimum nickel content of 7%-9%, minimum chromium content of 17%, delivered plant, loaded on trucks or barges, minimum quantity 1,000 long tons, net 30-day standard payment terms.

