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Mineral Industry Surveys

For information, contact:
Peter H. Kuck, Nickel Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4965, Fax: (703) 648-7757
E-mail: pkuck@usgs.gov

Joseph M. Krisanda (Data)
Telephone: (703) 648-7987
Fax: (703) 648-7975
E-mail: jkrisand@usgs.gov

Internet: http://minerals.usgs.gov/minerals

NICKEL IN SEPTEMBER 2006

Reported domestic nickel consumption in September, on a daily average basis, was slightly greater than the revised total for August, according to the U.S. Geological Survey. Daily average use of nickel metal and ferronickel for stainless and heat resisting steels was 16% greater than the corresponding average for August. Use of nickel metal to make superalloys (such as INCONEL 718 and WASPALOY) decreased by 14% from August levels, on a daily average basis. The decrease in the superalloy category was accompanied by a 24% decrease in the "Other nickel & nickel alloys" category (such as INCONEL 600 and Nickel 200). Sales to plating companies averaged 26.7 metric tons per day (t/d), about 9% more than the revised August figure of 24.5 t/d. The United States imported 108,000 metric tons (t) of primary nickel during the first 8 months of 2006, about 9% more than the 99,600 t for the corresponding period of 2005. Trade data for September will appear in a subsequent report. Percentages reported in this paragraph are based on data concealed to avoid revealing individual company proprietary data.

On September 30, stocks in London Metal Exchange (LME) warehouses worldwide totaled 5,124 t, down 4% from the 5,358 t of August 31. LME stocks were minimal throughout the third quarter of 2006 because of growing demand for austenitic stainless steel in Asia. On July 31, stocks bottomed out at 4,158 t, the lowest end-of-month figure reported in at least 12 years.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE[1]

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total	Total year to date
2005:					
September	5,190	658	44	5,900	50,800
October	5,230	708	44	5,980	56,800
November	5,220	585	57	5,860	62,700
December	4,750	619	52	5,420	68,100
January-December	61,100	6,450	544	68,100	XX
2006:					
January	6,730 r	831	71	7,630 r	7,630 r
February	6,360 r	842	66	7,270 r	14,900 r
March	6,370 r	776	68	7,220 r	22,100 r
April	6,510 r	788	59	7,350 r	29,500 r
May	6,500 r	850	59	7,410 r	36,900 r
June	6,540 r	758	59	7,360 r	44,200 r
July	6,120 r	677	52	6,850 r	51,100 r
August	6,420 r	788	59	7,260 r	58,400 r
September:					
Steel:					
Stainless and heat resisting	3,060	823	W	3,880	30,600
Alloy (excludes stainless)	167	--	--	167	2,710
Superalloys	983	--	W	983	10,100
Copper-nickel alloys	W	--	--	W	W
Electric, magnetic, and expansion alloys	5	--	--	5	116
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	802	--	--	802	7,410
Chemical and chemical uses	W	--	W	W	W
Other uses	1,180	--	54	1,230	14,500
Total reported	6,190 [2]	823	54	7,070	65,400
Total all companies (calc)[3]	XX	XX	XX	13,900	128,000
2006: January-September	57,700	7,130	548	65,400	XX
2005: January-September	45,900	4,540	392	50,800	XX

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

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

[2]Of consumption, 4,010 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

[3]Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (50.94%) to apparent primary consumption for 2004.

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
2005:				
September	1,680	273	153	2,110
October	1,660	279	147	2,090
November	1,720	307	147	2,170
December	2,050	300	146	2,500
2006:				
January	1,830	300	153	2,280
February	1,960	354	154	2,470
March	1,880	409	154	2,440
April	2,100	332	170	2,610
May	2,490	292	154	2,940
June	2,140	307	145	2,600
July	1,970	333 r	152 r	2,450 r
August	1,920	439 r	166 r	2,530 r
September:				
Steel (stainless, heat resisting and alloy)	680	391	(3)	1,070
Nonferrous alloys[4]	1,090	W	(3)	1,090
Foundry (cast irons)	(3)	W	--	(3)
Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses	131	W	167	298
Total	1,900	391	167	2,460

rRevised. W Withheld to avoid disclosing company proprietary data. -- Zero.

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

[2]Stocks 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.

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

[4]Includes 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)

	Consumption			Stocks		
Period	Ferrous scrap[2]	Nonferrous scrap[3]	Total scrap	Ferrous scrap[2]	Nonferrous scrap[3]	Total scrap
2005:						
September	4,490	709	5,200	2,800	99	2,900
October	5,000	638	5,640	3,010	110	3,120
November	5,520	611	6,130	2,630	98	2,730
December	4,530	593	5,130	2,470	89	2,560
January-December	56,200	8,530	64,700	XX	XX	XX
2006:						
January	3,710	710	4,420	2,600	54	2,660
February	4,130	653	4,790	2,850	45	2,900
March	4,290	800	5,090	2,930	44	2,980
April	5,250	699	5,950	2,660	49	2,710
May	4,340	651	4,990	2,760	54	2,810
June	3,840	845	4,680	3,090	44	3,130
July	4,450	666	5,110	3,110	57	3,170
August	5,560	705	6,260	2,720	50	2,770
September	NA	688	NA	NA	52	NA
Total	35,600	6,420	41,300	XX	XX	XX

NA Not available. XX Not applicable.

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

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

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

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY[1]

(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
2005:										
August	10,500	772	1,370	--	447	402	295	13,800	110,000	116
September	9,410	500	1,890	--	645	443	294	13,200	123,000	94
October	8,410	794	728	17	719	505	286	11,500	135,000	63
November	9,690	714	1,240	107	689	581	277	13,300	148,000	94
December	7,310	423	877	110	608	731	291	10,400	159,000	128
January-December	110,000	8,120	19,200 r	1,540	7,170	8,340	3,620	159,000	XX	1,060
2006:										
January	11,800	971	864	80	651	717	307	15,400	15,400	76
February	9,740	575	1,310	177	379	771	435	13,400	28,800	74
March	12,300	695	1,530	67	567	817	369	16,400	45,200	124
April	12,900	730 r	1,300	121	621	1,100	287	17,100 r	62,200 r	83
May	10,400	1,170	1,090	107	561	1,370	279	15,000 r	77,200 r	99
June	10,900	648	1,050	67	713	1,500	326	15,200	92,400 r	174
July	9,460	802	1,530	98	731	1,540	215	14,400	107,000	105
August:										
Australia	721	60	--	--	--	--	--	781	9,720	--
Brazil	--	--	--	--	--	--	--	--	962	--
Canada	4,280	336	--	80	123	1,070	18	5,910	47,800	(5)
China	59	3	--	--	6	--	6	74	832	1
Colombia	41 [6]	--	280	--	--	24	(5)	345	2,250	--
Dominican Republic	--	--	735	--	--	--	1	736	6,370	--
Finland	543	--	13	--	--	--	67	623	5,540	--
France	138	--	--	--	13	--	17	168	1,930	8
Germany	--	3	--	--	21	87	34	145	753	45
Japan	--	16	25	--	57	5	44	147	676	7
Mexico	--	(5)	--	--	31	319	2	352	2,230	--
New Caledonia	--	--	150	--	--	--	--	150	1,200	--
Norway	968	--	--	--	6	--	--	974	11,500	3
Russia	4,140	--	--	--	--	--	--	4,140	24,100	--
South Africa	18	40	--	--	--	--	--	58	552	--
Sweden	--	2	--	--	3	--	--	5	23	--
United Kingdom	8	210	--	--	134	--	3	355	2,170	11
Zimbabwe	80	--	--	--	--	--	--	80	905	--
Other	4	115 [6]	--	--	149	114	98	480	2,860	13
Total	11,000	785	1,200	80	543	1,620	290	15,500	122,000	88
2006: January-August	88,600	6,380	9,850	800	4,770	9,440	2,510	122,000	XX	822
2005: January-August	75,600	5,690	14,500	1,310	4,510	6,080	2,480	110,000	XX	680

rRevised. XX Not applicable. -- Zero.

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

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

[3]Excludes wrought nickel.

[4]May include revisions for prior months.

[5]Less than ½ unit.

[6]All or part of these data have been referred to the U.S. Census Bureau for verification.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY[1]

(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
2005:										
August	91	84	--	1	1,270	3,350	506	5,300	41,500	156
September	147	85	4	5	1,150	3,950	315	5,650	47,100	105
October	134	148	1	8	1,040	3,450	281	5,070	52,200	94
November	70	116	-4	5	1,000	3,640	271	5,100	57,300	79
December	80	87	21	33	1,080	4,200	430	5,940	63,200	99
January-December	1,190	1,910	72	234	11,700	43,800	4,230	63,200	XX	1,340
2006:										
January	105	107	15	12	1,200	4,100	387	5,930	5,930	158
February	125	87	8	8	860	2,950	370	4,410	10,300	106
March	87	92	5	69	942	2,700	631	4,520	14,900	114
April	189	111	22	8	975	2,540	387	4,230	19,100	151
May	79	100	6	8	2,070	3,420	636	6,320	25,400	119
June	48	64	-4	4	1,420	2,910	454	4,890	30,300	84
July	39	73	3	4	2,120	3,090	358	5,690	36,000	101
August:										
Australia	--	2	--	--	22	1	1	26	242	8
Belgium	--	1	--	2	24	5	21	53	525	--
Canada	(4)	14	--	--	595	233	202	1,040	8,820	10
China	--	2	--	--	42	1,360	14	1,420	10,900	1
Finland	--	--	--	--	--	7	--	7	3,800	--
Germany	--	17	--	(4)	32	4	5	58	410	3
India	--	(4)	--	--	--	64	--	64	939	2
Italy	--	--	--	--	--	--	3	3	1,010	(4)
Japan	--	10	--	--	1,170	64	47	1,290	4,780	13
Korea, Republic of	--	7	--	--	19	167	3	196	1,350	2
Mexico	25	2	--	1	--	--	112	140	798	5
Netherlands	--	--	--	--	--	75	9	84	640	2
South Africa	--	--	--	2	--	--	1	3	44	--
Sweden	--	(4)	--	--	40	2	--	42	246	(4)
Taiwan	--	(4)	--	--	--	551	98	649	3,900	12
United Kingdom	--	5	--	--	67	4	31	107	842	6
Other	(4)	18	3	--	--	584	126	731	2,700	32
Total	25	78	3	5	2,010	3,120	673	5,920	41,900	96
2006: January-August	697	712	64	118	11,600	24,800	3,900	41,900	XX	928
2005: January-August	759	1,470	45	182	7,470	28,600	2,930	41,500	XX	958

XX Not applicable. -- Zero.

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

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

[3]Excludes wrought nickel.

[4]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY[1]

(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
2005:									
August	447	360	462	242	20	172	293	2,000	14,900
September	644	314	500	241	34	176	156	2,070	17,000
October	491	333	480	241	20	170	466	2,200	19,200
November	551	214	629	262	16	286	198	2,160	21,300
December	429	295	552	221	35	183	243	1,960	23,300
January-December	4,840	3,740	6,580	3,150	350	1,850	2,790	23,300	XX
2006:									
January	557	379	478	354	6	204	137	2,120	2,120
February	434	292	550	276	2	198	335	2,090	4,200
March	1,040	398	516	302	41	335	204	2,840	7,040
April	400	427	472	224	25	251	127	1,930	8,960
May	404	338	596	262	17	382	266	2,270	11,200
June	486	338	524	259	31	373	276	2,290	13,500
July	578	581	526	242	10	457	182	2,580	16,100
August:									
Australia	167	--	--	--	--	--	(2)	167	2,050
Belgium	2	--	(2)	(2)	--	(2)	(2)	2	128
Canada	--	--	4	(2)	(2)	49	5	58	746
China	--	(2)	1	(2)	--	--	72	73	777
France	18	2	222	26	--	22	2	292	1,690
Germany	217	139	100	306	3	87	(2)	852	5,790
Italy	215	324	13	--	--	13	(2)	565	1,810
Japan	(2)	--	1	--	--	33	1	35	929
Mexico	--	(2)	(2)	--	--	1	2	3	31
Netherlands	--	(2)	(2)	--	--	(2)	13	13	71
South Africa	--	--	--	--	--	--	--	--	253
Sweden	--	20	73	2	--	5	--	100	2,000
United Kingdom	70	30	3	(2)	(2)	3	12	118	1,340
Other	16	7	10	4	--	4	26	67	817
Total	705	522	427	338	3	217	133	2,350	18,400
2006: January-August	4,600	3,280	4,090	2,260	135	2,420	1,660	18,400	XX
2005: January-August	2,720	2,590	4,420	2,180	246	1,030	1,730	14,900	XX

XX Not applicable. -- Zero.

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

[2]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY[1]

(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
2005:									
August	1,010	1,310	114	301	9	285	360	3,390	25,300
September	565	1,250	92	398	26	237	286	2,850	28,100
October	731	1,100	125	393	27	417	401	3,190	31,300
November	628	1,430	104	335	5	419	288	3,210	34,500
December	762	1,510	65	282	3	243	267	3,130	37,700
January-December	10,400	15,000	1,440	4,200	119	3,000	3,580	37,700	XX
2006:									
January	472	1,460	67	358	35	645	251	3,280	3,280
February	411	1,650	91	321	19	277	336	3,110	6,390
March	1,040	1,800	63	473	33	281	360	4,050	10,400
April	955	1,730	71	371	30	245	246	3,650	14,100
May	687	1,610	95	394	19	236	326	3,360	17,400
June	550	1,650	75	426	21	226	286	3,230	20,700
July	317	1,230	61	391	16	194	261	2,470	23,100
August:									
Australia	--	(2)	1	2	--	5	2	10	61
Belgium	64	252	--	2	--	(2)	(2)	318	3,200
Canada	16	83	43	37	2	27	29	237	1,720
China	1	119	(2)	132	--	43	17	312	2,050
France	80	167	(2)	9	(2)	1	(2)	257	3,540
Germany	3	219	3	12	(2)	5	(2)	242	1,220
India	--	15	1	21	--	6	(2)	43	158
Ireland	(2)	--	1	2	--	--	1	4	34
Israel	4	99	1	2	(2)	2	(2)	108	1,000
Italy	53	19	(2)	22	--	4	2	100	716
Japan	261	58	1	2	(2)	5	1	328	2,690
Korea, Republic of	1	17	(2)	35	(2)	3	1	57	747
Mexico	2	63	12	4	7	63	194	345	2,670
Netherlands	--	53	--	22	--	3	2	80	203
Singapore	1	4	2	3	--	1	2	13	173
Spain	2	(2)	--	2	--	(2)	(2)	4	93
Sweden	1	8	--	3	4	--	3	19	332
Switzerland	18	3	2	3	--	(2)	1	27	353
Taiwan	--	1	(2)	9	--	4	1	15	297
United Kingdom	85	250	13	46	(2)	9	6	409	3,250
Other	14	33	15	30	3	53	30	178	1,750
Total	606	1,460	95	400	16	234	292	3,110	26,200
2006: January-August	5,040	12,600	618	3,140	189	2,340	2,360	26,200	XX
2005: January-August	7,670	9,680	1,050	2,800	60	1,680	2,340	25,300	XX

XX Not applicable. -- Zero.

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

[2]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
September 2006:		
Stainless and heat resisting steels	100	(1)
Alloy steels	99	1
Superalloys	89	11
Copper-nickel alloys	95	5
Other nickel-base alloys	100	(1)

[1]Less than ½ unit.

TABLE 9
NICKEL PRICES

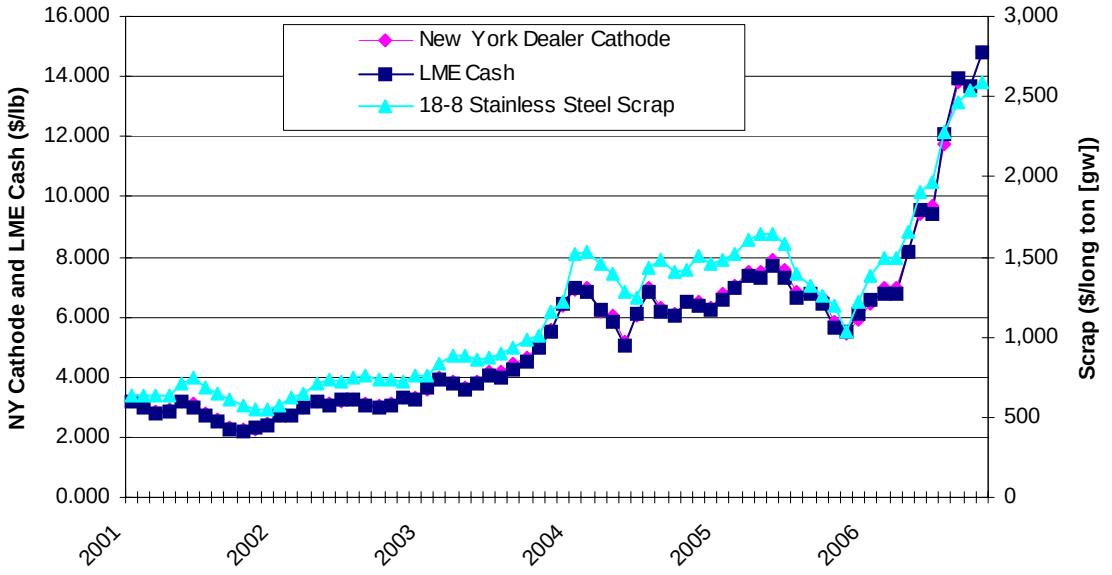
Date	Platts Metals Week: Cathode NY Dealer $/lb.	Platts Metals Week: LME Cash mean[1] $/t	Platts Metals Week: LME Cash mean[1] $/lb.	Platts Metals Week: 18/8 Stainless steel scrap free market $/long ton (gw)	American Metal Market 18/8 Stainless steel scrap Pittsburgh $/long ton (gw)
2005:					
Average for month of:					
October	5.840	12,396.548	5.623	1,194	1,350
November	5.429	12,111.477	5.494	1,038	1,244
December	5.923	13,425.625	6.090	1,225	1,193
Yearly average	6.814	14,737.960	6.685	1,409	1,469
2006:					
Average for week ending:					
October 6	14.375-14.740	31,310.000	14.202	2,475-2,550	2,725-2,750
October 13	14.831-15.398	32,810.000	14.882	2,500-2,650	2,625-2,650
October 20	15.210-15.958	33,688.500	15.281	2,600-2,650	2,625-2,650
October 27	14.870-16.049	33,180.500	15.050	2,600-2,650	2,625-2,650
November 3	14.738-15.351	32,481.000	14.733	2,600-2,650	(2)
November 10	14.511-15.278	31,518.000	14.296	2,550-2,600	(2)
November 17	14.006-14.643	30,439.000	13.807	2,500-2,565	(2)
November 24	14.053-14.983	32,319.500	14.660	2,425-2,475	(2)
Average for month of:					
January	6.408	14,549.643	6.600	1,379	1,275
February	6.944	14,975.000	6.793	1,497	1,387
March	6.949	14,893.043	6.755	1,499	1,493
April	8.184	17,931.806	8.134	1,656	1,531
May	9.425	21,064.524	9.555	1,909	1,813
June	9.664	20,747.045	9.411	1,963	2,088
July	11.750	26,568.571	12.051	2,275	2,138
August	13.808	30,727.955	13.938	2,493	2,419
September	13.634	30,117.381	13.661	2,534	2,681
October	14.822	32,692.500	14.829	2,584	2,662
November	14.535	32,099.773	14.560	2,562	NA

NA Not available.

[1]Mean of the cash buyer price and the cash seller and settlement price.

[2]On November 1, 2006, American Metal Market (AMM) changed its price listings for austenitic stainless steel scrap. AMM has begun reporting prices for Type 316 solids & clips and has changed its listing for 18-8 bundles, solids & clips to Type 304 solids & clips. See November pages of November AMM Scrap Iron & Steel Prices for details. All prices remain in dollars per gross (long) ton. More complete AMM price data will appear in subsequent U.S. Geological Survey Mineral Industry Surveys.

2001-2006 AVERAGE MONTHLY PRICES
(Derived from Metals Week and American Metal Market quotations)



2001-2006 STOCKS

End of month stocks for the London Metal Exchange (LME) actually represent opening reported stocks for the first business day of the following month.