

Mineral Industry Surveys

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NICKEL IN NOVEMBER 2007

Reported total domestic nickel consumption in November, on a daily average basis, was 3% less than that for October, according to the U.S. Geological Survey. Daily average use of nickel metal and ferronickel for stainless and heat resisting steels was 4% greater than the revised figure for October. Average daily use of nickel metal to make superalloys (such as INCONEL 718 and WASPALOY) decreased by 21% from October levels. Average daily use decreased by 10% in the "Other nickel and nickel alloys" category (such as INCONEL 600 and Nickel 200). Sales to plating companies averaged 28.0 metric tons per day (t/d), slightly more than the October figure of 27.8 t/d. Percentages reported in this paragraph are based on data withheld to avoid revealing individual company proprietary data.

The United States imported 103,000 metric tons (t) of primary nickel in the first 10 months of 2007, 21% less than the 131,000 t for the corresponding period of 2006. About 87%, or 89,500 t, of the primary nickel was Class I materials. Class I materials

(electrolytic cathode, briquets, granules, pellets, powders, rondelles, etc.) are refined products with a nickel content of 99% or greater. Trade data for November 2007 will appear in a subsequent report.

On November 30, stocks in London Metal Exchange (LME) warehouses worldwide totaled 44,334 t, up 18% from 37,662 t on October 31. LME stocks grew dramatically during the second half of 2007 as global production of austenitic stainless steel, the principal use of nickel, slowed.

World prices weakened dramatically during the summer, but partially recovered in the autumn despite the buildup in LME stocks. The average monthly LME cash price for November was \$30,600 per metric ton (\$13.880 per pound), down slightly from the October figure of \$31,045 per metric ton (\$14.082 per pound). The November price, however, was 41% less than the record high of \$52,161 (\$23.660 per pound) reached in May. The average LME 3-month mean nickel price for November was \$30,917 per metric ton (\$14.024 per pound).

 ${\bf TABLE~1}$ CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE 1

(Metric tons, nickel content)

	Cathodes, pellets,		Oxide-sinter, salts, and		Total
	briquets, and		other		year to
Period	powder	Ferronickel	forms	Total	date
2006:	powder	1 ciromekei	TOTHIS	Total	date
November	6,270	709	50	7,030	81,600
December	5,390	655	49	6,100	87,700
January-December	77,700	9,350	688	87,700	XX
2007:	_	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,	
January	6,370	854	53	7,280	7,280
February	6,020	759	53	6,830	14,100
March	5,700	846	61	6,600	20,700
April	6,280	812	56	7,150	27,900
May	6,000	723	54	6,780	34,600
June	6,080	827	60	6,970	41,600
July	5,720	700	49	6,470	48,100
August	6,210	815	56	7,080	55,200
September	5,300	795	61	6,160	61,300
October ^r	6,440	689	64	7,190	68,500
November:					
Steel:					
Stainless and heat resisting	2,940	668	W	3,600	36,900
Alloy (excludes stainless)	248	(2)		248	2,510
Superalloys	606		W	606	11,500
Copper-nickel alloys	W			W	W
Electric, magnetic, and expansion alloys	13			13	122
Other nickel & nickel alloys	W		W	W	W
Cast iron	W			W	W
Electroplating (sales to platers)	839			839	8,780
Chemical and chemical uses	W		W	W	W
Other uses	1,380		57	1,440	15,500
Total reported	6,020 3	668	57	6,750	75,300
Total all companies (calc) ⁴	XX	XX	XX	11,100	123,000
2007: January-November	66,100	8,490	628	75,300	XX
2006: January-November	72,300	8,700	639	81,600	XX

^rRevised. 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.

²Withheld to avoid disclosing company proprietary data

³Of consumption, 3,890 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

⁴Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (61.01%) to apparent primary consumption for 2006.

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

(Metric tons, nickel content)

	Cathodes, pellets,		Oxide-sinter,	
	briquets, and		salts, and	
Period	powder	Ferronickel	other forms	Total
2006:				
November	1,790	364	176	2,330
December	1,880	380	160	2,420
2007:				
January	1,920	427	175	2,520
February	1,650	466	182	2,300
March	1,790	471	166	2,420
April	1,470	463	176	2,110
May	1,570	466	182	2,220
June	1,550	403	149	2,100
July	1,630	432	161	2,230
August	1,690 ^r	504	173	2,370 °
September ^f	1,510	479	149	2,140
October	1,460	432	154	2,050
November:				
Steel (stainless, heat resisting and alloy)	686	470	(3)	1,160
Nonferrous alloys ⁴	947	(3)	(3)	947
Foundry (cast irons)	(3)			(3)
Chemical (catalysts, ceramics, plating				
salt, etc.) and unspecified uses	(3)		233	233
Total	1,630	470	233	2,340

Revised. -- Zero.

 ${\bf TABLE~3}$ 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	Ferrous scrap ²	Nonferrous scrap ³	Total			
2006:	serup	serap		serap	serup				
November	6,310	516 ^r	6,830 r	4,140	45	4,190			
December	5,460	465	5,930	4,300	48	4,350			
January-December	79,000	8,970 ^r	87,900 ^r	XX	XX	XX			
2007:	- <u>-</u>								
January	7,620	745	8,370	4,240	57	4,300			
February	6,190	617	6,810	4,180	80	4,260			
March	5,500	933	6,430	5,430	51	5,480			
April	6,750	776	7,520	4,550	53	4,610 ^r			
May	5,620	787	6,400	4,810	51	4,860			
June	6,060	867	6,930	5,120	51	5,170			
July ^r	5,640	716	6,360	4,880	46	4,930			
August ^r	5,540	880	6,420	4,710	44	4,750			
September	5,350	496	5,840	4,890	45 ^r	4,930 °			
October	5,820	565	6,380	4,940	42	4,980			
November	5,780	407	6,180	4,730	41	4,770			
January-November	65,900	7,790	73,600	XX	XX	XX			

^rRevised. XX Not applicable.

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 "Oxide-sinter, salts, and other forms: Chemical and unspecified uses" category.

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

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.

 $\label{eq:table 4} \textbf{U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY}^1$

(Metric tons, nickel content)

	6.4.1	ъ 1		Metal-	***	G. 1.1			T . 1	
	Cathodes,	Powder	_	lurgical-	Waste	Stainless			Total	
Period and country	pellets, and	and	Ferro-	grade	and	steel	GI : 1	3	year to	Wrough
of origin	briquets	flakes	nickel	oxide	scrap	scrap	Chemicals	Total ³	date ⁴	nickel
2006:	- 0.450	- 10	4.000			4.0.50	250	12.100	4.40.000	
October	8,150	542	1,220	161	575	1,060	358	12,100	148,000	88
November	10,300	513	932	99	564	881	311	13,600	162,000	61
December	7,450	609	1,570	76	526	957	168	11,400	173,000	59
January-December	125,000	8,780	14,600	1,210	6,850	13,500	3,680	173,000	XX	1,110
2007:	=									
January	8,330	536	627	107	476	728	348	11,200	11,200	51
February	6,610	562	832	97	463	674	254	9,490	20,600	75
March	8,550	626	1,350	7	579	1,090	357	12,600	33,200	51
April	8,460	600	941	80	549	898	329	11,900	45,100	77
May	8,090	583	1,020	18	570	1,020	274	11,600	56,600	67
June	8,130	552	965	2	712	858	205	11,400	68,100	79
July	8,190	466	1,490		578	403	350	11,500	79,500	50
August	10,600	642	1,430	7	561	416	255	14,000	93,500	96
September	8,690	514	1,480	32	431	318	209	11,700	105,000	101
October:	= !									
Australia	850	60						910	9,890	1
Belgium	-	10			2		8	20	260	
Brazil	196							196	854	(5)
Canada	4,490	202		14	148	518	4	5,380	53,200	(5)
China		3			20		20	43	299	2
Colombia	- 		168			1	(5)	169	2,710	
Denmark	-						3	3	148	
Dominican Republic			301			2		303	6,660	
Finland	675						83	758	3,150	
France	23	(5)			93		23	139	1,020	19
Germany	- 	6			79		27	112	928	7
Israel	- 				24	2		26	259	
Japan	- 	16			5		34	55	738	17
Mexico	- 				34	178	4	216	2,170	
Netherlands	- 						4	4	321	4
New Caledonia	-		150				· 	150	1,410	
Norway	1,060				9			1,070	9,670	
Russia	996							996	17,600	
South Africa		20						20	608	
Sweden								20	23	
United Kingdom	- ² 5	25			93	4	6	133	2,460	2
Zimbabwe	- 94				93			94	687	
Other	_ 94				50	13	7	70	1,010	43
	8,390	(5)	619	14	557	718	223	10,900	116,000	95
Total										
2007: January-October	84,100	5,420	10,700	364	5,480	7,120	2,800	116,000	XX	743
2006: January-October	107,000	7,650	12,100	1,030	5,760	11,600	3,200	148,000	XX	988

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 chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide and hydroxide (65%).

³Excludes wrought nickel.

⁴May include revisions for prior months.

⁵Less than ½ unit.

$\label{eq:table 5} \textbf{U.S. EXPORTS OF NICKEL, BY COUNTRY}^1$

(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
2006:	*					<u>.</u>				
October	13	71	1	5	2,420	2,630	591	5,740	54,400	85
November	47	106	3	11	2,650	3,140	491	6,450	60,800	66
December		71		7	2,610	3,350	389	6,480	67,300	61
January-December	882	1,030	67	150	21,300	38,000	5,920	67,300	XX	1,230
2007:	_									
January	- 64	88	2	2	3,160	4,440	254	8,010	8,010	144
February	112	79	(4)	2	2,620	5,940	525	9,280	17,300	192
March	93	112	5	249	2,810	6,330	659	10,300	27,500	99
April	83	79	1	752	2,900	4,350	802	8,960	36,500	187
May	81	76	(4)	475	3,580	5,230	703	10,200	46,700	226
June	54	82	2	525	5,970	5,800	438	12,900	59,500	125
July	36	63		560	3,240	5,300	533	9,730	69,300	81
August	- 71	79	(4)	503	2,920	5,190	578	9,340	78,600	134
September	47	70	(4)	405	2,140	5,160	430	8,260	86,900	96
October:		, 0	(.,	.02	2,1.0	2,100	.50	0,200	00,>00	
Australia		1			26	1		28	315	
Bangladesh						27		27	1,170	
Belgium		2			6		3	11	337	1
Canada	_ 3	7		684	1,310	194	77	2,280	24,300	4
China		1				1,210	12	1,220	10,600	1
Colombia	(4)	5				(4)	(4)	5	279	
Finland									2,240	
France		(4)				13		13	145	1
Germany		24		56	11		14	105	1,770	5
India		1			2	952		955	5,660	(4)
Italy		(4)					(4)	1	68	(4)
Japan		11	2		563	433	12	1,020	15,200	2
Korea, Republic of		4				195	21	220	4,410	14
Mexico	_ 57	3				1/3	58	119	1,200	8
Netherlands	_					5		5	1,030	(4)
Pakistan	_					446	(4)	446	1,440	(4)
Singapore		2					3	5	281	2
South Africa		1					<i>-</i> -	1	39	
Spain									3,640	(4)
Sweden					31	53	1	85	606	(4)
Taiwan	(4)	2				2,270	30	2,300	16,600	(4)
Thailand	_	2				2,270	24	2,300	752	
United Kingdom		5			70	19	24	28 96	919	(4) 5
Vietnam	_					16		96 16	919	
Other		 17		 1		16 89	 87	196		43
Total	62	88	2	741	2,020	5,930	344	9,190	2,160 96,000	86
	704	815	14							
2007: January-October		815 850	14 65	4,210 132	31,400	53,700	5,270	96,000	XX XX	1,370 1,100
2006: January-October	//8	830	03	132	16,000	31,500	5,040	54,400	λX	1,100

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 chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴Less than ½ unit.

TABLE 6 U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY $^{\!1}$

(Metric tons, gross weight)

Period and country	Unwrought alloyed	Bars, rods, and		Plates and		Tubes and	Other alloyed		Total year to
of origin	ingot	profiles	Wire	sheets	Foil	pipes	articles	Total	date
2006:									
October	517	464	492	390	34	316	160	2,370	22,600
November	336	482	755	355	26	237	133	2,330	24,900
December	351	485	431	363	25	465	149	2,270	27,200
January-December	6,180	4,990	6,270	3,640	233	3,620	2,240	27,200	XX
2007:									
January	438	481	573	204	29	307	91	2,120	2,120
February	390	459	452	311	21	188	148	1,970	4,090
March	418	480	691	328	12	183	139	2,250	6,340
April	423	505	688	403	25	257	178	2,480	8,820
May	412	432	648	359	(2)	157	235	2,240	11,100
June	219	495	657	255	10	253	205	2,090	13,200
July	529	449	558	258	11	156	209	2,170	15,300
August	152	553	347	251	11	189	218	1,720	17,000
September	185	329	401	244	22	124	278	1,580	18,600
October:									
Australia	124						(2)	124	1,110
Belgium	12		(2)				(2)	12	89
Canada		4	(2)			13	90	107	556
China		1	3	1		(2)	22	27	723
France	1	7	95	17		19	6	145	2,040
Germany	153	101	149	235	(2)	120	8	766	7,780
Italy		35	2	1			(2)	38	2,420
Japan	1	14	3	8		112	14	152	738
Mexico			(2)			(2)	3	3	85
Netherlands		(2)					4	4	101
Sweden			208	5		17		230	2,450
United Kingdom	26	48	7	(2)	(2)	24	28	133	1,020
Other	27	16	7	1		2	27	80	1,340
Total	344	226	474	268	(2)	307	202	1,820	20,500
2007: January-October	3,510	4,410	5,490	2,880	142	2,120	1,900	20,500	XX
2006: January-October	5,490	4,020	5,080	2,920	182	2,920	1,960	22,600	XX

XX Not applicable. -- Zero.

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

²Less than ½ unit.

 $\label{eq:table 7} \textbf{U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY}^1$

(Metric tons, gross weight)

	Unwrought	Bars, rods,		Plates		Tubes	Other		Total
Period and country	alloyed	and		and		and	alloyed		year to
of destination	ingot	profiles	Wire	sheets	Foil	pipes	articles	Total	date
2006:	_								
October	829	1,430	66	412	21	1,170	253	4,180	33,800
November	488	1,170	80	361	14	182	223	2,520	36,300
December	385	1,430	55	537	14	226	198	2,850	39,200
January-December	7,550	18,000	881	4,890	252	4,410	3,240	39,200	XX
2007:	_								
January	417	1,340	48	395	6	255	244	2,700	2,700
February	688	1,280	43	508	9	265	157	2,950	5,650
March	720	1,600	78	702	15	316	158	3,590	9,250
April	519	1,300	76	780	8	235	167	3,090	12,300
May	615	1,190	123	458	13	217	326	2,940	15,300
June	457	1,430	132	492	20	202	239	2,970	18,200
July	612	1,050	97	363	19	163	220	2,520	20,800
August	566	1,290	100	429	38	192	303	2,920	23,700
September	589	1,180	89	370	45	192	279	2,750	26,400
October:	-								
Australia	4	1	(2)	1		2	2	10	72
Belgium	173	233	8	(2)		(2)	1	415	3,550
Canada	12	55	13	45	5	38	15	183	1,990
China	15	129	7	92		7	42	292	2,540
France	201	320	3	28		1	1	554	4,600
Germany	1	94	2	35	3	4	18	157	2,450
India	(2)	3	(2)	20		7	(2)	30	219
Ireland	(2)		(2)			2	1	3	36
Israel	17	101	(2)	2		4	3	127	855
Italy	99	79	1	28		40	2	249	1,280
Japan	30	34	1	6	2	4	2	79	1,730
Korea, Republic of	1	11	4	55	2	4	(2)	77	804
Mexico	4	64	14	(2)	7	11	191	291	2,580
Netherlands	- ·	63	(2)	2		2	(2)	67	398
Singapore	1	1	6	7		1	3	19	301
Spain	- 6	(2)		2	(2)	(2)	(2)	8	158
Sweden	- 1	4	4	33		(2)	1	43	221
Switzerland	25	7	1	7	1	(2)	1	42	258
Taiwan	(2)	14	(2)	13		1	(2)	28	175
United Kingdom	63	196	22	54	1	10	3	349	3,000
Other	13	42	8	34	11	37	56	201	2,460
Total	666	1,450	94	464	32	175	342	3,220	29,700
2007: January-October	5,850	13,100	880	4,960	207	2,210	2,440	29,700	XX
2006: January-October	6,680	15,400	746	3,990	224	4,000	2,820	33,800	XX
XX Not applicable Zen		13,700	740	3,770	227	7,000	2,020	22,000	АΛ

XX Not applicable. -- Zero.

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

²Less than ½ unit.

TABLE 8 NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent		
	Wrought	Cast	
November 2007:			
Stainless and heat resisting steels	100	(1)	
Alloy steels	99	1	
Superalloys	78	22	
Copper-nickel alloys	77	23	
Other nickel-base alloys	100	(1)	

Less than ½ unit.

TABLE 9 NICKEL PRICES

			Platts Me	etals Week		American Metal Market ^{1, 2}				
					18/8 Stainless	18/8 Stainless	304 Stainless steel	316 Stainless steel		
		Cathode	LME	LME	steel scrap	steel scrap	scrap: solids, clips	scrap: solids, clips		
		NY Dealer	Cash mean ³	Cash mean ³	free market	Pittsburgh	Pittsburgh	Pittsburgh		
Date		\$/lb.	\$/t	\$/lb.	\$/long ton (gw)	\$/long ton (gw)	\$/long ton (gw)	\$/long ton (gw)		
2006, Yearly ave	rage	10.982	24,243.860	10.997	2,090	2,090	XX	XX		
2007:			•		•	•				
Yearly average		16.905	37,216.201	16.881	2,677	XX	2,999	4,321		
Average for we	ek									
October	5	13.969-14.534	30,248.500	13.720	2,350-2,575	XX	2,300-2,325	3,600-3,650		
October	12	13.854-15.101	30,932.500	14.031	2,350-2,575	XX	2,300-2,325	3,600-3,650		
October	19	14.564-15.169	31,745.000	14.399	2,350-2,575	XX	2,300-2,325	3,600-3,650		
October	26	14.514-15.124	31,295.500	14.195	2,550-2,620	XX	2,300-2,325	3,600-3,650		
November	2	14.466-14.803	31,245.500	14.173	2,550-2,620	XX	2,300-2,325	3,600-3,650		
November	9	14.564-15.008	31,739.000	14.397	2,690-2,730	XX	2,575-2,600	3,950-4,000		
November	16	15.010-15.716	32,748.500	14.854	2,755-2,800	XX	2,575-2,600	3,950-4,000		
November	23	13.881-15.033	29,639.000	13.444	2,645-2,730	XX	2,575-2,600	3,950-4,000		
November	30	12.969-13.695	27,852.500	12.634	2,352-2,465	XX	2,575-2,600	3,950-4,000		
December	7	12.080-12.570	25,925.500	11.760	2,240-2,352	XX	2,775-2,800	4,100-4,150		
December	14	12.112-12.475	25,781.000	11.694	2,240-2,352	XX	2,725-2,750	4,150-4,200		
December	21	12.071-12.409	25,982.000	11.785	2,240-2,352	XX	2,725-2,750	4,150-4,200		
December	28	12.157-12.749	26,688.750	12.106	2,240-2,352	XX	2,725-2,750	4,150-4,200		
Average for mo	onth of:									
January		16.177	36,795.227	16.690	2,866	XX	2,917	4,114		
February		18.309	41,171.125	18.675	3,141	XX	3,146	4,243		
March		21.238	46,303.409	21.003	3,738	XX	3,481	4,856		
April		23.139	50,249.474	22.793	4,069	XX	3,925	5,550		
May		23.737	52,160.833	23.660	3,638	XX	4,060	5,589		
June		18.491	41,704.762	18.917	2,016	XX	3,719	5,018		
July		15.285	33,416.591	15.158	1,501	XX	2,804	4,032		
August		12.680	27,643.182	12.539	1,571	XX	2,364	3,708		
September		13.291	29,526.000	13.393	2,168	XX	2,036	3,151		
October		14.225	31,044.891	14.082	2,493	XX	2,263	3,538		
November		14.178	30,599.886	13.880	2,634	XX	2,533	3,905		
December		12.105	25,979.028	11.784	2,296	XX	2,745 ^r	4,149		

^rRevised. XX Not applicable.

¹On November 1, 2006, American Metal Market (AMM) changed its price listings for austenitic stainless steel scrap. AMM has begun reporting prices for Ty 316 solids & clips and has changed its listing for 18-8 bundles, solids & clips to Type 304 solids & clips. See November 2006 AMM Scrap Iron & Steel Prices section for details. All prices remain in dollars per gross (long) ton. AMM monthly averages prior to July 2007 were calculated by the U.S. Geological Survey.

²American Metal Market began publishing monthly stainless consumer buying prices for the first time in its September 2007 issue. Computation of the mont average price is based on the number of actual working days in the month and does not include weekends and holidays. See individual issues for details.

³Mean of the cash buyer price and the cash seller and settlement price.



[Derived from Platts Metals Week (MW) and American Metal Market (AMM) quotations]
New York dealer cathode and LME cash from MW and stainless steel scrap from AMM



