

NICKEL STATISTICS¹
U.S. GEOLOGICAL SURVEY
 [All values are in metric tons (t) nickel unless otherwise noted]
 Last modification: December 21, 2007

Year	Primary production	Secondary production	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1900	5		26,100	2,660		23,600	1,100	22,000	9,290
1901	3		53,200	2,660		50,700	1,240	24,000	11,400
1902	3		15,400	1,460		14,100	992	19,000	12,200
1903	52		16,400	1,100		15,600	882	16,000	10,200
1904	11		8,950	3,410		5,800	882	16,000	10,500
1905			14,100	4,330		10,000	882	16,000	15,600
1906			15,500	4,820		10,900	882	16,000	16,000
1907			8,440	3,980		4,690	992	17,000	16,300
1908			7,630	4,430		3,470	992	18,000	14,900
1909	309		10,100	5,470		4,940	882	16,000	17,000
1910			14,700	6,910		8,110	882	15,000	23,100
1911	404		13,500	11,400		2,500	882	15,000	25,200
1912	298		21,000	11,700		9,600	882	15,000	27,900
1913	219		21,500	13,200		8,520	926	15,300	32,200
1914	384		15,900	12,500		3,780	904	14,700	30,000
1915	746		25,700	12,000		14,400	904	14,600	39,100
1916	833	740	33,000	15,200		19,400	926	13,800	45,500
1917	365	780	34,300	9,980		25,500	926	11,800	46,200
1918	400	1,260	33,200	7,920		26,900	904	9,760	47,600
1919	464	2,220	16,600	1,730		17,600	882	8,320	23,100
1920	331	2,000	22,000	551		23,800	926	7,530	35,700
1921	101	857	1,990	193		2,750	926	8,420	10,400
1922	189	1,370	6,770	4,940		5,430	838	8,140	11,800
1923	91	1,410	18,400	840		19,400	794	7,560	31,100
1924	173	2,030	16,800	1,180		18,200	661	6,300	35,300
1925	247	2,090	19,600	1,630		20,800	728	6,800	37,100
1926	293	2,770	17,500	1,420		20,000	794	7,280	33,900
1927	780	3,070	16,200	800		19,300	772	7,220	34,500
1928	474	4,080	27,500	800		31,300	816	7,770	50,300
1929	308	3,950	37,600	1,000		40,900	772	7,350	56,300
1930	279	2,630	23,000	1,100		24,800	772	7,570	54,200
1931	338	1,880	13,700	600		15,300	772	8,270	36,300
1932	177	1,320	8,530	700		9,330	772	9,190	21,800
1933	114	1,500	19,900	900		20,600	772	9,670	46,300
1934	142	1,680	19,100	1,500		19,400	772	9,390	71,600
1935	145	1,770	31,000	1,200		31,700	772	9,190	77,400
1936	97	1,780	43,200	2,300		42,800	772	9,050	93,400
1937	199	2,180	43,700	2,500		43,600	772	8,740	120,000
1938	377	2,090	23,800	3,800		22,500	772	8,930	115,000
1939	357	2,650	52,800	6,100		51,900	772	9,050	122,000
1940	503	3,770	76,000	7,100		76,600	772	8,990	140,000
1941	599	4,820	96,300	4,100		94,400	772	8,560	162,000
1942	555	3,760	104,000	5,000		103,000	705	7,050	158,000
1943	582	6,270	111,000	6,800	8,160	109,000	705	6,650	167,000
1944	896	3,920	107,000	5,900	12,000	120,000	705	6,530	157,000
1945	1,050	5,880	97,500	2,500	8,340	109,000	705	6,410	145,000
1946	319	7,480	83,900	5,000	11,800	82,600	772	6,430	123,000
1947	586	8,660	73,200	7,500	7,010	70,300	772	5,640	140,000
1948	801	8,030	87,500	5,000	9,650	87,000	794	5,370	151,000
1949	717	5,150	82,600	2,500	8,100	83,400	882	6,040	146,000
1950	828	7,980	82,800	2,700	5,360	86,400	992	6,700	145,000
1951	686	7,800	84,500	3,560	5,180	78,600	1,190	7,440	132,000

NICKEL STATISTICS¹
U.S. GEOLOGICAL SURVEY
 [All values are in metric tons (t) nickel unless otherwise noted]
 Last modification: December 21, 2007

Year	Primary production	Secondary production	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1952	574	6,790	98,700	5,350	7,380	92,000	1,260	7,730	146,000
1953	546	7,580	108,000	11,700	8,980	95,900	1,320	8,050	198,000
1954	754	7,810	120,000	11,000	9,610	85,900	1,350	8,180	216,000
1955	3,450	10,500	129,000	15,900	8,170	99,900	1,460	8,900	239,000
1956	6,100	13,500	130,000	34,300	11,500	116,000	1,430	8,560	259,000
1957	9,140	10,900	127,000	10,300	22,900	111,000	1,630	9,480	286,000
1958	10,700	6,720	81,600	10,800	12,100	71,700	1,630	9,210	224,000
1959	10,500	8,560	102,000	10,100	12,800	102,000	1,630	9,110	285,000
1960	13,000	8,560	93,400	41,700	10,300	98,100	1,630	8,960	320,000
1961	10,100	9,700	115,000	42,800	16,600	108,000	1,720	9,400	361,000
1962	10,200	10,100	112,000	21,300	12,200	108,000	1,760	9,510	357,000
1963	10,400	17,200	108,000	47,000	15,600	113,000	1,740	9,260	339,000
1964	11,100	21,000	117,000	52,800	15,600	133,000	1,740	9,160	371,000
1965	12,300	17,600	148,000	16,100	12,700	156,000	1,740	9,020	425,000
1966	12,000	24,300	128,000	20,300	28,400	170,000	1,740	8,740	412,000
1967	13,200	18,800	130,000	24,300	28,100	158,000	1,940	9,460	449,000
1968	13,800	12,800	134,000	26,000	24,900	145,000	2,090	9,810	497,000
1969	14,300	17,000	117,000	26,800	15,000	129,000	2,320	10,300	487,000
1970	14,100	21,000	142,000	24,300	22,400	141,000	2,840	11,900	628,000
1971	14,200	24,300	129,000	20,200	14,500	117,000	2,930	11,800	637,000
1972	14,300	32,600	158,000	16,700	23,800	145,000	3,090	12,100	611,000
1973	12,600	59,800	173,000	4,500	66,800	239,000	3,370	12,400	710,000
1974	12,800	58,500	200,000	3,900	80,700	257,000	3,840	12,700	770,000
1975	13,000	37,700	146,000	6,700	67,600	199,000	4,560	13,800	802,000
1976	12,600	47,400	171,000	14,000	63,600	221,000	4,960	14,200	792,000
1977	11,700	45,700	177,000	15,100	51,300	231,000	5,000	13,400	828,000
1978	10,200	40,100	213,000	15,100	52,500	247,000	4,500	11,300	658,000
1979	10,600	52,100	161,000	21,700	50,600	205,000	5,860	13,200	686,000
1980	10,200	44,700	172,000	17,700	107,000	187,000	6,230	12,300	779,000
1981	9,350	47,200	190,000	17,800	151,000	187,000	5,970	10,700	726,000
1982	3,140	39,000	118,000	33,900	112,000	164,000	4,810	8,130	621,000
1983		45,200	138,000	21,200	92,100	175,000	4,670	7,650	673,000
1984	8,710	50,000	160,000	39,800	88,000	186,000	4,770	7,490	773,000
1985	4,730	48,700	143,000	32,000	72,700	197,000	4,980	7,540	813,000
1986	1,500	39,700	117,000	19,600	62,600	163,000	3,880	5,770	852,000
1987	0	32,300	135,000	21,000	53,600	172,000	4,840	6,940	891,000
1988	0	48,700	146,000	27,900	56,100	181,000	13,800	19,000	952,000
1989	347	52,100	137,000	31,500	56,600	178,000	13,300	17,500	987,000
1990	3,700	57,400	145,000	37,100	55,800	185,000	8,860	11,100	974,000
1991	7,070	53,500	139,000	36,900	61,500	179,000	8,160	9,760	1,010,000
1992	8,960	55,900	128,000	33,900	61,400	175,000	7,000	8,130	1,010,000
1993	4,880	54,000	133,000	33,200	61,700	176,000	5,290	5,970	928,000
1994	0	58,600	133,000	41,900	47,300	192,000	6,340	6,970	932,000
1995	8,290	64,500	157,000	51,500	44,800	216,000	8,230	8,800	1,040,000
1996	15,100	59,300	150,000	46,800	42,700	206,000	7,500	7,790	1,060,000
1997	16,000	68,400	158,000	56,500	37,300	222,000	6,930	7,040	1,140,000
1998	4,290	63,100	156,000	43,500	31,600	212,000	4,630	4,630	1,180,000
1999	0	71,000	149,000	38,900	22,800	211,000	6,010	5,880	1,170,000
2000	0	86,500	167,000	58,100	27,200	233,000	8,640	8,180	1,290,000
2001	0	81,200	144,000	57,000	24,200	210,000	5,950	5,470	1,350,000
2002	0	99,300	129,000	45,900	17,700	220,000	6,770	6,130	1,350,000
2003	0	101,000	137,000	53,600	19,700	218,000	9,630	8,530	1,370,000

NICKEL STATISTICS¹
U.S. GEOLOGICAL SURVEY
 [All values are in metric tons (t) nickel unless otherwise noted]
 Last modification: December 21, 2007

Year	Primary production	Secondary production	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
2004	0	103,000	155,000	56,300	18,500	232,000	13,800	11,900	1,420,000
2005	0	101,000	159,000	63,200	19,400	236,000	14,700	12,300	1,490,000
2006	0	108,000	173,000	67,300	20,500	252,000	24,200	19,600	1,580,000

¹Compiled by T.G. Goonan and P.H. Kuck.

Data are calculated, estimated, or reported. See notes for more information.

NICKEL PRIMARY PRODUCTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
 [All values are in metric tons (t) nickel unless otherwise noted]
 Last modification: December 17, 2007

Year	Smelter production from laterite	Refinery production from matte	Byproduct of lead or cobalt production	Byproduct of copper production	Byproduct of talc production	Byproduct of palladium and platinum production	USGS reported primary production	Adjusted primary production
1900			5				5	5
1901			3				3	3
1902			3				3	3
1903			52				52	52
1904			11				11	11
1905								
1906								
1907								
1908								
1909				309			309	309
1910								
1911				404			404	404
1912				298			298	298
1913				219			219	219
1914				384			384	384
1915				746			746	746
1916				833			833	833
1917				365			365	365
1918				400			400	400
1919				464			464	464
1920			125	206			331	331
1921				101			101	101
1922				189			189	189
1923				91			91	91
1924				173			173	173
1925				247			247	247
1926				293			293	293
1927				780			780	780
1928				474			474	474
1929				308			308	308
1930				279			279	279
1931				338			338	338
1932				177			177	177
1933				114			114	114
1934				142			142	142
1935				145			145	145
1936				97			97	97
1937				199			199	199
1938				377			377	377
1939				357			357	357
1940				503			503	503
1941			0	562	37		599	599
1942			0	550	5		555	555
1943			0	582			582	582
1944			0	632	264		896	896
1945			0	652	396		1,050	1,050
1946			0	319	0		319	319
1947			0	586	0		586	586
1948			0	801	0		801	801
1949			0	717	0		717	717

NICKEL PRIMARY PRODUCTION STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 17, 2007

Year	Smelter production from laterite	Refinery production from matte	Byproduct of lead or cobalt production	Byproduct of copper production	Byproduct of talc production	Byproduct of palladium and platinum production	USGS reported primary production	Adjusted primary production
1950			0	828	0		828	828
1951	0	0	0	686	0		686	686
1952	0	0	0	574	0		574	574
1953	10	0		536			546	546
1954	174	0		580			754	754
1955	3,040	0		409			3,450	3,450
1956	5,530	0		565			6,100	6,100
1957	8,680	0		455			9,140	9,140
1958	10,200	0		455			10,700	10,700
1959	10,100	0		447			10,500	10,500
1960	10,800	1,610		565			13,000	13,000
1961	9,570	0		567			10,100	10,100
1962	9,590	0		588			10,200	10,200
1963	9,730	0		641			10,400	10,400
1964	10,200	0		861			11,100	11,100
1965	11,500	0		766			12,300	12,300
1966	11,100	0		913			12,000	12,000
1967	11,800	0		1,430			13,200	13,200
1968	11,900	0		1,920			13,800	13,800
1969	11,900	0		2,460			14,300	14,400
1970	11,500	0		2,640			14,100	14,100
1971	11,900	0		2,340			14,200	14,200
1972	12,000	0		2,270			14,300	14,300
1973	11,700	0		869			12,600	12,600
1974	12,000	205		792			12,800	12,800
1975	13,000	7,240		1,010			13,000	13,000
1976	12,600	18,200		1,090			12,600	12,600
1977	11,700	22,700		1,010			11,700	11,700
1978	10,200	23,600		1,050			10,200	10,200
1979	10,600	29,500		1,160			10,600	10,600
1980	10,200	29,900		964			10,200	10,200
1981	9,350	34,900		1,220			9,350	9,350
1982	3,140	37,600		812			3,140	3,140
1983		30,300		799				
1984	8,710	32,000		783			8,710	8,710
1985	4,730	28,300		763			4,730	4,730
1986	1,500	0		791			1,500	2,290
1987	0			937			0	937
1988				1,030			0	1,030
1989	347			1,070			347	1,417
1990	3,700			1,120			3,700	4,820
1991	7,070			1,220			7,070	8,290
1992	8,960			1,220			8,960	10,200
1993	4,880			1,220			4,880	6,100
1994	0			1,260			0	1,260
1995	8,290			1,240			8,290	9,530
1996	15,100			1,270			15,100	16,400
1997	16,000			1,320			16,000	17,300
1998	4,290			1,250			4,290	5,540
1999	0			1,100			0	1,100

NICKEL PRIMARY PRODUCTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
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 Last modification: December 17, 2007

Year	Smelter production from laterite	Refinery production from matte	Byproduct of lead or cobalt production	Byproduct of copper production	Byproduct of talc production	Byproduct of palladium and platinum production	USGS reported primary production	Adjusted primary production
2000	0			940		0	0	1,880
2001				689		358	0	1,050
2002				688		639	0	1,330
2003				505		636	0	1,140
2004				504		671	0	1,180
2005				493		685	0	1,180
2006				489		737	0	1,230

¹Compiled by T.G. Goonan and P.H. Kuck.

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NICKEL IMPORTS STATISTICS¹**U.S. GEOLOGICAL SURVEY**

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	Primary imports	Secondary imports	Total imports
1900			26,100
1901			53,200
1902			15,400
1903			16,400
1904			8,950
1905			14,100
1906			15,500
1907			8,440
1908			7,630
1909			10,100
1910			14,700
1911			13,500
1912			21,000
1913			21,500
1914			15,900
1915			25,700
1916			33,000
1917	34,300		34,300
1918	33,200		33,200
1919	16,600		16,600
1920	22,000		22,000
1921	1,990		1,990
1922	6,770		6,770
1923	18,400		18,400
1924	16,800		16,800
1925	19,600		19,600
1926	17,500		17,500
1927	16,200		16,200
1928	27,500		27,500
1929	37,600		37,600
1930	23,000		23,000
1931	13,700		13,700
1932	8,530		8,530
1933	19,900		19,900
1934	19,100		19,100
1935	31,000		31,000
1936	43,200		43,200
1937	43,400		43,700
1938	23,800		23,800
1939	52,800		52,800
1940	76,000		76,000
1941	96,300		96,300
1942	104,000		104,000
1943	111,000		111,000
1944	107,000		107,000
1945	97,500		97,500
1946	83,900		83,900
1947	73,200		73,200
1948	87,500		87,500
1949			82,600
1950			82,800
1951			84,500
1952			98,700
1953			108,000
1954			120,000
1955			129,000
1956			130,000
1957			127,000
1958			81,600

NICKEL IMPORTS STATISTICS¹
U.S. GEOLOGICAL SURVEY

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Year	Primary imports	Secondary imports	Total imports
1959			102,000
1960			93,400
1961			115,000
1962			112,000
1963			108,000
1964			117,000
1965			148,000
1966			128,000
1967			130,000
1968			134,000
1969			117,000
1970			142,000
1971			129,000
1972			158,000
1973	173,000		173,000
1974	200,000		200,000
1975	146,000		146,000
1976	171,000		171,000
1977	177,000		177,000
1978	213,000		213,000
1979	161,000		161,000
1980	172,000		172,000
1981	190,000		190,000
1982	118,000		118,000
1983	138,000		138,000
1984	160,000		160,000
1985	143,000		143,000
1986	117,000		117,000
1987	135,000		135,000
1988	140,000	5,880	146,000
1989	128,000	9,140	137,000
1990	134,000	11,600	145,000
1991	132,000	6,210	139,000
1992	119,000	9,510	128,000
1993	126,000	6,710	133,000
1994	127,000	6,060	133,000
1995	149,000	7,930	157,000
1996	142,000	8,060	150,000
1997	147,000	11,000	158,000
1998	148,000	8,500	156,000
1999	139,000	9,480	149,000
2000	156,000	10,700	167,000
2001	136,000	8,760	144,000
2002	121,000	9,110	130,000
2003	125,000	11,500	137,000
2004	136,000	18,800	155,000
2005	143,000	15,500	159,000
2006	153,000	20,300	173,000

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NICKEL EXPORTS STATISTICS¹**U.S. GEOLOGICAL SURVEY**

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Last modification: December 21, 2007

Year	Primary exports	Secondary exports	Total exports
1900			2,660
1901			2,660
1902			1,460
1903			1,100
1904			3,410
1905			4,330
1906			4,820
1907			3,980
1908			4,430
1909			5,470
1910			6,910
1911			11,400
1912			11,700
1913			13,200
1914			12,500
1915			12,000
1916			15,200
1917	9,980		9,980
1918	7,920		7,920
1919	1,730		1,730
1920	551		551
1921	193		193
1922	4,940		4,940
1923	840		840
1924	1,180		1,180
1925	1,630		1,630
1926	1,420		1,420
1927			800
1928			800
1929			1,000
1930			1,100
1931			600
1932			700
1933			900
1934			1,500
1935			1,200
1936			2,300
1937			2,500
1938			3,800
1939			6,100
1940			7,100
1941			4,100
1942			5,000
1943			6,800
1944			5,900
1945			2,500
1946			5,000
1947			7,500
1948			5,000
1949			2,500
1950			2,700
1951			3,560

NICKEL EXPORTS STATISTICS¹**U.S. GEOLOGICAL SURVEY**

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	Primary exports	Secondary exports	Total exports
1952			5,350
1953			11,700
1954			11,000
1955			15,900
1956			34,300
1957			10,300
1958			10,800
1959			10,100
1960			41,700
1961			42,800
1962			21,300
1963			47,000
1964			52,800
1965			16,100
1966			20,300
1967			24,300
1968			26,000
1969			26,800
1970			24,300
1971			20,200
1972			16,700
1973	4,500		4,500
1974	3,900		3,900
1975	6,700		6,700
1976	14,000		14,000
1977	15,100		15,100
1978	15,100		15,100
1979	21,700		21,700
1980	17,700		17,700
1981	17,800		17,800
1982	33,900		33,900
1983	21,200		21,200
1984	28,700	11,100	39,800
1985	19,700	12,200	32,000
1986	3,600	16,000	19,600
1987	4,000	17,000	21,000
1988	5,560	22,400	27,900
1989	4,240	27,200	31,500
1990	8,870	28,200	37,100
1991	9,100	27,800	36,900
1992	8,560	25,300	33,900
1993	7,180	26,000	33,200
1994	7,420	34,500	41,900
1995	9,750	41,800	51,500
1996	13,100	33,600	46,800
1997	16,400	40,200	56,500
1998	8,440	35,100	43,500
1999	7,440	31,400	38,900
2000	8,150	49,900	58,100
2001	8,450	48,600	57,000
2002	6,520	39,400	45,900
2003	6,330	47,300	53,600

NICKEL EXPORTS STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	Primary exports	Secondary exports	Total exports
2004	8,000	48,300	56,300
2005	7,630	55,600	63,200
2006	8,050	59,300	67,300

¹Compiled by T.G. Goonan and P.H. Kuck.

Data are calculated, estimated, or reported. See notes for more information.

NICKEL STOCKS STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	Government stocks	Producer and trader stocks	Consumer primary stocks	Consumer secondary stocks	USGS reported stocks total	Adjusted stocks total
1941			4,500			4,500
1942	676		3,300			3,980
1943	676	685	3,570	3,230	8,160	8,160
1944	1,470	1,720	4,630	4,140	12,000	12,000
1945	12,370		8,700		8,700	21,070
1946	21,633		12,500		12,500	34,133
1947	30,463		8,570		8,570	39,033
1948	40,451		10,500		10,500	50,951
1949	50,268		8,320		8,320	58,588
1950	60,505		5,580		5,580	66,085
1951	70,449		5,180		5,180	75,629
1952	81,355		7,380		7,380	88,735
1953	92,739		8,980		8,980	101,719
1954	105,684		9,610		9,610	115,294
1955	119,909		8,170		8,170	128,079
1956	132,305		11,500		11,500	143,805
1957	146,181		22,900		22,900	169,081
1958	157,143		12,100		12,100	169,243
1959	169,350		12,800		12,800	182,150
1960	177,737		10,300		10,300	188,037
1961	187,224		16,600		16,600	203,824
1962	200,000		12,200		12,200	212,000
1963	208,000		15,600		15,600	224,000
1964	199,000		15,600		15,600	215,000
1965	191,000		12,700		12,700	204,000
1966	122,000		28,400		28,400	150,000
1967	71,000		28,100		28,100	99,100
1968	64,600		24,900		24,900	89,500
1969	64,000		15,000		15,000	79,000
1970	50,000		22,400		22,400	72,400
1971	47,300		14,500		14,500	61,800
1972	44,000		23,800		23,800	67,800
1973	38,400		26,100		66,800	64,500
1974	37,900		41,100		80,700	79,000
1975	37,400		32,200		67,600	69,600
1976	36,900		28,700		63,600	65,600
1977	36,500		16,900		51,300	53,400
1978	35,400		18,500		52,500	53,900
1979	33,200		17,700		50,600	50,900
1980	30,700	54,400	13,800	8,270	107,000	107,000
1981	29,200	90,700	20,400	10,300	151,000	151,000
1982	29,200	56,200	17,100	9,080	112,000	112,000
1983	29,300	34,900	18,600	9,350	92,100	92,100
1984	29,200	33,800	19,000	5,920	88,000	88,000
1985	33,800	15,800	17,400	5,720	72,700	72,700
1986	33,800	9,340	15,200	4,240	62,600	62,600
1987	33,800	6,190	9,680	3,970	53,600	53,600
1988	33,800	6,970	10,700	4,620	56,100	56,100
1989	33,800	6,330	9,620	6,940	56,600	56,600
1990	33,800	8,070	9,060	4,920	55,800	55,800
1991	33,800	11,800	10,500	5,460	61,500	61,500

NICKEL STOCKS STATISTICS¹**U.S. GEOLOGICAL SURVEY**

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	Government stocks	Producer and trader stocks	Consumer primary stocks	Consumer secondary stocks	USGS reported stocks total	Adjusted stocks total
1992	33,800	10,100	12,300	5,240	61,400	61,400
1993	31,600	15,700	11,100	3,360	61,700	61,700
1994	26,800	10,200	7,290	3,020	47,300	47,300
1995	19,800	12,700	8,200	4,150	44,800	44,800
1996	15,900	13,300	9,270	4,230	42,700	42,700
1997	8,530	12,600	10,300	5,770	37,300	37,300
1998	2,600	13,100	10,500	5,460	31,600	31,600
1999	0	12,700	5,010	5,070	22,800	22,800
2000	0	12,300	6,540	8,380	27,200	27,200
2001	0	12,600	4,500	7,040	24,200	24,200
2002	0	6,150	4,520	7,000	17,700	17,700
2003	0	8,040	4,830	6,850	19,700	19,700
2004	0	6,580	5,770	6,110	18,500	18,500
2005	0	5,940	6,670	6,800	19,400	19,400
2006	0	6,450	7,160	6,910	20,500	20,500

¹Compiled by T.G. Goonan and P.H. Kuck.

Data are calculated, estimated, or reported. See notes for more information.

NICKEL WORLD PLANT STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) nickel unless otherwise noted]

Last modification: December 21, 2007

Year	World plant production
1970	601,000
1971	620,000
1972	593,000
1973	662,000
1974	742,000
1975	747,000
1976	742,000
1977	714,000
1978	603,000
1979	639,000
1980	731,000
1981	692,000
1982	585,000
1983	646,000
1984	731,000
1985	762,000
1986	806,000
1987	857,000
1988	924,000
1989	937,000
1990	902,000
1991	923,000
1992	879,000
1993	806,000
1994	826,000
1995	922,000
1996	954,000
1997	1,020,000
1998	1,040,000
1999	1,050,000
2000	1,120,000
2001	1,190,000
2002	1,340,000
2003	1,360,000
2004	1,390,000
2005	1,440,000
2006	1,450,000

¹Compiled by T.G. Goonan and P.H. Kuck.

Data are calculated, estimated, or reported. See notes for more information.

NICKEL CONSUMPTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
[All values are in metric tons (t) nickel unless otherwise noted]
Last modification: December 21, 2007

Year	Consumption determined from USGS previously reported data					Consumption determined from adjusted data					Methodological difference	
	Apparent primary	Apparent secondary	Industry reported primary	Industry reported secondary	Apparent consumption	Adjusted primary production	Adjusted total imports	Adjusted total exports	Adjusted total stocks	Adjusted apparent consumption	Nominal methodological difference [column (F-K)]	Percentage methodological difference [column (F-K)/F]
1900					23,600	5	26,100	2,660	0	23,400	200	0.85%
1901					50,700	3	53,200	2,660	0	50,500	200	0.39%
1902					14,100	3	15,400	1,460	0	13,900	200	1.42%
1903					15,600	52	16,400	1,100	0	15,400	200	1.28%
1904					5,800	11	8,950	3,410	0	5,550	250	4.31%
1905					10,000	0	14,100	4,330	0	9,770	230	2.30%
1906					10,900	0	15,500	4,820	0	10,700	200	1.83%
1907					4,690		8,440	3,980	0	4,460	230	4.90%
1908					3,470		7,630	4,430	0	3,200	270	7.78%
1909					4,940	309	10,100	5,470	0	4,940	0	0.00%
1910					8,110		14,700	6,910	0	7,790	320	3.95%
1911					2,500	404	13,500	11,400	0	2,500	0	0.00%
1912					9,600	298	21,000	11,700	0	9,600	0	0.00%
1913					8,520	219	21,500	13,200	0	8,520	0	0.00%
1914					3,780	384	15,900	12,500	0	3,780	0	0.00%
1915					14,400	746	25,700	12,000	0	14,400	0	0.00%
1916					19,400	833	33,000	15,200	0	18,600	800	4.12%
1917					25,500	365	34,300	9,980	0	24,700	800	3.14%
1918					26,900	400	33,200	7,920	0	25,700	1,200	4.46%
1919					17,600	464	16,600	1,730	0	15,300	2,300	13.07%
1920					23,800	331	22,000	551	0	21,800	2,000	8.40%
1921					2,750	101	1,990	193	0	1,900	850	30.91%
1922					5,430	189	6,770	4,940	0	2,020	3,410	62.80%
1923					19,400	91	18,400	840	0	17,700	1,700	8.76%
1924					18,200	173	16,800	1,180	0	15,800	2,400	13.19%
1925					20,800	247	19,600	1,630	0	18,200	2,600	12.50%
1926					20,000	293	17,500	1,420	0	16,400	3,600	18.00%
1927					19,300	780	16,200	800	0	16,200	3,100	16.06%
1928					31,300	474	27,500	800	0	27,200	4,100	13.10%
1929					40,900	308	37,600	1,000	0	36,900	4,000	9.78%
1930					24,800	279	23,000	1,100	0	22,200	2,600	10.48%
1931					15,300	338	13,700	600	0	13,400	1,900	12.42%
1932					9,330	177	8,530	700	0	8,010	1,320	14.15%
1933					20,600	114	19,900	900	0	19,100	1,500	7.28%

NICKEL CONSUMPTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
[All values are in metric tons (t) nickel unless otherwise noted]
Last modification: December 21, 2007

Year	Consumption determined from USGS previously reported data					Consumption determined from adjusted data					Methodological difference	
	Apparent primary	Apparent secondary	Industry reported primary	Industry reported secondary	Apparent consumption	Adjusted primary production	Adjusted total imports	Adjusted total exports	Adjusted total stocks	Adjusted apparent consumption	Nominal methodological difference [column (F-K)]	Percentage methodological difference [column (F-K)/F]
1934					19,400	142	19,100	1,500	0	17,700	1,700	8.76%
1935					31,700	145	31,000	1,200	0	29,900	1,800	5.68%
1936					42,800	97	43,200	2,300	0	41,000	1,800	4.21%
1937					43,600	199	43,700	2,500	0	41,400	2,200	5.05%
1938					22,500	377	23,800	3,800	0	20,400	2,100	9.33%
1939					51,900	357	52,800	6,100	0	47,100	4,800	9.25%
1940					76,600	503	76,000	7,100	0	69,400	7,200	9.40%
1941					94,400	599	96,300	4,100	4,500	88,300	6,100	6.46%
1942					103,000	555	104,000	5,000	3,980	100,000	3,000	2.91%
1943					109,000	582	111,000	6,800	8,160	101,000	8,000	7.34%
1944					120,000	896	107,000	5,900	12,000	98,200	21,800	18.17%
1945					109,000	1,050	97,500	2,500	21,070	87,000	22,000	20.18%
1946					82,600	319	83,900	5,000	34,133	66,200	16,400	19.85%
1947					70,300	586	73,200	7,500	39,033	61,400	8,900	12.66%
1948					87,000	801	87,500	5,000	50,951	71,400	15,600	17.93%
1949					83,400	717	82,600	2,500	58,588	73,200	10,200	12.23%
1950					86,400	828	82,800	2,700	66,085	73,400	13,000	15.05%
1951					78,600	686	84,500	3,560	75,629	72,100	6,500	8.27%
1952					92,000	574	98,700	5,350	88,735	80,800	11,200	12.17%
1953					95,900	546	108,000	11,700	101,719	83,900	12,000	12.51%
1954					85,900	754	120,000	11,000	115,294	96,200	-10,300	-11.99%
1955					99,900	3,450	129,000	15,900	128,079	104,000	-4,100	-4.10%
1956					116,000	6,100	130,000	34,300	143,805	86,100	29,900	25.78%
1957					111,000	9,140	127,000	10,300	169,081	101,000	10,000	9.01%
1958					71,700	10,700	81,600	10,800	169,243	81,300	-9,600	-13.39%
1959					102,000	10,500	102,000	10,100	182,150	89,500	12,500	12.25%
1960					98,100	13,000	93,400	41,700	188,037	58,800	39,300	40.06%
1961					108,000	10,100	115,000	42,800	203,824	66,500	41,500	38.43%
1962					108,000	10,200	112,000	21,300	212,000	92,700	15,300	14.17%
1963					113,000	10,400	108,000	47,000	224,000	59,400	53,600	47.43%
1964					133,000	11,100	117,000	52,800	215,000	84,300	48,700	36.62%
1965					156,000	12,300	148,000	16,100	204,000	155,000	1,000	0.64%
1966					170,000	12,000	128,000	20,300	150,000	174,000	-4,000	-2.35%
1967					158,000	13,200	130,000	24,300	99,100	170,000	-12,000	-7.59%

NICKEL CONSUMPTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
[All values are in metric tons (t) nickel unless otherwise noted]
Last modification: December 21, 2007

Year	Consumption determined from USGS previously reported data					Consumption determined from adjusted data					Methodological difference	
	Apparent primary	Apparent secondary	Industry reported primary	Industry reported secondary	Apparent consumption	Adjusted primary production	Adjusted total imports	Adjusted total exports	Adjusted total stocks	Adjusted apparent consumption	Nominal methodological difference [column (F-K)]	Percentage methodological difference [column (F-K)/F]
1968					145,000	13,800	134,000	26,000	89,500	131,000	14,000	9.66%
1969					129,000	14,400	117,000	26,800	79,000	115,000	14,000	10.85%
1970					141,000	14,100	142,000	24,300	72,400	138,000	3,000	2.13%
1971					117,000	14,200	129,000	20,200	61,800	134,000	-17,000	-14.53%
1972					145,000	14,300	158,000	16,700	67,800	150,000	-5,000	-3.45%
1973	180,000			59,000	239,000	12,600	173,000	4,500	64,500	184,000	55,000	23.01%
1974	198,000			59,000	257,000	12,800	200,000	3,900	79,000	194,000	63,000	24.51%
1975	161,000			37,700	199,000	13,000	146,000	6,700	69,600	162,000	37,000	18.59%
1976	173,000			47,400	221,000	12,600	171,000	14,000	65,600	174,000	47,000	21.27%
1977	186,000			45,700	231,000	11,700	177,000	15,100	53,400	186,000	45,000	19.48%
1978	207,000			40,100	247,000	10,200	213,000	15,100	53,900	208,000	39,000	15.79%
1979	164,000			41,000	205,000	10,600	161,000	21,700	50,900	153,000	52,000	25.37%
1980	143,000	44,700	142,000	39,700	187,000	10,200	172,000	17,700	107,000	108,000	79,000	42.25%
1981	141,000	50,000	124,000	45,100	187,000	9,350	190,000	17,800	151,000	138,000	49,000	26.20%
1982	125,000	39,000	94,300	32,400	164,000	3,140	118,000	33,900	112,000	126,000	38,000	23.17%
1983	137,000	45,200	116,000	38,100	175,000		138,000	21,200	92,100	137,000	38,000	21.71%
1984	141,000	42,400	124,000	45,000	186,000	8,710	160,000	39,800	88,000	133,000	53,000	28.49%
1985	143,000	36,600	109,000	48,700	197,000	4,730	143,000	32,000	72,700	131,000	66,000	33.5%
1986	124,000	25,100	97,100	39,700	163,000	2,290	117,000	19,600	62,600	110,000	53,000	32.5%
1987	139,000	15,600	115,000	32,300	172,000	937	135,000	21,000	53,600	124,000	48,000	27.9%
1988	133,000	31,600	98,800	48,700	181,000	1,030	146,000	27,900	56,100	117,000	64,000	35.4%
1989	126,000	31,700	104,000	52,100	178,000	1,420	137,000	31,500	56,600	106,000	72,000	40.4%
1990	127,000	42,800	121,000	57,400	185,000	4,820	145,000	37,100	55,800	114,000	71,000	38.4%
1991	125,000	31,400	109,000	53,500	179,000	8,290	139,000	36,900	61,500	105,000	74,000	41.3%
1992	119,000	40,300	101,000	55,900	175,000	10,200	128,000	33,900	61,400	104,000	71,000	40.6%
1993	122,000	36,600	105,000	54,000	176,000	6,100	133,000	33,200	61,700	106,000	70,000	39.8%
1994	134,000	30,500	107,000	58,600	192,000	1,260	133,000	41,900	47,300	107,000	85,000	44.3%
1995	151,000	29,500	123,000	64,500	216,000	9,530	157,000	51,500	44,800	118,000	98,000	45.4%
1996	146,000	33,700	118,000	59,300	206,000	16,400	150,000	46,800	42,700	122,000	84,000	40.8%
1997	154,000	37,700	120,000	68,400	222,000	17,300	158,000	56,500	37,300	124,000	98,000	44.1%
1998	149,000	36,900	116,000	63,100	212,000	5,540	156,000	43,500	31,600	124,000	88,000	41.5%
1999	140,000	49,400	117,000	71,000	211,000	1,100	149,000	38,900	22,800	120,000	91,000	43.1%
2000	147,000	44,000	115,000	86,500	233,000	940	167,000	58,100	27,200	105,000	128,000	54.9%
2001	129,000	42,700	98,800	81,200	210,000	1,050	144,000	57,000	24,200	91,500	119,000	56.7%

NICKEL CONSUMPTION STATISTICS¹
U.S. GEOLOGICAL SURVEY
 [All values are in metric tons (t) nickel unless otherwise noted]
 Last modification: December 21, 2007

Year	Consumption determined from USGS previously reported data					Consumption determined from adjusted data					Methodological difference	
	Apparent primary	Apparent secondary	Industry reported primary	Industry reported secondary	Apparent consumption	Adjusted primary production	Adjusted total imports	Adjusted total exports	Adjusted total stocks	Adjusted apparent consumption	Nominal methodological difference [column (F-K)]	Percentage methodological difference [column (F-K)/F]
2002	121,000	69,100	91,300	99,300	220,000	1,330	130,000	45,900	17,700	91,700	128,000	58.2%
2003	117,000	65,200	90,400	101,000	218,000	1,140	137,000	53,600	19,700	82,400	136,000	62.4%
2004	128,000	74,500	102,000	103,000	232,000	1,180	155,000	56,300	18,500	101,000	131,000	56.5%
2005	135,000	60,500	100,000	101,000	236,000	1,180	159,000	63,200	19,400	95,500	141,000	59.7%
2006	144,000	69,000	124,000	108,000	252,000	1,230	173,000	67,300	20,500	106,000	146,000	57.9%

¹Compiled by T.G. Goonan and P.H. Kuck.

Data are calculated, estimated, or reported. See notes for more information.

Nickel Worksheet Notes

Data Sources

The sources of data for the nickel worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey (USGS)—Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR); Metal Prices in the United States through 1998 (MP98); and Materials Survey—Nickel 1950, p. II-4, II-10, IX-4, X-4—X-8, (MS50). In a few instances, data were revised more than 5 years after being published in the MYB. Some of the revised data came from Ferrous Metals Supply/Demand Data, Mineral Industry Surveys (FM–MIS) (special, one-time publications issued as part of the monthly Mineral Industry Surveys) or from unpublished archives. The years of publication and corresponding years of data coverage are listed in the References section below. Blank cells in the worksheet indicate that data were not available or were withheld because they are proprietary.

Primary Production

U.S. nickel primary production data report the amount of nickel contained in U.S. smelter and refinery production. U.S. annual primary nickel smelter production was relatively constant, about 10,000–12,000 metric tons (t) for the years 1958–80. Almost all of this production, in the form of ferronickel, came from the Nickel Mountain Mine near Riddle, OR, which commenced operations in 1953. For the years 1955–99, U.S. primary nickel production was augmented by output from a refinery in Louisiana that produced nickel—first from imported sulfide matte, and later from petroleum residues. The greatest production from U.S. nickel deposits took place during World War I (1916–18), World War II (1941–45), a period of Government strategic stockpile building (1951–61), and the Vietnam Conflict (1961–75). Nickel has been a strategic and critical material in every major conflict fought by the United States since 1900, with the U.S. Government having to allocate or ration the metal in almost every instance. Primary domestic nickel production was not reported for the years 1905–06. Data were withheld for years 1907–08, 1910, and 1983. Data are sourced as follows: 1900–10, MR; 1911–50, MS50; 1951–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Primary Production Detail Worksheet Notes

Smelter Production from Laterite

In 1951, the M.A. Hanna Co. began exploring the nickel laterite deposit at Riddle, OR. In 1953, Hanna Nickel Smelting Co. began smelting operations at Riddle, extracting nickel from local laterite deposits. On January 7, 1987, The M.A. Hanna Co. closed its mine and smelter complex at Riddle. For the years 1958–80, nickel production from laterite ores averaged about 11,000 t nickel per year. Total production for the period was 301,000 t, excluding withheld production in 1983. There was no production from this facility for the years 1987–88. In 1989, Glenbrook Nickel Co. reopened the Riddle, OR, complex and began smelting stockpiled ore. In 1990, Glenbrook Nickel Co began processing spent catalysts and freshly mined ore. In July 1991, Glenbrook Nickel began importing lateritic ore from New Caledonia, and a special drying facility was built at Coos Bay, OR, to handle the imported ore. Glenbrook Nickel Co. decommissioned its mining and smelting complex at Riddle in 2000. During the period of production, about 7,000 t nickel was produced per year. Total production for the period was 68,600 t. There has been no production from this facility since 1998.

Refinery Production from Matte

In 1958–59, Freeport Nickel Co. built a nickel smelter and refinery in Port Nickel/Braithwaite, LA, to process concentrate from Cuba. In 1960, the facility produced 1,608 t of nickel from Cuban concentrate. Freeport Nickel Co. closed its new refinery at Port Nickel because suitable concentrate was not available. Freeport stopped importing Cuban concentrate in mid-1960 after restrictions and prohibitive taxes were imposed by the new Government of Cuba. In 1974, Amax Inc. began producing nickel in the rehabilitated refinery at Port Nickel/Braithwaite. The first feed was matte from Botswana. Amax Nickel Inc. halted nickel production from matte at Braithwaite in November 1985. In 1986, part of the Braithwaite plant was modified so that vanadium, molybdenum, and other metals could be recovered from spent petroleum catalysts. Impure nickel-cobalt hydroxides were being exported for recovery outside of the United States. During the period of production, about 24,500 t nickel was produced per year. Total production for the period was 294,600 t. There has been no production from this facility since 1985. Production from this facility was not included in U.S. primary production figures reported in the MYB, however, the nickel content of the concentrates and mattes treated did appear in the totals for imports for the period of production.

Byproduct of Lead, or Cobalt Production

In 1900, nickel was produced as a byproduct of the smelting of the lead ores at Mine La Motte, Madison County, MO. In 1906, North American Lead Co. built a smelter near Fredericktown, MO, to recover lead from galena ores. In 1909–10 the smelter produced byproduct cobalt oxide, copper metal, and nickel metal in addition to lead. In this period, Hudson Valley Lead Co. produced byproduct nickel, cobalt, and copper sulfide concentrates from lead ores in southeastern Missouri. A total of 77 t nickel was produced as byproduct for the years 1900–04. For the years 1905–06, and 1911–18, no production was reported. For the years 1907–10, and 1919, production was reported as withheld. In 1920, production of 125 t of nickel as byproduct was reported. The St. Louis Smelting and Refining Co. produced nickel near Fredericktown between July 1944 and September 1945. In 1953, byproduct nickel was recovered from cobalt ore at the Blackbird Mine, Lemhi County, ID. In 1955, National Lead Co. (Fredericktown) recovered nickel from a pyrite concentrate averaging 5.4 percent nickel. Byproduct

nickel continued to be recovered from cobalt ore at the Blackbird Mine in Idaho. National Lead Co. closed its mining and refining complex at Fredericktown in May 1961.

Byproduct of Copper Production

Reporting of byproduct nickel production from copper smelting began in 1909, was withheld in 1910, and continued for the years 1911–74, after which reporting was discontinued. The data point for 1953 is comprised of the nickel content of nickel sulfate produced at Baltimore, MD; Carteret, NJ; Perth Amboy, NJ; Laurel Hill, NY; and Tacoma, WA. For the years 1975–2004, byproduct nickel from copper production was estimated as 0.05 percent of U.S. copper mill concentrate production, a figure developed from 2 previous years of overlapping data. These estimated data are not included in primary production totals as reported in the MYB.

Byproduct of Talc Production

During World War II, talc operations became of interest as a source of nickel. In 1941, Vermont produced concentrates grading 10 percent Ni and 0.78 percent Co. Production data for 1943 were withheld; however, for the years 1944–45, nickel as a byproduct of talc production reached levels of 264 t, and 396 t, respectively. Production from this source did not last past the War.

Byproduct of Palladium and Platinum Production

In the year 2000, the Stillwater Mining Co. began constructing a nickel sulfate crystallizer circuit at its Columbus, MT, refinery. For the years 2001–02, 358 t and 639 t of byproduct nickel was produced at Stillwater, respectively. The crystallizer circuit was still operating in 2006.

USGS Reported Primary Production

This data column is the data reported on the “Summary Statistics” page.

Adjusted Primary Production

The purpose of this data column is to show what did, and did not, get taken into account when the historical statistics for U.S. primary nickel production was calculated and presented in past published data. From 1985 forward, there is a difference because nickel as a byproduct of copper production was unreported, and therefore not included in domestic nickel production.

Secondary Production

U.S. secondary nickel production data for the years 1973–2006 report the amount of nickel recovered from nonferrous scrap and from stainless steel scrap. The USGS began collecting data on scrap usage in 1916. For the years 1916–72, only nickel recovered from copper and nickel scrap is reported. After 1972, nickel recovered from stainless steel scrap is included. Data are sourced as follows: 1916–50, MS50; 1952–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Imports

U.S. nickel import data represent a variety of product categories, the most important being elemental metal in the form of cathode, briquettes, pellets, or powders. Other key products include metallurgical and chemical-grade oxides, ferronickel, and plating salts. Import data exclude steel mill products, castings, and downstream manufactured products that contain nickel-bearing steel. Over the years, the United States has imported most of its nickel requirements. In some cases, ore or matte was converted domestically into value-added products, such as ferronickel. In other cases, value-added products, such as ferronickel, oxide sinters, metal powders, and wrought products were shipped directly to steel mills and other downstream consumers upon clearing customs. For the years 1900–25, data represent nickel content of ore and matte plus gross weight of the following: unwrought and wrought nickel metal, nickel oxide, and cupronickel alloys. For the years 1926–48, data represent the nickel content of ore, matte, wrought, and unwrought nickel, nickel oxide, and nickel-silver. For the years 1949–52, data represent nickel content of refined metal, matte, oxide, and residues. For the years 1900–81, imports are reported as gross weight of products. For the years 1982–2006, import data represent contained nickel in imports. Because Congress enacted the Omnibus Trade and Competitiveness Act (PL 100-418), on August 23, 1988, foreign trade data after 1988 are not fully comparable with data of prior years. The new law required that all tariff schedules after January 1, 1989, conform to the internationally established Harmonized Tariff System. The new law caused a restructuring of both the import and export classification systems for nickel. Data are sourced as follows: 1900–31, MR; 1932–48, MYB; 1949–52, recently revised by USGS; 1953–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Nickel Imports Detail Worksheet Notes

Primary Imports

For the years 1900–88, primary imports comprised the total of imported nickel. After 1988, primary imports are reported separately as a part of total nickel imports.

Secondary Imports

Beginning in 1988, and continuing forward, an estimate of secondary nickel imports, that is, nickel contained in imported scrap, has been published in the MYB, and it has become a part of total nickel imports.

Total Imports

For the years 1900–21, data represent nickel content of ore and matte plus gross weight of the following: unwrought and wrought nickel metal, nickel oxide, and cupronickel alloys. The use of gross weights in the total will tend to overstate the nickel imported for those years. For the years 1926–49, the bulk of the imports consisted of refined nickel, ore, matte, and oxide. The amount reported also may include wrought shapes, nickel-silver, nonferrous scrap and nickel residues. Again, there is not complete clarity regarding how much the inclusion of gross weights would tend to overstate the true amount of nickel imported. From 1988 forward, total imports include an estimate of the amount of nickel contained in imported scrap.

Exports

U.S. nickel export data represent the amount of nickel contained in value-added products exported from the United States. Nickel export data have been reported since 1902. Export data exclude steel mill products, castings, and manufactured products that contain nickel-bearing steel. For the years 1900–21, data represent the nickel content of nickel metal, oxide, and matte. From 1922 forward, export data added categories for value-added products containing nickel, waste, and scrap, and since 1986, nickel contained in stainless steel scrap. For the years 1951–81, the MYB published gross weight data for exports. For this period, the weight of nickel contained in exports was taken as equal to 85 percent of the gross weight of nickel export products. For the years 1982–2002, export data were available directly from reports of contained nickel in exports. Foreign trade data after 1988 are not fully comparable with data of prior years. On August 23, 1988, Congress enacted the Omnibus Trade and Competitiveness Act (PL 100-418). The new law required that all export schedules after January 1, 1989, conform to the internationally established Harmonized Tariff System. The new law caused a restructuring of both the import and export classification systems for nickel. Data are sourced as follows: 1900–31, MR; 1932–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Nickel Exports Detail Worksheet Notes

Primary Exports

For the years 1900–83, primary exports comprised the total of exported nickel. After 1983, primary exports are reported separately as a part of total nickel exports.

Secondary Exports

Beginning in 1984, and continuing forward, an estimate of secondary nickel exports (nickel contained in exported scrap) has been published in the MYB, and has become a part of total nickel exports.

Total Exports

For the years 1900–21, data represents estimated nickel content of nickel metal, oxide, and matte. For the entire period, 1900–2002, the character of nickel exports has changed with regard to what is included, and whether it was reported in gross or contained weights.

Stocks

U.S. nickel stocks data report the amount of contained nickel in reported industry stocks as of December 31 of each year, as reported in the MYB. Stocks were not reported before 1945. For the years 1945–79, consumer stocks included only primary (ferroalloys, metal, and oxide) material and excluded scrap. For the years 1980–81, stocks include primary and secondary material held by government, producers, and consumers. From 1982 forward, stocks include government, producer, as well as consumer primary and secondary material. Data are sourced as follows: 1942–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Nickel Stocks Detail Worksheet Notes

Government Stocks

Government stocks figures were available for the years 1942–44, and for the years 1962 forward. For the years 1945–61, for which there was no published data, government stocks growth was estimated by interpolation using a factor for annual incremental growth equal to 11.06 percent of apparent nickel supply for the year. The factor was determined by dividing the difference in government stocks between 1944 and 1962 by the accumulation of apparent supply for that same period, apparent supply being defined as:

$$\text{PRIMARY PRODUCTION} + \text{SECONDARY PRODUCTION} + \text{NET IMPORTS} + \text{NONGOVERNMENT STOCK CHANGE (END OF YEAR - BEGINNING OF YEAR)}$$

Producer and Trader Stocks

From 1980 forward, producer trader stocks have been continually reported.

Consumer Primary Stocks

From 1941 forward, consumer primary nickel stocks have been continually reported.

Consumer Secondary Stocks

From 1980 forward, consumer secondary nickel stocks have been continually reported.

USGS Reported Stocks (Total Stocks)

This column is taken from previously reported USGS sources. One may compare this column with the others to determine how the elements included in the annual estimate have changed over time.

Adjusted Stocks Total

This column is the sum of the previous four columns. One may compare this column with the others to determine how the elements included in the annual estimate have changed over time.

Apparent Consumption

For the years 1900–82, apparent consumption is calculated using the following equation:

$$\text{APPARENT CONSUMPTION} = \text{PRODUCTION} + \text{IMPORTS} - \text{EXPORTS} \pm \text{STOCK CHANGES.}$$

In the earlier years of the apparent consumption column, certain variables that go into the calculation of apparent consumption were omitted (implicitly assumed to be zero) in the calculation due to lack of data. For example, stock adjustments were not reported prior to 1945; secondary production was not reported prior to 1916; and primary production was not reported prior to 1911. From 1983 forward, U.S. nickel consumption, as reported in the MYB, has been taken as

$$\text{APPARENT PRIMARY (CALCULATED FOR PRIMARY NICKEL PRODUCTS USING EQUATION ABOVE) + REPORTED SECONDARY CONSUMPTION.}$$

Reported secondary consumption is significantly larger than secondary consumption calculated from the net scrap export model. In recent years, significant amounts of nickel-bearing, semi finished stainless steel slab have been imported into the United States for further processing. Large quantities of scrap are generated during the downstream processing of this slab. The revised equation attempts to correct for this canvassing problem. Data are sourced as follows: 1900–31, MR; 1932–72, MYB; 1973–79, FM–MIS; 1980–2006, MYB.

Nickel Consumption Detail Worksheet Notes

Adjusted Apparent Consumption

Because the method of calculating “apparent consumption” for nickel has changed so often over the period, the subject column was created to demonstrate the effect of doing the calculation with parts missing, or changed in character. Column N suggests that methodology differences can generate estimates of consumption differing by as much as 60 percent.

Unit Value (\$/t)

Unit value for nickel is taken as the price of nickel reported in MP98 for the years 1900–78. Beginning in 1979, London Metal Exchange nickel price data are reported unrounded, because they are internationally accepted in that format.

Unit Value (98\$/t)

The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars.

World Production

World production represents mine production and is reported as recoverable nickel contained in the ore mined. Where actual mine output was not available, data related to a more highly processed form were used to indicate the minimum magnitude of mine output. In 1953, production data for countries once comprising the former Soviet Union were included for the first time. Data are sourced as follows: 1900–29, MS50; and 1930–2006, MYB.

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Recommended Citation Format:

U.S. Geological Survey, [year of last update, e.g., 2005], [Mineral commodity, e.g., Gold] statistics, *in* Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: U.S. Geological Survey Data Series 140, available online at <http://pubs.usgs.gov/ds/2005/140/>. (Accessed [date].)

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