NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008

TOTAL NATURAL ABRASIVES								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1900	4,410	3,910	11,900		16,300			
1901	3,910	3,910	13,100		17,000			
1902	3,860	3,860	8,030		11,900			
1903	4,120	4,120	12,700		16,800			
1904	17,700	1,740	8,200		25,900			
1905	26,800	1,930	12,700		39,400			
1906	1,050	1,050	16,200		17,200			
1907	970	970	13,400		14,400			
1908	607	607	9,000		9,610			
1909	1,430	1,430	11,200		12,600			
1910	933	933	30,500		31,400			
1911	598	598	11,600		12,200			
1912	900	900	17,600		18,500			
1913	19,700	19,700	18,500		38,300			116,000
1914	59,900	59,900	13,900		73,700	16.9	276	111,000
1915	69,300	69,300	9,180		78,600	13.4	216	96,400
1916	105,000	105,000	8,510		114,000	13.0	194	131,000
1917	105,000	104,000	2,070		107,000	20.2	257	135,000
1918	99,100	99,100	8,660		108,000	25.6	276	123,000
1919	76,800	76,800	11,800		88,600	24.7	233	129,000
1920	98,100	98,100	33,300		131,000	28.3	230	152,000
1921	37,000	37,000	16,100		53,100	46.5	423	104,000
1922	56,600	56,600	20,100		76,700	31.8	309	122,000
1923	74,100	74,100	26,200		100,000	34.1	325	148,000
1924	65,700	65,700	28,700		94,400	40.3	384	158,000
1925	65,600	65,600	26,200		91,900	41.2	385	165,000
1926	70,800	70,800	26,900		97,700	41.0	376	149,000
1927	57,100	57,100	23,000		80,100	43.7	408	57,100
1928	68,800	68,800	25,100		93,900	38.0	362	78,800
1929	65,400	65,400	27,600		93,100	35.4	337	65,400
1930	50,600	50,600	19,100		69,600	31.4	308	50,600
1931	34,800	34,800	13,000		47,700	25.7	275	34,800
1932	21,800	21,800	6,500		28,300	28.0	333	21,800
1933	36,700	36,700	10,100		46,600	27.3	342	36,700
1934	30,600	30,600	11,700		42,300	31.7	386	30,600
1935	38,600	38,600	19,100		57,700	29.3	349	38,600
1936	38,800	38,800	20,500		59,300	30.9	362	38,800
1937	45,900	45,900	20,900		66,800	30.3	343	48,200
1938	26,200	26,200	10,900		37,100	34.8	402	27,800
1939	41,100	41,100	15,800		56,900	31.6	370	43,500
1940	40,400	40,400	11,300		51,800	23.3	271	44,400
1941	60,500	60,500	7,590		68,100	22.4	248	66,700
1942	50,400	50,400	5,400	19,000	39,700	22.4	224	57,400
1943	42,400	42,400	6,080	19,000	30,400	21.8	206	48,000
1944	40,700	40,700	6,810	22,800	35,800	22.4	207	46,400
1945	42,400	42,400	7,200	27,100	37,800	24.0	218	52,400
1946	48,900	48,900	12,800	27,200	47,700	25.7	214	56,900
1947	53,000	53,000	15,700	34,300	52,600	28.0	204	61,000
1948	41,300	41,300	14,800	28,800	45,900	34.6	234	49,300
1949	34,900	34,900	10,200	639	44,600	36.9	253	43,900
1950	52,200	52,200	36,700	466	88,500	38.9	263	61,300

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TOTAL NATURAL ABRASIVES								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1951	53,700	53,700	23,300	610	76,200	40.9	256	71,000
1952	49,300	49,300	13,000	33,900	60,800	38.8	238	67,500
1953	48,000	48,000	11,500	52,400	60,000	42.3	258	57,100
1954	52,300	52,300	6,300	49,200	60,700	42.4	257	61,300
1955	59,300	56,800	9,690	61,600	72,200	45.6	278	73,600
1956	57,500	55,900	12,600	66,900	74,000	49.2	295	79,400
1957	62,100	56,300	16,100	68,300	84,300	46.7	272	71,200
1958	53,300	48,900	12,700	12,300	73,400	50.3	284	63,300
1959	59,100	54,300	17,100	11,400	84,500	56.2	314	66,400
1960	62,100	56,800	15,800	10,900	87,800	55.9	307	70,200
1961	57,400	52,000	14,400	11,600	83,200	55.2	302	64,700
1962	62,300	54,100	23,100	10,800	91,200	55.6	301	66,000
1963	69,000	58,200	29,400	12,400	86,100	45.0	239	75,100
1964	69,900	64,300	18,700	13,800	74,800	45.8	241	78,100
1965	77,500	71,800	18,400	11,900	83,900	46.2	239	87,500
1966	73,500	68,700	39,000	14,900	97,700	48.9	246	83,500
1967	66,800	57,800	16,300	12,700	70,500	50.6	247	76,600
1968	80,400	67,700	35,400	18,400	97,500	48.5	228	87,000
1969	79,800	66,700	20,900	14,500	86,200	46.6	207	86,600
1970	64,600	58,100	13,600	15,500	70,900	47.6	200	71,900
1971	71,700	62,600	10,900	9,590	81,500	57.3	230	165,000
1972	85,300	70,900	4,540	10,000	91,300	47.9	187	180,000
1973	97,900	84,700	12,700	16,200	105,000	47.9	176	205,000
1974	82,300	80,900	18,100	18,000	89,900	54.3	179	248,000
1975	78,900	64,500	6,350	9,690	85,500	57.4	174	159,000
1976	115,000	106,000	7,260	15,300	123,000	54.9	157	199,000
1977	116,000	107,000	12,700	17,600	123,000	57.5	155	196,000
1978	126,000	104,000	14,400	8,690	131,000	60.4	151	151,000
1979	126,000	106,000	19,900	4,460	141,000	61.8	139	159,000
1980	111,000	90,600	10,800	14,400	118,000	71.9	142	189,000
1981	99,600	83,400	12,300	16,200	104,000	88.8	159	171,000
1982	104,000	83,300	6,410	4,730	105,000	89.5	151	160,000
1983	102,000	94,200	8,920	4,450	106,000	103	168	146,000
1984	114,000	97,500	25,200	1,820	138,000	115	181	151,000
1985	110,000	99,100	28,700	884	138,000	107	162	142,000
1986	110,000	101,000	9,400	1,140	118,000	126	187	127,000
1987	107,000	98,400	16,800	1,520	122,000	137	196	117,000
1988	103,000	95,300	32,200	1,580	133,000	140	193	129,000
1989	106,000	89,600	24,000	12,400	117,000	138	182	136,000
1990	98,100	81,100	38,000	13,100	123,000	171	213	98,100
1991	90,900	73,900	30,000	12,600	108,000	179	215	126,000
1992	86,700	76,500	41,000	17,100	111,000	184	214	117,000
1993	94,500	78,600	57,000	13,100	138,000	199	225	124,000
1994	89,000	82,800			89,000	134	147	
1995	80,200	80,500			80,200	134	143	
1996	98,900	80,000			98,900	231	240	
1997	82,100				82,100	203	206	
1998	80,200				80,200	213	213	
1999	85,600				85,600	238	233	
2000	72,600				72,600	221	210	
2001	61,200				61,200	249	229	

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TOTAL NATURAL ABRASIVES								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
2002	67,300				67,300	250	227	
2003	69,900				69,900	258	228	
2004	94,200				94,200	207	179	
2005	91,300				91,300	207	172	
2006	76,200				76,200	242	202	

[1]**Compiled by T.D. Kelly (retired), T.P. Dolley, and D.W. Olson.**
Data are estimated, calculated, or reported. See notes for more information.

NATURAL ABRASIVES STATISTICS[1]
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CORUNDUM AND EMERY NATURAL ABRASIVES											
Year	Corundum production	Corundum and emery production	Emery production	Corundum and emery shipments	Emery shipments	Corundum imports	Corundum and emery imports	Emery imports	Corundum exports	Corundum and emery exports	Emery exports
1900		3,910		3,910			11,900				
1901		3,910		3,910			13,100				
1902		3,860		3,860			8,030				
1903		4,120		4,120			12,700				
1904		1,740		1,740			8,200				
1905		1,930		1,930			12,700				
1906		1,050		1,050			16,200				
1907			970		970		13,400				
1908			607		607		9,000				
1909			1,430		1,430		11,200				
1910			933		933		30,500				
1911			598		598		11,600				
1912			900		900		17,600				
1913			868		868		18,500				
1914			440		440		13,900				
1915			2,780		2,780		9,180				
1916			13,900		13,900		8,510				
1917	744		15,500		15,500		2,070				
1918			9,460		9,460		8,660				
1919			2,360		2,360		11,800				
1920			2,110		2,110		9,160				
1921			277		277		6,950				
1922			1,330		1,330		5,560				
1923			2,070		2,070		11,700				
1924			1,990		1,990	3,020	50	6,600			
1925			698		698	1,500	122	7,000			
1926			350		350	4,910	394	4,310			
1927			459		459	1,150	105	4,180			
1928			1,220		1,220	1,420	154	4,920			
1929			838		838	3,430	395	5,810			
1930			503		503	2,740	272	3,860			
1931			464		464	650	57	2,140			
1932			227		227	171	10	611			
1933			958		958	940	22	636			

NATURAL ABRASIVES STATISTICS[1]
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Last modification: April 17, 2008

CORUNDUM AND EMERY NATURAL ABRASIVES											
Year	Corundum production	Corundum and emery production	Emery production	Corundum and emery shipments	Emery shipments	Corundum imports	Corundum and emery imports	Emery imports	Corundum exports	Corundum and emery exports	Emery exports
1934			171		171	1,980	42	3,110			
1935			160		160	4,590	52	4,360			
1936			295		295	4,350	177	5,640			
1937			290		290	1,890	149	4,860			
1938			0		0	1,900	30	433			
1939			694		694	1,780	59	1,990			
1940			949		949	2,650	61	5,190			
1941			4,420		4,420	5,320	47	0			
1942			4,790		4,790	4,300	56	0		2,900	411
1943			6,050		6,050	5,160	111	0		1,050	327
1944			6,300		6,300	5,810	33	0		272	338
1945			7,130		7,130	5,660	34	0		113	148
1946			5,610		5,610	3,820	53	2,320		196	240
1947			5,260		5,260	2,180	52	2,820		204	248
1948			4,900		4,900	3,280	57	1,000		58	126
1949			4,450		4,450	1,830	2	1,380			
1950			5,400		5,400	3,210	10	1,570			
1951			10,600		10,600	4,310	9	2,580			
1952			9,390		9,390	4,150	12	5	142		693
1953			9,580		9,580	2,430	30	9	216		1,030
1954			8,850		8,850	1,010	220	517	137		1,180
1955			9,740		9,740	1,270	513	793	141		1,270
1956			11,000		11,000	1,690	435	1,820	225		1,760
1957			10,800		10,800	3,720	655	1,240	189		1,060
1958			6,970		6,970	4,250	469	55	151		1,000
1959			7,760		7,760	3,030	8	1,080	83		1,240
1960			7,410		7,410	2,410	4	0	49		1,030
1961			5,610		5,610	2,170	15	1,020	87		1,050
1962			3,920		3,920	2,200	51	2,030	99		747
1963			6,110		6,110	1,850		508	68		575
1964			8,360		8,360	1,790			140		622
1965			9,730		9,730	1,810					
1966			10,100		10,100	2,720					
1967						1,810					

NATURAL ABRASIVES STATISTICS[1]
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CORUNDUM AND EMERY NATURAL ABRASIVES											
Year	Corundum production	Corundum and emery production	Emery production	Corundum and emery shipments	Emery shipments	Corundum imports	Corundum and emery imports	Emery imports	Corundum exports	Corundum and emery exports	Emery exports
1968						5,440					
1969						0					
1970						0					
1971			1,440			0					
1972			2,620			0					
1973			2,620			907					
1974			2,290			1,810					
1975			3,160			907					
1976						1,810					
1977						1,810					
1978						441					
1979			9,080			4,540					
1980						0					
1981						0					
1982											
1983											
1984											
1985											
1986			2,610								
1987			1,760								
1988			869								
1989											
1990											
1991											
1992											
1993											
1994											
1995											
1996											
1997											
1998											
1999											
2000											
2001											

NATURAL ABRASIVES STATISTICS[1]
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CORUNDUM AND EMERY NATURAL ABRASIVES											
Year	Corundum production	Corundum and emery production	Emery production	Corundum and emery shipments	Emery shipments	Corundum imports	Corundum and emery imports	Emery imports	Corundum exports	Corundum and emery exports	Emery exports
2002											
2003											
2004											
2005											
2006											

NATURAL ABRASIVES STATISTICS[1]
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	CORUNDUM AND EMERY NATURAL ABRASIVES										
Year	Corundum apparent consumption	Corundum and emery apparent consumption	Emery apparent consumption	Corundum unit value ($/t)	Corundum and emery unit value ($/t)	Emery unit value ($/t)	Corundum unit value (98$/t)	Corundum and emery unit value (98$/t)	Emery unit value (98$/t)	Corundum world production	Emery world production
1900		15,800			26			510			
1901		17,000			37			720			
1902		11,900			27			510			
1903		16,800			16			290			
1904		9,940			33			600			
1905		14,600			32			580			
1906		17,200			42			760			
1907		13,400	970			13			230		
1908		9,000	607			14			250		
1909		11,200	1,430			13			230		
1910		30,500	933			16			280		
1911		11,600	598			11			190		
1912		17,600	900			7			120		
1913		18,500	868			6			98.8	2,580	48,900
1914		13,900	440			6			97.8	1,180	35,900
1915		9,180	2,780			11			178	690	17,200
1916		8,510	13,900			9			140	3,560	33,800
1917	744	2,070	15,500	91		16	1,160		204	6,140	31,300
1918		8,660	9,460			12			130	5,860	22,100
1919		11,800	2,360			10			94.2	1,690	12,500
1920		9,160	2,110			10			81.5	1,210	14,000
1921		6,950	277			8			72.8	835	13,800
1922		5,560	1,330			13			126	2,020	14,800
1923		11,700	2,070			14			133	2,980	24,100
1924	3,020	50	8,590			10			95.3	1,880	25,300
1925	1,500	122	7,700			8			74.5	1,910	28,000
1926	4,910	394	4,660			10			92.1	5,600	32,000
1927	1,150	105	4,640			13			121		
1928	1,420	154	6,140			14			133		10,000
1929	3,430	395	6,650			13			124		
1930	2,740	272	4,360			12			118		
1931	650	57	2,600			12			129		
1932	171	10	838			12			143		
1933	940	22	1,590			13			163		

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	CORUNDUM AND EMERY NATURAL ABRASIVES										
Year	Corundum apparent consumption	Corundum and emery apparent consumption	Emery apparent consumption	Corundum unit value ($/t)	Corundum and emery unit value ($/t)	Emery unit value ($/t)	Corundum unit value (98$/t)	Corundum and emery unit value (98$/t)	Emery unit value (98$/t)	Corundum world production	Emery world production
1934	1,980	42	3,280			11			134		
1935	4,590	52	4,520			10			119		
1936	4,350	177	5,940			10			117		
1937	1,890	149	5,150			10			113	2,300	
1938	1,900	30	433			10			113	1,540	
1939	1,780	59	2,680			10			117	2,460	
1940	2,650	61	6,140			10			116	3,910	
1941	5,320	47	4,420			10			111	6,210	
1942	4,300	41	4,380			10			100	7,030	
1943	5,160	36	5,720			11			104	5,630	
1944	5,810	30	5,960			10			92.6	5,700	
1945	5,660	25	6,980			11			100	10,000	
1946	3,820	19	7,700			11			91.9	8,000	
1947	2,180	13	7,830			13			95.0	8,000	
1948	3,280	8	5,780			14			94.7	8,000	
1949	1,830	2	5,830			14			95.9	9,000	
1950	3,210	10	6,970			14			94.7	9,070	
1951	4,310	9	13,100			15			94.0	9,980	7,360
1952	4,010	12	8,700			15			92.3	9,980	8,240
1953	2,210	30	8,560			15			91.6	9,070	
1954	868	220	8,190			15			90.9	9,070	
1955	1,130	513	9,260			16			97.3	7,260	7,080
1956	1,460	435	11,100			16			95.9	9,980	12,000
1957	3,530	655	11,000			17			98.6	9,070	
1958	4,100	469	6,030			18			102	9,980	
1959	2,940	8	7,610			19			106	7,260	
1960	2,360	4	6,390			19			104	8,170	
1961	2,090	15	5,570			19			104	7,260	
1962	2,110	51	5,200			18			97.1	3,660	
1963	1,780		6,040			20			106	6,120	
1964	1,650		7,740			21			111	8,190	
1965	1,810		9,730			21			109	9,960	
1966	2,720		10,100			21			106	9,910	
1967	1,810		0							9,790	

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	CORUNDUM AND EMERY NATURAL ABRASIVES										
Year	Corundum apparent consumption	Corundum and emery apparent consumption	Emery apparent consumption	Corundum unit value ($/t)	Corundum and emery unit value ($/t)	Emery unit value ($/t)	Corundum unit value (98$/t)	Corundum and emery unit value (98$/t)	Emery unit value (98$/t)	Corundum world production	Emery world production
1968	5,440		0							6,570	
1969	0		0							6,790	
1970	0		0							7,250	
1971	0		1,440							7,060	86,200
1972	0		2,620							7,670	86,800
1973	907		2,620							7,820	99,300
1974	1,810		2,290							7,900	158,000
1975	907		3,160							8,500	71,100
1976	1,810		0							12,600	71,400
1977	1,810		0							14,700	65,500
1978	441		0							17,200	8,130
1979	4,540		9,080			23			51.6	26,400	6,530
1980	0		0							29,100	49,000
1981	0		0							22,400	49,100
1982			0							18,800	38,000
1983			0							14,600	29,900
1984			0							9,220	28,100
1985			0							9,260	23,400
1986			2,610							9,220	7,500
1987			1,760								9,970
1988			869								26,800
1989											29,500
1990											
1991											35,500
1992											30,000
1993											30,000
1994											
1995											
1996											
1997											
1998											
1999											
2000											
2001											

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008

	CORUNDUM AND EMERY NATURAL ABRASIVES										
Year	Corundum apparent consumption	Corundum and emery apparent consumption	Emery apparent consumption	Corundum unit value ($/t)	Corundum and emery unit value ($/t)	Emery unit value ($/t)	Corundum unit value (98$/t)	Corundum and emery unit value (98$/t)	Emery unit value (98$/t)	Corundum world production	Emery world production
2002											
2003											
2004											
2005											
2006											

[1]**Compiled by T.D. Kelly (retired), T.P. Dolley, and D.W. Olson.**
Data are estimated, calculated, or reported. See notes for more information.

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008

OTHER NATURAL ABRASIVES			
Year	**Imports**	**Exports**	**Apparent consumption**
1924	229		229
1925	175		175
1926	963		963
1927	1,260		1,260
1928	2,410		2,410
1929	3,090		3,090
1930	4,970		4,970
1931	3,740		3,740
1932	1,940		1,940
1933	3,780		3,780
1934	1,480		1,480
1935	1,490		1,490
1936	536		536
1937	846		846
1938	455		455
1939	203		203
1940	208		208
1941	391		391
1942	213		213
1943	86		86
1944	26		26
1945	46		46
1946	86		86
1947	77		77
1948	2		2
1949	0		0
1950	1		1
1951	11		11
1952	1,490	32,600	1,290
1953	340	50,600	2,570
1954	4	47,500	3,850
1955	29	59,600	5,130
1956	9	64,500	6,410
1957	20	66,700	7,690
1958	72	10,800	8,970
1959	245	9,550	10,200
1960	194	9,390	11,500
1961	168	10,300	12,800
1962	7,390	9,720	14,100
1963	27,000	11,600	15,400
1964	16,900	12,700	4,160
1965	16,600	11,900	4,610
1966	35,400	14,900	20,500
1967	14,500	12,700	1,800
1968	29,900	18,400	11,600
1969	20,900	14,500	6,360
1970	13,600	15,500	6,240
1971	7,260	9,590	6,130
1972	4,540	10,000	6,010
1973	11,800	16,200	5,890
1974	16,300	18,000	5,770
1975	5,440	9,690	5,650

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008

OTHER NATURAL ABRASIVES			
Year	**Imports**	**Exports**	**Apparent consumption**
1976	5,440	15,300	5,540
1977	10,900	17,600	5,420
1978	14,000	8,690	5,300
1979	15,400	4,460	10,900
1980	10,800	14,400	7,840
1981	12,300	16,200	4,760
1982	6,410	4,730	1,690
1983	8,920	4,450	4,470
1984	25,200	1,820	23,400
1985	28,700	884	27,800
1986	9,400	1,140	8,260
1987	15,900	1,520	14,400
1988	32,200	1,580	30,600
1989	24,000	12,400	11,600
1990	38,000	13,100	24,900
1991	30,000	12,600	17,400
1992	41,000	17,100	23,900
1993	57,000	13,100	43,900
1994			
1995			
1996			
1997			
1998			
1999			
2000			
2001			
2002			
2003			
2004			
2005			
2006			

[1]Compiled by T.D. Kelly (retired), T.P. Dolley, and D.W. Olson.
Data are either calculated, or reported. See notes for more information.

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008

SPECIAL SILICA STONE STATISTICS								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1900	502				502	24.9	490	
1901								
1902								
1903								
1904	16,000				16,000	10.5	190	
1905	24,800				24,800	11.2	202	
1906								
1907								
1908								
1909								
1910								
1911								
1912								
1913								45,200
1914	43,800	43,800			43,800	19.5	318	58,000
1915	38,700	38,700			38,700	19.7	318	50,400
1916	51,900	51,900			51,900	18.6	278	53,800
1917	64,700	64,700			64,700	22.4	285	73,300
1918	71,500	71,500			71,500	29.3	316	76,200
1919	52,400	52,400			52,400	31.6	298	91,800
1920	59,500	59,500	24,200		83,600	33.9	276	99,600
1921	25,500	25,500	9,150		34,700	55.4	505	77,700
1922	27,900	27,900	14,600		42,400	44.8	435	77,300
1923	47,500	47,500	14,500		62,000	41.5	396	95,500
1924	37,900	37,900	18,800		56,700	51.8	494	105,000
1925	38,200	38,200	17,500		55,700	53.1	495	108,000
1926	41,900	41,900	16,400		58,300	52.0	479	82,200
1927	33,000	33,000	16,300		49,200	55.7	522	
1928	36,700	36,700	16,100		52,900	49.7	474	
1929	30,100	30,100	14,900		45,000	50.4	480	
1930	20,700	20,700	7,240		27,900	46.3	452	
1931	10,100	10,100	6,400		16,500	44.7	479	
1932	8,140	8,140	3,770		11,900	39.9	475	
1933	16,800	16,800	4,680		21,400	35.1	440	
1934	11,800	11,800	5,100		16,900	47.2	574	
1935	13,600	13,600	8,610		22,200	44.8	533	
1936	12,600	12,600	9,830		22,500	49.0	575	
1937	13,900	13,900	13,100		27,100	49.2	557	
1938	6,090	6,090	8,120		14,200	60.8	703	
1939	10,000	10,000	11,700		21,800	54.1	634	
1940	12,100	12,100	3,220		15,300	41.1	479	
1941	29,500	29,500	1,830		31,300	27.9	309	
1942	29,700	29,700	832	15,700	14,900	28.1	281	
1943	22,800	22,800	726	17,600	5,930	30.3	286	
1944	17,600	17,600	941	22,200	7,230	32.2	298	
1945	18,700	18,700	1,460	26,900	8,520	34.6	313	
1946	17,000	17,000	6,550	26,800	9,820	38.4	321	
1947	16,400	16,400	10,600	33,800	11,100	39.4	288	
1948	12,000	12,000	10,500	28,600	12,400	45.5	308	
1949	7,300	7,300	7,010	639	13,700	49.0	336	
1950	7,180	7,180	31,900	466	38,600	48.5	328	

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
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SPECIAL SILICA STONE STATISTICS								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1951	9,110	9,110	16,400	610	24,800	52.4	329	
1952	7,730	7,730	7,340	443	14,600	52.9	325	
1953	5,620	5,620	8,680	464	13,800	60.2	368	
1954	5,640	5,640	4,560	383	9,820	57.2	347	
1955	4,470	4,470	7,080	506	11,100	59.0	359	
1956	5,610	5,610	8,610	447	13,800	73.3	439	
1957	5,300	5,300	10,500	388	15,400	62.4	362	
1958	3,650	3,650	7,840	347	11,100	83.6	472	
1959	3,330	3,330	12,800	518	15,600	94.6	530	
1960	2,300	2,300	13,200	459	15,100	105	578	
1961	2,260	2,260	11,000	203	13,100	105	572	
1962	2,410	2,410	11,500	193	13,700	108	583	
1963	2,440	2,440	35	100	2,380	104	554	
1964	2,890	2,890	0	285	2,610	101	531	
1965	3,270	3,270	0		3,270	132	683	
1966	3,450	3,450	907		4,360	149	750	
1967	2,450	2,450	0		2,450	234	1,142	
1968	2,850	2,850	0		2,850	221	1,035	
1969	3,000	3,000	0		3,000	200	888	
1970	2,840	2,840	0		2,840	234	983	
1971	2,130	2,130	3,630		5,760	264	1,062	
1972	2,940	2,940	0		2,940	228	889	
1973	3,140	3,140	0		3,140	212	778	
1974	2,840	2,840	0		2,840	252	833	
1975	2,680	2,680	0		2,680	396	1,200	
1976	2,450	2,450	0		2,450	574	1,644	
1977	2,000	2,000	0		2,000	556	1,495	
1978	612	612	0		612	538	1,345	
1979	539	539	0		539	519	1,165	
1980	572	572	0		572	501	991	
1981	2,270	474	0		2,270	483	866	
1982	1,170	647	0		1,170	474	801	
1983	999	546	0		999	482	789	
1984	1,170	620	0		1,170	515	808	
1985	1,050	402	0		1,050	490	742	
1986	973	463	0		973	515	766	
1987	1,380	598	907		2,290	355	509	
1988	1,890	371	0		1,890	299	412	
1989	898	377			898	164	216	
1990	3,710	450			3,710	61.9	77.2	
1991	2,210	272			2,210	72.9	87.2	
1992	1,730	340			1,730	138	160	
1993	528	267			528	456	513	
1994	328	487			328	674	741	
1995	501	419			501	539	577	
1996	854	410			854	260	270	
1997	843	445			843	266	270	
1998	649	438			649	284	284	
1999	697	475			697	263	257	
2000	553	312			553	286	270	
2001	705	393			705	332	305	

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
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SPECIAL SILICA STONE STATISTICS								
Year	Production	Shipments	Imports	Exports	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
2002	748	386			748	321	291	
2003	1,070	513			1,070	293	259	
2004	227	655			227	581	502	
2005	193	576			193	989	825	
2006	227	328			227	4,370	3,533	

[1]**Compiled by T.D. Kelly (retired), T.P. Dolley, and D.W. Olson.**
Data are estimated, calculated, or reported. See notes for more information.

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) natural abrasives unless otherwise noted]
Last modification: April 17, 2008
TRIPOLI STATISTICS

Year	Production	Shipments	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1913	18,900	18,900	18,900	11.5	189	19,500
1914	15,600	15,600	15,600	9.50	155	16,200
1915	27,900	27,900	27,900	4.63	74.7	28,100
1916	39,200	39,200	39,200	5.48	81.9	39,800
1917	23,600	23,600	23,600	14.3	182	24,200
1918	18,100	18,100	18,100	11.0	119	18,600
1919	22,000	22,000	22,000	8.24	77.6	22,700
1920	36,500	36,500	36,500	15.6	127	37,400
1921	11,200	11,200	11,200	19.0	173	12,000
1922	27,400	27,400	27,400	11.6	113	27,900
1923	24,600	24,600	24,600	15.6	149	25,500
1924	25,800	25,800	25,800	15.1	144	26,300
1925	26,700	26,700	26,700	16.3	152	27,500
1926	28,500	28,500	28,500	18.4	169	29,300
1927	23,700	23,700	23,700	18.9	177	
1928	30,900	30,900	30,900	18.0	172	
1929	34,500	34,500	34,500	15.8	151	
1930	29,400	29,400	29,400	17.3	169	
1931	24,200	24,200	24,200	12.8	137	
1932	13,400	13,400	13,400	17.4	207	
1933	18,900	18,900	18,900	18.5	232	
1934	18,600	18,600	18,600	17.7	215	
1935	24,800	24,800	24,800	15.4	183	
1936	25,800	25,800	25,800	15.2	178	
1937	31,700	31,700	31,700	14.2	161	
1938	20,100	20,100	20,100	16.4	190	
1939	30,400	30,400	30,400	15.4	181	
1940	27,400	27,400	27,400	13.4	156	
1941	26,600	26,600	26,600	15.9	176	
1942	15,900	15,900	15,900	17.1	171	
1943	13,500	13,500	13,500	18.1	171	
1944	16,700	16,700	16,700	18.1	168	
1945	16,600	16,600	16,600	18.5	168	
1946	26,300	26,300	26,300	20.9	175	
1947	31,400	31,400	31,400	24.0	175	
1948	24,400	24,400	24,400	29.0	196	
1949	23,200	23,200	23,200	29.8	204	
1950	39,700	39,700	39,700	29.6	200	
1951	34,000	34,000	34,000	32.5	204	
1952	32,200	32,200	32,200	32.4	199	
1953	32,800	32,800	32,800	34.7	212	
1954	37,800	37,800	37,800	38.6	234	
1955	45,100	42,600	45,100	42.3	257	
1956	40,800	39,300	40,800	41.1	246	
1957	46,000	40,200	46,000	41.4	240	
1958	42,700	38,200	42,700	41.7	235	
1959	48,100	43,200	48,100	43.7	245	
1960	52,400	47,100	52,400	41.7	230	
1961	49,600	44,100	49,600	42.0	229	
1962	56,000	47,800	56,000	42.8	231	
1963	60,500	49,700	60,500	42.7	227	

NATURAL ABRASIVES STATISTICS[1]
U.S. GEOLOGICAL SURVEY
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TRIPOLI STATISTICS

Year	Production	Shipments	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1964	58,600	53,100	58,600	43.3	228	
1965	64,500	58,800	64,500	41.9	217	
1966	60,000	55,200	60,000	41.6	209	
1967	64,400	55,300	64,400	43.6	213	
1968	77,600	64,800	77,600	42.2	198	
1969	76,800	63,700	76,800	40.6	180	
1970	61,800	55,300	61,800	39.0	164	
1971	68,200	60,500	68,200	39.8	160	
1972	79,700	67,900	79,700	41.3	161	
1973	92,100	81,600	92,100	42.3	155	
1974	77,200	78,000	77,200	47.0	155	
1975	73,100	61,900	73,100	45.0	136	
1976	113,000	104,000	113,000	43.6	125	
1977	114,000	105,000	114,000	48.8	131	
1978	125,000	104,000	125,000	58.1	145	
1979	116,000	105,000	116,000	59.7	134	
1980	110,000	90,000	110,000	69.7	138	
1981	97,400	82,900	97,400	79.6	143	
1982	102,000	82,700	102,000	85.1	144	
1983	101,000	93,600	101,000	99.1	162	
1984	113,000	96,800	113,000	111	174	
1985	109,000	98,700	109,000	103	156	
1986	106,000	100,000	106,000	122	181	
1987	104,000	97,800	104,000	132	189	
1988	99,900	95,000	99,900	137	189	
1989	105,000	89,300	105,000	138	181	
1990	94,400	80,600	94,400	175	218	
1991	88,600	73,600	88,600	182	218	
1992	84,900	76,200	84,900	185	215	
1993	93,900	78,300	93,900	198	223	
1994	88,700	82,300	88,700	132	145	
1995	79,700	80,100	79,700	131	140	
1996	98,000	79,600	98,000	231	240	
1997	81,300		81,300	202	205	
1998	79,600		79,600	212	212	
1999	84,900		84,900	238	233	
2000	72,000		72,000	221	210	
2001	60,500		60,500	249	229	
2002	66,600		66,600	250	227	
2003	68,800		68,800	258	228	
2004	94,000		94,000	207	179	
2005	91,100		91,100	205	171	
2006	76,000		76,000	230	186	

[1]Compiled by T.D. Kelly (retired), T.P. Dolley, and D.W. Olson.
Data are estimated, calculated, or reported. See notes for more information.

Natural Abrasives Worksheet Notes

Data Sources
Sources of data for the natural abrasives worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR). 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 either were not available or were withheld from publication because they are proprietary.

Corundum and Emery

Corundum and emery data were reported separately for some years and combined for some years. The column headings on the corundum and emery worksheet indicate the manner in which the data were reported. Blank cells in the worksheet indicate that data either were not available or were withheld from publication because they are proprietary. All data from 1989–2006 were withheld from publication because they are proprietary.

Production
Corundum production datum for the year 1917 represents the total quantity of corundum that was produced in the United States. Production data for the years 1943–44 were withheld because they were proprietary.

Corundum and emery production data for the years 1900–06 represent the total quantities of combined corundum and emery that were produced annually in the United States.

Emery production data for the years 1907–88 represent the total quantities of emery that were produced annually in the United States. For the years 1967–70, 1976–78, and 1980–84, production data were withheld because they are proprietary.

Imports
Corundum import data for the years 1924–81 represent the total quantities of crude corundum ore and ground corundum grains that were imported into the United States for consumption purposes.

Corundum and emery import data for the years 1900–23 represent the total quantities of corundum and emery that were imported into the United States for consumption purposes. Corundum and emery import data for the years 1924–62 represent the summed quantities of corundum and emery that were imported into the United States for consumption purposes but were not delineated separately as either a corundum or emery import.

Emery import data for the years 1924–63 represent the total quantities of crude emery ore, ground emery grains, and emery wheels and files that were imported into the United States for consumption purposes.

Exports
Corundum export data for the years 1952–64 represent the total quantities of corundum that were exported from the United States to foreign recipients.

Corundum and emery export data for the years 1942–48 represent the summed quantities of corundum and emery that were exported from the United States to foreign recipients but were not delineated separately as either a corundum or emery export.

Emery export data for the years 1942–64 represent the total quantities of emery that were exported from the United States to foreign recipients.

Apparent Consumption
Apparent consumption data for corundum for the years 1917 and 1924–81 represent the total estimated quantities of corundum that were consumed annually within the United States. Apparent consumption data for corundum for the years 1917 and 1924–81 were estimated by using the following formula:

APPARENT CONSUMPTION = PRODUCTION + IMPORTS – EXPORTS.

Apparent consumption data for corundum and emery for the years 1900–62 represent the total estimated summed quantities of corundum and emery that were consumed annually within the United States. Apparent consumption data for corundum and emery for the years 1900–62 were estimated by using the following formula:

APPARENT CONSUMPTION = PRODUCTION + IMPORTS – EXPORTS.

For the years 1942–48, estimates of apparent consumption yielded negative values. To better estimate apparent consumption for these years, apparent consumption data were interpolated from the apparent consumption data series.

Apparent consumption data for emery for the years 1907–88 represent the total estimated quantities of emery that were consumed annually within the United States. Apparent consumption data for emery for the years 1907–88 were estimated by using the following formula:

APPARENT CONSUMPTION = PRODUCTION + IMPORTS – EXPORTS.

Unit Value ($/t)
Unit value datum for corundum for the year 1917 was estimated by dividing the total value of domestically produced corundum by the total quantity of domestically produced corundum.

Unit value data for corundum and emery for the years 1900–06 were estimated by dividing the total value of domestically produced corundum and emery by the total quantity of domestically produced corundum and emery.

Unit value data for emery for the years 1907–66 and 1979 were estimated by dividing the total value of domestically produced emery by the total quantity of domestically produced emery. For the years 1967–70, 1976–78, and 1980–84, production data were withheld because they are proprietary. For the years 1971–75 and 1985–88, unit value could not be estimated because production value was not available.

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 data for corundum for the years 1913–26 include U.S. production data. World production data for corundum for the years 1937–86 do not include U.S. production data.

World production data for emery for the years 1913–26 include U.S. production data. World production data for emery for the years 1928, 1951–52, 1955–56, 1971–89, and 1991–93 do not include U.S. production data.

Other Natural Abrasives

Imports
Import data for other (miscellaneous) natural abrasives for the years 1924–93 represent the total summed quantities of burrstones, corundum, diatomaceous earth, emery, flint, garnet, rottenstone, tripoli, and other natural abrasive materials that were imported into the United States for consumption purposes, but were not delineated separately as individual commodities. Data from 1994–2006 were withheld from publication because they are proprietary.

Exports
Export data for other miscellaneous natural abrasives for the years 1952–93 represent the total summed quantities of corundum, diatomaceous earth, emery, pumice, and other natural abrasive materials that were exported from the United States, but were not delineated separately as individual commodities. Data from 1994–2006 were withheld from publication because they are proprietary.

Apparent Consumption
Apparent consumption data for other miscellaneous natural abrasives for the years 1924–93 represent the total estimated quantities of various miscellaneous natural abrasives that were consumed annually within the United States. Apparent consumption data for various miscellaneous natural abrasives were estimated by using the following formula:

APPARENT CONSUMPTION = IMPORTS – EXPORTS.

For the years 1952–62, 1970–77, and 1980–81, estimates of apparent consumption yielded negative statistical values. To better estimate apparent consumption for these years, apparent consumption data were interpolated from the apparent consumption data series. Data from 1994–2006 were withheld from publication because they are proprietary.

Special Silica Stone

Production
Special silica stone production data for the years 1900, 1904–05, and 1914–2006 represent the total quantities of special silica stones that were produced annually in the United States. For the years 1914–80, domestic production was equal to domestic shipments. In the year 1978, a shift in reporting production occurred. Grinding pebbles and tube mill liners were eliminated from the survey forms. Prior to 1978, production data included grinding pebbles, grind stones, tube mill liners, and whetstones.

Shipments
Special silica stone shipment data for the years 1914–2006 represent the total quantities of special silica stones that were shipped to domestic recipients. For the years 1914–80, domestic production was equal to domestic shipments. In the year 1978, a shift in reporting production occurred. Grinding pebbles and tube mill liners were eliminated from the survey forms. Prior to 1978, shipment data included grinding pebbles, grind stones, tube mill liners, and whetstones.

Imports
Special silica stone import data for the years 1920–88 represent the total quantities of special silica stones that were imported into the United States for consumption purposes.

Exports
Special silica stone export data for the years 1942–64 represent the total quantities of special silica stones that were exported from the United States to foreign recipients.

Apparent Consumption
Apparent consumption data for special silica stones for the years 1900, 1904–05, and 1914–2006 represent the total estimated quantities of special silica stones that were consumed annually within the United States. Apparent consumption data for special silica stones for the years 1900, 1904–05, and 1914–2006 were estimated by using the following formula:

APPARENT CONSUMPTION = PRODUCTION + IMPORTS – EXPORTS.

For the years 1944–48, estimates of apparent consumption yielded negative statistical values. To better estimate apparent consumption for these years, apparent consumption data were interpolated from the apparent consumption data series.

Unit Value ($/t)
Unit value data for special silica stones for the years 1900, 1904–05, and 1914–2006 were estimated by dividing the total value of domestically produced special silica stones by the total quantity of domestically produced special silica stones. For the years 1978–80 80, the MYB reports quantity and value for finished products which causes a large increase in reported value. The unit value data, for the years 1978–80, were interpolated to make the data series more uniform. The noticeable decline in value, for the years 1990–91, was caused by the entry into bankruptcy of one of the major producers of special silica stone.

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 data for special silica stones for the years 1913–26 includes U.S. production data.

Tripoli

Production
Tripoli production data for the years 1913–2002 represent the total quantities of tripoli that were produced annually in the United States. For the years 1913–54, domestic production was equal to domestic shipments.

Shipments
Tripoli shipment data for the years 1913–96 represent the total quantities of tripoli that were shipped to domestic recipients. For the years 1913–54, domestic production was equal to domestic shipments. For the years 1997–2006, shipments data were not available.

Apparent Consumption
Apparent consumption data for tripoli for the years 1913–2006 represent the total estimated quantities of tripoli that were consumed annually within the United States. Apparent consumption data for tripoli for the years 1913–2006 were estimated by using the following formula:

APPARENT CONSUMPTION = PRODUCTION.

Unit Value ($/t)
Unit value data for tripoli for the years 1913–96 were estimated by dividing the total value of tripoli shipments by the total quantity of tripoli shipments. For the years 1997–2006 unit value was estimated by dividing total value of tripoli production by the total quantity of tripoli production.

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 data for tripoli for the years 1913–26 includes U.S. production data.

Total Natural Abrasives

Production
Production data for the years 1900–2006 were recorded from the MR and the MYB. Production data for the years 1900–2006 represent the total summed quantities of corundum, emery, special silica stones, and tripoli that were produced annually in the United States.

Imports
Import data for the years 1900–93 were recorded from the MR and the MYB. Import data for the years 1900–93 represent the total summed quantities of corundum, emery, special silica stones, and other miscellaneous natural abrasives that were imported into the United States for consumption purposes.

Exports
Export data for the years 1942–93 were recorded from the MYB. Export data for the years 1942–93 represent the total summed quantities of corundum, emery, special silica stones, and other miscellaneous natural abrasives that were exported from the United States to foreign recipients.

Apparent Consumption
Apparent consumption data for the years 1900–2006 represent the total estimated quantities of natural abrasives that were consumed annually in the United States. Apparent consumption was estimated by summing the estimated apparent consumptions for corundum and emery, other natural abrasives, special silica stone, and tripoli.

Unit value ($/t)
Unit value data is defined as the value of 1 metric ton (t) of natural abrasives apparent consumption. Unit value data for the years 1914–2002 were estimated as the weight-averaged value special silica stone and tripoli.

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 data for the years 1913–93 were recorded from the MR and the MYB. World production data for the years 1913–2000 represent the total summed quantities of corundum, emery, special silica stones, and tripoli that were produced annually throughout the world. For the years 1913–26, U.S. production was included as a constituent of the reported world production data for corundum, emery, special silica stone products, and tripoli. For the years 1927–93, U.S. production was not included as a constituent of the reported world production data for corundum, emery, special silica stone products, and tripoli in the MR and MYB statistics. Therefore, for the years 1927–93, total U.S. production data were added to the total world production data of corundum, emery, special silica stone products, and tripoli presented in the natural abrasives table.

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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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