

Table 1-12. Asbestos: Geometric mean exposures and percent exceeding designated occupational exposure limits by major industry division, MSHA and OSHA samples, 1979-1999

Industry Division		OSHA PEL = 2 f/cc								OSHA PEL = 0.2 f/cc								OSHA PEL = 0.1 f/cc				
		1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Construction SIC 15-17	GM (f/cc)	0.024	0.020	0.017	0.042	0.032	0.023	0.026	0.007	0.006	0.007	0.007	0.005	0.003	0.003	0.004	0.002	0.001	0.001	0.001	0.002	0.003
	No. of samples	97	172	112	168	383	629	474	279	254	254	266	175	214	200	144	82	45	75	52	35	31
	% > PEL	3.1	3.5	1.8	7.7	4.2	5.1	5.3	3.2	4.7	9.1	11.3	9.7	2.8	4.5	1.4	3.7	2.2	0.0	0.0	0.0	12.9
	% > REL	36.1	30.2	22.3	32.1	37.9	32.4	30.4	12.9	9.1	12.2	15.0	13.7	4.7	7.5	4.9	6.1	2.2	0.0	0.0	0.0	12.9
Manufacturing SIC 20-39	GM (f/cc)	0.030	0.035	0.007	0.032	0.020	0.012	0.009	0.005	0.010	0.005	0.004	0.006	0.003	0.003	0.003	0.003	0.002	0.001	0.001	0.002	0.003
	No. of samples	335	313	153	181	372	438	428	278	447	347	292	203	277	142	131	76	108	149	48	33	18
	% > PEL	3.0	7.7	0.7	1.1	4.6	2.3	2.3	2.5	16.6	6.3	6.2	11.8	7.9	0.0	5.3	0.0	0.9	1.3	0.0	0.0	5.6
	% > REL	37.3	41.2	14.4	35.4	27.2	26.3	21.0	10.1	21.5	13.3	10.6	15.8	10.5	1.4	9.9	3.9	0.9	1.3	0.0	0.0	5.6
Mining SIC 10-12, 14	GM (f/cc)	0.244	0.121	0.129	0.430	0.239	0.346	0.359	0.036	0.013	0.007	0.010	0.006	0.014	0.004	0.003	0.002	0.002	0.004	0.002	0.002	0.002
	No. of samples	204	301	276	64	73	23	43	37	16	53	29	46	34	28	14	157	77	28	7	3	2
	% > PEL	10.8	5.6	5.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	2.9	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	% > REL	70.6	60.8	60.9	90.6	78.1	91.3	86.0	48.6	12.5	18.9	20.7	19.6	32.4	7.1	7.1	0.6	0.0	10.7	0.0	0.0	0.0
Other SIC 1-9, 13, 40-99	GM (f/cc)	0.003	0.006	0.003	0.007	0.002	0.003	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.001	0.001	0.002	0.002	0.001
	No. of samples	94	124	68	51	469	834	732	505	814	509	625	472	462	285	231	214	144	166	136	93	71
	% > PEL	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	1.0	0.6	0.5	0.2	0.0	0.0	0.0	0.0	0.7	0.6	0.0	0.0	0.0
	% > REL	7.4	13.7	2.9	9.8	1.5	2.6	2.3	1.0	1.4	1.8	1.0	0.6	0.4	1.1	1.3	0.5	0.7	0.6	0.0	0.0	0.0

SIC - Standard Industrial Classification PEL - permissible exposure limit REL - recommended exposure limit GM - geometric mean f/cc - fibers per cubic centimeter

NOTE: The MSHA PEL is 2 f/cc. The NIOSH REL is 0.1 f/cc. See appendices for source description, methods, and agents.

SOURCE: Mine Safety and Health Administration (MSHA) metal/nonmetal mine data. Occupational Safety and Health Administration (OSHA) Integrated Management Information System.