

Respirable quartz: Geometric mean exposures and percent exceeding designated occupational exposure limits by OSHA region and state, OSHA samples, 1979–2003 (page 1 of 3)

OSHA Region	All years				1979–1988 OSHA PEL: see note				1989–1992 OSHA PEL=0.1 mg/m ³				1993–2003 OSHA PEL: see note			
	No. of Samples	GM (mg/m ³)	No. of Samples	% > PEL	No. of Samples	GM (mg/m ³)	% > PEL	% > REL	No. of Samples	GM (mg/m ³)	% > PEL	% > REL	No. of Samples	GM (mg/m ³)	% > PEL	% > REL
Region 1	1,692	0.029	1,006	0.032	25.2	39.2			187	0.017	9.6	21.9	499	0.028	22.8	34.7
Connecticut	514	0.021	354	0.026	18.6	32.8			56	0.014	3.6	16.1	104	0.015	8.7	20.2
Maine	39	0.019	21	0.029	33.3	38.1			1	0.007	0.0	0.0	17	0.012	5.9	11.8
Massachusetts	601	0.038	300	0.040	31.0	45.3			77	0.025	16.9	29.9	224	0.041	29.9	44.2
New Hampshire	298	0.024	143	0.033	23.8	39.9			41	0.015	7.3	22.0	114	0.018	15.8	23.7
Rhode Island	240	0.039	188	0.036	28.7	41.0			12	0.007	0.0	0.0	40	0.096	47.5	60.0
Vermont	0	-	0	-	-	-			0	-	-	-	0	-	-	-
Region 2	2,075	0.038	1,001	0.040	31.6	46.4			300	0.029	17.7	36.7	774	0.039	31.7	43.9
New Jersey	584	0.033	318	0.035	29.6	41.8			138	0.038	18.8	45.7	128	0.025	21.9	26.6
New York	1,476	0.040	681	0.042	32.3	48.3			158	0.024	17.1	29.7	637	0.044	33.9	47.7
Puerto Rico	11	0.027	2	0.914	100.0	100.0			3	0.007	0.0	0.0	6	0.016	16.7	33.3
Virgin Islands	4	0.007	0	-	-	-			1	0.007	0.0	0.0	3	0.007	0.0	0.0
Region 3	2,846	0.047	1,994	0.047	30.1	49.3			304	0.034	23.7	39.8	548	0.054	36.1	51.5
Delaware	23	0.019	17	0.014	5.9	11.8			0	-	-	-	6	0.044	33.3	33.3
District of Columbia	0	-	0	-	-	-			0	-	-	-	0	-	-	-
Maryland	247	0.032	127	0.032	28.3	36.2			62	0.035	35.5	50.0	58	0.030	20.7	29.3
Pennsylvania	2,061	0.049	1,394	0.049	29.4	51.7			220	0.033	20.5	37.3	447	0.057	38.0	53.2
Virginia	280	0.041	252	0.038	26.6	40.1			3	0.041	0.0	33.3	25	0.084	28.0	76.0
West Virginia	235	0.061	204	0.062	42.2	55.9			19	0.049	26.3	36.8	12	0.057	58.3	50.0
Region 4	3,223	0.031	1,501	0.036	29.0	42.0			524	0.030	20.8	35.3	1,198	0.026	19.5	31.8
Alabama	663	0.029	354	0.033	30.2	42.1			167	0.043	26.3	50.3	142	0.014	8.5	15.5
Florida	121	0.038	59	0.034	28.8	37.3			22	0.027	22.7	27.3	40	0.054	42.5	50.0
Georgia	750	0.040	477	0.041	32.9	47.4			96	0.022	15.6	26.0	177	0.049	22.6	42.4
Kentucky	359	0.029	155	0.045	33.5	45.2			62	0.046	29.0	41.9	142	0.015	13.4	16.2
Mississippi	114	0.047	75	0.046	33.3	49.3			22	0.030	13.6	22.7	17	0.096	41.2	64.7
North Carolina	587	0.027	157	0.026	12.1	26.1			27	0.026	18.5	29.6	403	0.027	21.3	33.3
South Carolina	230	0.022	66	0.018	21.2	22.7			68	0.019	16.2	25.0	96	0.030	21.9	32.3
Tennessee	399	0.029	158	0.041	28.5	44.9			60	0.019	13.3	23.3	181	0.025	17.7	35.9

See footnotes at end of table.

Respirable quartz: Geometric mean exposures and percent exceeding designated occupational exposure limits by OSHA region and state, OSHA samples, 1979–2003 (page 2 of 3)

OSHA Region	All years				1979–1988 OSHA PEL: see note				1989–1992 OSHA PEL=0.1 mg/m ³				1993–2003 OSHA PEL: see note					
	No. of Samples	GM (mg/m ³)	No. of Samples	GM (mg/m ³)	% > PEL	REL	% > PEL	REL	No. of Samples	GM (mg/m ³)	% > PEL	REL	% > PEL	REL	No. of Samples	GM (mg/m ³)	% > PEL	REL
Region 5	6,233	0.037	2,863	0.048	34.9	52.5	35.3	16.4	0.028	16.4	35.3	25.6	0.032	25.6	2,119	0.032	25.6	36.7
Illinois	1,188	0.039	546	0.043	33.5	47.4	35.6	18.3	0.031	18.3	35.6	28.8	0.039	28.8	451	0.039	28.8	39.5
Indiana	503	0.030	262	0.037	31.3	45.0	25.3	8.9	0.019	8.9	25.3	35.2	0.027	35.2	162	0.027	35.2	35.2
Michigan	915	0.015	29	0.013	0.0	3.4	12.1	2.7	0.012	2.7	12.1	9.0	0.016	9.0	622	0.016	9.0	18.2
Minnesota	75	0.059	60	0.067	50.0	65.0	44.4	0.0	0.029	0.0	44.4	33.3	0.047	33.3	6	0.047	33.3	33.3
Ohio	1,995	0.043	1,219	0.046	32.1	49.9	34.7	18.6	0.031	18.6	34.7	44.4	0.048	44.4	410	0.048	44.4	44.4
Wisconsin	1,557	0.055	747	0.061	41.9	64.1	55.8	25.7	0.050	25.7	55.8	38.5	0.049	38.5	468	0.049	38.5	52.6
Region 6	1,294	0.041	887	0.036	30.0	41.5	43.6	29.1	0.037	29.1	43.6	40.4	0.075	40.4	235	0.075	40.4	50.2
Arkansas	124	0.031	96	0.023	24.0	32.3	66.7	66.7	0.089	66.7	66.7	53.8	0.072	53.8	13	0.072	53.8	53.8
Louisiana	97	0.074	68	0.056	41.2	64.7	36.4	27.3	0.032	27.3	36.4	44.4	0.336	44.4	18	0.336	44.4	66.7
New Mexico	27	0.071	11	0.041	54.5	54.5	0.0	0.0	0.007	0.0	0.0	80.0	0.124	80.0	15	0.124	80.0	80.0
Oklahoma	233	0.040	154	0.034	20.1	37.7	50.0	30.0	0.044	30.0	50.0	49.3	0.058	49.3	69	0.058	49.3	49.3
Texas	813	0.039	558	0.037	31.9	41.0	41.5	25.2	0.034	25.2	41.5	44.2	0.065	44.2	120	0.065	44.2	44.2
Region 7	1,256	0.036	742	0.036	26.7	39.8	27.1	12.3	0.022	12.3	27.1	35.3	0.052	35.3	278	0.052	35.3	47.1
Iowa	592	0.032	336	0.031	22.6	32.7	28.6	12.6	0.021	12.6	28.6	48.9	0.050	48.9	137	0.050	48.9	48.9
Kansas	250	0.051	97	0.041	34.0	42.3	27.5	17.6	0.030	17.6	27.5	56.9	0.079	56.9	102	0.079	56.9	56.9
Missouri	333	0.036	242	0.048	31.4	50.4	22.6	8.1	0.019	8.1	22.6	6.9	0.013	6.9	29	0.013	6.9	6.9
Nebraska	81	0.027	67	0.023	19.4	32.8	50.0	0.0	0.033	0.0	50.0	40.0	0.068	40.0	10	0.068	40.0	40.0
Region 8	868	0.040	511	0.031	23.5	34.8	39.3	25.4	0.032	25.4	39.3	40.9	0.075	40.9	235	0.075	40.9	55.7
Colorado	541	0.031	328	0.026	20.4	30.2	32.4	17.6	0.025	17.6	32.4	51.8	0.055	51.8	139	0.055	51.8	51.8
Montana	78	0.059	64	0.044	25.0	35.9	81.8	72.7	0.250	72.7	81.8	66.7	0.141	66.7	3	0.141	66.7	66.7
North Dakota	108	0.082	56	0.041	23.2	50.0	50.0	50.0	0.069	50.0	50.0	72.0	0.183	72.0	50	0.183	72.0	72.0
South Dakota	73	0.055	27	0.033	33.3	44.4	70.0	70.0	0.102	70.0	70.0	47.2	0.068	47.2	36	0.068	47.2	47.2
Utah	62	0.044	31	0.085	48.4	48.4	28.0	8.0	0.017	8.0	28.0	66.7	0.076	66.7	6	0.076	66.7	66.7
Wyoming	6	0.025	5	0.022	0.0	20.0	-	-	-	-	-	0.0	0.046	0.0	1	0.046	0.0	0.0

See footnotes at end of table.

Respirable quartz: Geometric mean exposures and percent exceeding designated occupational exposure limits by OSHA region and state, OSHA samples, 1979–2003 (page 3 of 3)

OSHA Region	All years				1979–1988 OSHA PEL: see note				1989–1992 OSHA PEL=0.1 mg/m ³				1993–2003 OSHA PEL: see note			
	No. of Samples	GM (mg/m ³)	No. of Samples	% > PEL	GM (mg/m ³)	% > PEL	No. of Samples	GM (mg/m ³)	% > PEL	No. of Samples	GM (mg/m ³)	% > PEL	No. of Samples	GM (mg/m ³)	% > PEL	
Region 9	523	0.039	246	44.3	0.058	44.3	55.3	0.020	19.3	21.8	158	0.035	28.5	39.9		
American Samoa	0	-	0	-	-	-	-	-	-	-	0	-	-	-		
Arizona	76	0.052	29	41.4	0.055	41.4	58.6	0.010	0.0	10.0	37	0.078	51.4	62.2		
California	283	0.024	119	22.7	0.025	22.7	35.3	0.014	6.6	9.8	103	0.031	22.3	35.9		
Guam	1	0.007	1	0.0	0.007	0.0	0.0	-	-	-	0	-	-	-		
Hawaii	10	0.008	5	0.0	0.008	0.0	0.0	-	-	-	5	0.007	0.0	0.0		
Nevada	153	0.097	92	76.1	0.205	76.1	83.7	0.035	39.6	39.6	13	0.021	23.1	23.1		
Region 10	769	0.038	130	33.1	0.046	33.1	40.8	0.034	21.8	32.2	552	0.037	25.2	38.6		
Alaska	7	0.100	2	50.0	0.150	50.0	50.0	0.085	60.0	80.0	0	-	-	-		
Idaho	42	0.041	18	50.0	0.055	50.0	55.6	0.040	14.3	42.9	3	0.007	0.0	0.0		
Oregon	348	0.025	107	30.8	0.046	30.8	39.3	0.009	0.0	0.0	236	0.019	18.2	24.2		
Washington	372	0.055	3	0.0	0.007	0.0	0.0	0.033	23.2	26.8	313	0.061	30.7	49.8		
TOTAL	20,779	0.037	10,881	30.7	0.041	30.7	46.0	0.028	18.4	34.5	6,596	0.036	27.4	39.6		

- indicates incalculable field. PEL - permissible exposure limit REL - recommended exposure limit GM - geometric mean mg/m³ - milligrams per cubic meter
 OSHA - Occupational Safety and Health Administration
 NOTE: Before March 1, 1989 and after March 22, 1993, the OSHA PEL is [(10 mg/m³) / (% quartz + 2)] for respirable dust containing at least 1 percent quartz. From March 1, 1989 to March 22, 1993, the OSHA PEL was 0.1 mg/m³ for respirable quartz. The NIOSH REL is 0.05mg/m³. See appendices for source description and methods.
 SOURCE: OSHA Integrated Management Information System.