

**Chemical Substances
and
Physical Agents
in the
Work Environment
and
Biological Exposure Indices
with
Intended Changes**

1984-85

CBY 3102515

C 000174

LAM022084

DUSTS	
Substance	TLV
SILICA, SiO₂	
Crystalline	
‡Quartz [14808-60-7]	TLV in mppcf ^h : 300 ^h % quartz + 10 TLV for respirable dust in mg/m ³ : 10 mg/m ³ ^h % Respirable quartz + 2 TLV for "total dust," respirable and nonrespirable: 30 mg/m ³ % quartz + 3
‡Cristobalite [14464-46-1]	Use one-half the value calculated from the count or mass formulae for quartz.
‡Tridymite [15468-32-3]	Use one-half the value calculated from formulae for quartz.
‡Tripoli [1317-95-9]	Use respirable ^h mass quartz formula
‡Amorphous [7631-86-9]	(20 mppcf ^h)
‡Silica, fused [60676-86-0]	Use quartz formulae.
SILICATES and OTHER DUSTS (< 1% quartz)	
Asbestos ^h	
Amosite [12172-73-5]	0.5 fiber/cc > 5 μm in length, A1a
Chrysotile [12001-29-5]	2 fibers/cc > 5 μm in length, A1a
Crocidolite [12001-28-4]	0.2 fiber/cc > 5 μm in length, A1a
Other forms	2 fibers/cc > 5 μm in length, A1a
‡Graphite (natural) [7782-42-5]	15 mppcf
‡Mica [12001-26-2]	20 mppcf
Mineral wool fiber	10 mg/m ³
‡Perlite	30 mppcf
‡Portland Cement	30 mppcf
‡Soapstone	20 mppcf
Talc (containing no asbestos fibers) [14807-96-6]	2 mg/m ³ , Respirable dust

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‡Talc (fibrous), (use Asbestos limit.)
Nuisance particles (see Appendix D)
‡(30 mppcf) or 10 mg/m³^h
of total dust < 1% quartz,
or, ‡(5 mg/m³ respirable dust.)

Conversion factors:
mppcf × 35.3 = Million particles per cubic meter
= particles per cc

COAL DUST

2 mg/m³ (respirable dust fraction < 5% quartz).
‡(If > 5% quartz, use respirable mass formula.)

- h) Millions of particles per cubic foot of air, based on impinger samples counted by light-field technics.
i) The percentage of quartz in the formula is the amount determined from airborne samples, except in those instances in which other methods have been shown to be applicable.
j) Both concentration and percent quartz for the application of this limit are to be determined from the fraction passing a size-selector with the following characteristics:

Aerodynamic Diameter (μm) (unit density sphere)	% passing selector
≤ 2	90
2.5	75
3.5	50
5.0	25
10	0

- k) "Respirable" dust as defined by the British Medical Research Council Criteria,⁽¹⁾ and as sampled by a device producing equivalent results.⁽²⁾

(1) Hatch, T. E. and Gross: *Pulmonary Deposition and Retention of Inhaled Aerosols*, p. 149. Academic Press, New York, (1964).

(2) AIHA Aerosol Technology Committee: Interim Guide for Respirable Mass Sampling. *Am. Ind. Hyg. Assoc. J.* 31(2):133 (1970).

- l) As determined by the membrane filter method at 400-450X magnification (4 mm objective) phase contrast illumination.

‡m) containing < 1% quartz; (if quartz content > 1%, use formulae for quartz.)

‡See Notice of Intended Changes.

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