Calcium arsenate (as As)

CAS number 7778441

NIOSH REL 0.002 mg/m^3 15minute CEILING; NIOSH considers calcium arsenate to be a potential occupational carcinogen as defined by the OSHA carcinogen policy [29 CFR 1990].

Current OSHA PEL 0.010 mg/m^3 TWA

1989 OSHA PEL Same as current PEL

1993-1994 ACGIH TLV 0.01 mg/m^3 TWA, A1

Description of Substance Colorless to white, odorless solid.

LEL . . Noncombustible Solid

Original (SCP) IDLH 100 mg As/m^3

Basis for original (SCP) IDLH Because no data on acute inhalation toxicity are available for calcium arsenate, the chosen IDLH is based on an analogy with arsenic and compounds (as As) which has an IDLH of 100 mg As/m^3.

Short-term exposure guidelines None developed

ACUTE TOXICITY DATA

Lethal dose data:

Species	Reference	Route	LD_{50} (mg/kg)	LD_{Lo} (mg/kg)	Adjusted LD	Derived value
Rat	Back et al. 1972	oral	812	-----	2,103 mg As/m^3	210 mg As/m^3
Rat	Lehman 1951	oral	20	-----	52 mg As/m^3	5.2 mg As/m^3
Mouse	MacEwen and Vernot 1972	oral	794	-----	2,056 mg As/m^3	206 mg As/m^3
Rabbit	Muehlberger 1930	oral	50	-----	132 mg As/m^3	13 mg As/m^3
Dog	Perkow 1971/1976	oral	38	-----	98 mg As/m^3	9.8 mg As/m^3

Human data: None relevant for use in determining the revised IDLH.

Revised IDLH: 5 mg As/m^3

Basis for revised IDLH: No inhalation toxicity data are available on which to base an IDLH for calcium arsenate. Therefore, the revised IDLH for calcium arsenate is 5 mg As/m^3 based on acute oral toxicity data in animals [Lehman 1951] and to be consistent with the revised IDLH for other inorganic arsenic compounds which have a revised IDLH of 5 mg As/m^3. [Note: NIOSH recommends as part of its carcinogen policy that the "most protective" respirators be worn for calcium arsenate at concentrations above 0.002 mg As/m^3. OSHA currently requires in 29 CFR 1919.1018 that workers be provided with and required to wear and use the "most protective" respirators in concentrations exceeding 20 mg As/m^3 (i.e., 2,000 × the PEL).]

REFERENCES:

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Go back to the Documentation for Immediately Dangerous To Life or Health Concentrations (IDLHs)
