

# ARSENIC

0013

October 1999

CAS No: 7440-38-2  
 RTECS No: CG0525000  
 UN No: 1558  
 EC No: 033-001-00-X

Grey arsenic  
 As  
 Atomic mass: 74.9

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
<b>FIRE</b>	Combustible. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames. NO contact with strong oxidizers. NO contact with hot surfaces.	Powder, water spray, foam, carbon dioxide.
<b>EXPLOSION</b>	Risk of fire and explosion is slight when exposed to hot surfaces or flames in the form of fine powder or dust.	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	
<b>EXPOSURE</b>		<b>PREVENT DISPERSION OF DUST! AVOID ALL CONTACT! AVOID EXPOSURE OF (PREGNANT) WOMEN!</b>	<b>IN ALL CASES CONSULT A DOCTOR!</b>
<b>Inhalation</b>	Cough. Sore throat. Shortness of breath. Weakness. See Ingestion.	Closed system and ventilation.	Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.
<b>Skin</b>	Redness.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower.
<b>Eyes</b>	Redness.	Face shield or eye protection in combination with breathing protection if powder.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
<b>Ingestion</b>	Abdominal pain. Diarrhoea. Nausea. Vomiting. Burning sensation in the throat and chest. Shock or collapse. Unconsciousness.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Sweep spilled substance into sealable containers. Carefully collect remainder, then remove to safe place. Chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment.	T Symbol N Symbol R: 23/25-50/53 S: (1/2-)20/21-28-45-60-61 UN Hazard Class: 6.1 UN Pack Group: II Do not transport with food and feedstuffs. Marine pollutant.

EMERGENCY RESPONSE	SAFE STORAGE
Transport Emergency Card: TEC (R)-61GT5-II	Separated from strong oxidants, acids, halogens, food and feedstuffs. Well closed.

### IMPORTANT DATA

**Physical State; Appearance**

ODOURLESS, BRITTLE, GREY, METALLIC-LOOKING CRYSTALS.

**Chemical dangers**

Upon heating, toxic fumes are formed. Reacts violently with strong oxidants and halogens, causing fire and explosion hazard. Reacts with acids to produce toxic arsine gas (see: ICSC 0222).

**Occupational exposure limits**

TLV: 0.01 mg/m<sup>3</sup> as TWA; A1 (confirmed human carcinogen); BEI issued; (ACGIH 2004).

MAK: Carcinogen category: 1; Germ cell mutagen group: 3A; (DFG 2004).

**Routes of exposure**

The substance can be absorbed into the body by inhalation of its aerosol and by ingestion.

**Inhalation risk**

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly, when dispersed.

**Effects of short-term exposure**

The substance is irritating to the eyes, the skin and the respiratory tract. The substance may cause effects on the gastrointestinal tract, cardiovascular system, central nervous system and kidneys, resulting in severe gastroenteritis, loss of fluid, and electrolytes, cardiac disorders, shock, convulsions and kidney impairment. Exposure above the OEL may result in death. The effects may be delayed. Medical observation is indicated.

**Effects of long-term or repeated exposure**

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the mucous membranes, skin, peripheral nervous system, liver and bone marrow, resulting in pigmentation disorders, hyperkeratosis, perforation of nasal septum, neuropathy, liver impairment, anaemia. This substance is carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

### PHYSICAL PROPERTIES

Sublimation point: 613°C  
Density: 5.7 g/cm<sup>3</sup>

Solubility in water: none

### ENVIRONMENTAL DATA

The substance is toxic to aquatic organisms. It is strongly advised that this substance does not enter the environment.

### NOTES

The substance is combustible but no flash point is available in literature.

Depending on the degree of exposure, periodic medical examination is suggested.

Do NOT take working clothes home.

Refer also to cards for specific arsenic compounds, e.g., Arsenic pentoxide (ICSC 0377), Arsenic trichloride (ICSC 0221), Arsenic trioxide (ICSC 0378), Arsine (ICSC 0222).

Card has been partly updated in October 2004. See sections Occupational Exposure Limits, EU classification, Emergency Response.

Card has been partly updated in October 2005 in section Effects of long-term or repeated exposure.

### ADDITIONAL INFORMATION

**LEGAL NOTICE**

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information