

**MATERIAL SAFETY DATA SHEET****ARSENIC METAL, GRANULES**

PRODUCT CODE NUMBER(S): 1980-1

**PRODUCT IDENTIFICATION**

**Chemical Name and Synonyms:** *Arsenic metal, granules*  
**Chemical Family:** *Metal*  
**Chemical Formula:** *As*  
**Product Use:** *Laboratory reagent*  
**Manufacturer's Name and Address:**  
*Caledon Laboratories Ltd.*  
*40 Armstrong Avenue*  
*Georgetown, Ontario L7G 4R9*  
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**HAZARDOUS INGREDIENTS OF MATERIALS**

<b>Ingredients</b>	<b>%</b>	<b>TLV Units</b>	<b>CAS No.</b>
<i>Arsenic</i>	<i>99.99</i>	<i>0.01 mg/m<sup>3</sup></i>	<i>7440-38-2</i>

**PHYSICAL DATA**

**Physical State:** *Solid*  
**Odour and Appearance:** *Silver-grey, brittle, crystalline solid, odourless.*  
**Odour Threshold (ppm):** *Not applicable*  
**Vapour Pressure (mm Hg):** *~0*  
**Vapour Density (Air = 1):** *Not applicable*  
**Evaporation Rate:** *Not applicable*  
**Boiling Point (degrees C):** *Not applicable (sublimes)*  
**Melting Point (degrees C):** *613°C (sublimes)*  
**pH:** *Not applicable*  
**Specific Gravity:** *5.727 @ 14°C*  
**Coefficient of Water/Oil distribution:** *Not applicable*

**SHIPPING DESCRIPTION**

**UN:** *1558*  
**T.D.G. Class:** *6.1*  
**Pkg. Group:** *II*

**REACTIVITY DATA**

**Chemical Stability:** *Stable*  
**Incompatibility with other substances:** *May react violently or explosively with acids, oxidizing agents, halogens, halogen gases, halides, halogenates. Reaction with strong acids or bases, in the presence of nascent hydrogen, may produce highly toxic arsine gas*  
**Reactivity:** *Avoid excessive heat, generation of dust, exposure to air, all incompatible materials.*  
**Hazardous Decomposition Products:** *Arsenic oxides, highly toxic arsine gas.*

**FIRE AND EXPLOSION DATA**

**Flammability:** *Not combustible. As dust, presents slight explosion hazard when exposed to flame.*  
**Extinguishing Media:** *Carbon dioxide, dry chemical powder, alcohol or polymer foam. Fight fire from upwind, from a safe distance. Firefighters must wear protective equipment (NIOSH/MSHA approved positive-pressure, full face-piece self-contained breathing apparatus) and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes.*  
**Flash Point (Method Used):** *Not applicable*  
**Autoignition Temperature:** *Not applicable*  
**Upper Flammable Limit (% by volume):** *Not applicable*  
**Lower Flammable Limit (% by volume):** *Not applicable*  
**Hazardous Combustion Products:** *Produces poisonous fumes at high temperatures.*  
**Sensitivity to Impact:** *None identified*  
**Sensitivity to Static discharge:** *Mixtures of dust with air may be sensitive under certain conditions, when ignited by an electrostatic or other high-voltage spark, or other ignition source.*

**TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:**

**LD<sub>50</sub>:** *(oral, rat) 763 mg/kg*  
**LC<sub>50</sub>:** *Not available*

**Effects of Acute Exposure to Product:**

**Inhaled:** *Toxic. Inhalation of fumes or dust may cause irritation of respiratory tract, perforated septum, gastrointestinal disturbances and in severe overexposures, may be fatal. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.*  
**In contact with skin:** *Toxic if absorbed. Not a normal route of exposure.*  
**In contact with eyes:** *Not a normal route of exposure.*  
**Ingested:** *Not a normal route of exposure. Harmful if ingested in sufficient quantities. See "Inhaled"*

**Effects of Chronic Exposure to Product:**

*Chronic overexposure to arsenic compounds may cause skin and eye irritation, peripheral neuritis of the hands and feet, increased risk of lung and skin cancer, damage to liver, kidneys, and nervous system. Symptoms of chronic exposure include weight loss, nausea, diarrhea, weakness, loss of appetite, skin lesions.*  
**Carcinogenicity:** *Carcinogenicity designation A1, confirmed human carcinogen (ACGIH, IARC, NTP)*  
**Teratogenicity:** *Developmental abnormalities, pre and post-implantation mortality in testing with rats (RTECS No. CG0525000)*

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**Reproductive Effects:** No information available**Mutagenicity:** No information available**Synergistic Products:** None known

## PREVENTIVE MEASURES

**Engineering Controls:** Local exhaust required.**Respiratory Protection:** Dust mask. Use only in a fumehood. At concentrations above the NIOSH Recommended Exposure Limit (0.002 mg/m<sup>3</sup>), or at any detectable concentration, NIOSH-approved positive-pressure, full face-piece self-contained breathing apparatus, or positive-pressure, full face-piece supplied-air respirator with auxiliary positive-pressure self-contained breathing apparatus. DO NOT BREATHE DUST.**Eye Protection:** Chemical safety goggles**Skin Protection:** Rubber gloves. Other impervious protective clothing, sleeves, coveralls, boots sufficient to prevent contact.**Other Personal Protective Equipment:** An eyewash and safety shower should be nearby and ready for use.**Leak and Spill Procedure:** Cleanup personnel must be trained in the hazards of this chemical and its safe handling, and must wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Mix with dry lime, soda ash or other inert material. Clean up using a method that does not generate dust. Transfer carefully into container and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.**Waste Disposal:** Follow all federal, provincial and local regulations for disposal.**Handling Procedures and Equipment:** VERY TOXIC, CARCINOGEN, TERATOGEN. Workers using this material should be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Follow routine safe handling procedures. Use the smallest amount possible for the purpose, in a designated area with suitable ventilation. Use good housekeeping practices to prevent accumulations of dust. Avoid contact and inhalation. Keep away from all incompatible materials (see "Incompatibility with other substances").**Storage Requirements:** Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight. Store away from incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from moisture. Protect from damage.

## FIRST AID MEASURES

### Specific Measures:

**Eyes:** Unlikely route of exposure. Flush eyes thoroughly with gently running water, holding eyelids open while flushing, for five to ten (5-10) minutes, or until no trace of chemical remains. Get medical advice if irritation develops.**Skin:** Unlikely route of exposure. Remove contaminated clothing. Brush or wipe off dry material. Wash skin with plenty of water until no evidence of chemical remains. If irritation develops get medical attention.**Inhalation:** Immediately remove to fresh air (caution must be used by rescuers to avoid exposure to contaminating dust or fumes). Give oxygen or get medical attention for any breathing difficulty. If breathing has stopped begin artificial respiration immediately. GET MEDICAL ATTENTION. Onset of symptoms may be delayed; if victim feels unwell during the next 24 hours, get medical attention immediately.**Ingestion:** Unlikely route of exposure. If victim is alert and not convulsing, rinse mouth thoroughly with water, give 1 to 2 glasses of water to drink to dilute. Get medical attention. If spontaneous vomiting occurs, rinse mouth thoroughly with water, and give more water to drink. Onset of symptoms may be delayed; if victim feels unwell during the next 24 hours, get medical attention.

## REFERENCES USED

NIOSH Pocket Guide to Chemical Hazards; Pub. # 2005-151  
CCINFO disc: Cheminfo, MSDS's  
Budavari: The Merck Index, 12th ed., 1997  
Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987  
Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979  
Suppliers' Material Safety Data Sheets

## ADDITIONAL INFORMATION

**Date Issued:** July 15, 1991**Revision:** September 2010**MSDS:** 1980-1**Proposed WHMIS Designation:** D1B; D2A

Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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