

MATERIAL SAFETY DATA SHEET**SODIUM ARSENATE**

PRODUCT CODE NUMBER(S): 7170-1

PRODUCT IDENTIFICATION**Chemical Name and Synonyms:** *Sodium arsenate, heptahydrate***Chemical Family:** *Inorganic salt***Chemical Formula:** *Na₂HAsO₄·7H₂O***Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.**40 Armstrong Avenue**Georgetown, Ontario L7G 4R9***Telephone No:** *(905) 877-0101***Fax No:** *(905) 877-6666***Emergency Telephone No:** *CANUTEC (613) 996-6666***HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Sodium arsenate</i>	<i>98</i>	<i>0.01 mg/m³ (as As)</i>	<i>10048-95-0</i>

PHYSICAL DATA**Physical State:** *Solid***Odour and Appearance:** *Colourless crystals; odourless***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *Not applicable***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate:** *Not applicable***Boiling Point (degrees C):** *150°C (decomposes)***Melting Point (degrees C):** *57°C (rapid heating)***pH:** *8.5-9 (5%, aqueous)***Specific Gravity:** *1.87 @ 20°C***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *1685***T.D.G. Class:** *6.1***Pkg. Group:** *II***REACTIVITY DATA****Chemical Stability:** *Stable. Decomposes slowly on exposure to air.***Incompatibility with other substances:** *Strong acids, strong bases, oxidizing agents, halogens and halogenated compounds, reactive metals.***Reactivity:** *Avoid extreme heat, ignition sources, exposure to air, generation of dust, all incompatible materials.***Hazardous Decomposition Products:** *Toxic fumes of arsenic, arsine vapours, and arsenic oxides***FIRE AND EXPLOSION DATA****Flammability:** *Non combustible***Extinguishing Media:** *Water fog or extinguisher appropriate to the surrounding material that is burning. Use water as**spray or fog to minimize dust, absorb heat, cool containers, and disperse vapours. Fight fire from a distance, from up-wind direction. Firefighters must wear protective equipment (NIOSH 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:** *Toxic fumes of arsenic, and arsenic oxides***Sensitivity to Impact:** *None identified***Sensitivity to Static discharge:** *None identified***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD₅₀:** *(oral, rat) 41 mg/kg; (oral, mouse) 1-20 mg/kg; (im, mouse) 87,360 mg/kg***LD_{Lo}:** *(oral, chd) 2 mg/kg; (sc, guinea pig) 50 mg/kg***LC₅₀:** *Not available***Effects of Acute Exposure to Product:****Poisonous by all routes of exposure.****Inhaled:** *Toxic. Inhalation of fumes or dust may cause irritation of respiratory tract, perforated septum, gastrointestinal disturbances and in severe overexposures, foamy sputum, pulmonary edema and death. 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:** *Irritating. Toxic. Causes redness, itching, pain. Readily absorbed and may be fatal (LD₅₀ by skin absorption: 150 mg/kg). Exposure to arsenic compounds may produce hyperpigmentation of the skin and hyperkeratoses of plantar and palmar surfaces. Lesser exposures may cause skin sensitization.***In contact with eyes:** *Harmful. Causes irritation, watering, possible damage to conjunctiva.***Ingested:** *Poisonous; may be fatal. Causes severe stomach irritation and blood, heart, liver and kidney effects. Toxic symptoms include nervousness, thirst, acute nausea and vomiting, diarrhea, cyanosis, collapse and death. Estimated lethal dose, 120 mg. Soluble arsenic (As) compounds are considered poisonous to humans; inorganic arsenic is more toxic than organic arsenic, as organic arsenic is excreted more rapidly than inorganic; arsenic 5+ is excreted more rapidly than arsenic 3+, making the 3+ form more toxic.***Effects of Chronic Exposure to Product:***Chronic overexposure to arsenic compounds causes 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 ap-*

CODE: 7170-1

petite, garlic odour to the breath, bronzing of the skin, dermatitis, skin lesions.

Carcinogenicity: Carcinogenicity designation A1, confirmed human carcinogen (ACGIH, IARC, NTP)

Teratogenicity: Arsenic compounds produce developmental abnormalities in animal tests (RTECS No. CG0900000).

Reproductive Effects: Harmful effects in animal testing

Mutagenicity: Tests on laboratory animals show mutagenic effects.

Synergistic Products: None known

PREVENTIVE MEASURES

Engineering Controls: Local exhaust ventilation essential.

Respiratory Protection: Dust mask. Use only in a fumehood. At concentrations above the NIOSH Recommended Exposure Limit (0.002 mg/m³), 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 and/or face shield.

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: Evacuate area; ventilate area. 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 inert material. Clean up using a method that does not generate dust; wet if necessary. 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: TOXIC, CARCINOGEN; POSSIBLE TERATOGEN, MUTAGEN, REPRODUCTIVE HAZARD. Workers using this material must 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 possible amount for the purpose, in designated areas with adequate ventilation. Use good housekeeping practices to prevent accumulations of dust. Avoid contact and inhalation. Do not eat or drink in work area. Keep containers closed when not in use and when empty. Keep away from all incompatible materials (see "Incompatibility with other substances"). Wash thoroughly after working with this substance.

Storage Requirements: Store in suitable, labelled containers, in a cool, dry, well-ventilated area, out of direct sunlight, and away from incompatible materials. Keep containers tightly closed when not in use and when empty. Protect from damage.

FIRST AID MEASURES

Specific Measures:

Eyes: IMMEDIATELY flush eyes with gently running water for at least twenty (20) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear protective gloves to avoid contact with

material during first aid procedures. Get medical attention immediately.

Skin: Remove contaminated clothing, including watches, rings, belts, and shoes. Drench skin with plenty of running water for at least fifteen (15) minutes. Get medical attention. Wear protective gloves to avoid contact. Decontaminate clothing before reuse, or discard (inform laundry personnel of hazard).

Inhalation: IMMEDIATELY remove to fresh air (caution must be used by rescuers to avoid exposure to the contaminating fumes). Get medical attention and give oxygen for any breathing difficulty. If breathing has stopped give artificial respiration. If breathing and pulse are absent, give CPR. Care should be taken to avoid contact with toxic residue during first aid procedures; use a shield if possible, or at least wipe mouth area thoroughly before contact is established. IMMEDIATELY CONTACT A PHYSICIAN. Stay with casualty until medical help arrives. Onset of symptoms may be delayed; if victim feels unwell during the next 24 hours, get medical attention immediately.

Ingestion: GET MEDICAL ATTENTION. IMMEDIATELY. If victim is alert and not convulsing, rinse mouth thoroughly with water, give 2 to 4 glasses of water to drink to dilute, and induce vomiting, under medical supervision, by sticking a finger down the throat, or by giving syrup of ipecac. If spontaneous vomiting occurs, rinse mouth thoroughly with water, and give 2 to 4 more glasses of water to drink. Onset of symptoms may be delayed; if victim feels unwell during the next 24 hours, get medical attention immediately.

Note to physician: If emesis is unsuccessful after two doses of ipecac, consider gastric lavage. Monitor urine arsenic level. Alkalinization of urine may help prevent disposition of red cell breakdown products in renal cell tubular cells. Abdominal x-rays should be done for all ingestions. Chelation therapy with BAL, followed by n-penicillamine may be useful, but dosing guidelines are not clearly established.

REFERENCES USED

- NIOSH Pocket Guide to Chemical Hazards; Pub. # 2005-151 CCINFO disc: Cheminfo, MSDS's
- Budavari: The Merck Index, 12th ed., 1997
- Royal Society of Chemistry: Chemical Safety Data Sheets, Vol. 2, 1989
- Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987
- Suppliers' Material Safety Data Sheets

ADDITIONAL INFORMATION

Date Issued: August 6, 1991

Revision: September 2010

MSDS: 7170-1

Proposed WHMIS Designation: D1A; D2A; D2B

Prepared by: Caledon Laboratories Ltd. (905) 877-0101
Caledon Laboratories Ltd. believes the information contained herein is reliable and accurate. Caledon makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such information is solely for your consideration, investigation, and verification.