Health	3
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet

Arsenic trioxide MSDS

Section 1: Chemical Product and Company Identification

Product Name: Arsenic trioxide

Catalog Codes: SLA3175, SLA4678

CAS#: 1327-53-3

RTECS: CG3325000

TSCA: TSCA 8(b) inventory: Arsenic trioxide

CI#: Not applicable.

Synonym: Arsenic oxide; Arsenic Trioxide

Chemical Name: Diarsenic trioxide

Chemical Formula: As2O3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Arsenic trioxide	1327-53-3	100

Toxicological Data on Ingredients: Arsenic trioxide: ORAL (LD50): Acute: 14.6 mg/kg [Rat.]. 31.5 mg/kg [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, liver, cardiovascular system, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available. Slightly explosive in presence of heat.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards:
When heated to decomposition it emits toxic fumes. Arsenic trioxide + sodium chlorate for a spontaneously flammable mixture. Hydrogen fluoride + Arsenic trioxde react with incandescence.

Special Remarks on Explosion Hazards: Arsenic trioxide + zinc will explode on heating.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, metals, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Do not store above 24°C (75.2°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.05 (mg(AS)/m) [Canada] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Amorphous solid powder or lumps.)

Odor: Odorless.

Taste: Tasteless.

Molecular Weight: 197.84 g/mole

Color: White.

pH (1% soln/water): Not available.

Boiling Point: 465°C (869°F)

Melting Point: 312.3°C (594.1°F)

Critical Temperature: Not available.

Specific Gravity: 3.74 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility:

Partially soluble in cold water, hot water. Very slightly soluble in diethyl ether. Soluble in dilute hydrochloric acid, in alkali hydroxide. Soluble in carbonate solution. Practically insoluble in alcohol. Practically insoluble in chloroform. Soluble in gylcerin.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, moisture, dust generation, excess heat

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Dangerous when heated to decomposition. It emits toxic fumes of Arsenic. Dissolves in alkali to form arsenites. Incompatible with tannic acid, infusion of Chincona & other vegetable astringent infusions & decoctions, iron (in solution). Forms toxic volatile halides in contact in contact with halide acids. Forms volatile, highly toxic Arsine when reduced in acid solution. A vigorous reaction occurs between Oxygen Difluoride, Aluminum Chloride and Arsenic Trioxide. Chlorine Trifluoride + Arsenic Trioxide produces a violent reaction without flame. Can generate Arsine, which is an extremely poisonous gas, when arsenic compounds contact acid, alkalies, or water in the presence of an active metal (zinc, aluminum, manganese, sodium, iron, etc.)

Special Remarks on Corrosivity: Corrosive to metals in presence of moisture.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 14.6 mg/kg [Rat.].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A1 (Confirmed for human.) by ACGIH, 1 (Proven for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. TERATOGENIC EFFECTS: Classified POSSIBLE for human. May cause damage to the following organs: blood, kidneys, liver, cardiovascular system, central nervous system (CNS).

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
Passes through the placental barrier in human. May affect genetic material. May cause adverse reproductive (paternal and maternal effects as well as fetotoxicity or post implantation mortality) and birth defects (teratogen). May cause cancer (tumorigenic)

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Eyes: May cause eye irritation. May also affect vision. Inhalation: May cause respiratory tract irritation with sore throat, coughing, shortness of breath, and delayed lung edema. Ingestion: May be fatal if swallowed. Causes severe digestive tract irritation. Symptoms may include garlic-like odor of breath, garlic taste, possible bloody diarrhea, Mee's Lines (transverse white lines on nails), abdominal pain, nausea, vomiting. May also affect the liver, blood (anemia, hemolysis, pancytopenia), urinary tract (Kidneys), cardiovascular system (lowering of blood pressure and changes in EKG), behavior/Central Nervous System, metabolsim, and brain. Chronic Potential Health Effects: Skin: May cause dermatitis. symptoms may include cracking, thickening, pigmentation and drying of the skin. Eyes: May cause irritation, and affect vision (photophobia, dimness of vision, diplopia).

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Arsenic trioxide UNNA: 1561 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Arsenic trioxide California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Arsenic trioxide California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Arsenic trioxide Connecticut hazardous material survey.: Arsenic trioxide Illinois chemical safety act: Arsenic trioxide New York release reporting list: Arsenic trioxide Rhode Island RTK hazardous substances: Arsenic trioxide Pennsylvania RTK: Arsenic trioxide Massachusetts RTK: Arsenic trioxide Massachusetts spill list: Arsenic trioxide New Jersey: Arsenic trioxide New Jersey spill list: Arsenic trioxide Louisiana RTK reporting list: Arsenic trioxide Louisiana spill reporting: Arsenic trioxide California Director's List of Hazardous Substances: Arsenic trioxide TSCA 8(b) inventory: Arsenic trioxide SARA 302/304/311/312 extremely hazardous substances: Arsenic trioxide SARA 313 toxic chemical notification and release reporting: Arsenic trioxide CERCLA: Hazardous substances.: Arsenic trioxide: 1 lbs. (0.4536 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R28- Very toxic if swallowed. R36/38- Irritating to eyes and skin. R45- May cause cancer. S1/2- Keep locked up and out of the reach of children. S28- After contact with skin, wash immediately with plenty of [***] S36/37- Wear suitable protective clothing and gloves. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label. S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -Liste des produits purs tÃ©ratogÃ¨nes, mutagÃ¨nes, cancÃ©rogÃ¨nes. RÃ©pertoire toxicologique de la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -Material safety data sheet emitted by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du rÃ¨glement sur le transport des marchandises dangeureuses au canada. Centre de conformitÃ© internatinal LtÃ©e. 1986.

Other Special Considerations: Not available.

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