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## SAFETY DATA SHEET

Section 1- IDENTIFICATION		
COMPOSITION <b>As</b>		PRODUCT NAME <b>Arsenic</b>
SUPPLIER: <b>Plasmaterials, Inc.</b> <b>2268 Research Drive</b> <b>Livermore, CA 94550</b> <b>Ph: 925-447-4030</b>	RECOMMENDED USE: <b>Laboratory Chemicals</b> <b>Scientific Research</b>	EMERGENCY TELEPHONE NUMBERS <b>US: 001-800-424-9300</b> <b>Europe: 001-703-527-3887</b>

Section 2- HAZARD(S) IDENTIFICATION	
<b>Classification:</b> This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)	
<b>Acute Oral Toxicity:</b> Category 4 (H302)	<b>Acute Inhalation Toxicity:</b> Category 3 (H331)
<b>Acute Aquatic Toxicity:</b> Category 1 (H400)	<b>Chronic Aquatic Toxicity:</b> Category 1 (H410)
<b>LABEL ELEMENTS: Signal Word: Danger</b>	
	
<b><u>HAZARD STATEMENTS</u></b>	
-H302: Harmful if swallowed -H331: Toxic if inhaled -H400: Very toxic to aquatic life -H410: Very toxic to aquatic life with long lasting effects	
<b><u>PRECAUTIONARY STATEMENTS</u></b>	
-P261: Avoid breathing dust, fume, gas, mist, vapors, spray -P264: Wash skin thoroughly after handling -P270: Do not eat, drink or smoke when using this product -P271: Use only outdoors or in a well-ventilated area -P273: Avoid release to the environment -P301+P312+P330: IF SWALLOWED: Call a Poison Center/Doctor if you feel unwell. Rinse mouth -P304+P340+P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a Poison Center/Doctor -P391: Collect spillage -P403+P233: Store in a well-ventilated place. Keep container tightly closed. -P405: Store locked up -P501: Dispose of contents/container to an approved waste disposal plant	
<b>Hazards not otherwise classified (HNOC):</b>	
-None identified.	

### Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Molecular Weight
Arsenic	7440-38-2	74.92 g/mol

### Section 4- FIRST AID MEASURES

**General Advice:** Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

**Inhalation:** Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician.

**Skin Contact:** Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Take victim immediately to the hospital. Consult a physician.

**Eye Contact:** As a precaution, flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes.

**Ingestion:** Rinse mouth with water. Never give anything by mouth to an unconscious person. Consult a physician.

**Most Important Symptoms/Effects:** The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11.

**Indication of any Immediate Medical Attention and Special Treatment Needed:** No data available

### Section 5- FIREFIGHTING MEASURES

**Suitable Extinguishing Media:**

Carbon Dioxide (CO<sub>2</sub>); Dry Chemical, Water Spray, alcohol-resistant foam

**Unsuitable Extinguishing Media:**

No Information Available

**Specific Hazards Arising from the Chemical:**

No data available.

**Protective Equipment & Precautions for Firefighters:**

As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

### Section 6- ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Ensure adequate ventilation. Wear respiratory protection. Avoid dust formation. Avoid breathing dust, vapors, mist or gas. Evacuate personnel to safe areas.

**Environmental Precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided. See Section 12 for additional ecological information.

**Methods for Containment & Clean Up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### Section 7- HANDLING AND STORAGE

**Handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

**Storage:**

Keep in a dry and well ventilated place. Keep container tightly closed.

## Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines:

#### Components with Workplace Control Parameters:

Component	CAS-No.	Value	Control Parameters	Basis
Arsenic	7440-38-2	TWA	0.01 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lung Cancer Substances for which there is a Biological Exposure Index or Indices (See BEI® Section) Confirmed Human Carcinogen		
		C	0.0020 mg/m <sup>3</sup>	USA.NIOSH recommended exposure limits
		Potential Occupational Carcinogen See Appendix A 15 Minute Ceiling Value		

#### Biological Occupational Exposure Limits:

Component	CAS-No.	Parameters	Value	Biological Specimen	Basis
Arsenic	7440-38-2	Inorganic Arsenic plus methylated metabolites	35µg As/I	In Urine	ACGIH-Biological Exposure Indices (BEI)
	Remarks	End of the work week (After four or five consecutive working days with exposure)			

**Engineering Measures:** Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Wash hands before breaks, at the end of the workday and immediately after handling the product.

#### Personal Protective Equipment:

**Eye/Face Protection:** Safety glasses and face shield. Use equipment for eye protection tested and approved under appropriate standards such as NIOSH (US) or EN 166 (EU).

**Skin and Body Protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory Protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EU EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of Environmental Exposure:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## Section 9- PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Powder

**Appearance:** Grey

**Odor:** No information available

**Odor Threshold:** No information available

**pH:** No information available

**Melting Point/Range:** 817°C / 1,503°F

**Boiling Point/Range:** 613°C / 1,135°F

**Flash Point:** Not applicable

**Evaporation Rate:** No information available

**Flammability (solid,gas):** No information available

**Flammability or Exposure Limits:**

**Upper:** No data available

**Lower:** No data available

**Vapor Pressure:** No information available

**Vapor Density:** No information available  
**Relative Density:** 5.727 g/cm<sup>3</sup> at 25°C / 77°F  
**Solubility:** No information available  
**Partition coefficient; n-octanol/water:** No information available  
**Auto Ignition Temperature:** No information available  
**Decomposition Temperature:** No information available  
**Viscosity:** No information available  
**Explosive Properties:** No information available  
**Oxidizing Properties:** No information available

## Section 10- STABILITY AND REACTIVITY

**Reactive Hazard:** No data available.

**Stability:** Stable under recommended storage conditions.

**Conditions to Avoid:** Heat exposure to air may affect product quality

**Incompatible Materials:** Oxidizing agents, halogens, palladium undergoes a violent reaction with arsenic, zinc, platinum oxide, nitrogen trichloride, bromine azide

**Hazardous Decomposition Products:**

Hazardous decomposition products formed under fire conditions-Arsenic Oxide  
 Other decomposition products-No information available

**Hazardous Reactions:** No information available

## Section 11- TOXICOLOGICAL INFORMATION

**Acute Toxicity:**

**Product Information/Component Information:**

Component	LD50 Oral	Dermal	Inhalation
Arsenic	Rat = 763 mg/kg Remarks: Behavioral: Ataxia, Diarrhea	No Data Available	No Data Available
	Mouse = 145 mg/kg Remarks: Behavioral: Ataxia, Diarrhea		

**Skin Corrosion/Irritation:** No information available

**Serious eye damage/irritation:** No information available

**Respiratory or Skin Sensitization:** No information available

**Carcinogenicity:** This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP or EPA classification.

-IARC: 1 – Group 1: Carcinogenic to humans (Arsenic)

-NTP: Known to be human carcinogen (Arsenic)

-OSHA: OSHA specifically regulated carcinogen (Arsenic)

**Mutagenic Effects:** No information available

**Reproductive Effects:** No information available

**Development Effects:** No information available

**STOT – single exposure:** No information available

**STOT – repeated exposure:** No information available

**Aspiration Hazard:** No information available

**Additional Information: (RTECS: CG0525000):** 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. Stomach irregularities –based on human evidence.

## Section 12- ECOLOGICAL INFORMATION

### Toxicity:

**Toxicity to fish:** LC50-Pimephales promelas (fathead minnow) – 9.9 mg/l – 96.0 h

**Toxicity to daphnia and other aquatic invertebrates:** EC50-Daphnia magna (water flea) – 3.8 mg/l – 48 h

**Persistence and Degradability:** No information available

**Bioaccumulation/Accumulation:** No information available

**Mobility in Soil:** No information available

**Results of PBT and vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**Other Adverse Effects:** Very toxic to aquatic life with long lasting effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

## Section 13- DISPOSAL CONSIDERATIONS

**Waste Disposal Methods:** Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dispose of contaminated packaging as unused product. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

## Section 14- TRANSPORT INFORMATION

### DOT:

**UN-No:** 1558

**Proper Shipping Name:** Arsenic

**Hazard Class:** 6.1

**Packing Group:** II

**Reportable Quantity (RQ):** 1 lbs

**Poison Inhalation Hazard:** No

### IATA:

**UN-No:** 1558

**Proper Shipping Name:** Arsenic

**Hazard Class:** 6.1

**Packing Group:** II

### IMDG/IMO:

**UN-No:** 1558

**Proper Shipping Name:** Arsenic

**Hazard Class:** 6.1

**Packing Group:** II

**EMS-No:** F-A, S-A

**Marine Pollutant:** Yes

## Section 15- REGULATORY INFORMATION

### US Federal Regulations:

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**SARA 313:** The following components are subject to reporting levels established by SARA Title III, Section 313:

Component	CAS No.	Revision Date
Arsenic	7440-38-2	2007-07-01

**SARA 311/312 Hazards:** Acute Health Hazard, Chronic Health Hazard

### HMIS (USA):

**Health Hazard:** 2

**Chronic Health Hazard:** \*

**Flammability:** 0

**Physical Hazard:** 0  
**National Fire Protection Association (USA):**  
**Health Hazard:** 2  
**Fire Hazard:** 0  
**Reactivity Hazard:** 0

**US California Proposition 65:** WARNING! This product contains a chemical known to the State of California to cause cancer.

Component	CAS No.	Revision Date
Arsenic	7440-38-2	2008-10-10

**US Massachusetts RTK – Substance List:**

Component	CAS No.	Revision Date
Arsenic	7440-38-2	2007-07-01

**US New Jersey Right-to-Know Act:**

Component	CAS No.	Revision Date
Arsenic	7440-38-2	2007-07-01

**US Pennsylvania RTK – Hazardous Substances:**

Component	CAS No.	Revision Date
Arsenic	7440-38-2	2007-07-01

## Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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