## SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. **Product identifier**

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Substance name</td>
<td>TRIS(DIMETHYLAMINO)ARSINE</td>
</tr>
<tr>
<td>Product code</td>
<td>OMAS080</td>
</tr>
<tr>
<td>Formula</td>
<td>C₆H₁₈AsN₃</td>
</tr>
<tr>
<td>Synonyms</td>
<td>HEXAMETHYLARSENOUSTRIAMIDE</td>
</tr>
<tr>
<td>Chemical family</td>
<td>ARSENIC COMPOUND</td>
</tr>
</tbody>
</table>

1.2. **Relevant identified uses of the substance or mixture and uses advised against**

- **Use of the substance/mixture**: Chemical intermediate
- **For research use only**

1.3. **Details of the supplier of the safety data sheet**

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA
T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com - www.gelest.com

1.4. **Emergency telephone number**

- **Emergency number**: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

## SECTION 2: Hazards identification

2.1. **Classification of the substance or mixture**

<table>
<thead>
<tr>
<th>Classification (GHS-US)</th>
<th>H₂₂₆</th>
<th>H₃₀₁</th>
<th>H₃₁₅</th>
<th>H₃₁₉</th>
<th>H₃₃₅</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H₂₂₆</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute Tox. 3 (Oral)</td>
<td>H₃₀₁</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>H₃₁₅</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye Irrit. 2A</td>
<td>H₃₁₉</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H₃₃₅</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

2.2. **Label elements**

**GHS-US labeling**

- **Hazard pictograms (GHS-US)**: ![GHS02](image), ![GHS06](image), ![GHS07](image)

- **Signal word (GHS-US)**: Danger

- **Hazard statements (GHS-US)**:
  - H₂₂₆ - Flammable liquid and vapor
  - H₃₀₁ - Toxic if swallowed
  - H₃₁₅ - Causes skin irritation
  - H₃₁₉ - Causes serious eye irritation
  - H₃₃₅ - May cause respiratory irritation

- **Precautionary statements (GHS-US)**:
  - P₂₈₀ - Wear protective gloves/protective clothing/eye protection/face protection
  - P₂₁₀ - Keep away from heat, open flames, sparks. - No smoking
  - P₂₄₀ - Ground/bond container and receiving equipment
  - P₂₄₁ - Use explosion-proof electrical equipment
  - P₂₄₂ - Use only non-sparking tools
  - P₂₄₃ - Take precautionary measures against static discharge
  - P₂₆₁ - Avoid breathing vapors
  - P₂₆₄ - Wash hands thoroughly after handling
  - P₂₇₀ - Do not eat, drink or smoke when using this product
  - P₂₇₁ - Use only outdoors or in a well-ventilated area
  - P₃₃₀ - Rinse mouth
  - P₃₀₁+P₃₁₀ - If swallowed: Immediately call a doctor
  - P₃₀₃+P₃₆₁+P₃₅₃ - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower
TRIS(DIMETHYLAMINO)ARSINE  
Safety Data Sheet  

2.3. Other hazards  
No additional information available  

2.4. Unknown acute toxicity (GHS US)  
No data available  

SECTION 3: Composition/information on ingredients  

3.1. Substance  
Substance type : Mono-constituent  
Name : TRIS(DIMETHYLAMINO)ARSINE  
CAS No : 6596-96-9  

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
</table>
| Tris(dimethylamino)arsine     | (CAS No) 6596-96-9   | > 95| Flam. Liq. 3, H226  
|                               |                      |     | Acute Tox. 3 (Oral), H301  
|                               |                      |     | Skin Irrit. 2, H315  
|                               |                      |     | Eye Irrit. 2A, H319  
|                               |                      |     | STOT SE 3, H335 |

3.2. Mixture  
Not applicable  

SECTION 4: First aid measures  

4.1. Description of first aid measures  
First-aid measures general : Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. Call a POISON CENTER or doctor/physician.  
First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.  
First-aid measures after skin contact : Wash with plenty of soap and water. Get immediate medical advice/attention.  
First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.  
First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Obtain emergency medical attention.  

4.2. Most important symptoms and effects, both acute and delayed  
Symptoms/injuries after inhalation : May cause respiratory irritation.  
Symptoms/injuries after skin contact : Causes skin irritation.  
Symptoms/injuries after eye contact : Causes serious eye irritation.  
Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Acute arsenic poisoning from ingestion results in marked irritation of the stomach and intestines with nausea, vomiting and diarrhea. In severe cases the vomitus and stools are bloody and the victim goes into shock with weak rapid pulse, cold sweats, coma and death.  
Chronic symptoms : Chronic arsenic poisoning may cause disturbances of the digestive system such as loss of appetite, cramps, nausea, constipation or diarrhea.  

4.3. Indication of any immediate medical attention and special treatment needed  
No additional information available  

SECTION 5: Firefighting measures  

5.1. Extinguishing media  
Unsuitable extinguishing media : Water.  

5.2. Special hazards arising from the substance or mixture  
Fire hazard : Flammable liquid and vapor. Toxic fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.
TRIS(DIMETHYLAMINO)ARSINE
Safety Data Sheet

5.3. Advice for firefighters
Firefighting instructions: Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.
Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapor and mist.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel
Protective equipment: Wear protective equipment as described in Section 8.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
For containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for cleaning up: Utilizing full life-protection procedures for skin and inhalation hazard. Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage
7.1. Precautions for safe handling
Additional hazards when processed: Keep away from any possible contact with water, because of violent reaction and possible flash fire.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors. Ground/bond container and receiving equipment. Take precautionary measures against static discharge. Do not allow hydrolyzed solids to accumulate in work areas. Avoid contact with water. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities
Technical measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.
Storage conditions: Keep container tightly closed. Keep in a cool place. Store locked up.
Incompatible materials: Water.
Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)
No additional information available

SECTION 8: Exposure controls/personal protection
8.1. Control parameters
Tris(dimethylamino)arsine (6596-96-9)
USA OSHA
OSHA PEL (TWA) (mg/m³) 0.5 mg/m³ arsenic (organic compounds)

8.2. Exposure controls
Appropriate engineering controls: Provide local exhaust or general room ventilation.
Personal protective equipment: Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Hand protection: Neoprene or nitrile rubber gloves.
Eye protection: Chemical goggles or face shield. Contact lenses should not be worn.
Skin and body protection: Wear suitable protective clothing.
**Respiratory protection**: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>207.15 g/mol</td>
</tr>
<tr>
<td>Color</td>
<td>Straw</td>
</tr>
<tr>
<td>Odor</td>
<td>Amine, fishy</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Refractive index</td>
<td>1.4848</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>-53 °C</td>
</tr>
<tr>
<td>Boiling point</td>
<td>55 °C @ 10 mm Hg</td>
</tr>
<tr>
<td>Flash point</td>
<td>&lt; 60 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>&lt; 2 mm Hg @ 20 °C</td>
</tr>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.1248</td>
</tr>
<tr>
<td>VOC content</td>
<td>&lt; 5 %</td>
</tr>
<tr>
<td>Solubility</td>
<td>Reacts with water</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Kow</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### 9.2. Other information

No additional information available

### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

Stable.

#### 10.3. Possibility of hazardous reactions

Avoid contact with water. Material decomposes slowly in contact with air by reaction with water, liberating dimethylamine and arsenic oxides (arsenic acids).

#### 10.4. Conditions to avoid

Heat. Open flame. Sparks.

#### 10.5. Incompatible materials

Water.

#### 10.6. Hazardous decomposition products

Arsenic oxide (arsenic acid) fumes. Dimethylamine.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

**Acute toxicity**: Oral: Toxic if swallowed.

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRIS(DIMETHYLAMINO)ARSINE (6596-96-9)</strong></td>
<td></td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>105.263 mg/kg body weight</td>
</tr>
</tbody>
</table>
TRIS(DIMETHYLAMINO)ARSINE
Safety Data Sheet

TRIS(DIMETHYLAMINO)ARSINE (6596-96-9)

Toxicity information: 48 mg/kg LD50 oral rat: This product is expected to form arsenic acids on ingestion.

Tris(dimethylamino)arsine (6596-96-9)

<table>
<thead>
<tr>
<th>ATE US (oral)</th>
<th>100.000 mg/kg body weight</th>
</tr>
</thead>
</table>

Skin corrosion/irritation: Causes skin irritation.
Serious eye damage/irritation: Causes serious eye irritation.
Respiratory or skin sensitization: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified

Arsenic acids are reported human carcinogens. The related compound tris(dimethylamino)phosphine is a reported carcinogen.

Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): May cause respiratory irritation.
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified
Symptoms/injuries after inhalation: May cause respiratory irritation.
Symptoms/injuries after skin contact: Causes skin irritation.
Symptoms/injuries after eye contact: Causes serious eye irritation.
Symptoms/injuries after ingestion: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Acute arsenic poisoning from ingestion results in marked irritation of of the stomach and intestines with nausea, vomiting and diarrhea. In severe cases the vomitus and stools are bloody and the victim goes into shock with weak rapid pulse, cold sweats, coma and death.

Chronic symptoms: Chronic arsenic poisoning may cause disturbances of the digestive system such as loss of appetite, cramps, nausea, constipation or diarrhea.

Reason for classification: Expert judgment

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Other adverse effects
Other adverse effects: This substance may be hazardous to the environment.
Effect on ozone layer: No additional information available
Effect on the global warming: No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Sewage disposal recommendations: Do not dispose of waste into sewer.
Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT): 2929
DOT NA no.: UN2929

14.2. UN proper shipping name
Proper Shipping Name (DOT): Toxic liquids, flammable, organic, n.o.s. (TRIS(DIMETHYLAMINO)ARSINE)
TRIS(DIMETHYLAMINO)ARSINE
Safety Data Sheet

Hazard labels (DOT) : 6.1 - Poison
                      3 - Flammable liquid

DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : II - Medium Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 153
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243

14.3. Additional information
Other information : No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : B - (i) The material may be stowed “on deck” or “under deck” on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) “On deck only” on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

DOT Vessel Stowage Other : 40 - Stow “clear of living quarters”

Air transport
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

SECTION 15: Regulatory information

15.1. US Federal regulations
TRIS(DIMETHYLAMINO)ARSINE (6596-96-9)

TSCA Exemption/Exclusion : CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

Tris(dimethylamino)arsine (6596-96-9)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations
No additional information available

15.3. US State regulations
TRIS(DIMETHYLAMINO)ARSINE (6596-96-9)

| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

Tris(dimethylamino)arsine (6596-96-9)

| U.S. - California - Proposition 65 - Carcinogens List | No |
| U.S. - California - Proposition 65 - Developmental Toxicity | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

No significance risk level (NSRL)
SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development.

Full text of H-phrases:

<table>
<thead>
<tr>
<th>Acute Tox. 3 (Oral)</th>
<th>Acute toxicity (oral) Category 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2A</td>
<td>Serious eye damage/eye irritation Category 2A</td>
</tr>
<tr>
<td>Flamm. Liq. 3</td>
<td>Flammable liquids Category 3</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
<td>Skin corrosion/irritation Category 2</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity (single exposure) Category 3</td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapor</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
</tr>
</tbody>
</table>

HMIS III Rating

Health: 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability: 3 Serious Hazard

Physical: 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 08/20/2015

Version: 1.0

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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