SECTION 1: Identification

1.1. Identification

Product name: ALUMATRANE, tech-90
Product code: AKA005
Product form: Substance
Physical state: Solid
Formula: C6H12AlNO3
Synonyms: TRIETHANOLAMINE ALUMINATE; 2,2',2''-NITRILOTRIETHOXIDE ALUMINUM
Chemical family: METAL COMPOUND

1.2. Recommended use and restrictions on use

Recommended use: Chemical intermediate

1.3. Supplier

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: Hazard(s) Identification

2.1. Classification of the substance or mixture

GHS-US classification

Serious eye damage/eye irritation Category 2A   H319   Causes serious eye irritation
Full text of H statements: see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US):

Signal word (GHS US): Warning
Hazard statements (GHS US): H319 - Causes serious eye irritation
Precautionary statements (GHS US):

P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.

2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type: Mono-constituent
Name: ALUMATRANE, tech-90
CAS-No.: 21863-06-9

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumatrane</td>
<td>(CAS-No.) 21863-06-9</td>
<td>90 - 100</td>
<td>Eye Irrit. 2A, H319</td>
</tr>
</tbody>
</table>

Full text of hazard classes and H-statements: see section 16

3.2. Mixtures

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.

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact: Wash with plenty of soap and water. Get 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 medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation: May cause irritation to the respiratory tract.

Symptoms/effects after skin contact: May cause skin irritation.

Symptoms/effects after eye contact: Causes serious eye irritation.

Symptoms/effects after ingestion: No information available.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media


Unsuitable extinguishing media: Do not use straight streams.

5.2. Specific hazards arising from the chemical

Fire hazard: Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions: Exercise caution when fighting any chemical fire.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

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 product 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: Sweep or shovel spills into appropriate container for disposal.

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

Precautions for safe handling: Avoid contact with skin and eyes. Avoid dust formation. Do not breathe dust. Do not allow dust to accumulate in work areas. Provide local exhaust or general room ventilation to minimize exposure to dust.

Hygiene measures: Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed.

Incompatible materials: Strong oxidizers.
ALUMATRANE, tech-90
Safety Data Sheet

Storage area : Store in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters
No additional information available

8.2. Appropriate engineering controls
Appropriate engineering controls : Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

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. 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 dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
Physical state : Solid
Appearance : Powder.
Molecular mass : 173.15 g/mol
Color : Off-white to yellow.
Odor : Very slight.
Odor threshold : No data available
Refractive index : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : < 1
Melting point : No data available
Freezing point : No data available
Boiling point : 280 °C @ 13 mm Hg sub
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : < 2 mm Hg @ 100°C
Relative vapor density at 20 °C : No data available
Relative density : 1.05
% Volatiles : < 1 %
Solubility : Slightly. Soluble in water. Reacts slowly with water.
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosion limits : No data available

9.2. Other information
No additional information available
**SECTION 10: Stability and reactivity**

<table>
<thead>
<tr>
<th>10.1.</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.2.</td>
<td>Chemical stability</td>
</tr>
<tr>
<td></td>
<td>Stable.</td>
</tr>
<tr>
<td>10.3.</td>
<td>Possibility of hazardous reactions</td>
</tr>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.4.</td>
<td>Conditions to avoid</td>
</tr>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>10.5.</td>
<td>Incompatible materials</td>
</tr>
<tr>
<td></td>
<td>Strong oxidizers.</td>
</tr>
<tr>
<td>10.6.</td>
<td>Hazardous decomposition products</td>
</tr>
</tbody>
</table>

**SECTION 11: Toxicological information**

<table>
<thead>
<tr>
<th>11.1.</th>
<th>Information on toxicological effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity                  : Not classified</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation       : Not classified</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/irritation   : Causes serious eye irritation.</td>
<td></td>
</tr>
<tr>
<td>Respiratory or skin sensitization : Not classified</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity          : Not classified</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity                 : Not classified</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity           : Not classified</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure : Not classified</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure : Not classified</td>
<td></td>
</tr>
<tr>
<td>Aspiration hazard               : Not classified</td>
<td></td>
</tr>
<tr>
<td>Symptoms/effects after inhalation : May cause irritation to the respiratory tract.</td>
<td></td>
</tr>
<tr>
<td>Symptoms/effects after skin contact : May cause skin irritation.</td>
<td></td>
</tr>
<tr>
<td>Symptoms/effects after eye contact : Causes serious eye irritation.</td>
<td></td>
</tr>
<tr>
<td>Symptoms/effects after ingestion : No information available.</td>
<td></td>
</tr>
<tr>
<td>Reason for classification       : Expert judgment</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 12: Ecological information**

<table>
<thead>
<tr>
<th>12.1.</th>
<th>Toxicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.2.</td>
<td>Persistence and degradability</td>
</tr>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.3.</td>
<td>Bioaccumulative potential</td>
</tr>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.4.</td>
<td>Mobility in soil</td>
</tr>
<tr>
<td></td>
<td>No additional information available</td>
</tr>
<tr>
<td>12.5.</td>
<td>Other adverse effects</td>
</tr>
<tr>
<td>Effect on the ozone layer       : No additional information available</td>
<td></td>
</tr>
</tbody>
</table>

**SECTION 13: Disposal considerations**

<table>
<thead>
<tr>
<th>13.1.</th>
<th>Disposal methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage disposal recommendations : Do not dispose of waste into sewer.</td>
<td></td>
</tr>
<tr>
<td>Product-Packaging disposal recommendations : Dispose of solid materials or residues at a licensed site. Dispose in a safe manner in accordance with local/national regulations.</td>
<td></td>
</tr>
<tr>
<td>Ecology - waste materials        : Avoid release to the environment.</td>
<td></td>
</tr>
</tbody>
</table>
SECTION 14: Transport information

14.1. UN number
Not regulated for transport.

14.2. UN proper shipping name
Not applicable

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

Transport by sea
No additional information available

Air transport
No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Alumatrane (21863-06-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA
Alumatrane (21863-06-9)
Listed on the Canadian NDSL (Non-Domestic Substances List)

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Full text of H-phrases:

H319 | Causes serious eye irritation

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; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor.

Hazard Rating
Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 1 Slight Hazard - Materials that must be preheated before ignition will occur. Includes liquids, solids and semi solids having a flash point above 200 F. (Class IIIB)
Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Prepared by safety and environmental affairs.

Date of issue: 04/14/2016 Version: 1.0
ALUMATRANE, tech-90
Safety Data Sheet

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

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

© 2019 Gelest Inc. Morrisville, PA 19067