1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name: Trimethylaluminum

Product Number: 257222
Brand: Aldrich
Index-No.: 013-004-00-2

CAS-No.: 75-24-1

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

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone: +1 800-325-5832
Fax: +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone #: +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Pyrophoric liquids (Category 1), H250
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word: Danger

Hazard statement(s)

H250 Catches fire spontaneously if exposed to air.
H260 In contact with water releases flammable gases which may ignite spontaneously.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P222 Do not allow contact with air.
P223 Do not allow contact with water.
Handle under inert gas. Protect from moisture.
Wash skin thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immerse in cool water/wrap in wet bandages.
IF ON SKIN (or hair): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Store in a dry place. Store in a closed container.
Store locked up.
Dispose of contents/container to an approved waste disposal plant.

Reacts violently with water.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

**Synonyms**: Aluminum trimethanide (TMA)

**Formula**: \( C_3H_9Al \)

**Molecular weight**: 72.09 g/mol

**CAS-No.**: 75-24-1

**EC-No.**: 200-853-0

**Index-No.**: 013-004-00-2

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethylaluminium</td>
<td>Pyr. Liq. 1; Water-react. 1; Skin Corr. 1B; Eye Dam. 1; H250, H260, H314, H318</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

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

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available

5. **FIREFIGHTING MEASURES**

5.1 **Extinguishing media**

Suitable extinguishing media
Dry powder

5.2 **Special hazards arising from the substance or mixture**
No data available

5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 **Further information**
No data available

6. **ACCIDENTAL RELEASE MEASURES**

6.1 **Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 **Environmental precautions**
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 **Methods and materials for containment and cleaning up**
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water.

6.4 **Reference to other sections**
For disposal see section 13.

7. **HANDLING AND STORAGE**

7.1 **Precautions for safe handling**
Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Never allow product to get in contact with water during storage.
Handle and store under inert gas. Air sensitive.
Storage class (TRGS 510): Pyrophoric and self-heating hazardous materials

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. **EXPOSURE CONTROLS/PERSONAL PROTECTION**

8.1 **Control parameters**
Components with workplace control parameters
### 8.2 Exposure controls

**Appropriate engineering controls**
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection**
Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin 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. Protective gloves against thermal risks

**Body Protection**
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., 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 respirator with multi-purpose combination (US) or type ABEK (EN 14387) 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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethylaluminium</td>
<td>75-24-1</td>
<td>PEL</td>
<td>2 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

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

- **Appearance**
  Form: liquid

- **Odour**
  No data available

- **Odour Threshold**
  No data available

- **pH**
  No data available

- **Melting point/freezing point**
  Melting point/range: 15 °C (59 °F) - lit.

- **Initial boiling point and boiling range**
  128 - 130 °C (262 - 266 °F) at 67 hPa (50 mmHg)
  125 - 126 °C (257 - 259 °F) - lit.

- **Flash point**
  Not applicable

- **Evaporation rate**
  No data available

- **Flammability (solid, gas)**
  No data available

- **Upper/lower flammability or explosive limits**
  No data available

- **Vapour pressure**
  92.4 hPa (69.3 mmHg) at 60 °C (140 °F)

- **Vapour density**
  No data available

- **Relative density**
  0.752 g/mL at 25 °C (77 °F)
n) Water solubility No data available
o) Partition coefficient: n-octanol/water No data available
p) Auto-ignition temperature No data available
q) Decomposition temperature To avoid thermal decomposition, do not overheat. Heating can release hazardous gases.
r) Viscosity No data available
s) Explosive properties No data available
t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
Reacts violently with water.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
acids, Oxygen, Alcohols, Halogens, Oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Aluminum oxide
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available
Inhalation: No data available
Dermal: No data available
No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Additional Information**
RTECS: BD2204000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Headache, Nausea, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
No data available

12.2 **Persistence and degradability**
No data available

12.3 **Bioaccumulative potential**
No data available

12.4 **Mobility in soil**
No data available

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

12.6 **Other adverse effects**
No data available

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

**Product**
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

14. **TRANSPORT INFORMATION**

**DOT (US)**
UN number: 3394  Class: 4.2 (4.3)  Packing group: I
Proper shipping name: Organometallic substance, liquid, pyrophoric, water-reactive (Trimethylaluminium)
Reportable Quantity (RQ):

Poison Inhalation Hazard: No
IMDG
UN number: 3394   Class: 4.2 (4.3)   Packing group: I   EMS-No: F-G, S-M
Proper shipping name: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
(Trimethylaluminium)

IATA
UN number: 3394   Class: 4.2 (4.3)
Proper shipping name: Organometallic substance, liquid, pyrophoric, water-reactive (Trimethylaluminium)
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

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

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Massachusetts Right To Know Components

<table>
<thead>
<tr>
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<td>1993-04-24</td>
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Pennsylvania Right To Know Components

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New Jersey Right To Know Components

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California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

<table>
<thead>
<tr>
<th>H</th>
<th>Statement</th>
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<tbody>
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<td>Serious eye damage</td>
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<td>Water-react.</td>
<td>Substances and mixtures, which in contact with water, emit flammable gases</td>
</tr>
</tbody>
</table>

HMIS Rating
Health hazard: 3
Chronic Health Hazard: 4
Flammability: 4
Physical Hazard: 3

NFPA Rating
Health hazard: 3
Fire Hazard: 4
Reactivity Hazard: 3
Special hazard I: W
Further information
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slip for additional terms and conditions of sale.

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.10    Revision Date: 05/24/2016    Print Date: 09/24/2018