福建沃尔法化学科技有限公司
Fujian Wolfa Chemical Technology Co., Ltd

DESIGN REPORT OF SAFETY DATA SHEET

Revision Date: Nov. 14, 2025

Name of the Sample	Trimethylaluminium
Applicant	Fujian Wolfa Chemical Technology Co., Ltd.
Supplier	Fujian Wolfa Chemical Technology Co., Ltd.
Composition of the Sample	Trimethylaluminium: ≥99%
Warranty of Design	Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Eleventh Revised Edition
Design Result of SDS please see next page.	

Notes: This SDS is valid before the implementation of the Twelfth revised edition GHS.

SAFETY DATA SHEET

SDS

Section 1 Product and Company Identification

> Product Identifier

Product Name	Trimethylaluminium
Synonyms	TMA
CAS No.	75-24-1
EC No.	200-853-0
Molecular Formula	C_3H_9Al

> Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Relevant Identified Uses	Used in semiconductor thin-film deposition technology.
Uses Advised Against	Please consult manufacturer.

> Details of the Supplier of the Safety Data Sheet

Applicant Name	Fujian Wolfa Chemical Technology Co., Ltd.
Application Address	Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province
Applicant Post Code	362000
Applicant Telephone	+86 18050950397
Applicant Fax	——
Applicant E-mail	——
Supplier Name	Fujian Wolfa Chemical Technology Co., Ltd.
Supplier Address	Room 2620, Building 18, Xingguang Plaza, No.970 Anji South Road, Fengze District, Quanzhou City, Fujian Province
Supplier Post Code	362000
Supplier Telephone	+86 18050950397
Supplier Fax	——
Supplier E-mail	——

> Emergency Phone Number

Emergency Phone Number	+86 18050950397

Section 2 Hazards Identification

Hazard class and label elements of the product according to GHS (the Eleventh revised edition):

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

Flammable liquids	Category 2
Pyrophoric liquids	Category 1
Substances and mixtures,	Category 2

which in contact with water, emit flammable gases	
Skin corrosion /irritation	Category 1B

> GHS Label Elements

Pictogram



Signal Word Danger

> Hazard Statements

H225	Highly flammable liquid and vapour
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

> Precautionary Statements

Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/···/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P222	Do not allow contact with air.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P231+P232	Handle under inert gas. Protect from moisture.

Response

P303+P361+P353	IF ON SKIN (or hair): Remove/Take off Immediately all contaminated clothing. Rinse SKIN with water/shower.
P335+P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.
P370+P378	In case of fire: Use dry sand, stones or dry powder fire extinguishing agents for extinction.

Storage

P231	Handle under inert gas.
P403	Store in a well-ventilated place.
P402+P404	Store in a dry place. Store in a closed container.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international

regulations.

> Physical Hazards

It spontaneously ignites upon contact with air and reacts violently with water, releasing flammable gases that can cause combustion and explosions.

> Health Hazards

Skin contact causes severe burns. Inhalation of vapors or gases produced during combustion or decomposition may cause symptoms resembling metal fume fever. It irritates the upper respiratory tract and conjunctiva, and in severe cases, can lead to pulmonary edema.

> Environmental Hazards

This substance may be harmful to the environment.

> Emergency Management

Highly flammable. Spontaneously ignites upon exposure to air and reacts explosively with water. Contact with skin and eyes causes severe burns.

Section 3 Composition/Information on Ingredients

Component	CAS No.	EC No.	Concentration (weight percent, %)
Trimethylaluminium	75-24-1	200-853-0	≥99

Section 4 First Aid Measures

> Description of First Aid Measures

General Advice Consult a physician. Show this safety data sheet to the doctor in attendance.

Following eye contact Immediately lift the eyelids and thoroughly rinse the eyes with plenty of running water or normal saline for at least 15 minutes. If contact lenses are worn, remove them and continue rinsing. Seek medical attention if pain persists or recurs.

Following skin contact Immediately remove all contaminated clothing. Wipe particles from the skin, immerse the affected area in cold water, and wrap with a wet bandage. Seek medical attention if persistent irritation occurs.

If swallowed If swallowed, seek medical attention immediately. Do not induce vomiting. Do not administer anything by mouth to an unconscious patient.

If inhalation Quickly remove the patient from the scene to an area with fresh air, ensure the airway remains clear, and seek medical attention. If breathing is difficult, have professional personnel administer artificial respiration or provide oxygen.

> Most Important Symptoms and Effects, both Acute and Delayed

The product can be absorbed via inhalation or through the skin.

Inhalation: Coughing, sore throat, shortness of breath or difficulty breathing, asthma, damage to the respiratory tract, etc.

Skin contact: Burning sensation, pain; severe cases involve skin corrosion.

Eye contact: Redness, pain, tearing; severe cases involve corneal damage.

> Indication of Any Immediate Medical Attention and Special Treatment Needed

No data available.

Section 5 Fire Fighting Measures

> Extinguishing Media

Suitable extinguishing media	Dry yellow sand, gravel, and dry powder extinguishing agent.
For safety reasons unsuitable extinguishing agents	Water.
Special fire-extinguishing methods	Smothering and excluding air.

> Specific Hazards Arising from the chemical

Pyrophoric substances; they ignite spontaneously upon exposure to air, causing fires. They react violently with water, potentially causing explosions. They undergo violent reactions upon contact with oxidizing agents, acids, bases, alcohols, and amines. Combustion produces irritating or toxic fumes and gases, including aluminum oxide, carbon monoxide, and carbon dioxide.

> Special protective actions for fire-fighters

Firefighters must wear appropriate self-contained breathing apparatus and protective clothing. Fight the fire from an upwind position. If it can be done safely, move containers from the fire area to an open space. Ventilate the area after the fire.

Section 6 Accidental Release Measures

> Personal Precautions, Protective Equipment and Emergency Procedures

Isolate the area affected by the leak, evacuate non-essential personnel, and restrict access. Emergency response personnel must wear appropriate protective equipment (refer to Section 8). Shut off the source of the leak if possible. Depressurize the container. Eliminate all sources of ignition. Avoid contact with skin and eyes, and avoid inhaling vapors. Ensure adequate ventilation. Collect the spilled material into suitable containers for safe disposal.

> Environmental Precautions

Prevent the spilled material from entering sewers, drainage systems, or the soil. Do not discharge into the aquatic environment. Notify the relevant environmental authorities immediately if environmental pollution occurs.

> Methods and Materials for Containment and Cleaning Up

Smoking is prohibited near the leak area; eliminate all open flames, sparks, or sources of ignition. Quickly extinguish any flames using yellow sand, gravel, or dry powder extinguishing agents. Cover and absorb the spilled material using a suitable inert absorbent, then transfer it to an appropriate container for safe disposal. Leaking containers must be handled properly and repaired and inspected before reuse.

> Preventive Measures to Avoid Secondary Hazards

Prevent further leakage or spread during the elimination process. Do not wash with water.

> Additional Information

Refer to Section 7 for information on handling and storage;

Refer to Section 8 for information on exposure controls and personal protection;

Refer to Section 13 for information on waste disposal.

Section 7 Handling and Storage

> Precautions for Handling

1. Operate in a closed system; ensure adequate ventilation.

2. Operators must undergo specialized training and strictly adhere to operating procedures.

3. Operators are advised to wear anti-static work clothing and chemical-resistant gloves (selected based on specific working conditions).

4. Keep away from sources of ignition and heat; avoid contact with air and water sources.

5. Protect from direct sunlight.

6. Smoking is strictly prohibited in the workplace.

7. Use explosion-proof lighting and ventilation facilities; avoid contact with oxidizing agents, acids, bases, alcohols, and amines; and do not use machinery or tools that generate sparks.

8. Handle with care during transport (load and unload gently).

9. Equip the area with appropriate types and quantities of fire-fighting equipment.

> Conditions for safe storage, including any incompatibilities

Pyrophoric liquid.

Store in a dry place and in a tightly sealed container.

Store in a cool, well-ventilated warehouse.

Protect containers from physical damage; storage temperature must not exceed 40°C.

Keep away from sources of ignition and heat; avoid contact with air and water.

Protect from direct sunlight.

Store separately from oxidizing agents, acids, bases, alcohols, and amines; do not store together.

Lighting and ventilation facilities in the storage area must be explosion-proof; switches should be located outside the storage area.

Equip with appropriate types and quantities of firefighting equipment.

Do not use machinery or tools that generate sparks.

Section 8 Exposure Controls/Personal Protection

> Control Parameters

Hazard composition and occupational exposure limits

No information available

> Exposure controls

Operate in a closed system; provide forced ventilation. Provide safety showers and eyewash stations.

> Personal Protection Equipment

Eye Protection	Persons who may come into contact with this product should not wear contact lenses. Wear safety glasses.
Hand Protection	When wearing chemical-resistant gloves, the choice should be based on specific working conditions.
Respiratory Protection	Avoid inhaling the fumes produced during spontaneous combustion and wear a filter-type gas mask.
Skin and Body Protection	Wear protective clothing and high-top leather boots.
Other Protection	Handle in accordance with good industrial hygiene and safety practices. Smoking,

eating, and drinking are strictly prohibited in the workplace. Wash hands and change clothes after work.

Section 9 Physical and Chemical Properties

Appearance	Colorless transparent liquid
Odor	Odorlessness
Odor Threshold	No information available
pH	No information available
Melting Point/Freezing Point (℃)	15℃
Initial Boiling Point and Boiling Range (℃)	127℃
Flash Point (℃)	No information available
Solubility	Reacts violently with water. Miscible with saturated hydrocarbons and aromatic hydrocarbons.
Flammability	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit: No information available; Lower limit: No information available
Vapor Pressure (KPa)	6.57 mmHg at 15℃
Relative Vapour Density (Air=1)	No information available
Relative Density (Water=1)	0.752 g/cm³
Water Solubility	No information available
n-Octanol/Water Partition Coefficient	No information available
Auto-Ignition Temperature (℃)	-22℃
Explosivity	No information available
Oxidativity	No information available
Surface Tension	No information available

Section 10 Stability and Reactivity

Chemical Stability	Stable under recommended storage conditions, but sensitive to air and moisture; reacts violently with water and may spontaneously ignite upon exposure to air.
Possibility of Hazardous Reactions	Reacts explosively with water and spontaneously ignites upon exposure to air.
Conditions to Avoid	High temperatures, heating, and other sources of ignition; humid environments; exposure to air; direct sunlight.
Materials to avoid	Water, alcohols, oxygen, chlorinating agents, acids, bases.
Hazardous decomposition products	Thermal decomposition at high temperatures can produce aluminum oxide, carbon monoxide, and carbon dioxide.

Section 11 Toxicological Information

> Acute Toxicity

No information available.

> Skin Corrosion/Irritation

Causes severe skin burns.

> Serious Eye Damage/Irritation

Eye contact causes serious damage.

> Respiratory Sensitization

No information available.

> Skin Sensitization

No information available.

> Germ Cell Mutagenicity

No information available.

> Carcinogenicity

No information available.

> Reproductive Toxicity

No information available.

> STOT-single Exposure

No information available.

> Aspiration Hazard

No information available.

Section 12 Ecological Information

> Acute aquatic Toxicity

No information available.

> Chronic aquatic toxicity

No information available.

> Others

Persistence and Degradability	No information available.
Bioaccumulative Potential	No information available.
Mobility in Soil	No information available.
Results of PBT and vPvB Assessment	No information available.

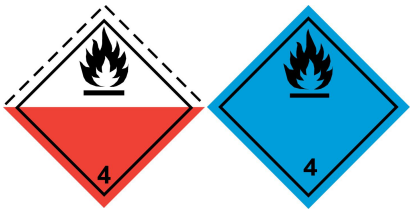
Section 13 Disposal Considerations

> Waste treatment methods

Waste Products	First, consider recovery or recycling whenever possible; otherwise, dispose of the waste in accordance with relevant national and local regulations, or arrange for disposal by an approved, qualified waste management company. Contact the

	manufacturer or supplier to determine the appropriate disposal method.
Contaminated Packaging	It is recommended to treat this as waste and dispose of it in accordance with relevant national and local regulations.
Precautions for Disposal	Consult relevant national and local regulations before disposal. Avoid environmental contamination during the disposal process.

Section 14 Transport Information

Transporting Label	
UN Number	3394
Proper Shipping Name	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER REACTIVE
Hazard Class	4.2
Subsidiary Hazard Class	4.3
Packing Group	I
Packing Method	Pack according to the manufacturer's recommended method.
Transportation Precautions	Transport vehicles must be equipped with appropriate types and quantities of fire-fighting equipment and spill emergency response gear. Mixed loading or transport with oxidizing agents, food-grade chemicals, or similar substances is strictly prohibited. Vehicle exhaust pipes used for transporting this material must be fitted with spark arresters. When using tank trucks, grounding chains should be installed, and internal baffle plates may be used to minimize sloshing and static electricity generation. The use of machinery or tools prone to generating sparks during loading and unloading is prohibited. Transport during the summer months is best scheduled for the early morning or evening. During transport, the cargo must be protected from direct sunlight, rain, and high temperatures. During stops, the vehicle must be kept away from sources of ignition, heat sources, and high-temperature areas. For road transport, vehicles must follow designated routes and avoid stopping in residential or densely populated areas. For rail transport, shunting by gravity (free-rolling) is prohibited. Bulk transport using wooden or concrete vessels is strictly prohibited. Hazard warning signs and notices must be displayed on transport vehicles in accordance with relevant regulations.

Section 15 Regulatory Information

> Regulatory Information

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECL	AIIC	ENCS
Trimethylaluminium	√	√	√	√	√	√	√	√	√

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 Toxic Substances Control Act Inventory (United States)

【DSL】 Domestic Substances List (Canada)

【IECSC】 Inventory of Existing Chemical Substances in China

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECL】 Korean Existing Chemicals List

【AIIC】 Australian Inventory of Industrial Chemicals

【ENCS】 Existing and New Chemical Substances (Japan)

Note

"√" Indicates that the substance included in the regulations

"×" That no data or included in the regulations

Section 16 Additional Information

Preparation Date **Dec. 1, 2022**

Revision Date **Nov. 14, 2025**

Revision Reason **SDS Update Section**

Disclaimer

The information provided in this Safety Data Sheet is correct based on the latest knowledge, information and concepts available to us. The information provided is intended only as a guide for safe operation, use, processing, storage, transportation, disposal and discharge and is not intended as a guarantee or specification of quality. This information is only used for the specific substance specified and may not be suitable for mixing with any other substance or in all cases, unless otherwise specified in the context.