

## Material Safety Data Sheet

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Version 1.5  
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

## 1 - Product and Company Information

Product Name	TRIMETHYLALUMINUM, 2.0M SOLUTION IN TOLUENE
Product Number	198048
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
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Emergency Phone #	+61 2 9841 0566

## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number	
TRIMETHYLALUMINUM SOLUTION, ~2M IN TOLUENE	None	None	None	
Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
TOLUENE	85.6	108-88-3	203-625-9	601-021-00-3
Repr. Cat.3				
Symbols: F Xn				
R-Phrases: 11 38 48/20 63 65 67				
Highly flammable. Irritating to skin. Harmful: danger of serious damage to health by prolonged exposure through inhalation.				
Possible risk of harm to the unborn child. Harmful: may cause lung damage if swallowed. Vapors may cause drowsiness and dizziness.				
TRIMETHYLALUMINUM	14.4	75-24-1	200-853-0	013-004-00-2
Symbols: F C				
R-Phrases: 14 17 34				
Reacts violently with water. Spontaneously flammable in air.				
Causes burns.				
Formula	C3H9Al			
Molecular Weight	72.09 AMU			

### 3 - Hazards Identification

## SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Reacts violently with water, liberating extremely flammable gases. Harmful by inhalation. Causes burns.

## 4 - First Aid Measures

#### AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

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## 5 - Fire Fighting Measures

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#### CONDITIONS OF FLAMMABILITY

Reacts with water to liberate flammable and/or explosive gas. Catches fire if exposed to air.

#### EXTINGUISHING MEDIA

Suitable: Dry chemical powder.  
Unsuitable: Do not use water.

#### SPECIAL RISKS

Specific Hazard(s): Pyrophoric material. Vapor may travel considerable distance to source of ignition and flash back. Explosion Hazards: Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions. Forms explosive mixtures in air.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

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## 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

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## 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe vapor. Do not get

in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame. Handle and store under nitrogen.

Incompatible Materials: Do not allow contact with water

#### SPECIAL REQUIREMENTS: Air sensitive.

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#### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

#### GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

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#### 9 - Physical and Chemical Properties

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Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	N/A	
Flash Point	4 °C	Method: closed cup
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	0.81 g/cm <sup>3</sup>	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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#### 10 - Stability and Reactivity

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#### STABILITY

Conditions to Avoid: Catches fire if exposed to air. Do not allow water to enter container because of violent reaction.

Materials to Avoid: Alcohols, Oxygen, Oxidizing agents, Acids, Bases, Halogens.

#### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Aluminum oxide.

Hazardous Decomposition Products Formed Upon Contact with Water: Methane gas

#### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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### 11 - Toxicological Information

#### SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals. Exposure may cause: Lung irritation, chest pain, and edema which may be fatal.

#### ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: May be harmful if absorbed through the skin.

Readily absorbed through skin.

Eye Contact: Causes burns.

Inhalation: Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Harmful if inhaled.

Ingestion: May be harmful if swallowed.

#### TARGET ORGAN INFORMATION

Brain. Liver. Kidneys. Bladder.

#### CONDITIONS AGGRAVATED BY EXPOSURE

May cause nervous system disturbances.

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### 12 - Ecological Information

No data available.

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### 13 - Disposal Considerations

#### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

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### 14 - Transport Information

#### RID/ADR

UN#: 3399

Class: 4.3

PG: I

Proper Shipping Name: Organometallic substance,

liquid, water-reactive, flammable

IMDG

UN#: 3399

Class: 4.3

PG: I

Subrisk: 3

Proper Shipping Name: Organometallic substance,  
liquid, water-reactive, flammable

Marine Pollutant: No

Severe Marine Pollutant: No

Technical Name: Required

IATA

UN#: 3399

Class: 4.3

PG: I

Subrisk: 3

Proper Shipping Name: Organometallic substance,  
liquid, water-reactive, flammable

Inhalation Packing Group I: No

Technical Name: Required

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F C

Highly Flammable. Corrosive.

R-PHRASES: 11 14/15 20 34

Highly flammable. Reacts violently with water, liberating  
extremely flammable gases. Harmful by inhalation. Causes burns.

S-PHRASES: 16 26 33 36/37/39 43 45

Keep away from sources of ignition - no smoking. In case of  
contact with eyes, rinse immediately with plenty of water and  
seek medical advice. Take precautionary measures against static  
discharges. Wear suitable protective clothing, gloves, and  
eye/face protection. In case of fire, use dry powder. Never use  
water. In case of accident or if you feel unwell, seek medical  
advice immediately (show the label where possible).

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## 16 - Other Information

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### WARRANTY

The above information is believed to be correct but does not  
purport to be all inclusive and shall be used only as a guide. The  
information in this document is based on the present state of our  
knowledge and is applicable to the product with regard to  
appropriate safety precautions. It does not represent any  
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