



SIGMA-ALDRICH

## Material Safety Data Sheet

Date Printed: 08/06/2004  
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Version 1.20

### Section 1 - Product and Company Information

**Product Name** Diethylaluminum cyanide, 1.0M solution in toluene  
**Product Number** 276863  
**Brand** Aldrich Chemical

**Company** \*Sigma-Aldrich  
**Street Address** 3050 Spruce Street  
**City, State, Zip, Country** SAINT LOUIS, MO 63103 US  
**Technical Phone:** 314 771 5765  
**Fax:** 800 325 5052

**Emergency Phone:** 414 273 3850 Ext. 5996

### Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
DIETHYLALUMINUM CYANIDE, 1.0M SOLUTION IN TOLUENE	None	Yes		
<u>Ingredient Name</u>	<u>CAS #</u>	<u>Percent</u>	<u>SARA 313</u>	
DIETHYLALUMINUM CYANIDE	5804-85-3	12.772 %	Yes	
TOLUENE	108-88-3	87.228 %	Yes	
<b>Formula</b>	C5H10AlN			
<b>Synonyms</b>				

### Section 3 - Hazards Identification

#### Emergency Overview

Flammable (USA) Highly Flammable (EU). Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment. Contact with water liberates toxic, extremely flammable gas. Very toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Readily absorbed through skin. Target organ(s): Liver, Kidneys, Calif. Prop. 65 reproductive hazard.

**HMIS Rating**  
Health: 3\*      Flammability: 3      Reactivity: 2      Special Hazard(s) : Water reactive

**NFPA Rating**  
Health: 3      Flammability: 3      Reactivity: 2      Special Hazard(s) : Water reactive

\*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

### Section 4 - First Aid Measures

#### Immediate Treatment - Work Site

Have cyanide kit available at all times.  
In case of exposure, obtain medical attention immediately.

#### Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately.

#### Inhalation Exposure

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

#### Dermal Exposure

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

#### Eye Exposure

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.

### Section 5 - Fire Fighting Measures

**Flammable Hazards:** Yes

#### Explosion Hazards

Vapor may travel considerable distance to source of ignition and flash back.  
Container explosion may occur under fire conditions.

#### Conditions of Flammability

Reacts with water to liberate flammable and/or explosive gas.

**Flash Point:** 44.6 °F 7 °C

**Autoignition Temp:** N/A **Flammability:** Yes

#### Extinguishing Media

##### Suitable

Carbon dioxide, dry chemical powder, or appropriate foam.

##### Unsuitable

Do not use water.

#### Firefighting

##### Protective Equipment

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

##### Specific Hazard(s)

Flammable liquid. Emits toxic fumes under fire conditions.

### Section 6 - Accidental Release Measures

#### Procedure to be Followed in Case of Leak or Spill

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.

**Additional Information (e.g. Refer to Information Under Other Headings)**

Ventilate the spill site thoroughly before reentering.

**Section 7 - Handling and Storage****Handling****User Exposure**

Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

**Storage****Stability**

Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place.

**Incompatible Materials**

Do not allow contact with water.

**Special Requirements**

Handle and store under inert gas. May develop pressure. Open carefully. Air sensitive.

**Section 8 - Exposure Controls / PPE****Engineering Controls**

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

**Personal Protective Equipment****Respiratory**

Government approved respirator.

**Hand**

Compatible chemical-resistant gloves.

**Eye**

Chemical safety goggles.

**Other**

Faceshield (8-inch minimum).

**General Hygiene Measures**

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

**Section 9 - Physical/Chemical Properties****Appearance****Physical State**

Clear liquid

**Color**

Very deep brown-yellow

**Molecular Weight:**

111.1 AMU

**pH**

N/A

**BP/BP Range**

N/A

**MP/MP Range**

N/A

**Freezing Point**

N/A

**Vapor Pressure**

N/A

**Vapor Density**

N/A

**Saturated Vapor Conc.**

N/A

**SG/Density**

0.87 g/cm<sup>3</sup>

**Bulk Density**

N/A

**Odor Threshold**

N/A

**Volatile%**

N/A

**VOC Content**

N/A

**Water Content**

N/A

**Solvent Content**

N/A

**Evaporation Rate**

N/A

Viscosity N/A  
Partition Coefficient N/A  
Decomposition Temp. N/A  
Flash Point °F 44.6 °F  
Flash Point °C 7 °C  
Explosion Limits N/A

Method: closed cup

Method: closed cup

Flammability N/A  
Autoignition Temp N/A  
Solubility N/A

N/A = not available

**Section 10 - Stability and Reactivity****Stability****Conditions of Instability**

May decompose on exposure to air.

**Materials to Avoid**

Do not allow contact with water, Strong oxidizing agents, Strong acids.

**Hazardous Decomposition Products****Hazardous Decomposition Products**

Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen cyanide, Aluminum oxide.

**Hazardous Polymerization****Hazardous Polymerization**

Will not occur.

**Section 11 - Toxicological Information****Route of Exposure****Skin Contact**

Causes burns.

**Skin Absorption**

May be fatal if absorbed through skin.

**Eye Contact**

Causes burns.

**Inhalation**

May be fatal if inhaled.

**Ingestion**

May be fatal if swallowed.

**Target Organ(s) or System(s)**

Liver. Kidneys. Brain. Bladder. Central nervous system. Cardiovascular system.

**Signs and Symptoms of Exposure**

Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals. 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. Lung irritation, chest pain, and edema which may be fatal. Cyanosis. CNS depression. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Conditions Aggravated by Exposure**

May cause nervous system disturbances.

**RTECS Number:** N/A

**Chronic Exposure - Carcinogen**

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

## Section 12 - Ecological Information

No data available.

## Section 13 - Disposal Considerations

### Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.  
Observe all federal, state, and local environmental regulations.

## Section 14 - Transport Information

### DOT

**Proper Shipping Name:** Toxic liquids, flammable, organic, n.o.s.  
**UN#:** 2929  
**Class:** 6.1  
**Packing Group:** Packing Group I  
**Hazard Label:** Toxic substances,  
**Hazard Label:** Flammable liquid  
**PIH:** Not PIH

### IATA

**Proper Shipping Name:** Toxic liquid, flammable, organic, n.o.s.  
**IATA UN Number:** 2929  
**Hazard Class:** 6.1  
**Packing Group:** I

## Section 15 - Regulatory Information

### EU Additional Classification

**Symbol of Danger:** F T+ N

#### Indication of Danger

Highly Flammable. Very toxic. Dangerous for the environment.

**Risk Statements R:** 11 15/29 26/27/28 34 51/53

Highly flammable. Contact with water liberates toxic, extremely flammable gas. Very toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety Statements S:** 7 16 26 29 33 36/37/39 45 60 61

Keep container tightly closed. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

### US Classification and Label Text

#### Indication of Danger

Flammable (USA) Highly Flammable (EU). Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment.

#### Risk Statements

Contact with water liberates toxic, extremely flammable gas. Very toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

#### Safety Statements

Keep container tightly closed. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

#### US Statements

Readily absorbed through skin. Target organ(s): Liver. Kidneys. Calif. Prop. 65 reproductive hazard.

### United States Regulatory Information

**SARA Listed:** Yes

**Notes:** This product is or contains a component that is subject to SARA313 reporting requirements.

### United States - State Regulatory Information

#### California Prop - 65

This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

### Canada Regulatory Information

#### WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

**DSL:** No

**NDSL:** No

## Section 16 - Other Information

### Disclaimer

For R&D use only. Not for drug, household or other uses.

### 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 guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

