

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

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

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1 - Product and Company Information

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Product Name	SODIUM DIHYDRIDO-BIS(2-METHOXYETHOXY)ALU MINATE ~70%IN TOLUEN
Product Number	71495
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765
Technical Phone #	+61 2 9841 0555
Fax	+61 2 9841 0500
Emergency Phone #	+61 2 9841 0566

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2 - Composition/Information on Ingredients

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Product Name	CAS #	EC no	Annex I Index Number
VITRIDE (R), 65+ WT% SOLUTION OF SODIUM DIHYDROBIS (2-METHOXYETHOXY) ALUMINATE IN TOLUENE	None	None	None

Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
SODIUM DIHYDROBIS (2-METHOXYETHOXY) ALUMINATE	>= 65 <= 70	22722-98-1	245-178-2	None

Symbols: F C  
R-Phrases: 14/15 34  
Reacts violently with water, liberating extremely flammable gases.  
Causes burns.

TOLUENE	>= 30 <= 35	108-88-3	203-625-9	601-021-00-3
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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.

Formula	C6H16AlNaO4
Molecular Weight	202.16 AMU
Synonyms	Red-Al (R)

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3 - Hazards Identification

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SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

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

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#### 4 - First Aid Measures

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##### 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.

##### EXTINGUISHING MEDIA

Suitable: Use approved class D extinguishers or smother with dry sand, dry ground limestone, or dry clay.

Unsuitable: Do not use water. Do not use carbon dioxide extinguisher on this material.

##### SPECIAL RISKS

Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Explosion Hazards: Forms explosive mixtures in air. Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

##### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

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

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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. Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of fumes.

##### METHODS FOR CLEANING UP

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

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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: Store under inert gas. 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. Heat- and 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 thoroughly after handling. Discard contaminated shoes. Remove and wash contaminated clothing promptly.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Impervious protective clothing.

Faceshield (8-inch minimum).

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Turbid viscous liquid Color: Faintly yellow	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	110 °C	
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	Lower: 1.27 % Upper: 7 %	
Vapor Pressure	21 mmHg	20 °C
SG/Density	1.02 g/cm3	
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.	205 °C	
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: Heat. Air. Do not allow water to enter container because of violent reaction.

Materials to Avoid: Water, Oxidizing agents Contact of Red-Al with paper or cloth could cause ignition. Red-Al reacts with carbon dioxide and also with carbon tetrachloride

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Hydrogen gas Carbon monoxide, Carbon dioxide, Aluminum oxide, Sodium oxides.

Hazardous Decomposition Products Formed Upon Contact with Water: Liberates flammable/explosive hydrogen gas

### HAZARDOUS EXOTHERMIC REACTIONS

Hazardous Exothermic Reactions: Decomposes violently above 205°C.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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### ACUTE TOXICITY

LD50

Oral

Rat

> 50 mg/kg

LD50

Skin

Rabbit

> 200 mg/kg

### IRRITATION DATA

Skin

Rabbit

Remarks: Severe irritation effect

### 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. Exposure can cause: Lung irritation, chest pain, and edema which may be fatal. Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.

### 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. May be harmful

if inhaled.  
Ingestion: Harmful if swallowed.

#### TARGET ORGAN INFORMATION

Brain. Liver. Kidneys. Bladder.

#### CONDITIONS AGGRAVATED BY EXPOSURE

May cause nervous system disturbances.

#### 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.

#### CHRONIC EXPOSURE - TERATOGEN

Result: May cause congenital malformation in the fetus.

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#### 12 - Ecological Information

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No data available.

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#### 13 - Disposal Considerations

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#### 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

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##### 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: 7/8 16 29 33 26 36/37/39 45

Keep container tightly closed and dry. Keep away from sources of ignition - no smoking. Do not empty into drains. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. 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).

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 2 (self-classification)

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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 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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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