



## DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

Safety Data Sheet OMAL021.4

Issue date: 05/11/2020

Version: 1.0

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product form	: Mixture
Physical state	: Liquid
Product name	: DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)
Product code	: OMAL021.4
Formula	: C <sub>8</sub> H <sub>19</sub> Al
Synonyms	: DIBAL-H BIS(ISOBUTYL)HYDROALUMINUM HYDROBIS(2-METHYLPROPYL)ALUMINUM
Chemical family	: METAL ALKYL

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

##### 1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

##### 1.2.2. Uses advised against

No additional information available

#### 1.3. Details of the supplier of the safety data sheet

##### GELEST, INC.

11 East Steel Road  
Morrisville, PA 19067

##### USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

[info@gelest.com](mailto:info@gelest.com) - [www.gelest.com](http://www.gelest.com)

##### GELEST INC.

Fritz-Klatte-Strasse 8  
65933 Frankfurt

##### Germany

T +49 (0) 69 3535106-500 - F +49 (0) 69 3535106-501 - (M-F): 8:00 AM - 4:00 PM

[info@gelestde.com](mailto:info@gelestde.com) - [www.gelestde.com](http://www.gelestde.com)

#### 1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

### SECTION 2: Hazards identification

#### 2.1. Classification of the substance or mixture

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

Pyrophoric Liquids, Category 1	H250
Substances and Mixtures which, in contact with water, emit flammable gases, Category 1	H260
Skin corrosion/irritation, Category 1, Sub-Category 1B	H314
Serious eye damage/eye irritation, Category 1	H318
Carcinogenicity, Category 2	H351
Full text of H statements : see section 16	

##### Adverse physicochemical, human health and environmental effects

No additional information available

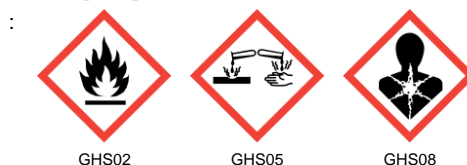
# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

### 2.2. Label elements

#### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazardous ingredients

: Diisobutylaluminum hydride; Methylene chloride

Hazard statements (CLP)

: 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.  
H351 - Suspected of causing cancer.

Precautionary statements (CLP)

: P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P222 - Do not allow contact with air.  
P223 - Do not allow contact with water.  
P231+P232 - Handle and store contents under inert gas. Protect from moisture.  
P264 - Wash hands thoroughly after handling.

EUH-statements

: EUH014 - Reacts violently with water.

### 2.3. Other hazards

No additional information available

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Diisobutylaluminum hydride	(CAS-No.) 1191-15-7 (EC-No.) 214-729-9	88 – 89	Pyr. Liq. 1, H250 Water-react. 1, H260 Skin Corr. 1B, H314 Eye Dam. 1, H318
Methylene chloride	(CAS-No.) 75-09-2 (EC-No.) 200-838-9 (EC Index-No.) 602-004-00-3	11 – 12	Acute Tox. 4 (Oral), H302 Carc. 2, H351

Full text of H-statements: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general

: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label.

First-aid measures after inhalation

: Remove person to fresh air and keep comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact

: Wash with plenty of water/.... Get immediate medical advice/attention.

First-aid measures after eye contact

: Immediately flush eyes thoroughly with water for at least 15 minutes. Get immediate medical advice/attention.

First-aid measures after ingestion

: Never give anything by mouth to an unconscious person. Get medical advice/attention.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects

: May cause cancer. Causes severe skin burns and eye damage.

Symptoms/effects after inhalation

: May cause irritation to the respiratory tract. Direct respiratory contact is usually not possible, but will cause burns. Inhalation of combustion products can cause irritation.

Symptoms/effects after skin contact

: Causes (severe) skin burns.

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

Symptoms/effects after eye contact : Causes serious eye damage.  
Symptoms/effects after ingestion : May be harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Dry chemical powder followed by sand or dolomite.  
Unsuitable extinguishing media : Water.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Pyrophoric liquids. Catches fire spontaneously if exposed to air. In contact with water releases flammable gases which may ignite spontaneously.  
Explosion hazard : Container explosion may occur during fire conditions.

### 5.3. Advice for firefighters

Firefighting instructions : If material is ignited, allow to burn. Exercise caution when fighting any chemical fire. In case of fire: stop leak if safe to do so.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Eliminate every possible source of ignition. Use special care to avoid static electric charges. Laboratory and production areas must be equipped with special fire-extinguishing media for pyrophorics.

#### 6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.  
Emergency procedures : Evacuate unnecessary personnel.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

### 6.3. Methods and material for containment and cleaning up

For containment : Concentrate containment efforts to adjacent combustibles.  
Methods for cleaning up : Cover with dry chemical extinguishing powder, lime, sand or soda ash. Do not use water. Remove combustible materials in the vicinity of the spill. Allow time for decomposition or fire to burn out, then sweep material and transfer to a suitable container for disposal.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Additional hazards when processed : Catches fire spontaneously if exposed to air. Do not allow contact with water.  
Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Do not allow contact with water. Do not allow contact with air. Handle under inert gas. Protect from moisture. Laboratory and production areas must be equipped with special fire-extinguishing media for pyrophorics. Provide good ventilation in process area to prevent formation of vapour.  
Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store in a dry place. Store in a closed container. Store locked up. Store in sealed containers under nitrogen or argon with <10ppm oxygen.  
Incompatible materials : Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Water. Dry residue has been reported to explode.  
Information on mixed storage : Flammable and combustible materials should not be stored in or near working areas for pyrophorics.  
Storage area : Store in a well-ventilated place. Store away from heat.

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Diisobutylaluminum hydride (1191-15-7)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
Methylene chloride (75-09-2)		
Austria	MAK [mg/m <sup>3</sup> ]	175 mg/m <sup>3</sup>
Austria	MAK [ppm]	50 ppm
Austria	MAK Short time value [mg/m <sup>3</sup> ]	700 mg/m <sup>3</sup>
Austria	MAK Short time value [ppm]	200 ppm
Belgium	Limit value [mg/m <sup>3</sup> ]	177 mg/m <sup>3</sup>
Belgium	Limit value [ppm]	50 ppm
Bulgaria	OEL TWA (mg/m <sup>3</sup> )	100 mg/m <sup>3</sup>
Bulgaria	OEL STEL (mg/m <sup>3</sup> )	517 mg/m <sup>3</sup>
France	VLE [mg/m <sup>3</sup> ]	356 mg/m <sup>3</sup> (restrictive limit)
France	VLE [ppm]	100 ppm (restrictive limit)
France	VME [mg/m <sup>3</sup> ]	178 mg/m <sup>3</sup> (restrictive limit)
France	VME [ppm]	50 ppm (restrictive limit)
Germany	Occupational exposure limit value (mg/m <sup>3</sup> )	260 mg/m <sup>3</sup>
Germany	Occupational exposure limit value (ppm)	75 ppm
Greece	OEL TWA (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Greece	OEL TWA (ppm)	100 ppm
Greece	OEL STEL (mg/m <sup>3</sup> )	1750 mg/m <sup>3</sup>
Greece	OEL STEL (ppm)	500 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	50 ppm
Latvia	OEL TWA (mg/m <sup>3</sup> )	120 mg/m <sup>3</sup>
USA IDLH	US IDLH (ppm)	2300 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	25 ppm
USA OSHA	OSHA PEL (STEL) (ppm)	125 ppm (see 29 CFR 1910.1052)
Spain	VLA-ED (mg/m <sup>3</sup> )	177 mg/m <sup>3</sup> (manufacturing, commercialization, and use restrictions under REACH)
Spain	VLA-ED (ppm)	50 ppm (manufacturing, commercialization, and use restrictions under REACH)
Switzerland	MAK (mg/m <sup>3</sup> )	180 mg/m <sup>3</sup>
Switzerland	MAK (ppm)	50 ppm
United Kingdom	WEL TWA (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
United Kingdom	WEL TWA (ppm)	100 ppm
United Kingdom	WEL STEL (mg/m <sup>3</sup> )	1060 mg/m <sup>3</sup>
United Kingdom	WEL STEL [ppm]	300 ppm
Czech Republic	Expoziční limity (PEL) (mg/m <sup>3</sup> )	200 mg/m <sup>3</sup>
Denmark	Grænseværdi (8 timer) (mg/m <sup>3</sup> )	122 mg/m <sup>3</sup>
Denmark	Grænseværdi (8 timer) (ppm)	35 ppm
Finland	HTP-arvo (8h) (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Finland	HTP-arvo (8h) (ppm)	100 ppm
Finland	HTP-arvo (15 min)	880 mg/m <sup>3</sup>
Finland	HTP-arvo (15 min) (ppm)	250 ppm
Hungary	AK-érték	10 mg/m <sup>3</sup>
Hungary	CK-érték	10 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (mg/m <sup>3</sup> )	174 mg/m <sup>3</sup>
Ireland	OEL (8 hours ref) (ppm)	50 ppm
Ireland	OEL (15 min ref) (mg/m <sup>3</sup> )	550 mg/m <sup>3</sup>

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

Methylene chloride (75-09-2)		
Ireland	OEL (15 min ref) (ppm)	150 ppm
Lithuania	IPRV (mg/m <sup>3</sup> )	120 mg/m <sup>3</sup>
Lithuania	IPRV (ppm)	35 ppm
Lithuania	TPRV (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
Lithuania	TPRV (ppm)	70 ppm
Norway	Grenseverdier (AN) (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup>
Norway	Grenseverdier (AN) (ppm)	15 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m <sup>3</sup> )	50 mg/m <sup>3</sup>
Norway	Grenseverdier (Korttidsverdi) (ppm)	15 ppm
Poland	NDS (mg/m <sup>3</sup> )	88 mg/m <sup>3</sup>
Romania	OEL TWA (mg/m <sup>3</sup> )	174 mg/m <sup>3</sup>
Romania	OEL TWA (ppm)	50 ppm
Slovakia	NPHV (priemerná) (mg/m <sup>3</sup> )	350 mg/m <sup>3</sup>
Slovakia	NPHV (priemerná) (ppm)	100 ppm
Sweden	nivågränsvärde (NVG) (mg/m <sup>3</sup> )	120 mg/m <sup>3</sup>
Sweden	nivågränsvärde (NVG) (ppm)	35 ppm
Sweden	kortidsvärde (KTV) (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
Sweden	kortidsvärde (KTV) (ppm)	70 ppm
Canada (Quebec)	VEMP (mg/m <sup>3</sup> )	174 mg/m <sup>3</sup>
Canada (Quebec)	VEMP (ppm)	50 ppm
Australia	TWA (mg/m <sup>3</sup> )	174 mg/m <sup>3</sup>
Australia	TWA (ppm)	50 ppm
Portugal	OEL TWA (ppm)	50 ppm
Portugal	OEL chemical category (PT)	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans

## 8.2. Exposure controls

### Appropriate engineering controls:

Glove box or sealed system under inert atmosphere is required. Provide local exhaust or general room ventilation.

### Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

### Hand protection:

Neoprene or nitrile rubber gloves

### Eye protection:

Full face shield with chemical workers goggles. Contact lenses should not be worn

### Skin and body protection:

Wear suitable protective clothing. Fire resistant laboratory jacket or apron should be worn.

### Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified organic vapor (black cartridge) respirator.

## SECTION 9: Physical and chemical properties

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

Physical state	: Liquid
Appearance	: Clear liquid. Fumes and ignites in air.
Molecular mass	: 142.22 g/mol
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < 0 °C
Freezing point	: No data available
Boiling point	: 116 – 118 °C @ 1 mm Hg
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Pyrophoric liquids,Catches fire spontaneously if exposed to air,In contact with water releases flammable gases which may ignite spontaneously.
Vapour pressure	: No data available
Relative vapour density at 20 °C	: > 1
Relative density	: 0.866
Solubility	: Reacts violently with water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable in sealed containers under dry inert atmosphere when stored <10°C. Product activity decreases ~1%/month if stored at 20°C.

### 10.3. Possibility of hazardous reactions

The product can generate small amounts of hydrogen when exposed to alkalis and protic materials such as water and alcohol.

### 10.4. Conditions to avoid

No additional information available

### 10.5. Incompatible materials

Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Water. Dry residue has been reported to explode.

### 10.6. Hazardous decomposition products

Aluminium oxides. Carbon monoxide. Formaldehyde. Hydrogen. Organic acid vapors.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

#### Methylene chloride (75-09-2)

LD50 oral rat	1600 mg/kg
LC50 Inhalation - Rat	53 mg/l (Exposure time: 6 h)
ATE CLP (oral)	1600 mg/kg bodyweight
ATE CLP (vapours)	53 mg/l/4h
ATE CLP (dust,mist)	53 mg/l/4h

Skin corrosion/irritation	: Causes severe skin burns.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer. This product contains a component that has been reported to be carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

<b>Methylene chloride (75-09-2)</b>	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity, 3 - Reasonably anticipated to be Human Carcinogen

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract. Direct respiratory contact is usually not possible, but will cause burns. Inhalation of combustion products can cause irritation.
Symptoms/effects after skin contact	: Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: May be harmful if swallowed.
Reason for classification	: Expert judgment

## SECTION 12: Ecological information

### 12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

<b>Methylene chloride (75-09-2)</b>	
LC50 fish 1	140.8 – 277.8 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	1532 – 1847 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	262 – 855 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 2	190 mg/l (Exposure time: 48 h - Species: Daphnia magna)

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

<b>Methylene chloride (75-09-2)</b>	
BCF fish 1	6.4 – 40
Partition coefficient n-octanol/water (Log Pow)	1.25

### 12.4. Mobility in soil

No additional information available

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Sewage disposal recommendations	: Do not dispose of waste into sewer.
Product/Packaging disposal recommendations	: Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.. This is a RCRA hazardous waste: 40 CFR 261.21 (i.e. ignitable) 40 CFR 261.23 (i.e. reactive).
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

### 14.1. UN number

UN-No. (ADR)	: 3394
UN-No. (IMDG)	: 3394
UN-No. (IATA)	: 3394
UN-No. (ADN)	: 3394
UN-No. (RID)	: 3394

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

### 14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Proper Shipping Name (IMDG)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Proper Shipping Name (IATA)	: Organometallic substance, liquid, pyrophoric, water-reactive
Proper Shipping Name (ADN)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER REACTIVE
Proper Shipping Name (RID)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Transport document description (ADR)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)), 4.2 (4.3), I, (B/E)
Transport document description (IMDG)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)), 4.2 (4.3), I
Transport document description (IATA)	: UN 3394 Organometallic substance, liquid, pyrophoric, water-reactive (DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)), 4.2
Transport document description (ADN)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER REACTIVE (DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)), 4.2 (4.3), I
Transport document description (RID)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)), 4.2 (4.3), I

### 14.3. Transport hazard class(es)

#### ADR

Transport hazard class(es) (ADR) : 4.2 (4.3)

Danger labels (ADR) : 4.2, 4.3



#### IMDG

Transport hazard class(es) (IMDG) : 4.2 (4.3)

Danger labels (IMDG) : 4.2, 4.3



#### IATA

Transport hazard class(es) (IATA) : 4.2 (4.3)

#### ADN

Transport hazard class(es) (ADN) : 4.2 (4.3)

Danger labels (ADN) : 4.2, 4.3



#### RID

Transport hazard class(es) (RID) : 4.2 (4.3)

Danger labels (RID) : 4.2, 4.3





# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

### 14.4. Packing group

Packing group (ADR)	: I
Packing group (IMDG)	: I
Packing group (IATA)	: Not applicable
Packing group (ADN)	: I
Packing group (RID)	: I

### 14.5. Environmental hazards

Dangerous for the environment	: No
Marine pollutant	: No
Other information	: No supplementary information available

### 14.6. Special precautions for user

#### - Overland transport

Classification code (ADR)	: SW
Special provisions (ADR)	: 274
Limited quantities (ADR)	: 0
Excepted quantities (ADR)	: E0
Packing instructions (ADR)	: P400
Special packing provisions (ADR)	: PP86
Mixed packing provisions (ADR)	: MP2
Portable tank and bulk container instructions (ADR)	: T21
Portable tank and bulk container special provisions (ADR)	: TP2, TP7, TP36, TP41
Tank code (ADR)	: L21DH
Tank special provisions (ADR)	: TU4, TU14, TU22, TC1, TE21, TM1
Vehicle for tank carriage	: AT
Transport category (ADR)	: 0
Special provisions for carriage - Packages (ADR)	: V1
Special provisions for carriage - Operation (ADR)	: S20
Hazard identification number (Kemler No.)	: X333
Orange plates	:

**X333**

**3394**

Tunnel restriction code (ADR)	: B/E
EAC code	: 4W

#### - Transport by sea

Special provisions (IMDG)	: 274
Limited quantities (IMDG)	: 0
Excepted quantities (IMDG)	: E0
Packing instructions (IMDG)	: P400
Special packing provisions (IMDG)	: PP86
Tank instructions (IMDG)	: T21
Tank special provisions (IMDG)	: TP2, TP7, TP36, TP41
EmS-No. (Fire)	: F-G
EmS-No. (Spillage)	: S-M
Stowage category (IMDG)	: D
Stowage and handling (IMDG)	: H1
Segregation (IMDG)	: SG35, SG63, SG26

#### - Air transport

PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

PCA packing instructions (IATA)	: Forbidden
PCA max net quantity (IATA)	: Forbidden
CAO packing instructions (IATA)	: Forbidden
CAO max net quantity (IATA)	: Forbidden
ERG code (IATA)	: 4W

### - Inland waterway transport

Classification code (ADN)	: SW
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 0
Excepted quantities (ADN)	: E0
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0

### - Rail transport

Classification code (RID)	: SW
Special provisions (RID)	: 274
Limited quantities (RID)	: 0
Excepted quantities (RID)	: E0
Packing instructions (RID)	: P400
Special packing provisions (RID)	: PP86
Mixed packing provisions (RID)	: MP2
Portable tank and bulk container instructions (RID)	: T21
Portable tank and bulk container special provisions (RID)	: TP2, TP7, TP36
Tank codes for RID tanks (RID)	: L21DH
Special provisions for RID tanks (RID)	: TU4, TU14, TU22, TU38, TC1, TE21, TE22, TE25, TM1
Transport category (RID)	: 0
Special provisions for carriage – Packages (RID)	: W1
Hazard identification number (RID)	: X333

### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

#### 15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list

Contains no REACH Annex XIV substances

Contains no substance subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

Contains no substance subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Contains no REACH Annex XIV substances

#### 15.1.2. National regulations

##### Germany

Regulatory reference	: WGK nwg, Non-hazardous to water (Classification according to AwSV, Annex 1)
Employment restrictions	: Observe restrictions according Act on the Protection of Working Mothers (MuSchG) Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG)
Hazardous Incident Ordinance (12. BImSchV)	: Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

##### Netherlands

SZW-lijst van kankerverwekkende stoffen	: None of the components are listed
---	-------------------------------------

# DIISOBUTYLALUMINUM HYDRIDE, 1M in methylene chloride (11-12 wt%)

## Safety Data Sheet

SZW-lijst van mutagene stoffen	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: None of the components are listed

### Denmark

Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product Pregnant/breastfeeding women working with the product must not be in direct contact with the product The requirements from the Danish Working Environment Authorities regarding work with carcinogens must be followed during use and disposal
-----------------------------	--

### 15.2. Chemical safety assessment

No additional information available

## SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Carc. 2	Carcinogenicity, Category 2
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Pyr. Liq. 1	Pyrophoric Liquids, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H250	Catches fire spontaneously if exposed to air.
H260	In contact with water releases flammable gases which may ignite spontaneously.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H351	Suspected of causing cancer.
EUH014	Reacts violently with water.

SDS EU (REACH Annex II) - Custom

*The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.*

© 2020 Gelest Inc. Morrisville, PA 19067