



DIMETHYLISOPROPOXYALUMINUM

Safety Data Sheet OMAL025

Date of issue: 23/09/2016 Version: 1.0

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

1.1. Product identifier

Product form	: Substance
Physical state	: Liquid
Substance name	: DIMETHYLISOPROPOXYALUMINUM
Product code	: OMAL025
Formula	: C5H13AlO
Synonyms	: DMAI ALUMINUM, DIMETHYL(2-PROPANOLATO)- DIMETHYLALUMINUM ISOPROPOXIDE
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

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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]

Flammable liquids, Category 2	H225
Substances and Mixtures which, in contact with water, emit flammable gases, Category 2	H261
Skin corrosion/irritation, Category 1B	H314
Serious eye damage/eye irritation, Category 1	H318
Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	H335

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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2.2. Label elements

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

Hazard pictograms (CLP) :



Signal word (CLP) :

Danger

Hazard statements (CLP) :

H225 - Highly flammable liquid and vapour.
H261 - In contact with water releases flammable gases.
H314 - Causes severe skin burns and eye damage.
H335 - May cause respiratory irritation.

Precautionary statements (CLP) :

P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P223 - Do not allow contact with water.
P231+P232 - Handle under inert gas. Protect from moisture.
P240 - Ground/bond container and receiving equipment.
P310 - Immediately call a POISON CENTER or doctor/physician

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type :

Mono-constituent

Name :

DIMETHYLISOPROPOXYALUMINUM

CAS-No. :

6063-89-4

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Dimethylisopropoxyaluminum	(CAS-No.) 6063-89-4	95 - 100	Flam. Liq. 2, H225 Water-react. 2, H261 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

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 :

Causes severe skin burns and eye damage.

Symptoms/effects after inhalation :

May cause respiratory irritation. 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 :

No information available.

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

No additional information available

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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 : Highly flammable liquid and vapour. In contact with water releases flammable gases.
Explosion hazard : Container explosion may occur during fire conditions. May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

- Firefighting instructions : Exercise caution when fighting any chemical fire.
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.

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".
Emergency procedures : Stop release.

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. Use only non-sparking tools.

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 : Handle empty containers with care because residual vapours are flammable. Do not allow contact with water.
Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapour and mist. Ground/bond container and receiving equipment. Provide good ventilation in process area to prevent formation of vapour. Protect from moisture. Handle under inert gas. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
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

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.
Storage conditions : Keep container tightly closed. Keep in a cool place. Protect from moisture. Store in a dry place. Store locked up.
Incompatible materials : Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Precious metals. Water.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

- No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Dimethylisopropoxyaluminum (6063-89-4)

Italy - Portugal - USA ACGIH | ACGIH TWA (mg/m³)

2 mg/m³ aluminum alkyls as Al

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Dimethylisopropoxyaluminum (6063-89-4)

USA OSHA

OSHA PEL (TWA) (mg/m³)

2 mg/m³ aluminum alkyls as Al

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 in air.
Molecular mass	: 116.13 g/mol
Colour	: No data available
Odour	: No data available
Odour threshold	: No data available
Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: < 10 °C
Freezing point	: No data available
Boiling point	: 186 °C
Flash point	: 5 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour.
Vapour pressure	: 10 mm Hg @ 70°C
Relative vapour density at 20 °C	: > 1
Relative density	: 0.828
Solubility	: Reacts violently with water.
Log Pow	: No data available
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

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10.2. Chemical stability

Stable in sealed containers stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions

In contact with water releases flammable gases which may ignite spontaneously. Reacts when exposed to alkalis and protic materials such as water and alcohol.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Precious metals. Water.

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
Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.
Reproductive toxicity	: Not classified
STOT-single exposure	: May cause respiratory irritation.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: May cause respiratory irritation. 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	: No information available.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

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.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

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SECTION 14: Transport information

14.1. UN number

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

14.1. UN number

UN-No. (ADR)	: 3398
UN-No. (IMDG)	: 3398
UN-No. (IATA)	: 3398
UN-No. (ADN)	: 3398
UN-No. (RID)	: 3398

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE
Proper Shipping Name (IMDG)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE
Proper Shipping Name (IATA)	: Organometallic substance, liquid, water-reactive
Proper Shipping Name (ADN)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER REACTIVE
Proper Shipping Name (RID)	: ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE
Transport document description (ADR)	: UN 3398 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE (DIMETHYLISOPROPOXYALUMINUM), 4.3, II, (D/E)
Transport document description (IMDG)	: UN 3398 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE (DIMETHYLISOPROPOXYALUMINUM), 4.3, II
Transport document description (IATA)	: UN 3398 Organometallic substance, liquid, water-reactive (DIMETHYLISOPROPOXYALUMINUM), 4.3, II
Transport document description (ADN)	: UN 3398 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER REACTIVE (DIMETHYLISOPROPOXYALUMINUM), 4.3, II
Transport document description (RID)	: UN 3398 ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE (DIMETHYLISOPROPOXYALUMINUM), 4.3, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 4.3
Danger labels (ADR)	: 4.3



IMDG

Transport hazard class(es) (IMDG)	: 4.3
Danger labels (IMDG)	: 4.3



IATA

Transport hazard class(es) (IATA)	: 4.3
Hazard labels (IATA)	: 4.3



ADN

Transport hazard class(es) (ADN)	: 4.3
Danger labels (ADN)	: 4.3

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RID

Transport hazard class(es) (RID) : 4.3
Danger labels (RID) : 4.3



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

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) : W1
Special provisions (ADR) : 274
Limited quantities (ADR) : 500ml
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC01
Mixed packing provisions (ADR) : MP15
Portable tank and bulk container instructions (ADR) : T7
Portable tank and bulk container special provisions (ADR) : TP2, TP7, TP36, TP41
Tank code (ADR) : L4DH
Tank special provisions (ADR) : TU14, TE21, TM2
Vehicle for tank carriage : AT
Transport category (ADR) : 0
Special provisions for carriage - Packages (ADR) : V1
Special provisions for carriage - Loading, unloading and handling (ADR) : CV23
Hazard identification number (Kemler No.) : 323
Orange plates :



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

- Transport by sea

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 500 ml
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001

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Special packing provisions (IMDG)	: PP31
IBC packing instructions (IMDG)	: IBC01
Tank instructions (IMDG)	: T7
Tank special provisions (IMDG)	: TP2, TP7, TP36, TP41
EmS-No. (Fire)	: F-G
EmS-No. (Spillage)	: S-N
Stowage category (IMDG)	: E
Stowage and handling (IMDG)	: SW2, H1
Segregation (IMDG)	: SG35, SG26

- Air transport

PCA Excepted quantities (IATA)	: E2
PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
PCA packing instructions (IATA)	: 478
PCA max net quantity (IATA)	: 1L
CAO packing instructions (IATA)	: 481
CAO max net quantity (IATA)	: 5L
Special provisions (IATA)	: A3
ERG code (IATA)	: 4W

- Inland waterway transport

Classification code (ADN)	: W1
Special provisions (ADN)	: 274
Limited quantities (ADN)	: 500 ml
Excepted quantities (ADN)	: E2
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Provisions for handling and stowage of the cargo (ADN)	: HA08
Number of blue cones/lights (ADN)	: 0

- Rail transport

Classification code (RID)	: W1
Special provisions (RID)	: 274
Limited quantities (RID)	: 500ml
Excepted quantities (RID)	: E2
Packing instructions (RID)	: P001, IBC01
Mixed packing provisions (RID)	: MP15
Portable tank and bulk container instructions (RID)	: T7
Portable tank and bulk container special provisions (RID)	: TP2, TP7, TP36
Tank codes for RID tanks (RID)	: L4DH
Special provisions for RID tanks (RID)	: TU14, TE21, TM2
Transport category (RID)	: 0
Special provisions for carriage – Packages (RID)	: W1
Special provisions for carriage - Loading, unloading and handling (RID)	: CW23
Colis express (express parcels) (RID)	: CE7
Hazard identification number (RID)	: 323

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

No REACH Annex XVII restrictions

DIMETHYLISOPROPOXYALUMINUM is not on the REACH Candidate List

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DIMETHYLISOPROPOXYALUMINUM is not on the REACH Annex XIV List

15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

Denmark

Class for fire hazard : Class I-1

Store unit : 1 liter

Classification remarks : F <Flam. Liq. 2; Water-react. 2>; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

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:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
Water-react. 2	Substances and Mixtures which, in contact with water, emit flammable gases, Category 2
H225	Highly flammable liquid and vapour.
H261	In contact with water releases flammable gases.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.

SDS EU (REACH Annex II) - Custom

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