



DIETHYLGALLIUM CHLORIDE

Safety Data Sheet OMGA025

Date of issue: 09/06/2015 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	: DIETHYLGALLIUM CHLORIDE
Product code	: OMGA025
Formula	: C4H10ClGa
Synonyms	: TMG DIETHYLCHLOROGALLANE CHLORODIETHYLGALLIUM CHLORODIETHYLGALLANE

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

Adverse physicochemical, human health and environmental effects

No additional information available

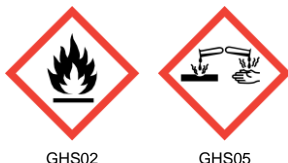
DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS02

GHS05

Signal word (CLP) :

Danger

Hazard statements (CLP) :

H225 - Highly flammable liquid and vapour.
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.

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.
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.
P240 - Ground and bond container and receiving equipment.

EUH-statements

: EUH014 - Reacts violently with water.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type

: Mono-constituent

Name

: DIETHYLGALLIUM CHLORIDE

CAS-No.

: 30914-08-0

EC-No.

: 250-387-7

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Diethylgallium chloride	(CAS-No.) 30914-08-0 (EC-No.) 250-387-7	97 - 100	Flam. Liq. 2, H225 Pyr. Liq. 1, H250 Water-react. 1, H260 Skin Corr. 1B, H314 Eye Dam. 1, H318

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

: 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.

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

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 liquid. Highly flammable liquid and vapour. 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. May form flammable/explosive vapour-air mixture.

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.

Other information : Concentrate containment efforts to adjacent combustibles. Fumes, self-heating on exposure to air, may ignite spontaneously in contact with.

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".

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 : Catches fire spontaneously if exposed to air. 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. Do not allow contact with air. Do not allow contact with water. Ground/bond container and receiving equipment. Handle under inert gas. Protect from moisture. Handle only in sealed purged systems. 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 : Laboratory and production areas must be equipped with special fire-extinguishing media for organometallics. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions : Keep container tightly closed. Store in a dry place. Store in a closed container. Keep in a cool place. Store locked up. Store in sealed containers under nitrogen or argon with <50ppm oxygen.

Incompatible materials : Air. Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Water.

Storage area : Store in a well-ventilated place. Store away from heat.

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Diethylgallium chloride (30914-08-0)		
Italy - Portugal - USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³ aluminum alkyls as Al
USA OSHA	OSHA PEL (TWA) (mg/m ³)	2 mg/m ³ 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:

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

Skin and body protection:

Wear fire/flammable resistant/retardant clothing.

Respiratory protection:

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid. Fumes, self-heating on exposure to air, may ignite spontaneously in contact with combustible materials.
Molecular mass	: 163.29 g/mol
Colour	: Colourless.
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	: 60 - 62 °C @ 2mm Hg
Flash point	: < 0 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour, Catches fire spontaneously if exposed to air.
Vapour pressure	: 5 mm Hg @ 25°C
Relative vapour density at 20 °C	: < 1
Relative density	: 1.35
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

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

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 stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions

Catches fire spontaneously if exposed to air.

10.4. Conditions to avoid

Heat. Sparks. Open flame. Do not allow contact with air.

10.5. Incompatible materials

Air. Alkalis. Bromine. Chlorine. Metal salts. Oxidizing agent. Water.

10.6. Hazardous decomposition products

Carbon monoxide. Formaldehyde. Gallium oxides. 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	: Not classified.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Symptoms/effects after inhalation	: 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.

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.

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

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.

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

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATERREACTIVE
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, WATERREACTIVE
Proper Shipping Name (RID)	: ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
Transport document description (ADR)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATERREACTIVE ((DIETHYLGALLIUM CHLORIDE)), 4.2 (4.3), I, (B/E)
Transport document description (IMDG)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE ((DIETHYLGALLIUM CHLORIDE)), 4.2 (4.3), I
Transport document description (IATA)	: UN 3394 Organometallic substance, liquid, pyrophoric, water-reactive ((DIETHYLGALLIUM CHLORIDE)), 4.2
Transport document description (ADN)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATERREACTIVE ((DIETHYLGALLIUM CHLORIDE)), 4.2 (4.3), I
Transport document description (RID)	: UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE ((DIETHYLGALLIUM CHLORIDE)), 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)
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ADN

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

Safety Data Sheet

Danger labels (ADN) : 4.2, 4.3



RID

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

Danger labels (RID) : 4.2, 4.3



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
Mixed packing provisions (ADR) : MP2
Portable tank and bulk container instructions (ADR) : T21
Portable tank and bulk container special provisions (ADR) : TP2, TP7, TP36
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 :



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

- Transport by sea

Special provisions (IMDG) : 274
Limited quantities (IMDG) : 0

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

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
Properties and observations (IMDG)	: Highly flammable liquid. Liable to ignite spontaneously in air. In contact with air, evolve irritating and slightly toxic fumes. React violently with moisture, water and acids evolving flammable gas.

- Air transport

PCA Limited quantities (IATA)	: Forbidden
PCA limited quantity max net quantity (IATA)	: Forbidden
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, TP41
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

No REACH Annex XVII restrictions

DIETHYLGALLIUM CHLORIDE is not on the REACH Candidate List

DIETHYLGALLIUM CHLORIDE is not on the REACH Annex XIV List

DIETHYLGALLIUM CHLORIDE is not 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.

DIETHYLGALLIUM CHLORIDE

Safety Data Sheet

DIETHYLGALLIUM CHLORIDE is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

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

Classification remarks : 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
Pyr. Liq. 1	Pyrophoric Liquids, Category 1
Skin Corr. 1B	Skin corrosion/irritation, Category 1B
Water-react. 1	Substances and Mixtures which, in contact with water, emit flammable gases, Category 1
H225	Highly flammable liquid and vapour.
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.
H318	Causes serious eye damage.
EUH014	Reacts violently with water.

SDS EU (REACH Annex II) - Custom

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