

**DIETHYLGALLIUM CHLORIDE**

Safety Data Sheet OMGA025

Date of issue: 06/09/2015

Version: 1.0

**SECTION 1: Identification****1.1. Identification**

Product name : DIETHYLGALLIUM CHLORIDE  
 Product code : OMGA025  
 Product form : Substance  
 Physical state : Liquid  
 Formula : C<sub>4</sub>H<sub>10</sub>ClGa  
 Synonyms : TMG  
 DIETHYLCHLOROGALLANE  
 CHLORODIETHYLGALLIUM  
 CHLORODIETHYLGALLANE

**1.2. Recommended use and restrictions on use**

Recommended use : Chemical intermediate

**1.3. Supplier****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)
**1.4. Emergency telephone number**

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

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS-US classification**

Flammable liquids Category 2  
 Pyrophoric liquids Category 1  
 Substances and mixtures which in contact with water emit flammable gases Category 1  
 Skin corrosion/irritation Category 1B  
 Serious eye damage/eye irritation Category 1  
 Full text of H statements : see section 16

H225 Highly flammable liquid and vapor  
 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

**2.2. GHS Label elements, including precautionary statements****GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H225 - Highly flammable liquid and vapor  
 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

Precautionary statements (GHS US) : P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
 P210 - Keep away from heat, open flames, sparks. - No smoking.  
 P222 - Do not allow contact with air.  
 P223 - Do not allow contact with water.  
 P231+P232 - Handle under inert gas. Protect from moisture  
 P233 - Keep container tightly closed.  
 P240 - Ground/Bond container and receiving equipment  
 P241 - Use explosion-proof ventilating equipment  
 P242 - Use only non-sparking tools.  
 P243 - Take precautionary measures against static discharge.  
 P260 - Do not breathe vapors.  
 P264 - Wash hands thoroughly after handling.  
 P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting  
 P302+P334 - If on skin: Immerse in cool water/wrap with wet bandages  
 P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse

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skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a doctor  
P321 - Specific treatment (see first aid instructions on this label)  
P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.  
P363 - Wash contaminated clothing before reuse.  
P370+P378 - In case of fire: Use dry extinguishing powder to extinguish.  
P402+P404 - Store in a dry place. Store in a closed container.  
P403+P235 - Keep in a cool place  
P405 - Store locked up.  
P422 - Store contents under dry inert atmosphere  
P501 - Dispose of contents/container to licensed waste disposal facility.

### 2.3. Hazards not otherwise classified (HNOC)

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Mono-constituent  
Name : DIETHYLGALLIUM CHLORIDE  
CAS-No. : 30914-08-0

Name	Product identifier	%	GHS-US classification
Diethylgallium chloride	(CAS-No.) 30914-08-0	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 hazard classes and 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 victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.

First-aid measures after skin contact : Wash with plenty of soap and 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 (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.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

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

Unsuitable extinguishing media : Water.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Pyrophoric liquid. Highly flammable liquid and vapor. 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 vapor-air mixture.

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### 5.3. Special protective equipment and precautions for fire-fighters

- 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 vapor 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 vapors are flammable. Keep away from any possible contact with water, because of violent reaction and possible flash fire.
- Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor 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.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Diethylgallium chloride (30914-08-0)		
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ aluminum alkyls as Al
OSHA	OSHA PEL (TWA) (mg/m³)	2 mg/m³ aluminum alkyls as Al

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Glove box or sealed system under inert atmosphere is required. Provide local exhaust or general room ventilation.

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### 8.3. Individual protection measures/Personal protective equipment

#### 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/flamm 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
Color	: Colorless.
Odor	: No data available
Odor threshold	: No data available
Refractive index	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=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 vapor, Catches fire spontaneously if exposed to air
Vapor pressure	: 5 mm Hg @ 25°C
Relative vapor 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
Oxidizing properties	: No data available
Explosion 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.

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### 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 sensitization	: 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
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – 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

No additional information available

### 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. Other adverse effects

Other adverse effects	: This substance may be hazardous to the environment.
Effect on the ozone layer	: No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal 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 vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

## SECTION 14: Transport information

### 14.1. UN number

UN-No.(DOT)	: 3394
DOT NA no.	UN3394



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### 14.2. UN proper shipping name

Transport document description	: UN3394 Organometallic substance, liquid, pyrophoric, water-reactive (DIETHYLGALLIUM CHLORIDE), 4.2 (4.3), I
Proper Shipping Name (DOT)	: Organometallic substance, liquid, pyrophoric, water-reactive (DIETHYLGALLIUM CHLORIDE)
Class (DOT)	: 4.2 - Class 4.2 - Spontaneously combustible material 49 CFR 173.124
Packing group (DOT)	: I - Great Danger
Hazard labels (DOT)	: 4.2 - Spontaneously combustible 4.3 - Dangerous when wet



DOT Packaging Non Bulk (49 CFR 173.xxx)	: 181
DOT Packaging Bulk (49 CFR 173.xxx)	: 244
DOT Packaging Exceptions (49 CFR 173.xxx)	: None
DOT Symbols	: G - Identifies PSN requiring a technical name

### 14.3. Additional information

Emergency Response Guide (ERG) Number	: 135
Other information	: No supplementary information available.

### Transport by sea

DOT Vessel Stowage Location	: D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other	: 13 - Keep as dry as reasonably practicable, 52 - Stow "separated from" acids, 78 - Stow "separated longitudinally by an intervening complete compartment or hold from" explosives

### Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: Forbidden
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: Forbidden

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

DIETHYLGALLIUM CHLORIDE (30914-08-0)	
TSCA Exemption/Exclusion	CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

### Diethylgallium chloride (30914-08-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

### Diethylgallium chloride (30914-08-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

### Diethylgallium chloride (30914-08-0)

Listed on the Japanese ISHL (Industrial Safety and Health Law)

### 15.3. US State regulations

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California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

### SECTION 16: Other information

Full text of H-phrases::

H225	Highly flammable liquid and vapor
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

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.

### Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given

Flammability : 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical : 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Prepared by safety and environmental affairs.

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SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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