

# SAFETY DATA SHEET

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## SECTION 1. IDENTIFICATION

**Product Identifier:** >95% Di-n-butylgermanium Dichloride

**Product Code:** GE-OMX-01-4593

**CAS Number:** 4593-81-1

**Relevant identified uses of the substance:** Scientific research and development

Supplier details:

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351  
Emergency telephone number:  
+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity Category 3

Acute dermal toxicity Category 3

Acute Inhalation Toxicity - Dusts and Mists Category 3

Skin Corrosion/irritation Category 1 B

Serious Eye Damage/Eye Irritation Category 1

Label Elements

Signal Word

Danger

Hazard Statements

Toxic if swallowed

Toxic in contact with skin

Causes severe skin burns and eye damage

Toxic if inhaled



Precautionary Statements

#### Prevention

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Wear protective gloves/protective clothing/eye protection/face protection

Use only outdoors or in a well-ventilated area

Do not breathe dust/fume/gas/mist/vapors/spray

#### Response

Immediately call a POISON CENTER or doctor/physician

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

#### Skin

Wash contaminated clothing before reuse

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### Ingestion

Rinse mouth

Do NOT induce vomiting

#### Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

#### Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Contact with water liberates toxic gas

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component Germane, dibutyldichloro-

CAS-No 4593-81-1

Weight % 98

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### SECTION 4. FIRST AID MEASURES

Eye Contact Immediate medical attention is required. Rinse immediately with plenty of water, also under

the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician immediately. Clean mouth with water.

Most important symptoms/effects Causes burns by all exposure routes. Product is a corrosive material. Use of gastric

lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Notes to Physician Treat symptomatically

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## SECTION 5. FIREFIGHTING MEASURES

Suitable Extinguishing Media Carbon dioxide (CO<sub>2</sub>). Dry chemical. chemical foam.

Unsuitable Extinguishing Media No data available

Flash Point No data available

Method - No data available

Autoignition Temperature No data available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No data available

Sensitivity to Static Discharge No data available

Specific Hazards Arising from the Chemical

Contact with water liberates toxic gas. Water reactive. Produce flammable gases on contact with water.

Hazardous Combustion Products

Hydrogen chloride gas Carbon monoxide (CO) Carbon dioxide (CO<sub>2</sub>)

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full

NFPA

Health

3

Flammability

0

Instability

0

Physical Hazards

W

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions See Section 12 for additional ecological information.

Methods for Containment and Clean

Up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

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## SECTION 7. HANDLING AND STORAGE

Handling Do not breathe dust. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Use only in area provided with appropriate exhaust ventilation.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Store contents under argon. Corrosives area.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits

established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations

and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid

Appearance Clear

Odor No data available

Odor Threshold No data available

pH No data available

Melting Point/Range No data available

Boiling Point/Range 242 °C / 467.6 °F @ 760 mmHg

Flash Point No data available

Evaporation Rate No data available

Flammability (solid,gas) No data available

Flammability or explosive limits

Upper No data available

Lower No data available

Vapor Pressure No data available

Vapor Density No data available

Relative Density 1.208

Solubility No data available

Partition coefficient; n-octanol/water No data available

Autoignition Temperature No data available

Decomposition Temperature No data available

Viscosity No data available

Molecular Formula C<sub>8</sub> H<sub>18</sub> Cl<sub>2</sub> Ge

Molecular Weight 257.73

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## SECTION 10. STABILITY AND REACTIVITY

Reactive Hazard Yes

Stability Stable under normal conditions. Moisture sensitive.

Conditions to Avoid Incompatible products. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents, Powdered metals

Hazardous Decomposition Products Hydrogen chloride gas, Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity

Product Information No acute toxicity information is available for this product

### Component Information

Component LD50 Oral LD50 Dermal LC50 Inhalation

Germane, dibutyldichloro- 100 mg/kg ( Rat ) Not listed Not listed

### Toxicologically Synergistic

### Products

No data available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No data available

Sensitization No data available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component CAS-No IARC NTP ACGIH OSHA Mexico

Germane,

dibutyldichloro-

4593-81-1 Not listed Not listed Not listed Not listed Not listed

Mutagenic Effects No data available

Reproductive Effects No data available.

Developmental Effects No data available.

Teratogenicity No data available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No data available

Symptoms / effects, both acute and delayed

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.

Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation

Endocrine Disruptor Information No data available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Do not empty into drains.

Persistence and Degradability No data available

Bioaccumulation/ Accumulation No data available.

Mobility No data available.

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a

hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

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## SECTION 14. TRANSPORT INFORMATION

DOT

UN-No UN2922

Hazard Class 8

Subsidiary Hazard Class 6.1

Packing Group III

TDG

UN-No UN2922

Hazard Class 8

Subsidiary Hazard Class 6.1

Packing Group III

IATA

UN-No

2922

Proper Shipping Name CORROSIVE LIQUID, TOXIC, N.O.S.\*

Hazard Class 8

Subsidiary Hazard Class 6.1

Packing Group III

IMDG/IMO

UN-No 2922

Proper Shipping Name CORROSIVE LIQUID, TOXIC, N.O.S.

Hazard Class 8

Subsidiary Hazard Class 6.1

Packing Group III

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## SECTION 15. REGULATORY INFORMATION

International Inventories

Component TSCA DSL NDSL EINECS ELINCS NLP PICCS ENCS AICS IECSC KECL

Germane, dibutyldichloro- X - X 224-986-9 - - - - -

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated

polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base

Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants

that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) N/A

SARA 313 N/A

SARA 311/312 Hazardous Categorization

Acute Health Hazard Yes

Chronic Health Hazard No

Fire Hazard No

Sudden Release of Pressure Hazard No

Reactive Hazard Yes

Clean Water Act N/A

Clean Air Act N/A

OSHA Occupational Safety and Health Administration

N/A

CERCLA

N/A

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know N/A

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No data available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and

the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1A Very toxic materials

E Corrosive material

F Dangerously reactive material

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## 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2022 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.