

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Description: Diphenylgermanium dichloride
Cat No. : 34113
CAS No 1613-66-7
Molecular Formula C12 H10 Cl2 Ge

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Laboratory chemicals.
Uses advised against No Information available

Details of the supplier of the safety data sheet
Importer

Fisher Scientific Korea
 D5,D6, Incheon Airport Logistics Complex
 150, Gonghangdong-Ro 296 Beon-Gil
 Jung-Gu, Incheon
 Tel: +82-1661-9555
 Fax: +82-2-2023-0603

Supplier

Thermo Fisher Scientific Chemicals, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099

E-mail address

Chem.KR@thermofisher.com

Emergency Telephone Number

Emergency telephone: Medical: +(82) 070-7686-0086 or + 1-703-741-5970
CHEMTREC: 080 822 1374 (Local), CHEMTREC: 1-800-424-9300 or + 1-703-527-3887
Korea: 00-308-13-2549 (24 hours a day, 7 days a week)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture
Physical hazards

Based on available data, the classification criteria are not met

Health hazards

Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity - (single exposure)	Category 3

Environmental hazards

Based on available data, the classification criteria are not met

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Label Elements



Signal Word

Warning

Hazard Statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled

Precautionary Statements

Prevention

P264 - Wash hands and face thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P271 - Use only outdoors or in a well-ventilated area

Response

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

P330 - Rinse mouth

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P312 - Call a POISON CENTER or doctor if you feel unwell

P321 - Specific treatment (see supplemental first aid instructions on this label)

P322 - Specific measures (see supplemental first aid instructions on this label)

P362 + P364 - Take off contaminated clothing and wash it before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P332 + P313 - If skin irritation occurs: Get medical advice/attention

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/attention

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

This product does not contain any known or suspected endocrine disruptors

NFPA

Health
2

Flammability
0

Instability
0

Physical hazards
N/A

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Component	Common Name	CAS No	Index No	Weight %
Germane, dichlorodiphenyl-	No information available	1613-66-7	Not listed	99 - 100

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SECTION 4: FIRST AID MEASURES

Description of first aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention.

Ingestion

Clean mouth with water. Get medical attention.

Inhalation

Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Carbon dioxide (CO₂). Dry chemical. Chemical foam. Do not use a solid water stream as it may scatter and spread fire.

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO₂), Hydrogen chloride gas.

Advice for fire-fighters

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

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Ensure adequate ventilation.

Environmental precautions

See Section 12 for additional Ecological Information.

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Methods and Material for Containment and Cleaning Up

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

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Avoid contact with skin and eyes. Do not breathe mist/vapors/spray.

Conditions for Safe Storage, Including any Incompatibilities

Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	CAS No	Korea	ACGIH TLV	OSHA PEL
Germane, dichlorodiphenyl-	1613-66-7	Not listed	Not listed	Not listed

Component	CAS No	European Union	The United Kingdom	Germany
Germane, dichlorodiphenyl-	1613-66-7	Not listed	Not listed	Not listed

ACGIH - Biological Exposure Indices

Component	CAS No	ACGIH - Biological Exposure Indices
Germane, dichlorodiphenyl-	1613-66-7	Not listed

Exposure Controls

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

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Personal protective equipment Use only those certified by the Korea Occupational Safety and Health Administration.
Respiratory Protection When workers are facing concentrations above the exposure limit they must use appropriate certified respirators
Recommended Filter type: low boiling organic solvent Type AX Brown conforming to EN371 or Organic gases and vapours filter Type A Brown conforming to EN14387
To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
When RPE is used a face piece Fit Test should be conducted

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

Environmental exposure controls No information available

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance (Physical State, Color, etc.) Colorless Liquid

Odor No information available

Odor Threshold No data available

pH No information available

Melting Point/Range No data available

Softening Point No data available

Boiling Point/Range No information available

Flash Point 109 °C / 228.2 °F

@ 05 mmHg

Method - No information available

Evaporation Rate No data available

Flammability (solid,gas) Not applicable

Explosion Limits No data available

Liquid

Vapor Pressure No data available

Vapor Density No data available

Specific Gravity / Density 1.415 (Air = 1.0)

Bulk Density Not applicable

Water Solubility No information available

Solubility in other solvents No information available

Liquid

Partition Coefficient (n-octanol/water)

Component	CAS No	log Pow
Germane, dichlorodiphenyl-	1613-66-7	No data available

Autoignition Temperature No data available

Decomposition Temperature No data available

Viscosity No data available

Explosive Properties No information available

Oxidizing Properties No information available

Molecular Formula C12 H10 Cl2 Ge

Molecular Weight 297.71

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SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available

Chemical Stability

Moisture sensitive.

Possibility of Hazardous Reactions

Hazardous Polymerization No information available.
Hazardous Reactions No information available.

Conditions to Avoid

Incompatible products.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Hydrogen chloride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information

Information on expected route of exposure

Use only in closed systems permitted

Inhalation Not an expected route of exposure.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes. Irritating to eyes.
Skin Harmful in contact with skin. Avoid contact with skin. May cause irritation.

Information on Health Hazards

(a) acute toxicity;

Oral Category 4
Dermal Category 4
Inhalation Category 4

Component	CAS No	LD50 Oral	LD50 Dermal	LC50 Inhalation
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; Category 2

(d) respiratory or skin sensitization;

Respiratory No data available
Skin No data available

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Component	CAS No	Test method	Test species	Study result
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available

(e) germ cell mutagenicity; No data available

Component	CAS No	Test method	Test species	Study result
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available

(f) carcinogenicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available

There are no known carcinogenic chemicals in this product

Component	CAS No	IARC	NTP	ACGIH	OSHA	UK
Germane, dichlorodiphenyl-	1613-66-7	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

Component	CAS No	Test method	Test species / Duration	Study result
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available

(h) STOT-single exposure;
Results / Target organs Category 3
Respiratory system.

(i) STOT-repeated exposure; No data available
Target Organs No information available.

(j) aspiration hazard; No data available

Other Adverse Effects

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Component	CAS No	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

Component	CAS No	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Germane, dichlorodiphenyl-	1613-66-7	No data available	No data available	No data available	No data available

Persistence and degradability No information available

Bioaccumulative potential No information available

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Mobility in soil No information available

Ozone Depletion Potential

Component	CAS No	Ozone Depletion Potential
Germane, dichlorodiphenyl-	1613-66-7	Not listed

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous. Dispose in accordance with the Wastes Control Act (폐기물관리법).

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14: TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN3282
Proper Shipping Name ORGANOMETALLIC COMPOUND, TOXIC, LIQUID, N.O.S.
Technical Shipping Name Diphenylgermanium dichloride
Hazard Class 6.1
Packing Group III

IATA

UN-No UN3282
Proper Shipping Name ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.
Technical Shipping Name Diphenylgermanium dichloride
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN3282
Proper Shipping Name ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.
Technical Shipping Name Diphenylgermanium dichloride
Hazard Class 6.1
Packing Group III
Marine Pollutant No hazards identified

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

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

Legend: X - Listed '-' - Not Listed

International Inventories

Component	CAS No	KECL	TSCA	EINECS	IECSC	DSL	NDSL	PICCS	ENCS	ISHL	AICS
Germane, dichlorodiphenyl-	1613-66-7	-	X	216-562-7	-	-	X	-	-		-

Component	CAS No	Seveso III Directive	Seveso III Directive	Rotterdam	Basel Convention
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		(2012/18/EC) - Qualifying Quantities for Major Accident Notification	(2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Convention (PIC)	(Hazardous Waste)
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable	Not applicable

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Korean National Regulations

Component	CAS No	Act on Registration and Evaluation of Chemical Substances (K-REACH)	Authorised Chemicals	Existing Substances Subject to Registration
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Toxic Chemicals	Chemical Control Act - Prohibited Chemicals	Chemical Control Act - Use Restricted Chemicals
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	Chemical Control Act - Accident Precaution Chemicals (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Storage (% in mixtures)	Chemical Control Act - Accident Precaution Chemicals - Quantity limits Manufacture/Use (% in mixtures)
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	Waste Control Law	Ministry of Environment - CMR risk	Ministry of Environment - Critically Controlled Substance
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Harmful Agents Subject to Work Environment Monitoring	ISHA - Prohibited substances	ISHA - Substances requiring permission
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Substances subject to control	ISHA - Harmful Agents Requiring Health Examination	ISHA - Permissible Exposure Limits
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

Component	CAS No	ISHA - Subject to Process Safety Reports (minimum quantity)	ISHA - Threshold Limit Values (TLVs) Chemicals	ISHA - Special management materials
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

National Fire Association - Dangerous Substances Minimum quantity requiring a permit

Component	CAS No	Class 1 - Oxidising solids	Class 2 - Flammable solid	Class 3 - Spontaneously Combustible Substances and Dangerous Substances When Wet	Class 4 - Flammable liquids	Class 5 - Self-reactive substances	Class 6 - Oxidising liquids
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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NFA Dangerous Substances Classification

Class 3.7 (Organometallic compounds) - 50 kg

Control Parameters

Component	CAS No	Korea	ACGIH - Biological Exposure Indices
Germane, dichlorodiphenyl-	1613-66-7	Not listed	Not listed

US Management Information

OSHA - Occupational Safety and Health Administration

Not applicable

Component	CAS No	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable

CERCLA

Not applicable

Component	CAS No	CERCLA Extremely Hazardous Substances RQs	Hazardous Substances RQs	SARA 313 - Threshold Values %
Germane, dichlorodiphenyl-	1613-66-7	Not applicable	Not applicable	Not applicable

GHS Classification - According to GB-CLP Regulations UK SI 2019/720 and UK SI 2020/1567

Warning.

H315 - Causes skin irritation. H335 - May cause respiratory irritation. H319 - Causes serious eye irritation. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P280 - Wear protective gloves/protective clothing/eye protection/face protection.

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadviser - LOLI, Merck index, RTECS

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Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

Prepared By	Health, Safety and Environmental Department
Creation Date	15-Apr-2015
Revision Date	09-Jun-2024
Revision Number	6
Revision Summary	New emergency telephone response service provider.

MOEL's Public Notice No. 2023-9 (Standards for Classification and Labeling of Chemical Substances and Safety Data Sheets)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet