



# PRODUCT INFORMATION SHEET

**MATERION**

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

### 1.1. Product identifier

**Name of the substance** Germanium  
**Identification number** 231-164-3 (EC number)  
**Registration number** -  
**Document number** 073  
**Synonyms** None.

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses** Manufacture of computer, electronic and optical products, electrical equipment  
Scientific research and development  
Other: Manufacture of medical and defense equipment

**Uses advised against** Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
Consumer uses: Private households (= general public = consumers)

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

**Company name** Materion Electronic Materials  
**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

**Division**

**Telephone** 1.216.383.4019  
**e-mail** ehs@materion.com  
**Contact person** Theodore Knudson

**1.4. Emergency telephone number** See Section 16.

### 1.3. Details of the supplier of the product information sheet

#### Supplier

**Company name** Materion Electronic Materials  
**Address** 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

**Division**

**Telephone** 1.216.383.4019  
**e-mail** ehs@materion.com  
**Contact person** Theodore Knudson

**1.4. Emergency telephone number** See Section 16.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

The substance has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

#### Classification according to Regulation (EC) No 1272/2008 as amended

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

### 2.2. Label elements

#### Label according to Regulation (EC) No. 1272/2008 as amended

**Contains:** Germanium

**Hazard pictograms** None.

**Signal word** None.

**Hazard statements** The products are classified as articles and, as such, do not present a physical or health hazard in the present form. If the products are processed or handled in ways that generate particles (dust, fume, particles and/or powder), a potential health hazard could exist and risk management measures must be taken to minimize risk.

## Precautionary statements

<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash hands after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.

**Supplemental label information** For further information, please contact the Product Stewardship Department at +1.216.383.4019.

**2.3. Other hazards** This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII. The substance is not included in the list established in accordance with REACH Article 59(1) for having endocrine disrupting properties.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

#### General information

Chemical name	%	CAS-No. / EC No.	REACH Registration No.	Index No.	Notes
Germanium	100	7440-56-4 231-164-3	-	-	

**Classification:** -

#### List of abbreviations and symbols that may be used above

ATE: Acute toxicity estimate.

M: M-factor

vPvB: very persistent and very bioaccumulative substance.

PBT: persistent, bioaccumulative and toxic substance.

#: This substance has been assigned Union workplace exposure limit(s).

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition comments** The full text for all H-statements is displayed in section 16.

## SECTION 4: First aid measures

**General information** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 4.1. Description of first aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

**Skin contact** Wash off with soap and water. Get medical attention if irritation develops and persists.

**Eye contact** Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion** Rinse mouth. Get medical attention if symptoms occur.

**4.2. Most important symptoms and effects, both acute and delayed** Under normal conditions of intended use, this material does not pose a risk to health.

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

## SECTION 5: Firefighting measures

**General fire hazards** No unusual fire or explosion hazards noted.

### 5.1. Extinguishing media

**Suitable extinguishing media** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** None known.

**5.2. Special hazards arising from the substance or mixture** None known.

### 5.3. Advice for firefighters

**Special protective equipment for firefighters** Use protective equipment appropriate for surrounding materials.

**Special firefighting procedures** Use water spray to cool unopened containers.

**Specific methods** Use standard firefighting procedures and consider the hazards of other involved materials.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

<b>For non-emergency personnel</b>	Wear appropriate personal protective equipment.
<b>For emergency responders</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the Product Information Sheet.

**6.2. Environmental precautions** Avoid discharge into drains, water courses or onto the ground.

**6.3. Methods and material for containment and cleaning up** The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. The product is insoluble in water.

**6.4. Reference to other sections** For personal protection, see section 8 of the Product Information Sheet. For waste disposal, see section 13 of the Product Information Sheet.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling** Avoid prolonged exposure. Observe good industrial hygiene practices.

**7.2. Conditions for safe storage, including any incompatibilities** Store in tightly closed container. Store away from incompatible materials (see Section 10 of the Product Information Sheet).

**7.3. Specific end use(s)** Observe industrial sector guidance on best practices.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

<b>Occupational exposure limits</b>	No exposure limits noted for ingredient(s).
<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Recommended monitoring procedures</b>	Follow standard monitoring procedures.
<b>Derived no effect levels (DNELs)</b>	Not available.
<b>Predicted no effect concentrations (PNECs)</b>	Not available.

### 8.2. Exposure controls

**Appropriate engineering controls** Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Individual protection measures, such as personal protective equipment

<b>General information</b>	Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin protection</b>	
- <b>Hand protection</b>	Wear gloves to prevent metal cuts and skin abrasions during handling.
- <b>Other</b>	Wear suitable protective clothing.
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.

**Hygiene measures** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**Environmental exposure controls** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Colour</b>	Grayish-white

<b>Odour</b>	None.
<b>Odour threshold</b>	Not applicable.
<b>Melting point/freezing point</b>	937,2 °C (1718,96 °F) / Not applicable.
<b>Boiling point or initial boiling point and boiling range</b>	Not applicable.
<b>Flammability</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit – upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Kinematic viscosity</b>	Not applicable.
<b>Solubility</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water) (log value)</b>	Not applicable.
<b>Vapour pressure</b>	Not available.
<b>Vapour pressure temp.</b>	25 °C (77 °F) 25 °C (77 °F)
<b>Density and/or relative density</b>	
<b>Density</b>	5,32 g/cm <sup>3</sup> estimated at 25 °C 5,32 g/cm <sup>3</sup> estimated at 25 °C estimated Not applicable.
<b>Relative density</b>	Not applicable.
<b>Vapour density</b>	Not applicable.
<b>Particle characteristics</b>	Not available.
<b>9.2. Other information</b>	
<b>9.2.1. Information with regard to physical hazard classes</b>	No relevant additional information available.
<b>9.2.2. Other safety characteristics</b>	
<b>Evaporation rate</b>	Not applicable.
<b>Molecular formula</b>	Ge
<b>Molecular weight</b>	72,59 g/mol
<b>Surface tension</b>	Not applicable.
<b>Surface tension temp.</b>	Not applicable.
<b>Viscosity</b>	Not applicable.
<b>SECTION 10: Stability and reactivity</b>	
<b>10.1. Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.2. Chemical stability</b>	Material is stable under normal conditions.
<b>10.3. Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>10.4. Conditions to avoid</b>	Contact with incompatible materials.
<b>10.5. Incompatible materials</b>	Strong oxidising agents.
<b>10.6. Hazardous decomposition products</b>	No hazardous decomposition products are known.

## SECTION 11: Toxicological information

**General information** Occupational exposure to the substance or mixture may cause adverse effects.

### Information on likely routes of exposure

<b>Inhalation</b>	Not likely, due to the form of the product.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Not likely, due to the form of the product.
<b>Ingestion</b>	Not likely, due to the form of the product.

**Symptoms** None known.

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

**Acute toxicity** Not known.

Components	Species	Test Results
Germanium (CAS 7440-56-4)		
<b>Acute</b>		
<b>Oral</b>		
LD50	Rat	104 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Due to partial or complete lack of data the classification is not possible. Not likely, due to the form of the product.

**Serious eye damage/eye irritation** Due to partial or complete lack of data the classification is not possible. Not likely, due to the form of the product.

**Respiratory sensitisation** Due to partial or complete lack of data the classification is not possible.

**Skin sensitisation** Due to partial or complete lack of data the classification is not possible. Not a skin sensitiser.

**Germ cell mutagenicity** Due to partial or complete lack of data the classification is not possible.

**Carcinogenicity** Not classifiable as to carcinogenicity to humans. Due to partial or complete lack of data the classification is not possible.

**Reproductive toxicity** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - single exposure** Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity - repeated exposure** Due to partial or complete lack of data the classification is not possible.

**Aspiration hazard** Not an aspiration hazard. Due to partial or complete lack of data the classification is not possible.

**Mixture versus substance information** No information available.

### 11.2. Information on other hazards

**Endocrine disrupting properties** This substance does not have endocrine disrupting properties with respect to human health, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.

**Other information** Not available.

## SECTION 12: Ecological information

**12.1. Toxicity** Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.

**12.2. Persistence and degradability** No data is available on the degradability of this product.

**12.3. Bioaccumulative potential** No data available.

**Partition coefficient n-octanol/water (log Kow)** Not available.

**Bioconcentration factor (BCF)** Not available.

**12.4. Mobility in soil** No data available.

**12.5. Results of PBT and vPvB assessment** This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

**12.6. Endocrine disrupting properties** This substance does not have endocrine disrupting properties with respect to the environment, as it does not meet the assessment criteria laid out in Regulations (EC) No 1907/2006, (EU) No 2017/2100 and (EU) 2018/605.

**12.7. Other adverse effects** No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

<b>Residual waste</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
<b>EU waste code</b>	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Disposal methods/information</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
<b>Special precautions</b>	Dispose in accordance with all applicable regulations.

## SECTION 14: Transport information

### ADR

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>Hazard No. (ADR)</b>	Not assigned.
<b>Tunnel restriction code</b>	Not assigned.
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### RID

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### ADN

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	-
<b>14.5. Environmental hazards</b>	No.
<b>14.6. Special precautions for user</b>	Not assigned.

### IATA

<b>14.1. UN number</b>	Not regulated as dangerous goods.
<b>14.2. UN proper shipping name</b>	Not regulated as dangerous goods.
<b>14.3. Transport hazard class(es)</b>	
<b>Class</b>	Not assigned.
<b>Subsidiary risk</b>	-
<b>14.4. Packing group</b>	-

**14.5. Environmental hazards** No.  
**14.6. Special precautions for user** Not assigned.

#### IMDG

**14.1. UN number** Not regulated as dangerous goods.  
**14.2. UN proper shipping name** Not regulated as dangerous goods.  
**14.3. Transport hazard class(es)**  
**Class** Not assigned.  
**Subsidiary risk** -  
**14.4. Packing group** -  
**14.5. Environmental hazards**  
**Marine pollutant** No.  
**EmS** Not assigned.  
**14.6. Special precautions for user** Not assigned.

### SECTION 15: Regulatory information

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

##### EU regulations

**Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended**  
Not listed.

**Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended**  
Not listed.

**Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended**  
Not listed.

**Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended**  
Not listed.

**Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA**  
Not listed.

##### Authorisations

**Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended**  
Not listed.

##### Restrictions on use

**Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use, as amended - Conditions of restriction given for the associated entry number should be considered**  
Not listed.

**Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.**  
Not listed.

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex I, as amended**  
Not listed.

**Regulation 2019/1148 on Marketing and Use of Explosive Precursors, Annex II, as amended**  
Not listed.

##### Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

##### National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

##### 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

## SECTION 16: Other information

### List of abbreviations

ADN: European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.  
ADR: Agreement concerning the International Carriage of Dangerous Goods by Road.  
CAS: Chemical Abstract Service.  
CEN: European Committee for Standardization.  
IATA: International Air Transport Association.  
IBC Code: International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk.  
IMDG: International Maritime Dangerous Goods.  
MARPOL: International Convention for the Prevention of Pollution from Ships.  
PBT: Persistent, bioaccumulative and toxic.  
RID: Regulations concerning the International Carriage of Dangerous Goods by Rail.  
STEL: Short term exposure limit.  
TLV: Threshold Limit Value.  
vPvB: Very persistent and very bioaccumulative.

### References

Not available.

### Information on evaluation method leading to the classification of mixture

Not applicable.

### Full text of any statements, which are not written out in full under sections 2 to 15

None.

### Revision information

Product and Company Identification: Synonyms

### Training information

Follow training instructions when handling this material.

### Disclaimer

To avoid any misunderstandings or incorrect assumptions by the receiver of the safety information, it should be made clear that the supplied information is not in the form of a Safety Data Sheet (SDS), but is actually a voluntary Product Information Sheet closely following the guidelines of the Safety Data Sheet – COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 (REACH/SDS).

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