

**MATERION****1. Chemical and company identification**

Name of chemical (Product name)	Carbon (bulk form)
Company name	Materion Advanced Materials Germany GmbH
Address	Borsigstrasse 10 Alzenau 63755 Germany
Contact person	Hermann Schmiing
Telephone	49.60.23.91.82.0
e-mail address	Materion.Germany@materion.com
Emergency telephone number	49.60.23.91.82.0
Reference number	G32

**2. Hazards identification****GHS classification**

The product is not classified according to GHS.

**GHS label elements**

**Symbols** None.

**Signal words** None.

**Hazard statement** The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

**Precautionary statement**

**Prevention** Keep cool. Protect from sunlight. Wear protective gloves/eye protection/face protection.

**Response** Wash hands after handling.

**Storage** Maintain air gap between stacks/pallets. Store away from other materials.

**Disposal** Dispose of waste and residues in accordance with local authority requirements.

**Other hazards which do not result in classification** None known.

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

**Main symptoms and emergency overview**

**Main symptoms** None known.

**Emergency overview** The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

**3. Composition/information on ingredients**

**Substance or mixture** Substance

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Carbon	7440-44-0			100

**Chemical formula** C (7440-44-0)

**4. First aid measures**

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

**If on skin** Wash off with soap and water. Get medical attention if irritation develops and persists.

**If in eyes** Rinse with water. Get medical attention if irritation develops and persists.

**If swallowed** Rinse mouth. Get medical attention if symptoms occur.

<b>Most important symptoms/effects, acute and delayed</b>	Under normal conditions of intended use, this material does not pose a risk to health.
<b>Protection of first-aid responders</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>Notes to physician</b>	Treat symptomatically.

## 5. Fire-fighting measures

<b>Extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
<b>Extinguishing media to avoid</b>	None.
<b>Specific hazards</b>	This product is not flammable.
<b>Special fire fighting procedures</b>	Use water spray to cool unopened containers.
<b>Protection of fire-fighters</b>	Wear suitable protective equipment.
<b>General fire hazards</b>	Not relevant, due to the form of the product.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency measures</b>	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.
<b>Methods or materials for containment and cleaning up</b>	Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.

## 7. Handling and storage

### Handling

<b>Technical measures (e.g. Local and general ventilation)</b>	Provide adequate ventilation.
<b>Safe handling advice</b>	Keep cool. Observe good industrial hygiene practices.
<b>Contact avoidance measures</b>	Chlorine.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

### Storage

<b>Safe storage conditions</b>	Store in a cool, dry place out of direct sunlight. Store away from other materials. Maintain air gap between stacks/pallets.
<b>Safe packaging materials</b>	Store in original tightly closed container.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### Japan. OELs - ISHL. (Workplace Environment Assessment Standards)

Material	Type	Value	Form
Carbon (bulk form)	TLV	0.025 mg/m3	Dust.
Components	Type	Value	Form
Carbon (CAS 7440-44-0)	TLV	0.025 mg/m3	Dust.

### Engineering measures

Good general ventilation (typically 10 air changes per hour) 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.

### Personal protective equipment

<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Hand protection</b>	Wear protective gloves.
<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing.

## 9. Physical and chemical properties

### Appearance

Physical state	Solid.
Form	Solid.
Color	Dark grey.
Odor	None.
Odor threshold	Not applicable.
pH	Not applicable.
Melting point/Freezing point	6332 °F (3500 °C) estimated
Boiling point, initial boiling point, and boiling range	Not applicable.
Flash point	Not applicable.
Combustion characteristics (solid, gas)	None known.

### Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not applicable.
Flammability limit - lower (%) temperature	Not applicable.
Flammability limit - upper (%)	Not applicable.
Flammability limit - upper (%) temperature	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.

Vapor pressure	Not applicable.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Specific gravity	Not available.

Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.

Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Viscosity (Coefficient of viscosity)	Not applicable.

### Other information

Density	Not applicable.
Explosive limit	Not applicable.
Explosive properties	Not explosive.
Molecular formula	C
Molecular weight	12.01 g/mol
Oxidizing properties	Not oxidizing.
Relative density	Not applicable.

## 10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
------------	---

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Chlorine.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

**Acute toxicity** Not known.

Components	Species	Test Results
Carbon (CAS 7440-44-0)		
<u>Acute</u>		
Oral		
LD50	Rat	> 10000 mg/kg
<b>Skin corrosion/irritation</b>	Not likely, due to the form of the product.	
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.	
<b>Respiratory or skin sensitization</b>		
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	Not a skin sensitizer.	
<b>Germ cell mutagenicity</b>	Not classified.	
<b>Carcinogenicity</b>	Not classified.	
<b>Reproductive toxicity</b>	Not classified.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	

## 12. Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	
<b>Bioaccumulation</b>	No data available.
<b>Mobility in soil</b>	Not relevant, due to the form of the product.
<b>Hazardous to the ozone layer</b>	No data available.
<b>Other hazardous effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

## 13. Disposal considerations

Dispose in accordance with all applicable regulations.

<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>Local disposal regulations</b>	Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

## 14. Transport information

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

**National regulations** Follow regulation in section 15 for domestic transportation.

## 15. Regulatory information

### Industrial Safety and Health Act

#### Notifiable substances

Not regulated.

#### Labeling substances

Not regulated.

### Poisonous and Deleterious Substances Control Act

#### Specified poisonous substances

Not regulated.

#### Poisonous substances

Not regulated.

#### Deleterious substances

Not regulated.

### Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

#### Class I specified chemical substances

Not regulated.

#### Class II specified chemical substances

Not regulated.

#### Monitoring chemical substances

Not regulated.

#### Priority Assessment Chemical Substances (PACs)

Not regulated.

#### Reporting Exempted Substances

Not regulated.

### Law concerning Pollutant Release and Transfer Register

#### Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 1 substances (substance name, ordinance number and content)

Not regulated.

#### Class 2 substances (substance name, ordinance number and content)

Not regulated.

**Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule** Not regulated.

**Air Law, Enforcement Rule** Not regulated.

### Explosives Control Act

Not regulated.

## 16. Other information

### Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices  
HSDB® - Hazardous Substances Data Bank  
IARC Monographs. Overall Evaluation of Carcinogenicity  
National Toxicology Program (NTP) Report on Carcinogens  
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits  
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012  
JIS Z 7252:2014 Classification of chemicals based on "Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"  
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.