



PRODUCT INFORMATION SHEET

MATERION

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

1.1. Product identifier

Name of the substance Carbon (bulk form)
Identification number 231-153-3 (EC number)
Registration number -
Document number G32
Synonyms None.
Issue date 06-February-2019
Version number 02

1.3. Details of the supplier of the product information sheet

Supplier

Company name Materion Advanced Materials Germany GmbH
Address Borsigstrasse 10
63755 Alzenau
DE

Division

Telephone 49.60.23.91.82.0 H. Schmiing

e-mail Materion.Germany@materion.com

Contact person Hermann Schmiing

1.4. Emergency telephone number 49.60.23.91.82.0 H. Schmiing

Revision date 11-February-2021

Supersedes date 06-February-2019

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
Other: Manufacture of medical and defense equipment Scientific research and development

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 Advanced Materials Germany GmbH
Address Borsigstrasse 10
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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.

Hazard summary

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 or powder) and/or chemical compounds, a potential health hazard could exist and risk management measures must be taken to minimize risk.

2.2. Label elements

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

Contains: Carbon (bulk form)
Hazard pictograms None.
Signal word None.
Hazard statements The substance does not meet the criteria for classification.

Precautionary statements

Prevention Observe good industrial hygiene practices.
Response Wash hands after handling.
Storage Store away from incompatible materials.
Disposal 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 Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients**3.1. Substances****General information**

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|--------------------|-----|------------------------|------------------------|-----------|-------|
| Carbon (bulk form) | 100 | 7440-44-0 231-153-3 | - | - | |

Classification: -

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 (CO₂).
Unsuitable extinguishing media Do not use water as an extinguisher.

5.2. Special hazards arising from the substance or mixture This product is not flammable.

5.3. Advice for firefighters

Special protective equipment for firefighters Wear suitable protective equipment.
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

| | |
|------------------------------------|---|
| For non-emergency personnel | Keep unnecessary personnel away. For personal protection, see section 8 of the PIS. |
| For emergency responders | As supplied, this product poses no special release issues. |

6.2. Environmental precautions Not relevant, due to the form of the product.

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk.

6.4. Reference to other sections For personal protection, see section 8 of the PIS. For waste disposal, see section 13 of the PIS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Minimise dust generation and accumulation. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store in a closed container away from incompatible materials.

7.3. Specific end use(s) Not relevant.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Austria. MAK List, OEL Ordinance (GwV), BGBl. II, no. 184/2001

| Material | Type | Value | Form |
|------------------------------------|------|----------------------|------------------|
| Carbon (bulk form) (CAS 7440-44-0) | MAK | 5 mg/m ³ | Respirable dust. |
| | STEL | 10 mg/m ³ | Respirable dust. |

Bulgaria. OELs. Regulation No 13 on protection of workers against risks of exposure to chemical agents at work

| Material | Type | Value | Form |
|------------------------------------|------|-----------------------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 3,5 mg/m ³ | Respirable fraction. |

Croatia. Dangerous Substance Exposure Limit Values in the Workplace (ELVs), Annexes 1 and 2, Narodne Novine, 13/09

| Material | Type | Value | Form |
|------------------------------------|------|----------------------|------------------|
| Carbon (bulk form) (CAS 7440-44-0) | MAC | 4 mg/m ³ | Respirable dust. |
| | | 10 mg/m ³ | Total dust. |

Cyprus. OELs. Control of factory atmosphere and dangerous substances in factories regulation, PI 311/73, as amended.

| Material | Type | Value |
|------------------------------------|------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 10 mg/m ³ |

Denmark. Exposure Limit Values

| Material | Type | Value | Form |
|------------------------------------|------|-----------------------|-------------|
| Carbon (bulk form) (CAS 7440-44-0) | TLV | 2,5 mg/m ³ | Respirable. |

Estonia. OELs. Occupational Exposure Limits of Hazardous Substances (Regulation No. 105/2001, Annex), as amended

| Material | Type | Value | Form |
|------------------------------------|------|---------------------|-------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 3 mg/m ³ | Dust. |

Finland. Workplace Exposure Limits

| Material | Type | Value |
|------------------------------------|------|---------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 2 mg/m ³ |

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984

| Material | Type | Value | Form |
|--|------|----------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | VME | 5 mg/m3 | Respirable fraction. |
| | | 2 mg/m3 | Respirable fraction. |
| | | 10 mg/m3 | Inhalable fraction. |
| Regulatory status: Regulatory binding (VRC) | | | |
| Regulatory status: Indicative limit (VL) | | | |
| Regulatory status: Regulatory binding (VRC) | | | |

Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace

| Material | Type | Value | Form |
|------------------------------------|------|------------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | AGW | 10 mg/m3 | Inhalable fraction. |
| | | 1,25 mg/m3 | Respirable fraction. |

Greece. OELs (Decree No. 90/1999, as amended)

| Material | Type | Value | Form |
|------------------------------------|------|----------|-------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 5 mg/m3 | Respirable. |
| | | 10 mg/m3 | Inhalable |

Hungary. OELs. Joint Decree on Chemical Safety of Workplaces

| Material | Type | Value | Form |
|------------------------------------|------|----------|-----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 6 mg/m3 | Respirable dust. |
| | | 10 mg/m3 | Total inhalable dust. |

Poland. Ordinance of the Minister of Labour and Social Policy on 6 June 2014 on the maximum permissible concentrations and intensities of harmful health factors in the work environment, Journal of Laws 2014, item 817

| Material | Type | Value | Form |
|------------------------------------|------|---------|---------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 6 mg/m3 | Inhalable fraction. |

Portugal. VLEs. Norm on occupational exposure to chemical agents (NP 1796)

| Material | Type | Value | Form |
|------------------------------------|------|---------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 2 mg/m3 | Respirable fraction. |

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

| Material | Type | Value | Form |
|------------------------------------|------|------------|----------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 10 mg/m3 | Inhalable fraction. |
| | | 1,25 mg/m3 | Respirable fraction. |

Sweden. OELs. Work Environment Authority (AV), Occupational Exposure Limit Values (AFS 2015:7)

| Material | Type | Value | Form |
|------------------------------------|------|---------------|------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 0,2 fibers/ml | |
| | | 5 mg/m3 | Inhalable dust. |
| | | 2,5 mg/m3 | Respirable dust. |

UK. EH40 Workplace Exposure Limits (WELs)

| Material | Type | Value | Form |
|------------------------------------|------|----------|------------------|
| Carbon (bulk form) (CAS 7440-44-0) | TWA | 4 mg/m3 | Respirable dust. |
| | | 10 mg/m3 | Inhalable dust. |

Biological limit values No biological exposure limits noted for the ingredient(s).**Recommended monitoring procedures** Follow standard monitoring procedures.

| | |
|--|---|
| Derived no effect levels (DNELs) | Not available. |
| Predicted no effect concentrations (PNECs) | Not available. |
| 8.2. Exposure controls | |
| Appropriate engineering controls | 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. |
| Individual protection measures, such as personal protective equipment | |
| General information | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. |
| Eye/face protection | Wear safety glasses with side shields (or goggles). |
| Skin protection | |
| - Hand protection | Wear protective gloves. |
| - Other | Wear suitable protective clothing. |
| Respiratory protection | In case of insufficient ventilation, wear suitable respiratory equipment. |
| Thermal hazards | 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 | Environmental manager must be informed of all major releases. |

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|--|-----------------------------|
| Physical state | Solid. |
| Form | Solid. |
| Colour | Dark grey. |
| Odour | None. |
| Odour threshold | Not applicable. |
| pH | Not applicable. |
| Melting point/freezing point | 3500 °C (6332 °F) estimated |
| Initial boiling point and boiling range | Not applicable. |
| Flash point | Not applicable. |
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | None known. |

Upper/lower flammability or explosive limits

| | |
|--|-----------------|
| Flammability limit - lower (%) | Not applicable. |
| Flammability limit - upper (%) | Not applicable. |
| Explosive limit - lower (%) | Not applicable. |
| Explosive limit - lower (%) temperature | Not applicable. |
| Explosive limit – upper (%) | Not applicable. |
| Explosive limit - upper (%) temperature | Not applicable. |
| Vapour pressure | Not applicable. |
| Vapour density | Not applicable. |
| Relative density | Not applicable. |

| | |
|--|-----------------|
| Solubility(ies) | |
| Solubility (water) | Insoluble |
| Partition coefficient (n-octanol/water) | Not applicable. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not applicable. |
| Viscosity | Not applicable. |
| Explosive properties | Not explosive. |
| Oxidising properties | Not oxidising. |

9.2. Other information

| | |
|--------------------------|-----------------|
| Explosive limit | Not applicable. |
| Molecular formula | C |
| Molecular weight | 12,01 g/mol |

SECTION 10: Stability and reactivity

| | |
|---|---|
| 10.1. Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| 10.2. Chemical stability | Material is stable under normal conditions. |
| 10.3. Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| 10.4. Conditions to avoid | Contact with incompatible materials. |
| 10.5. Incompatible materials | Chlorine. |
| 10.6. Hazardous decomposition products | 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

| | |
|---------------------|---|
| Inhalation | No adverse effects due to inhalation are expected. |
| Skin contact | No adverse effects due to skin contact are expected. |
| Eye contact | Not likely, due to the form of the product. |
| Ingestion | May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure. |

Symptoms None known.

11.1. Information on toxicological effects

| | |
|--|---|
| Acute toxicity | Not known. |
| Skin corrosion/irritation | Not likely, due to the form of the product. |
| Serious eye damage/eye irritation | Not likely, due to the form of the product. |
| Respiratory sensitisation | Not a respiratory sensitizer. |
| Skin sensitisation | Not a skin sensitiser. |
| Germ cell mutagenicity | Based on available data, the classification criteria are not met. |
| Carcinogenicity | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA. |

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)

Not listed.

Slovenia. OELs. Regulations concerning protection of workers against risks due to exposure to chemicals while working (Official Gazette of the Republic of Slovenia)

Carbon (bulk form) (CAS 7440-44-0) Carcinogenic, Category 1A

| | |
|---|---------------------------|
| Reproductive toxicity | Not classified. |
| Specific target organ toxicity - single exposure | Not classified. |
| Specific target organ toxicity - repeated exposure | Not classified. |
| Aspiration hazard | Not an aspiration hazard. |
| Mixture versus substance information | No information available. |

Other information This product has no known adverse effect on human health.

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

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 Not a PBT or vPvB substance or mixture.

12.6. 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

Residual waste 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).

Contaminated packaging 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.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Special precautions Dispose in accordance with all applicable regulations.

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

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

Carbon (bulk form) (CAS 7440-44-0)

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

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.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

National regulations

Not available.

15.2. Chemical safety assessment

Not available.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

Not applicable.

Revision information

SECTION 2: Hazards identification: Hazard summary

Toxicological Information: Toxicological Data

Training information

Follow training instructions when handling this material.

Disclaimer

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