Safety Data Sheet

according to Regulation (EC) No 1907/2006

carbon fabrics, tapes, braided sleeves, rovings, yarns, chopped strands

Revision date: 29.03.2018  Product code: 190220-2010  Page 1 of 6

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

1.1. Product identifier

carbon fabrics, tapes, braided sleeves, rovings, yarns, chopped strands

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

1.3. Details of the supplier of the safety data sheet

Company name: R&G Faserverbundwerkstoffe GmbH
Composite Technology
Im Meißel 7 - 13
D-71111 Waldenbuch

Place: D-71107 Waldenbuch
Post-office box: 1145

Telephone: +49 (0)7157 5304-60  Telefax: +49 (0)7157 5304-70

e-mail: info@r-g.de
Internet: www.r-g.de

Management

1.4. Emergency telephone number:
Vergiftungs-Informations-Zentrale Freiburg
Tel: +49 (0)761 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No. 1272/2008

Hazard categories:
Respiratory or skin sensitisation: Skin Sens. 1

Hazard Statements:
May cause an allergic skin reaction.

2.2. Label elements

Regulation (EC) No. 1272/2008

Hazard components for labelling:
epoxy resin (number average molecular weight <= 700), reaction product: bisphenol-A-(epichlorhydrin)

Signal word: Warning

Pictograms:


Hazard statements

H317 May cause an allergic skin reaction.

Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 IF ON SKIN: Wash with plenty of water.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 Take off contaminated clothing and wash it before reuse.

Additional advice on labelling
not classified as dangerous under the hazardous substances laws (GefStoffV)/EC Directives

SECTION 3: Composition/information on ingredients

Revision No: 1,05 - Replaces version: 1,04  GB - EN  Print date: 29.03.2018
3.2. Mixtures

Chemical characterization
organic/inorganic pigment paste for colouring epoxy resins

Hazardous components

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-44-0</td>
<td>Carbon</td>
<td>&gt; 95%</td>
</tr>
<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>0,1 - 1%</td>
</tr>
<tr>
<td>500-033-5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Classification according to Regulation (EC) No. 1272/2008 [CLP]
Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1, Aquatic Chronic 2; H319 H315 H317 H411

Full text of H and EUH statements: see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information
Change contaminated clothing.

After inhalation
Remove to fresh air Consult a doctor when complaints persist.

After contact with skin
After contact with skin, wash immediately with plenty of water and soap. If skin becomes irritated, seek medical treatment.

After ingestion
Rinse mouth thoroughly with water. Seek medical advice immediately.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Unsuitable extinguishing media
High power water jet.

5.2. Special hazards arising from the substance or mixture

Passenger-LQ
Carbon monoxide hydrocarbons.

5.3. Advice for firefighters

Wear breathing apparatus without recirculating air and suitable protective clothing.

Additional information
Fire residue and contaminated firefighting water must be disposed of in accordance with government regulations.

SECTION 6: Accidental release measures

6.3. Methods and material for containment and cleaning up

Absorb with sand, earth, or another absorbent substance. Collect in suitable receptacles. Wash off contained area with water.
SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
adherence to the general industrial rules and regulations and hygiene provisions for the prevention of risks

Advice on protection against fire and explosion
Keep away from ignition sources and naked flames. Dust explosive.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels
Store in a dry place free of frost. Do not subject to excessive heat.
Storage temperature: < 50°C
Relative room humidity: < 85%

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Substance</th>
<th>ppm</th>
<th>mg/m³</th>
<th>fibres/ml</th>
<th>Category</th>
<th>Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>7440-44-0</td>
<td>Graphite, respirable</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>TWA (8 h)</td>
<td>WEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td></td>
<td>STEL (15 min)</td>
<td>WEL</td>
</tr>
</tbody>
</table>

Additional advice on limit values
unknown

8.2. Exposure controls

Protective and hygiene measures
Wear protective clothing.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: solid
Colour: black
Odour: odourless

Changes in the physical state
Melting point: 3,500 °C
Flash point: > 100 °C
Density (at 20 °C): 1,7 - 2,0 g/cm³
Water solubility: insoluble

SECTION 10: Stability and reactivity

10.4. Conditions to avoid
reaction with strong oxidising agents Danger of dust explosion.

10.5. Incompatible materials
unknown

10.6. Hazardous decomposition products
Passenger-LQ
SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Dose</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>LD50</td>
<td>Rat</td>
<td>GESTIS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>oral</td>
<td>11400 mg/kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dermal</td>
<td>&gt; 22800 mg/kg</td>
<td>Rabbit</td>
<td>GESTIS</td>
<td></td>
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</tbody>
</table>

Irritation and corrosivity

Fiber abrasion can cause mechanical skin irritation.

SECTION 12: Ecological information

12.1. Toxicity

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Aquatic toxicity</th>
<th>Dose</th>
<th>[h]</th>
<th>[d]</th>
<th>Species</th>
<th>Source</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>Acute fish toxicity</td>
<td>LC50 4,4 mg/l</td>
<td>96 h</td>
<td></td>
<td>Oncorhynchus mykiss (Rainbow trout)</td>
<td>EPA-660/3-75-009</td>
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<tr>
<td></td>
<td>Acute algae toxicity</td>
<td>ErC50 9,4 mg/l</td>
<td>72 h</td>
<td></td>
<td></td>
<td>Scenedesmus capricornutum</td>
<td>EPA-660/3-75-009</td>
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<tr>
<td></td>
<td>Acute crustacea toxicity</td>
<td>EC50 2,8 mg/l</td>
<td>48 h</td>
<td></td>
<td></td>
<td>Daphnia magna</td>
<td>OECD 202</td>
<td></td>
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<tr>
<td></td>
<td>Acute bacteria toxicity</td>
<td>(&gt; 100 mg/l)</td>
<td>3 h</td>
<td></td>
<td></td>
<td>Activated sludge</td>
<td></td>
<td></td>
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</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>OECD 301F</th>
<th>Value</th>
<th>d</th>
<th>Source</th>
<th>Method</th>
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<tbody>
<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>Not readily biodegradable (according to OECD criteria)</td>
<td>5%</td>
<td>28</td>
<td>Manufacturer</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not readily biodegradable (according to OECD criteria)</td>
<td>6-12%</td>
<td>28</td>
<td>Manufacturer</td>
<td></td>
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</table>

12.3. Bioaccumulative potential

Partition coefficient n-octanol/water

<table>
<thead>
<tr>
<th>CAS No</th>
<th>Chemical name</th>
<th>Log Pow</th>
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<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>3.24</td>
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</table>

BCF

<table>
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<tr>
<th>CAS No</th>
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<th>BCF</th>
<th>Species</th>
<th>Source</th>
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</thead>
<tbody>
<tr>
<td>25068-38-6</td>
<td>epoxy resin (number average molecular weight &lt;= 700), reaction product: bisphenol-A-(epichlorhydrin)</td>
<td>31</td>
<td>Quantitative structure-activity relationship (QSAR)</td>
<td></td>
</tr>
</tbody>
</table>
Further information
Do not empty into drains.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Advice on disposal
Remove according to the regulations.

Waste disposal number of waste from residues/unused products
160306 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes other than those mentioned in 16 03 05

SECTION 14: Transport information

Land transport (ADR/RID)
14.3. Transport hazard class(es):
No dangerous good in sense of these transport regulations.

Inland waterways transport (ADN)
14.3. Transport hazard class(es):
No dangerous good in sense of these transport regulations.

Marine transport (IMDG)
14.3. Transport hazard class(es):
No dangerous good in sense of these transport regulations.

Air transport (ICAO-TI/IATA-DGR)
14.3. Transport hazard class(es):
No dangerous good in sense of these transport regulations.

Other applicable information
postal dispatch without restriction

SECTION 15: Regulatory information

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

National regulatory information
Water contaminating class (D): 1 - slightly water contaminating

Additional information
not applicable

SECTION 16: Other information

Relevant H and EUH statements (number and full text)
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Further Information
All information, recommendations, and advice on the part of R&G Faserverbundwerkstoffe GmbH are published to the best of our knowledge and belief. They are noncommittal and contain neither explicit nor tacit assurance or warranty of particular properties. The values specified for properties are typical figures. Recommendations or advice serve to describe our products and possible applications in a general or exemplary, but not specifically individual manner. In the course of the constant technical advancement and improvement of our products there may be changes to the characteristic values, copy, and diagrams; no specific reference is made to any such change. Owing to our products’ wide and highly diverse range of potential applications far beyond any of our attempts to analyse, the customer alone is responsible for examining our products’ suitability for the respective processes and purposes and their respective processibility. All and any protective rights and the applicable laws, terms, and conditions must be observed by the buyer or user of our products at their own responsibility. Publication is not a licence and does not intend the
violation of any patents.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)