SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

eConduct Copper 341000

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

1.1 Product identifier

   Trade name : eConduct Copper 341000
   Product code : 023345B10 023345B10

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

   This information is not available.

1.3 Details of the supplier of the safety data sheet

   Company : ECKART GmbH
   Guentersthal 4
   91235 Hartenstein

   Telephone : +499152770
   Telefax : +499152777008
   E-mail address of person responsible for the SDS : msds.eckart@altana.com

1.4 Emergency telephone number

   GBK Gefahrgut Büro GmbH, Ingelheim, Germany:
   From outside US: (001) 352-323-3500
   (First call in English, response in your language is possible)
   US & Canada (toll free) : 1-800-5355-053

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

   Classification (REGULATION (EC) No 1272/2008)
   Acute toxicity, Category 4 H302: Harmful if swallowed.
   Eye irritation, Category 2 H319: Causes serious eye irritation.
   Acute aquatic toxicity, Category 1 H400: Very toxic to aquatic life.
   Chronic aquatic toxicity, Category 1 H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

   Labelling (REGULATION (EC) No 1272/2008)
Hazard pictograms:

Signal word: Warning

Hazard statements:
- H302: Harmful if swallowed.
- H319: Causes serious eye irritation.
- H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:
- Prevention:
  - P264: Wash skin thoroughly after handling.
  - P273: Avoid release to the environment.
  - P280: Wear eye protection/ face protection.
- Response:
  - P337 + P313: If eye irritation persists: Get medical advice/attention.
  - P391: Collect spillage.
- Disposal:
  - P501: Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
copper

2.3 Other hazards
Combustible Solids
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification REGULATION (EC) No 1272/2008</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper</td>
<td>7440-50-8 231-159-6 01-2119480154-42</td>
<td>Acute Tox. 4; H302 Eye Irrit. 2; H319 Aquatic Acute 1; H400 Aquatic Chronic 1; H410</td>
<td>&gt;= 50 - &lt;= 100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>silver</td>
<td>7440-22-4 231-131-3</td>
<td>Aquatic Acute 1; H400 Aquatic Chronic 1;</td>
<td>&gt;= 10 - &lt; 20</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move the victim to fresh air.

Do not leave the victim unattended.

Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

If inhaled: If unconscious, place in recovery position and seek medical advice.

If symptoms persist, call a physician.

In case of skin contact: Wash off immediately with soap and plenty of water.

In case of eye contact: Immediately flush eye(s) with plenty of water.

Remove contact lenses.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Risks: Harmful if swallowed.

Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

This information is not available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: Special powder against metal fire

Dry sand

ABC powder

Unsuitable extinguishing media: Water

High volume water jet
5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting: Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions: Use personal protective equipment.
Evacuate personnel to safe areas.
Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.

6.2 Environmental precautions

Environmental precautions: Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: Use mechanical handling equipment.

Pick up and transfer to properly labelled containers.
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For personal protection see section 8.
SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling:
- Avoid creating dust. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Avoid formation of respirable particles.
- Do not breathe vapours/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion:
- Normal measures for preventive fire protection.
- Avoid dust formation.

Hygiene measures:
- General industrial hygiene practice. Do not smoke. Wash hands before breaks and at the end of workday. Keep away from food and drink. Keep away from tobacco products.
- When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers:
- Electrical installations / working materials must comply with the technological safety standards.
- Keep away from sources of ignition - No smoking. Do not store near combustible materials. Keep containers tightly closed in a cool, well-ventilated place. To maintain product quality, do not store in heat or direct sunlight.
- Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions:
- Protect from humidity and water.

Advice on common storage:
- Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. Do not store together with oxidizing and self-igniting products.

Dampness:
- Keep in a dry, cool and well-ventilated place.

Further information on storage stability:
- Keep in a dry place. No decomposition if stored and applied as directed.
7.3 Specific end use(s)
This information is not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

### Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis (Version Date)</th>
</tr>
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<tbody>
<tr>
<td>copper</td>
<td>7440-50-8</td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m3 (Copper)</td>
<td>GB EH40 (2011-12-01)</td>
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<tr>
<td></td>
<td></td>
<td>TWA (Dusts and mists)</td>
<td>1 mg/m3 (Copper)</td>
<td>GB EH40 (2011-12-01)</td>
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<tr>
<td></td>
<td></td>
<td>STEL (Dusts and mists)</td>
<td>2 mg/m3 (Copper)</td>
<td>GB EH40 (2011-12-01)</td>
</tr>
<tr>
<td>silver</td>
<td>7440-22-4</td>
<td>TWA</td>
<td>0.1 mg/m3</td>
<td>2000/39/EC (2000-06-16)</td>
</tr>
</tbody>
</table>

Further information
Indicative

<table>
<thead>
<tr>
<th>Components</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis (Version Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>0.1 mg/m3</td>
<td>GB EH40 (2005-04-06)</td>
</tr>
</tbody>
</table>

Further information
Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used

<table>
<thead>
<tr>
<th>Components</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis (Version Date)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>0.01 mg/m3 (Silver)</td>
<td>2006/15/EC (2006-02-09)</td>
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</table>

Further information
Indicative

### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
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<tbody>
<tr>
<td>copper</td>
<td>Workers</td>
<td>Skin contact</td>
<td>short term – systemic effects</td>
<td>273 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>short term – systemic effects</td>
<td>20 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>long term – systemic effects</td>
<td>137 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>short term – systemic effects</td>
<td>273 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>short term – systemic effects</td>
<td>20 mg/m3</td>
</tr>
<tr>
<td>silver</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>0.1 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>long term – systemic effects</td>
<td>0.04 mg/m3</td>
</tr>
<tr>
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<td>Consumers</td>
<td>Oral</td>
<td>long term – systemic effects</td>
<td>1.2 mg/kg</td>
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</tbody>
</table>

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
</table>
8.2 Exposure controls

Personal protective equipment

Eye protection : Safety glasses

Wear face-shield and protective suit for abnormal processing problems.

Hand protection

Material : Leather

Remarks : Leather gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The exact break through time can be obtained from the protective glove producer and this has to be observed. Recommended preventive skin protection

The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection : Long sleeved clothing

Safety shoes

Dust impervious protective suit

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : Use suitable breathing protection if workplace concentration requires.

Respirator with a dust filter

P1 filter

Environmental exposure controls

Water : The product should not be allowed to enter drains, water courses or the soil.
SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>powder</td>
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<tr>
<td>Colour</td>
<td>coloured</td>
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<tr>
<td>Odour</td>
<td>characteristic</td>
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<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Combustible Solids</td>
</tr>
<tr>
<td>Self-ignition</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Smoldering temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
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<tr>
<td>Explosive properties</td>
<td>No data available</td>
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<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
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<tr>
<td>Vapour pressure</td>
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<tr>
<td>Relative vapour density</td>
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<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>No data available</td>
</tr>
</tbody>
</table>
9.2 Other information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions: Stable under recommended storage conditions.
No hazards to be specially mentioned.
No decomposition if stored and applied as directed.
Dust may form explosive mixture in air.

10.4 Conditions to avoid
Conditions to avoid: No data available
No data available

10.5 Incompatible materials

10.6 Hazardous decomposition products
Contact with water or humid air: This information is not available.

Thermal decomposition: This information is not available.
SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Harmful if swallowed.

**Product:**
Acute oral toxicity: Acute toxicity estimate: 557.41 mg/kg
Method: Calculation method

**Components:**
copper:
Acute oral toxicity: Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation
Not classified based on available information.

**Product:**
Remarks: May cause skin irritation in susceptible persons.

**Components:**
copper:
Remarks: May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation
Causes serious eye irritation.

**Product:**
Remarks: Eye irritation

**Components:**
copper:
Result: Eye irritation

Respiratory or skin sensitisation
Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.
Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Product:
Remarks: No data available

Components:
copper:
Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:
copper:
M-Factor (Acute aquatic toxicity) : 10

Ecotoxicology Assessment
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

silver:
M-Factor (Acute aquatic toxicity) : 10
M-Factor (Chronic aquatic toxicity) : 10

Ecotoxicology Assessment
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
Product: Assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects
Product: Additional ecological information
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Components:
copper:
Additional ecological information
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations
European Waste Catalogue
12 01 04 - non-ferrous metal dust and particles
10 03 21 - other particulates and dust (including ball-mill dust) containing dangerous substances

13.1 Waste treatment methods
Product
The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company. In accordance with local and national regulations.

Contaminated packaging
Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.
In accordance with local and national regulations.

SECTION 14: Transport information

14.1 UN number

ADR : UN 3077
IMDG : UN 3077
IATA : UN 3077

14.2 UN proper shipping name

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)
IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper metal powder)
IATA : Environmentally hazardous substance, solid, n.o.s. (Copper metal powder)

14.3 Transport hazard class(es)

ADR : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADR
Packing group : III
Classification Code : M7
Hazard Identification Number : 90
Labels : 9

IMDG
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Remarks : IMDG Code segregation group 7 - Heavy metals and their salts

IATA (Cargo)
Packing instruction (cargo aircraft) : 956

IATA (LQ)
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

IATA (Passenger)
Packing instruction (passenger aircraft) : 956
Packing instruction (LQ) : Y956
Packing group : III
Labels : Miscellaneous Dangerous Goods

14.5 Environmental hazards

ADR
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 Special precautions for user

Remarks : For single packagings <=5L / 5 kg, or combination packagings containing inner packagings <= 5L / 5 kg net per inner packaging, SV375 ADR, 2.10.2.7 IMDG-Code, A197 IATA-DGR may be applied.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Not applicable

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements
H302 : Harmful if swallowed.
H319 : Causes serious eye irritation.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations
Acute Tox. : Acute toxicity
**SAFETY DATA SHEET**
according to Regulation (EC) No. 1907/2006

**eConduct Copper 341000**

**Version** | **Revision Date:** | **SDS Number:** | **Print Date:** | **Date of first issue:**
---|---|---|---|---
2.0 | 12.03.2018 | 102000027967 | 19.11.2018 | 26.07.2017

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Aquatic Acute : Acute aquatic toxicity
Aquatic Chronic : Chronic aquatic toxicity
Eye Irrit. : Eye irritation
2006/15/EC : Europe. Indicative occupational exposure limit values
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
2000/39/EC / TWA : Limit Value - eight hours
2006/15/EC / TWA : Limit Value - eight hours
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

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 to be valid for such material used in combination with any other materials or in any process, unless specified in the text.
<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Print Date</th>
<th>Date of first issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>12.03.2018</td>
<td>102000027967</td>
<td>19.11.2018</td>
<td>26.07.2017</td>
</tr>
</tbody>
</table>

GB / EN