

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended.

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

1.1 Product identifier

Product name: Rivolta S.C.F. Spray

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

Identified uses: Solvent-based cleaner

Uses advised against: No uses advised against identified.

1.3 Details of the supplier of the safety data sheet

Manufacturer / Supplier Bremer & Leguil GmbH
Am Burgacker 30 - 42
47051 Duisburg / Germany
info@bremer-leguil.de
Telephone: +49 (0)203 / 9923-0

Contact Person: Bremer & Leguil GmbH - Product Safety Management
E-mail: product-safety@bremer-leguil.de

1.4 Emergency telephone number: +49 (0) 6131 19240 (Giftinformationszentrum Mainz)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified and labelled as hazardous according to regulation (EU) 1272/2008 (CLP).

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

Physical Hazards

| | | |
|---------|------------|---|
| Aerosol | Category 1 | H222: Extremely flammable aerosol. H229: Pressurized container: May burst if heated. |
|---------|------------|---|

Health Hazards

| | | |
|-------------------|------------|---|
| Aspiration Hazard | Category 1 | H304: May be fatal if swallowed and enters airways. |
|-------------------|------------|---|

Hazard summary

Physical Hazards: No data available.

Health Hazards

Skin Contact: At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

Ingestion: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

2.2 Label Elements

Product name: Rivolta S.C.F. Spray



Signal Words: Danger

Hazard Statement(s): H222: Extremely flammable aerosol.
H229: Pressurized container: May burst if heated.

Precautionary Statements

Prevention: P102: Keep out of reach of children.
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211: Do not spray on an open flame or other ignition source.
P251: Do not pierce or burn, even after use.

Storage: P410+P412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122°F.

Supplemental label information

EUH066: Repeated exposure may cause skin dryness or cracking.

2.3 Information on other hazards

The product may not be released into the environment without control.

Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Results of PBT and vPvB 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.

| |
|--|
| SECTION 3: Composition/information on ingredients |
|--|

3.2 Mixtures

General information: Mixture of components with propellant in aerosol can.

Product name: Rivolta S.C.F. Spray

| Chemical name | Identifier | Concentration * | REACH Registration No. | Notes |
|---------------------------------|-------------------|------------------|------------------------|-------|
| Propane | EINECS: 200-827-9 | 0% - <30,00% | 01-2119486944-21 | |
| Butane (<0,1% 1,3-butadiene) | EINECS: 203-448-7 | 0% - <30,00% | 01-2119474691-32 | |
| Isobutane (<0,1% 1,3-butadiene) | EINECS: 200-857-2 | 0% - <30,00% | 01-2119485395-27 | |
| Ethanol | EINECS: 200-578-6 | 20,00% - <50,00% | 01-2119457610-43 | |
| Cyclopentane | EINECS: 206-016-6 | 10,00% - <20,00% | 01-2119463053-47 | |
| Hydrocarbons, low viscosity | EINECS: 927-285-2 | 10,00% - <20,00% | 01-2119480162-45 | |
| Hydrocarbons, low viscosity | EINECS: 920-901-0 | 10,00% - <20,00% | 01-2119456810-40 | |
| Hydrocarbons, low viscous | EC: 918-167-1 | 5,00% - <10,00% | 01-2119472146-39 | |
| Isopropyl alcohol | EINECS: 200-661-7 | 1,00% - <5,00% | 01-2119457558-25 | |

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

PBT: persistent, bioaccumulative and toxic substance.

vPvB: very persistent and very bioaccumulative substance.

Classification

| Chemical name | Identifier | Classification |
|---------------------------------|-------------------|---|
| Propane | EINECS: 200-827-9 | CLP: Flam. Gas 1A;H220, Press. Gas Compr. Gas;H280 |
| Butane (<0,1% 1,3-butadiene) | EINECS: 203-448-7 | CLP: Flam. Gas 1A;H220, Press. Gas Compr. Gas;H280 |
| Isobutane (<0,1% 1,3-butadiene) | EINECS: 200-857-2 | CLP: Flam. Gas 1A;H220, Press. Gas Compr. Gas;H280 |
| Ethanol | EINECS: 200-578-6 | CLP: Flam. Liq. 2;H225, Eye Irrit. 2;H319 |
| Cyclopentane | EINECS: 206-016-6 | CLP: Flam. Liq. 2;H225, Aquatic Chronic 3;H412, Asp. Tox. 1;H304, STOT SE 3;H336 EUH066 |
| Hydrocarbons, low viscosity | EINECS: 927-285-2 | CLP: Asp. Tox. 1;H304 EUH066 |
| Hydrocarbons, low viscosity | EINECS: 920-901-0 | CLP: Asp. Tox. 1;H304 EUH066 |
| Hydrocarbons, low viscous | EC: 918-167-1 | CLP: Asp. Tox. 1;H304, Aquatic Chronic 4;H413 EUH066 |
| Isopropyl alcohol | EINECS: 200-661-7 | CLP: Flam. Liq. 2;H225, Eye Irrit. 2;H319, STOT SE 3;H336 |

CLP: Regulation No. 1272/2008.

specific concentration limit

| Chemical name | Identifier | specific concentration limit | Hazard class | Hazard Category | Hazard statements |
|---------------|-------------------|------------------------------|------------------------|-----------------|-------------------|
| Ethanol | EINECS: 200-578-6 | >= 50 % | Serious eye irritation | 2 | H319 |

For the wording of the listed hazard statements refer to section 16.

SECTION 4: First aid measures

General: Instantly remove any clothing soiled by the product.

4.1 Description of first aid measures

Inhalation: Supply fresh air; consult doctor in case of symptoms.

Eye contact: Promptly wash eyes with plenty of water while lifting the eye lids.

Product name: Rivolta S.C.F. Spray

Skin Contact: Wash with soap and water.

Ingestion: Call a physician or poison control center immediately. Rinse mouth. Never give liquid to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

4.3 Indication of any immediate medical attention and special treatment needed Get medical attention if symptoms occur.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: CO₂, fire extinguishing powder or fog like water spraying. Extinguish larger fires with alcohol resistant foam or spray water with suitable surfactant added

Unsuitable extinguishing media: Water with a full water jet.

5.2 Special hazards arising from the substance or mixture: During fire, gases hazardous to health may be formed.

5.3 Advice for firefighters

Special fire-fighting procedures: Move container from fire area if it can be done without risk. Dispose of fire debris and contaminated fire fighting water in accordance with official regulations. Collect contaminated fire fighting water separately. It must not enter drains.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Keep away from sources of ignition - No smoking.

6.2 Environmental Precautions: Avoid release to the environment. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so. Do not allow to enter drainage system, surface or ground water.

6.3 Methods and material for containment and cleaning up: Scrape up spillage or absorb with absorbing material. Stop the flow of material, if this is without risk. Dispose of the material collected according to regulations.

6.4 Reference to other sections: See Section 8 of the SDS for Personal Protective Equipment. See Section 7 for information on safe handling See Section 13 for information on disposal.

Product name: Rivolta S.C.F. Spray

SECTION 7: Handling and storage:

- 7.1 Precautions for safe handling:** Provide adequate ventilation. Observe good industrial hygiene practices. Do not eat, drink or smoke when working with the product. Take usual precautions when handling mineral oil products or chemical products.
- 7.2 Conditions for safe storage, including any incompatibilities:** Store locked up. Local regulations concerning handling and storage of waterpolluting products have to be followed.
- 7.3 Specific end use(s):** Not applicable
- Storage Class:** 2 B, Aerosols

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

| Chemical name | Type | Exposure Limit Values | Source |
|---------------------------------|------|-----------------------------------|---|
| Ethanol | AGW | 200 ppm 380 mg/m ³ | Germany. TRGS 900, Occupational Exposure Limits (AGW), as amended (06 2018) |
| Hydrocarbons, low viscosity | MAK | 50 ppm 300 mg/m ³ | Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG), as amended (2011) |
| Propane | AGW | 1.000 ppm 1.800 mg/m ³ | Germany. TRGS 900, Occupational Exposure Limits (AGW), as amended (01 2012) |
| Butane (<0,1% 1,3-butadiene) | AGW | 1.000 ppm 2.400 mg/m ³ | Germany. TRGS 900, Occupational Exposure Limits (AGW), as amended (01 2012) |
| Isobutane (<0,1% 1,3-butadiene) | AGW | 1.000 ppm 2.400 mg/m ³ | Germany. TRGS 900, Occupational Exposure Limits (AGW), as amended (01 2012) |
| Isopropyl alcohol | AGW | 200 ppm 500 mg/m ³ | Germany. TRGS 900, Occupational Exposure Limits (AGW), as amended (01 2012) |

Biological Limit Values

| Chemical name | Exposure Limit Values | Source |
|---|-----------------------|------------------|
| Isopropyl alcohol (acetone: Sampling time: End of shift.) | 25 mg/l (Blood) | DE BAT (09 2013) |
| Isopropyl alcohol (acetone: Sampling time: End of shift.) | 25 mg/l (Urine) | DE BAT (09 2013) |

8.2 Exposure controls

Appropriate engineering controls: Provide adequate ventilation. 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

Product name: Rivolta S.C.F. Spray

| | |
|--------------------------------|---|
| General information: | Wash hands before breaks and after work. Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment. The usual precautionary measures should be adhered to in handling the chemicals or the mineral oil products. |
| Eye/face protection: | Avoid contact with skin and eyes. Goggles/face shield are recommended. If risk of splashing, wear safety goggles or face shield. |
| Skin protection | |
| Hand Protection: | Material: Nitrile butyl rubber (NBR). Min. Breakthrough time: ≥ 480 min Recommended thickness of the material: $\geq 0,38$ mm Avoid long-term and repeated skin contact. Suitable gloves can be recommended by the glove supplier. Use skin protection cream for preventive skin protection. Protective gloves, where permitted in acc. to safety directions. The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed. |
| Other: | Do not carry cleaning cloths impregnated with the product in trouser pockets. Wear suitable protective clothing. |
| Respiratory Protection: | Ensure good ventilation/exhaustion at the workplace. Avoid breathing vapour/ aerosol. |
| Thermal hazards: | Not known. |
| 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 to remove contaminants. Discard contaminated footwear that cannot be cleaned. |
| Environmental Controls: | No data available. |

SECTION 9: Physical and chemical properties
9.1 Information on basic physical and chemical properties
Appearance

| | |
|-------------------------------------|---|
| Physical state: | Aerosol |
| Form: | Aerosol |
| Color: | Colorless |
| Odor: | Characteristic |
| pH: | substance/mixture is non-soluble (in water) |
| Freezing point: | not determined |
| Boiling Point: | not determined |
| Flash Point: | < -60 °C (DIN 51755) |
| Flammability (solid, gas): | not determined |
| Explosion Limit - Upper (%): | Not applicable for mixtures |
| Explosion Limit - Lower (%): | Not applicable for mixtures |
| Vapor pressure: | Not applicable for mixtures |
| Relative vapor density: | Not applicable for mixtures |

Product name: Rivolta S.C.F. Spray

| | |
|---|--|
| Density: | 0,85 g/cm ³ (20 °C) (DIN 51757) |
| Solubility(ies) | |
| Solubility in Water: | partly soluble |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | Not applicable for mixtures |
| Auto-ignition temperature: | not determined |
| Decomposition Temperature: | not determined |
| Kinematic viscosity: | 1,6 mm ² /s (20 °C, DIN 51562) |
| Particle characteristics: | Not applicable |
| 9.2 Other information | No data available. |

SECTION 10: Stability and reactivity

| | |
|---|---|
| 10.1 Reactivity: | Stable under normal use conditions. |
| 10.2 Chemical Stability: | No data available. |
| 10.3 Possibility of hazardous reactions: | Stable under normal use conditions. |
| 10.4 Conditions to avoid: | Stable under normal use conditions. |
| 10.5 Incompatible Materials: | Strong oxidizing substances. Strong acids. Strong bases. |
| 10.6 Hazardous Decomposition Products: | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. |

SECTION 11: Toxicological information

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

Acute toxicity

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

| | |
|-----------------------------|---------------------------------------|
| Ethanol | LD 50 (Rat): > 6.200 mg/kg |
| Cyclopentane | LD 50 (Rat): > 5.000 mg/kg (OECD 423) |
| Hydrocarbons, low viscosity | LD 50 (Rat): > 5.001 mg/kg (OECD 401) |
| Hydrocarbons, low viscosity | LD 50 (Rat): > 10.000 mg/kg |
| Hydrocarbons, low viscous | LD 50 (Rat): > 5.000 mg/kg (OECD 401) |
| Isopropyl alcohol | LD 50 (Rat): 4.570 mg/kg |

Product name: Rivolta S.C.F. Spray

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

| | |
|-----------------------------|---|
| Ethanol | LD 50 (Rabbit): > 20.000 mg/kg (OECD 402) |
| Hydrocarbons, low viscosity | LD 50 (Rabbit): > 5.001 mg/kg (OECD 402) |
| Hydrocarbons, low viscous | LD 50 (Rabbit): 3.160 mg/kg (OECD 402) |
| Isopropyl alcohol | LD 50 (Rabbit): 13.400 mg/kg |

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

| | |
|------------------------------|---|
| Butane (<0,1% 1,3-butadiene) | LC 50 (Rat, 4 h): 658 mg/l Gas |
| Cyclopentane | LC 50 (Rat, 4 h): > 25,3 mg/l (OECD 403) Vapour |
| Hydrocarbons, low viscosity | LC 50 (Rat, 4 h): > 5 mg/l |
| Isopropyl alcohol | LC 50 (Rat, 4 h): 30 mg/l |

Skin Corrosion/Irritation:

Product: Based on available data, the classification criteria are not met.

Serious Eye Damage/Eye Irritation:

Product: Based on available data, the classification criteria are not met.

Respiratory or Skin Sensitization:

Product: Skin sensitizer: Based on available data, the classification criteria are not met.
Respiratory sensitizer: Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Product: Based on available data, the classification criteria are not met.

Carcinogenicity

Product: Based on available data, the classification criteria are not met.

Reproductive toxicity

Product: Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

Product: Based on available data, the classification criteria are not met.

Product name: Rivolta S.C.F. Spray

Specific Target Organ Toxicity - Repeated Exposure

Product: Based on available data, the classification criteria are not met.

Aspiration Hazard

Product: May be fatal if swallowed and enters airways.

11.2 Information on other hazards

Endocrine disrupting properties

Product: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 12: Ecological information

Acute toxicity

Product: Based on available data, the classification criteria are not met.

Fish

Specified substance(s)

| | |
|---------------------------------|---|
| Propane | LC 50 (Fish, 96 h): > 1.000 mg/l |
| Isobutane (<0,1% 1,3-butadiene) | LC 50 (Fish, 96 h): 28 mg/l |
| Ethanol | LC 50 (Fish, 96 h): > 2.000 mg/l (OECD 203) |
| Cyclopentane | LC 50 (Fish, 96 h): 29,3 mg/l |
| Hydrocarbons, low viscosity | LC 50 (Fish, 96 h): > 1.000 mg/l |
| Hydrocarbons, low viscosity | LC 50 (Fish, 96 h): > 101 mg/l |
| Hydrocarbons, low viscous | LC 50 (Fish, 96 h): > 1.000 mg/l (OECD 203) |
| Isopropyl alcohol | LC 50 (Fish, 96 h): 9.640 mg/l |

Aquatic Invertebrates

Specified substance(s)

| | |
|---------------------------------|---|
| Isobutane (<0,1% 1,3-butadiene) | EC 50 (Water Flea, 48 h): 16,3 mg/l |
| Ethanol | LC 50 (Water Flea, 48 h): 5.012 mg/l |
| Cyclopentane | EC 50 (Water Flea, 48 h): 51,1 mg/l |
| Hydrocarbons, low viscosity | EC 50 (Water Flea, 48 h): > 1.000 mg/l |
| Hydrocarbons, low viscous | EC 50 (Water Flea, 48 h): > 1.000 mg/l (OECD 202) |

Product name: Rivolta S.C.F. Spray

Isopropyl alcohol LC 50 (48 h): 1.400 mg/l

Chronic ToxicityProduct: Based on available data, the classification criteria are not met.

Aquatic Invertebrates

Specified substance(s)

Ethanol NOEC (Water Flea, 10 d): 9,6 mg/l

Toxicity to Aquatic Plants

Specified substance(s)

Isobutane (<0,1% 1,3-butadiene) EC 50 (Alga, 72 h): 8,6 mg/l

Ethanol EC 50 (Alga, 72 h): 275 mg/l (OECD 201)
NOEC (Alga, 7 d): 208 mg/l (OECD 201)

Cyclopentane LC 50 (Alga, 72 h): 21,58 mg/l

Hydrocarbons, low viscosity EC 50 (Alga, 72 h): > 1.001 mg/l

Hydrocarbons, low viscous EC 50 (Alga, 72 h): > 1.000 mg/l (OECD 201)

Isopropyl alcohol LC 50 (Alga, 72 h): > 100 mg/l

12.2 Persistence and Degradability

Biodegradation

Product: Not applicable for mixtures

Specified substance(s)

Ethanol > 70 % (5 d, OECD 301D) Readily biodegradable

Cyclopentane Not easily biodegradable

Hydrocarbons, low viscosity 31 % (28 d, OECD 301F) Not readily degradable.

12.3 Bioaccumulative potential

Product: Not applicable for mixtures

12.4 Mobility in soil:

Product: Not applicable for mixtures

12.5 Results of PBT and vPvB assessment:

The product does not contain any substances fulfilling the PBT/vPvB criteria.

Product name: Rivolta S.C.F. Spray

12.6 Endocrine disrupting properties

Product: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects: No data available.

Water Hazard Class (WGK): WGK 1: slightly water-endangering.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information: Dispose in accordance with all applicable regulations.

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

European Waste Codes

16 05 04*: Gases in pressure containers (including halons) containing hazardous substances.

SECTION 14: Transport information

ADR/RID

| | |
|------------------------------------|----------|
| 14.1 UN number or ID number: | UN 1950 |
| 14.2 UN Proper Shipping Name: | AEROSOLS |
| 14.3 Transport Hazard Class(es) | |
| Class: | 2 |
| Label(s): | 2.1 |
| Hazard No. (ADR): | – |
| Tunnel restriction code: | (D) |
| 14.4 Packing Group: | – |
| 14.5 Environmental hazards: | – |
| 14.6 Special precautions for user: | – |

IMDG

| | |
|------------------------------------|----------|
| 14.1 UN number or ID number: | UN 1950 |
| 14.2 UN Proper Shipping Name: | AEROSOLS |
| 14.3 Transport Hazard Class(es) | |
| Class: | 2.1 |
| Label(s): | 2.1 |
| EmS No.: | F-D, S-U |
| 14.3 Packing Group: | – |
| 14.5 Environmental hazards: | – |
| 14.6 Special precautions for user: | – |

Product name: Rivolta S.C.F. Spray

IATA

14.1 UN number or ID number: UN 1950
 14.2 Proper Shipping Name: Aerosols, flammable
 14.3 Transport Hazard Class(es):
 Class: 2.1
 Label(s): 2.1
 14.4 Packing Group: –
 14.5 Environmental hazards: –
 14.6 Special precautions for user: –

14.7 Maritime transport in bulk according to IMO instruments: Not applicable.

SECTION 15: Regulatory information

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

EU Regulations

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals: none

National Regulations

Water Hazard Class (WGK): WGK 1: slightly water-endangering.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

DIRECTIVE 2012/18/EU (SEVESO III) on the control of major-accident hazards involving dangerous substances

| Hazard category in accordance with Regulation (EC) No 1272/2008 | Qualifying quantity for the application of Lower-tier requirements: | Qualifying quantity for the application of Upper-tier requirements: |
|---|---|---|
| P3a: P3a. Flammable aerosols | 150 t | 500 t |

SECTION 16: Other information

Revision Information: Vertical lines in the margin indicate an amendment.

Wording of the H-statements in section 2 and 3

EUH066 Repeated exposure may cause skin dryness or cracking.
 H220 Extremely flammable gas.
 H222 Extremely flammable aerosol.
 H225 Highly flammable liquid and vapor.
 H229 Pressurized container: May burst if heated.
 H280 Contains gas under pressure; may explode if heated.
 H304 May be fatal if swallowed and enters airways.
 H319 Causes serious eye irritation.
 H336 May cause drowsiness or dizziness.
 H412 Harmful to aquatic life with long lasting effects.
 H413 May cause long lasting harmful effects to aquatic life.

Product name: Rivolta S.C.F. Spray

Other information: The classification complies with the current EU lists; however, it has been supplemented with expert literature information and information provided by/about our company. The following evaluation methods were used: - On the basis of test data - Calculation Method - Bridging Principle "Substantially similar mixtures" - Expert Judgement

Revision Date: 13.12.2024

Disclaimer: The data contained in this safety data sheet are based on our current knowledge and experience and are given to the best of our knowledge and belief. It characterizes the product only with regard to safety requirements for handling, transport and disposal. The data do not describe the product's properties (tech. product specification). Neither should any agreed property nor the suitability of the product for any specific technical application be deduced from the data contained in this safety data sheet. Modifications on this document are not allowed. The data are not transferable to other products. In the case of mixing the product with other products or in the case of processing, the data in this safety data sheet are not necessarily valid for the new-made material. It is the responsibility of the recipient of the product to observe federal, state and local law. Please contact us to obtain up-to-date safety data sheets. This document was issued electronically and has no signature.

Abbreviations and acronyms:

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; 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; EIGA - European Industrial Gases Association; 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; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative