

Safety data sheet Safety data sheet

acc. to Regulation (EC) No. 1907/2006 (REACH)



ROTI®Garose - His/Co Beads for biochemistry

article number: **1235**
Version: **3.0 en**
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Version: (2)

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

1.1 Product identifier

Identification of the substance **ROTI®Garose - His/Co Beads for biochemistry**
Article number 1235

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

Relevant identified uses: Laboratory chemical
Laboratory and analytical use
Uses advised against: Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink and animal feeding-stuffs.

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

| Name | Street | Postal code/city | Telephone | Website |
|---|-----------|----------------------|--------------|---------|
| National Poisons Information Service City Hospital | Dudley Rd | B187QH Birmingham | 844 892 0111 | |

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---------|---|-----------|---------------------------|------------------|
| 2.6 | Flammable liquid | 3 | Flam. Liq. 3 | H226 |
| 3.3 | Serious eye damage/eye irritation | 2 | Eye Irrit. 2 | H319 |
| 3.6 | Carcinogenicity | 1B | Carc. 1B | H350 |
| 4.1C | Hazardous to the aquatic environment - chronic hazard | 2 | Aquatic Chronic 2 | H411 |

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Supplemental hazard information

| Code | Supplemental hazard information |
|--------|--|
| EUH208 | contains Cobalt powder. May produce an allergic reaction |

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling

Signal word

Danger

Pictograms

GHS02, GHS07,
GHS08, GHS09



Hazard statements

| | |
|------|---|
| H226 | Flammable liquid and vapour |
| H319 | Causes serious eye irritation |
| H350 | May cause cancer |
| H411 | Toxic to aquatic life with long lasting effects |

Precautionary statements

Precautionary statements - prevention

| | |
|------|--|
| P202 | Do not handle until all safety precautions have been read and understood |
| P210 | Keep away from heat. No smoking |
| P273 | Avoid release to the environment |
| P280 | Wear protective gloves/eye protection |

Precautionary statements - response

| | |
|----------------|---|
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water |
| P308+P313 | IF exposed or concerned: Get medical advice/attention |

For professional users only

Supplemental hazard information

EUH208 Contains Cobalt powder. May produce an allergic reaction.

Hazardous ingredients for labelling: Cobalt powder

2.3 Other hazards

Special danger of slipping by leaking/spilling product.

Results of PBT and vPvB assessment

Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

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Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.






SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

| Name of substance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|-------------------|---|-----------|--|--|--------|
| Ethanol | CAS No 64-17-5 EC No 200-578-6 Index No 603-002-00-5 | ≤ 20 | Flam. Liq. 2 / H225 Eye Irrit. 2 / H319 |   | GHS-HC |
| Cobalt powder | CAS No 7440-48-4 EC No 231-158-0 Index No 027-001-00-9 | <0,25 | Acute Tox. 4 / H302 Eye Irrit. 2 / H319 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Muta. 2 / H341 Carc. 1B / H350 Repr. 1B / H360F Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410 |    | |

Notes

GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

| Name of substance | Identifier | Specific Conc. Limits | M-Factors | ATE | Exposure route |
|-------------------|---|-----------------------|--------------------------------|-----------|----------------|
| Cobalt powder | CAS No 7440-48-4 EC No 231-158-0 | - | M-factor (chronic) = 100 | 550 mg/kg | oral |

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

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Following skin contact

Rinse skin with water/shower. In case of skin reactions, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.2 Most important symptoms and effects, both acute and delayed

Vomiting, Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, alcohol resistant foam, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

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6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. Danger of explosion.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation. Avoid exposure.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Keep in a cool place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 2 – 8 °C

7.3 Specific end use(s)

No information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Identifier | TWA [ppm] | TWA [mg/m ³] | STEL [ppm] | STEL [mg/m ³] | Ceiling-C [ppm] | Ceiling-C [mg/m ³] | Notation | Source |
|---------|---------------|-----------|------------|-----------|--------------------------|------------|---------------------------|-----------------|--------------------------------|----------|-----------|
| GB | ethanol | 64-17-5 | WEL | 1.000 | 1.920 | | | | | | EH40/2005 |
| GB | cobalt | 7440-48-4 | WEL | | 0,1 | | | | | | EH40/2005 |

Notation

Ceiling-C
STEL

Ceiling value is a limit value above which exposure should not occur
Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA

Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs of components of the mixture

| Name of substance | CAS No | Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|-------------------|-----------|----------|----------------------|------------------------------------|-------------------|-------------------------|
| Cobalt powder | 7440-48-4 | DNEL | 40 µg/m ³ | human, inhalatory | worker (industry) | chronic - local effects |

Relevant PNECs of components of the mixture

| Name of substance | CAS No | Endpoint | Threshold level | Organism | Environmental compartment | Exposure time |
|-------------------|-----------|----------|-----------------|-----------------------|------------------------------|------------------------------|
| Cobalt powder | 7440-48-4 | PNEC | 0,62 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| Cobalt powder | 7440-48-4 | PNEC | 2,36 µg/l | aquatic organisms | marine water | short-term (single instance) |
| Cobalt powder | 7440-48-4 | PNEC | 0,37 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Cobalt powder | 7440-48-4 | PNEC | 53,8 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Cobalt powder | 7440-48-4 | PNEC | 69,8 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Cobalt powder | 7440-48-4 | PNEC | 10,9 mg/kg | terrestrial organisms | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)

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Eye/face protection



Use safety goggle with side protection.

Skin protection



• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

NBR (Nitrile rubber)

• material thickness

0,4 mm

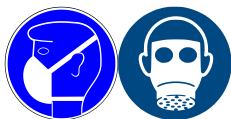
• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C, colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Physical state | liquid |
| Form | viscous |
| Colour | pink |
| Odour | schwach Lösungsmittel |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | >80 °C at 1.013 hPa |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | not determined |
| Flash point | >50 °C |
| Auto-ignition temperature | >455 °C |
| Decomposition temperature | not relevant |
| pH (value) | 6 – 8 |
| Kinematic viscosity | not determined |

Solubility(ies)

Water solubility miscible in any proportion

Partition coefficient

Partition coefficient n-octanol/water (log value): this information is not available

Vapour pressure not determined

Density and/or relative density

Density ~0,7 g/cm³ at 20 °C

Relative vapour density information on this property is not available

Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard classes: There is no additional information.

Other safety characteristics:

Miscibility completely miscible with water

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SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition.

If heated

Risk of ignition. Vapours may form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

| Acute toxicity estimate (ATE) of components of the mixture | | | |
|--|-----------|----------------|-----------|
| Name of substance | CAS No | Exposure route | ATE |
| Cobalt powder | 7440-48-4 | oral | 550 mg/kg |

| Acute toxicity of components of the mixture | | | | | |
|---|-----------|--------------------|----------|---------------|---------|
| Name of substance | CAS No | Exposure route | Endpoint | Value | Species |
| Ethanol | 64-17-5 | oral | LD50 | 10.470 mg/kg | rat |
| Ethanol | 64-17-5 | inhalation: vapour | LC50 | 124,7 mg/l/4h | rat |
| Cobalt powder | 7440-48-4 | oral | LD50 | 550 mg/kg | rat |

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

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Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Contains Cobalt powder. May produce an allergic reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

May cause cancer.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

vomiting

• If in eyes

Causes serious eye irritation

• If inhaled

Data are not available.

• If on skin

May produce an allergic reaction, pruritis, localised redness

• Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

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Aquatic toxicity (acute) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-------------------|-----------|----------|--------------|-----------------------|---------------|
| Ethanol | 64-17-5 | LC50 | 15.400 mg/l | fish | 96 h |
| Ethanol | 64-17-5 | EC50 | >10.000 mg/l | aquatic invertebrates | 48 h |
| Ethanol | 64-17-5 | ErC50 | 22.000 mg/l | algae | 96 h |
| Cobalt powder | 7440-48-4 | LC50 | 1,512 µg/l | fish | 96 h |
| Cobalt powder | 7440-48-4 | EC50 | >890 µg/l | aquatic invertebrates | 48 h |
| Cobalt powder | 7440-48-4 | ErC50 | 144 µg/l | algae | 72 h |

Aquatic toxicity (chronic) of components of the mixture

| Name of substance | CAS No | Endpoint | Value | Species | Exposure time |
|-------------------|-----------|----------|------------|-----------------------|---------------|
| Ethanol | 64-17-5 | LC50 | 1.806 mg/l | aquatic invertebrates | 10 d |
| Ethanol | 64-17-5 | ErC50 | 675 mg/l | algae | 4 d |
| Cobalt powder | 7440-48-4 | EC50 | 82,2 µg/l | aquatic invertebrates | 21 d |
| Cobalt powder | 7440-48-4 | ErC50 | 20 µg/l | algae | 70 h |

12.2 Persistence and degradability

Degradability of components of the mixture

| Name of substance | CAS No | Process | Degradation rate | Time | Method | Source |
|-------------------|---------|------------------|------------------|------|--------|--------|
| Ethanol | 64-17-5 | biotic/abiotic | 94 % | d | | |
| Ethanol | 64-17-5 | oxygen depletion | 69 % | 5 d | | ECHA |
| Ethanol | 64-17-5 | oxygen depletion | 84 % | 10 d | | ECHA |
| Ethanol | 64-17-5 | oxygen depletion | 97 % | 20 d | | ECHA |

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture

| Name of substance | CAS No | BCF | Log KOW | BOD5/COD |
|-------------------|-----------|-----|---------|----------|
| Ethanol | 64-17-5 | | -0,31 | 0,6211 |
| Cobalt powder | 7440-48-4 | 23 | | |

12.4 Mobility in soil

Data are not available.

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12.5 Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB. Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Properties of waste which render it hazardous

HP 3 flammable
HP 7 carcinogenic
HP 10 toxic for reproduction

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

SECTION 14: Transport information

14.1 UN number or ID number

| | |
|-----------|---------|
| ADRRID | UN 1170 |
| IMDG-Code | UN 1170 |
| ICAO-TI | UN 1170 |

14.2 UN proper shipping name

| | |
|-----------|------------------|
| ADRRID | ETHANOL SOLUTION |
| IMDG-Code | ETHANOL SOLUTION |
| ICAO-TI | Ethanol solution |

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14.3 Transport hazard class(es)

| | |
|-----------|---|
| ADRRID | 3 |
| IMDG-Code | 3 |
| ICAO-TI | 3 |

14.4 Packing group

| | |
|-----------|-----|
| ADRRID | III |
| IMDG-Code | III |
| ICAO-TI | III |

14.5 Environmental hazards

hazardous to the aquatic environment

Environmentally hazardous substance (aquatic environment): Cobalt powder

14.6 Special precautions for user



Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)Additional information

| | |
|---|--|
| Proper shipping name | ETHANOL SOLUTION |
| Particulars in the transport document | UN1170, ETHANOL SOLUTION, 3, III, (D/E), environmentally hazardous |
| Classification code | F1 |
| Danger label(s) | 3, "Fish and tree" |
|   | |
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Special provisions (SP) | 144, 601 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| Transport category (TC) | 3 |
| Tunnel restriction code (TRC) | D/E |
| Hazard identification No | 30 |
| Emergency Action Code | 2Y |

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information

| | |
|----------------------------|--------------------|
| Classification code | F1 |
| Danger label(s) | 3 Fish and tree |

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| | |
|---------------------------------|---------------------------|
| Environmental hazards | Yes Hazardous to water |
| Special provisions (SP) | 144, 601 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| Transport category (TC) | 3 |
| Hazard identification No | 30 |

International Maritime Dangerous Goods Code (IMDG) - Additional information

| | |
|--|--|
| Proper shipping name | ETHANOL SOLUTION |
| Particulars in the shipper's declaration | UN1170, ETHANOL SOLUTION, 3, III, >50°C c.c., MARINE POLLUTANT |
| Marine pollutant | yes (hazardous to the aquatic environment) |
| Danger label(s) | 3, "Fish and tree" |



| | |
|--------------------------|----------|
| Special provisions (SP) | 144, 223 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 5 L |
| EmS | F-E, S-D |
| Stowage category | A |

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

| | |
|--|--|
| Proper shipping name | Ethanol solution |
| Particulars in the shipper's declaration | UN1170, Ethanol solution, 3, III |
| Environmental hazards | yes (hazardous to the aquatic environment) |
| Danger label(s) | 3 |



| | |
|--------------------------|---------------|
| Special provisions (SP) | A3, A58, A180 |
| Excepted quantities (EQ) | E1 |
| Limited quantities (LQ) | 10 L |

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SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Seveso Directive

| 2012/18/EU (Seveso III) | | | |
|-------------------------|--|---|-------|
| No | Dangerous substance/hazard categories | Qualifying quantity (tonnes) for the application of lower and upper-tier requirements | Notes |
| E2 | environmental hazards (hazardous to the aquatic environment, cat. 2) | 200 500 | 57) |

Notation

57) Hazardous to the Aquatic Environment in category Chronic 2

Deco-Paint Directive

| | |
|--|---------|
| VOC content | 20 % |
| VOC content (Water content was discounted) | 177 g/l |

Industrial Emissions Directive (IED)

| | |
|--|---------|
| VOC content | 20 % |
| VOC content (Water content was discounted) | 177 g/l |

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Water Framework Directive (WFD)

| List of pollutants (WFD) | | | | |
|--------------------------|---|--------|-----------|---------|
| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
| Ethanol | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |
| Cobalt powder | Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment | | a) | |

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List of pollutants (WFD)

| Name of substance | Name acc. to inventory | CAS No | Listed in | Remarks |
|-------------------|----------------------------|--------|-----------|---------|
| Cobalt powder | Metals and their compounds | | a) | |

Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

none of the ingredients are listed

Regulation on drug precursors

none of the ingredients are listed

Regulation on substances that deplete the ozone layer (ODS)

none of the ingredients are listed

Regulation concerning the export and import of hazardous chemicals (PIC)

none of the ingredients are listed

Regulation on persistent organic pollutants (POP)

none of the ingredients are listed

National regulations(GB)

List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list

none of the ingredients are listed

Restrictions according to GB REACH, Annex 17

Dangerous substances with restrictions (GB REACH, Annex 17)

| Name of substance | Name acc. to inventory | CAS No | No |
|----------------------|--|--------|----|
| ROTI®Garose - His/Co | this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC | | 3 |
| Ethanol | flammable / pyrophoric | | 40 |
| Cobalt powder | carcinogenic | | 28 |
| Cobalt powder | toxic for reproduction | | 30 |

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

| Country | Inventory | Status |
|---------|------------|--------------------------------|
| AU | AIIC | all ingredients are listed |
| CA | DSL | all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | all ingredients are listed |
| EU | REACH Reg. | not all ingredients are listed |

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| Country | Inventory | Status |
|---------|-----------|--|
| JP | CSCL-ENCS | not all ingredients are listed |
| KR | KECI | all ingredients are listed |
| MX | INSQ | not all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| PH | PICCS | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed as "ACTIVE" |

Legend

| | |
|------------|---|
| AIIC | Australian Inventory of Industrial Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| DSL | Domestic Substances List (DSL) |
| ECSI | EC Substance Inventory (EINECS, ELINCS, NLP) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| INSQ | National Inventory of Chemical Substances |
| KECI | Korea Existing Chemicals Inventory |
| NZIoC | New Zealand Inventory of Chemicals |
| PICCS | Philippine Inventory of Chemicals and Chemical Substances (PICCS) |
| REACH Reg. | REACH registered substances |
| TCSI | Taiwan Chemical Substance Inventory |
| TSCA | Toxic Substance Control Act |

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 2.2 | Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger | | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | | Labelling of packages where the contents do not exceed 125 ml: change in the listing (table) | yes |
| 2.2 | contains: Cobalt powder | | yes |
| 2.3 | Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be a PBT or a vPvB. | Results of PBT and vPvB assessment: Does not contain a PBT-/vPvB-substance in a concentration of $\geq 0,1\%$. | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|--|--|-----------------|
| 2.3 | | Endocrine disrupting properties: Does not contain an endocrine disruptor (EDC) in a concentration of $\geq 0,1\%$. | yes |
| 14.8 | | Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)Additional information | yes |
| 14.8 | | Classification code: F1 | yes |
| 14.8 | | Danger label(s): 3 Fish and tree | yes |
| 14.8 | | Danger label(s): change in the listing (table) | yes |
| 14.8 | | Environmental hazards: Yes Hazardous to water | yes |
| 14.8 | | Special provisions (SP): 144, 601 | yes |
| 14.8 | | Excepted quantities (EQ): E1 | yes |
| 14.8 | | Limited quantities (LQ): 5 L | yes |
| 14.8 | | Transport category (TC): 3 | yes |
| 14.8 | | Hazard identification No: 30 | yes |
| 14.8 | Marine pollutant: yes (hazardous to the aquatic environment), (Cobalt powder) | Marine pollutant: yes (hazardous to the aquatic environment) | yes |
| 15.1 | Restrictions according to REACH, Annex XVII | | yes |
| 15.1 | | Dangerous substances with restrictions (REACH, Annex XVII): change in the listing (table) | yes |
| 15.1 | List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list: None of the ingredients are listed. (Or Concentration of the substance in a mixture: $<0.1\%$ Mass concentration) | | yes |
| 15.1 | VOC content: 20 % , 265,1 g/l | VOC content: 20 % | yes |
| 15.1 | | VOC content (Water content was discounted): 177 g/l | yes |
| 15.1 | VOC content: 472,7 g/l | | yes |
| 15.1 | VOC content Water content was discounted: 265,1 g/l | VOC content (Water content was discounted): 177 g/l | yes |
| 15.1 | | National regulations(GB) | yes |

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| Section | Former entry (text/value) | Actual entry (text/value) | Safety-relevant |
|---------|---------------------------|--|-----------------|
| 15.1 | | List of substances subject to authorisation (GB REACH, Annex 14) / SVHC - candidate list: none of the ingredients are listed | yes |
| 15.1 | | Restrictions according to GB REACH, Annex 17 | yes |
| 15.1 | | Dangerous substances with restrictions (GB REACH, Annex 17): change in the listing (table) | yes |
| 15.1 | | National inventories: change in the listing (table) | yes |

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------------|---|
| Acute Tox. | Acute toxicity |
| ADR | Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road) |
| Aquatic Acute | Hazardous to the aquatic environment - acute hazard |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic hazard |
| ATE | Acute Toxicity Estimate |
| BCF | Bioconcentration factor |
| BOD | Biochemical Oxygen Demand |
| Carc. | Carcinogenicity |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| Ceiling-C | Ceiling value |
| COD | Chemical oxygen demand |
| DGR | Dangerous Goods Regulations (see IATA/DGR) |
| DNEL | Derived No-Effect Level |
| EC50 | Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval |
| EC No | The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union) |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| ErC50 | ≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control |
| Eye Dam. | Seriously damaging to the eye |
| Eye Irrit. | Irritant to the eye |
| Flam. Liq. | Flammable liquid |

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| Abbr. | Descriptions of used abbreviations |
|-------------|--|
| GB REACH | The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019, SI 2019/758 (as amended) |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IATA | International Air Transport Association |
| IATA/DGR | Dangerous Goods Regulations (DGR) for the air transport (IATA) |
| ICAO | International Civil Aviation Organization |
| ICAO-TI | Technical instructions for the safe transport of dangerous goods by air |
| IMDG | International Maritime Dangerous Goods Code |
| IMDG-Code | International Maritime Dangerous Goods Code |
| index No | The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 |
| LC50 | Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval |
| LD50 | Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval |
| log KOW | n-Octanol/water |
| M-factor | Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present |
| Muta. | Germ cell mutagenicity |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| ppm | Parts per million |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| Repr. | Reproductive toxicity |
| Resp. Sens. | Respiratory sensitisation |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| Skin Sens. | Skin sensitisation |
| STEL | Short-term exposure limit |
| TWA | Time-weighted average |
| VOC | Volatile Organic Compounds |
| vPvB | Very Persistent and very Bioaccumulative |
| WEL | Workplace exposure limit |

Key literature references and sources for data

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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Classification procedure

Physical and chemical properties. The classification is based on tested mixture.
Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

| Code | Text |
|-------|--|
| H225 | Highly flammable liquid and vapour. |
| H226 | Flammable liquid and vapour. |
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H360F | May damage fertility. |
| H400 | Very toxic to aquatic life. |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects. |

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.