

Elabscience Biotechnology Co., Ltd

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------|---|
| Product name: | SMCC Activated R-PE |
| Cat. No. | E-FN-S102 |
| Application | For research use only |
| Company: | Elabscience Biotechnology Co., Ltd |
| Address: | Building B18, Biomedical Park, # 858 Gaoxin Road, Donghu Hi-Tech Development Area, Wuhan, Hubei, China |
| Email: | techsupport@elabscience.com |
| Fax: | 86-27-87645690 |
| Emergency | 86-27-87385095 |

SECTION 2 HAZARDS IDENTIFICATION

| Items | Physical form | Hazardous Ingredient | Concentration | CAS No. |
|-----------|----------------------------------|---------------------------------|---------------|------------|
| Reagent 1 | Odorless and Red, powder/lump | Ethylenediaminetetraacetic acid | 0.02% | 60-00-4 |
| | | R-Phycoerythrin | 1.86% | 11016-17-4 |

2.1 HAZARD STATEMENT

Classification according to GHS

2.1.1 Ethylenediaminetetraacetic acid

H303: May be harmful if swallowed.

H319: Causes serious eye irritation.

H402: Harmful to aquatic life.

2.1.2 R-Phycoerythrin

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

2.2 PRECAUTION STATEMENT

Classification according to GHS

2.2.1 Ethylenediaminetetraacetic acid

P264: Wash skin thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312: Call a POISON CENTER/ doctor if you feel unwell.

P337 + P313: If eye irritation persists: Get medical advice/ attention.

P501: Dispose of contents/ container to an approved waste disposal plant.

SECTION 3 INFORMATION ON INGREDIENTS

3.1 Reagent 1

| Ingredient | Concentration | CAS No. |
|-------------------------------------|---------------|------------|
| Trehalose | 92.09% | 6138-23-4 |
| R-Phycoerythrin | 1.86% | 11016-17-4 |
| Sodium chloride | 5.13% | 7647-14-5 |
| Disodium hydrogen orthophosphate | 0.68% | 7558-79-4 |
| Potassium chloride | 0.11% | 7447-40-7 |
| Potassium dihydrogen orthophosphate | 0.11% | 7778-77-0 |
| Ethylenediaminetetraacetic acid | 0.02% | 60-00-4 |

SECTION 4 FIRST-AID MEASURES

Classification according to GHS

4.1 General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

4.2 If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.3 In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.4 In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.5 If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media

Suitable: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide or appropriate foam. For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide. For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.

5.2 Special precautions for fire-fighters

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.3 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Person-related safety precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2 Measures for environmental protection

Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be avoided.

6.3 Measures for containment and cleaning

Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7 HANDLING AND STORAGE

7.1 Handling

- Wear appropriate protective clothing and safety gloves.
- Avoid inhalation.
- Avoid contact with eyes, skin and clothing.
- Mechanical exhaust required.
- Keep away from ignition sources, heat and flame.
- No smoking at working site.
- Incompatibilities: Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken, damp and cause losses.
- Working place should be equipped with appropriate varieties and quantities of firefighting equipment and leakage emergency treatment equipment.

7.2 Storage

- Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
- Keep away from heat, sparks and flame.
- Keep away from sources of ignition.
- Incompatible: Strong oxidizing agents, Strong acids.
- Storage place should be equipped with appropriate varieties and quantities of firefighting equipment and leakage emergency treatment equipment.

SECTION 8 EXPOSURE CONTROL/PPE

8.1 Engineering Controls

Mechanical exhaust required. Safety shower and eye bath.

8.2 Personal Protective Equipment

- Respiratory: Government approved respirator if needed.
- Eye/face: Chemical safety goggles if needed.
- Clothing: Wear appropriate protective clothing.
- Hand/skin: Protective gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose

of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

- Body protection: Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.

8.3 Other Protect

No smoking, drinking and eating at working site. Wash thoroughly after handling.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

9.1 Ethylenediaminetetraacetic acid

- a) Physical state: powder
- b) Color: white
- c) Odor: odorless
- d) Melting point/freezing point: Melting point/range: 250 °C - dec.
- e) Initial boiling point and boiling range: No data available
- f) Flammability (solid, gas): No data available
- g) Upper/lower flammability or explosive limits: No data available
- h) Flash point: Not applicable
- i) Autoignition temperature: No data available
- j) Decomposition temperature: > 220 °C
- k) pH: 2.5 at 10 g/l at 23 °C
- l) Viscosity: Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
- m) Water solubility: 0.4 g/l at 20 °C
- n) Partition coefficient n-octanol/water: No data available
- o) Vapor pressure: No data available
- p) Density: 1.46 g/cm³ at 20 °C
Relative density: No data available
- q) Relative vapor density: No data available
- r) Particle characteristics: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: none

9.2 R-Phycoerythrin

- a) Appearance: Form: Suspension
Color: Red
- b) Odor: Characteristic
- c) Odor threshold: Not determined.
- d) pH-value at 20 °C (68 °F): 7
- e) Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 100 °C (212 °F)
- f) Flash point: Not applicable.
- g) Flammability (solid, gaseous): Not applicable.
- h) Decomposition temperature: Not determined.
- i) Auto igniting: Product is not selfigniting.

- j) Danger of explosion: Product does not present an explosion hazard.
- k) Explosion limits:
 - Lower: Not determined.
 - Upper: Not determined.
- l) Vapor pressure: Not determined.
- m) Density at 20 °C (68 °F): 1.2 g/cm³ (10.014 lbs/gal)
- n) Relative density Not determined.
- o) Vapor density Not determined.
- p) Evaporation rate Not determined.
- q) Solubility in / Miscibility with Water: Not miscible or difficult to mix.
- r) Partition coefficient (n-octanol/water): Not determined.
- s) Viscosity:
 - Dynamic: Not determined.
 - Kinematic: Not determined.
- t) Solvent content:
 - Water: 29.6 %
 - VOC content: 0.00 %
 - Solids content: 60.4 %
- u) Other information: No further relevant information available.

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks

10.5 Incompatible materials

Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.

10.6 Hazardous decomposition products

Other decomposition products: No data available

Hazardous decomposition products formed under fire conditions: Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 Ethylenediaminetetraacetic acid

Acute toxicity

LD50 Oral - Rat - male and female - 4,500 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 20 h

Remarks: (ECHA)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation

Remarks: (ECHA)

Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: Ethylenedinitrilotetraacetic acid disodium salt

Maximization Test - Rabbit

Result: Does not cause skin sensitization.

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: AH4025000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

11.2 R-Phycoerythrin**Acute toxicity**

LD50 Oral - Rat - male and female - 2,840 mg/kg

Skin corrosion/irritation

Irritant to skin and mucous membranes.

Serious eye damage/eye irritation

Irritating effect.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

No data available

SECTION 12 ECOLOGICAL INFORMATION**12.1 Ethylenediaminetetraacetic acid****Toxicity**

Toxicity to fish:

static test LC50 - *Lepomis macrochirus* (Bluegill sunfish) - 41 mg/l - 96 h

Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates:

static test EC50 - *Daphnia magna* (Water flea) - 625 mg/l - 24 h

(DIN 38412)

Toxicity to fish (Chronic toxicity):

flow-through test NOEC - *Danio rerio* (zebra fish) - ≥ 25.7 mg/l - 35 d

(OECD Test Guideline 210)

Toxicity to daphnia and other aquatic invertebrates(Chronic toxicity):

semi-static test NOEC -*Daphnia magna* (Water flea) - 25 mg/l - 21 d

Persistence and degradability

Biodegradability:

aerobic - Exposure time 20 d

Result: 0 - 20 % - Not readily biodegradable.

Remarks: (ECHA)

Ratio BOD/ThBOD:

< 1 %

Remarks: (IUCLID)

Bioaccumulative potential

Bioaccumulation

Lepomis macrochirus - 28 d at 21 °C - 80 µg/l(Ethylenediaminetetraacetic acid)

Bioconcentration factor (BCF): 1.8

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Endocrine disrupting properties

No data available

Other adverse effects

May be harmful to aquatic organisms due to the shift of the pH. Avoid release to the environment.

12.2 R-Phycoerythrin

Toxicity

Aquatic toxicity

No further relevant information available.

Persistence and degradability

No further relevant information available.

Behavior in environmental systems

Bioaccumulative potential

No further relevant information available.

Mobility in soil

No further relevant information available.

Additional ecological information

General notes

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects

No further relevant information available.

SECTION 13 DISPOSAL CONSIDERATION

13.1 Disposal methods

Dispose of waste in accordance to applicable national, regional, or local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

Dispose in the same manner as unused product.

SECTION 14 TRANSPORT INFORMATION

RID/ADR: Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA: Non-Hazardous for Air Transport.

IMO: Non-Hazardous for Sea Transport.

SECTION 15 REGULATORY INFORMATION

This material safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008 and its amendments.

SECTION 16 OTHER INFORMATION

IMPORTANT! Read the safety data sheets before the use and disposal of this product. Insure that this information is understood by the operators exposed to this product. Use this product for the intended purpose as indicated in the instruction manual.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from this use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.