

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 10/19/2018

Version 1.4

SECTION 1. Identification**Product identifier**

| | |
|----------------|---|
| Product number | 100590 |
| Product name | Glycine cryst. EMPROVE® EXPERT Ph Eur,BP,JP,USP |
| Synonyms | Gly |
| CAS-No. | 56-40-6 |

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

| | |
|-----------------|----------------------------------|
| Identified uses | Food and pharmaceutical industry |
|-----------------|----------------------------------|

Details of the supplier of the safety data sheet

| | |
|---------|--|
| Company | EMD Millipore Corporation 400 Summit Drive Burlington Massachusetts 01803 United States of America General Inquiries: +1 800-645-5476 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany. |
|---------|--|

| | |
|----------------------------|--|
| Emergency telephone | 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week |
|----------------------------|--|

SECTION 2. Hazards identification**GHS-Labeling**

Not a dangerous substance according to GHS.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

| | | |
|------------|--------------------------------------|--|
| Formula | H ₂ NCH ₂ COOH | C ₂ H ₅ NO ₂ (Hill) |
| Synonyms | Gly | |
| Molar mass | 75.06 g/mol | |

| | |
|---------|--|
| Remarks | No hazardous ingredients according to the OSHA Hazard Communication Standard 29 CFR 1910.1200. |
|---------|--|

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SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

Eye contact

After eye contact: rinse out with plenty of water. Remove contact lenses.

Ingestion

After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

We have no description of any toxic symptoms.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Foam, Carbon dioxide (CO₂), Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrous gases, nitrogen oxides

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

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Protective equipment see section 8.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Store at +5°C to +30°C (+41°F to +86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

| | |
|---------------------|----------------|
| Glove material: | Nitrile rubber |
| Glove thickness: | 0.11 mm |
| Break through time: | > 480 min |

splash contact:

| | |
|---------------------|----------------|
| Glove material: | Nitrile rubber |
| Glove thickness: | 0.11 mm |
| Break through time: | > 480 min |

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

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This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Respiratory protection

required when dusts are generated.

Recommended Filter type: Filter P 1 (acc. to DIN 3181) for solid particles of inert substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SECTION 9. Physical and chemical properties

| | |
|-----------------------------|---|
| Physical state | solid |
| Color | white |
| Odor | odorless |
| Odor Threshold | Not applicable |
| pH | 5.9 - 6.4 at 50 g/l 68 °F (20 °C) |
| Melting point | 451 °F (233 °C) (decomposition) |
| Boiling point/boiling range | Not applicable |
| Flash point | Not applicable |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | The product is not flammable. Test N.1: Test method for readily combustible solids |
| Lower explosion limit | No information available. |
| Upper explosion limit | No information available. |
| Vapor pressure | 0.0000171 Pa at 77 °F (25 °C) |
| Relative vapor density | No information available. |
| Density | 1.161 g/cm ³ at 68 °F (20 °C) |

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|--|---|
| Relative density | No information available. |
| Water solubility | 250 g/l at 77 °F (25 °C) soluble |
| Partition coefficient: n-octanol/water | log Pow: -3.21 (calculated) (Lit.) Bioaccumulation is not expected. |
| Autoignition temperature | not auto-flammable |
| Decomposition temperature | > 451 °F (> 233 °C) |
| Viscosity, dynamic | Not applicable |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | none |
| Bulk density | 920 kg/m ³ |
| Particle size | < 0.1 mm Method: OECD Test Guideline 110 |

SECTION 10. Stability and reactivity

Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents, Bases

Conditions to avoid

no information available

Incompatible materials

no information available

Hazardous decomposition products

in the event of fire: See section 5.

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SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Acute oral toxicity

LD50 Rat: 7,930 mg/kg (External MSDS)

Skin irritation

Rabbit

Result: No skin irritation

OECD Test Guideline 404

Eye irritation

Rabbit

Result: No eye irritation

OECD Test Guideline 405

Sensitization

Sensitization test: Mouse

Result: negative

Method: OECD Test Guideline 429

Genotoxicity in vitro

reverse mutation assay

Escherichia coli/Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

In vitro mammalian cell gene mutation test

MOUSE LYMPHOMA TEST

Result: negative

Method: OECD Test Guideline 476

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

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ACGIH
by NTP.
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

This is a non-essential amino acid that occurs in many forms in natural protein.
Therapeutically used substance.
No toxic effects are to be expected when the product is handled appropriately.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

static test LC50 *Oryzias latipes* (Orange-red killifish): > 1,000 mg/l; 96 h
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

semi-static test EC50 *Daphnia magna* (Water flea): > 220 mg/l; 48 h
Analytical monitoring: yes
OECD Test Guideline 202

Toxicity to algae

static test EC50 *Pseudokirchneriella subcapitata* (green algae): > 1,000 mg/l; 72 h
OECD Test Guideline 201

Toxicity to bacteria

static test NOEC activated sludge: >= 100 mg/l; 14 d (ECHA)

Persistence and degradability

Biodegradability

76 - 82 %; 14 d; aerobic
OECD Test Guideline 301C
Readily biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -3.21
(calculated)
(Lit.) Bioaccumulation is not expected.

Mobility in soil

No information available.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

SARA 313

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

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SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 10/19/2018

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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