



# SAFETY DATA SHEET

[Required under safety and health regulations for shipping and handling]

Version: 2023

Date Updated: January 30, 2023

## SECTION 1. ----- PRODUCT AND COMPANY IDENTIFICATION -----

**Product Name** Glycine  
**Product Code(s)** GB0235  
**Recommended Use** For Laboratory Research Use Only  
Not for Human or Animal Drug Use

**Supplier** Bio Basic Inc.  
**Address** 20 Konrad Crescent, Markham, Ontario,  
Canada, L3R 8T4  
**Telephone** (905) 474 4493  
**Fax** (905) 474 5794  
**For Chemical Emergency Phone#** (416) 995 9730

## SECTION 2. ----- HAZARDS IDENTIFICATION -----

### Classification of the substance or mixture

Not a hazardous substance or mixture.

### GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

**Hazards not otherwise classified (HNOC) or not covered by GHS** - none

## SECTION 3. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----

Chemical Name	EC No.	CAS-No	Weight %
Glycine	200-272-2	56-40-6	<100

## SECTION 4. ----- FIRST-AID MEASURES -----

### Description of first aid measures

#### If inhaled

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

#### In case of skin contact

Wash off with soap and plenty of water.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5. ----- FIRE FIGHTING MEASURES -----

### Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

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

#### Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 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.

### 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.

### Reference to other sections

For disposal see section 13.

## SECTION 7. ----- HANDLING AND STORAGE-----

### Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

### Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): 11: Combustible Solids

Recommended storage temperature

2 - 30 °C

### Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

## SECTION 8. ----- EXPOSURE CONTROLS/PERSONAL PROTECTION-----

### Control parameters

### Exposure controls

#### Appropriate engineering controls

General industrial hygiene practice.

### Personal protective equipment

#### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government

standards such as NIOSH (US) or EN 166(EU).

### **Skin protection**

Handle with 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Splash contact Material:

Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### **Body Protection**

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### **Respiratory protection**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### **Control of environmental exposure**

No special environmental precautions required.

## **SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -**

### **Information on basic physical and chemical properties**

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|--|--|
| a) Appearance                              | Form: Crystalline powder<br>Color: white |
| b) Odor                                    | odorless                                 |
| c) Odor Threshold                          | No data available                        |
| d) pH                                      | No data available                        |
| e) Melting point/freezing point            | > 233 °C (> 451 °F)                      |
| f) Initial boiling point and boiling range | No data available                        |
| g) Flash point                             | ( )No data available                     |
| h) Evaporation rate                        | No data available                        |
| i) Flammability (solid, gas)               | No data available                        |

- |    |  |  |
|----|--|--|
| j) | Upper/lower flammability or explosive limits | No data available  |
| k) | Vapour pressure                              | No data available  |
| l) | Vapour density                               | No data available  |
| m) | Relative density                             | 1.161 g/cm <sup>3</sup> at 20 °C (68 °F)                 |
| n) | Water solubility                             | 250 g/l at 25 °C (77 °F) - soluble                       |
| o) | Partition coefficient: log Pow:              | -3.21 - Bioaccumulation is not expected. n-octanol/water |
| p) | Auto-ignition temperature                    | > 140 °C (> 284 °F) not auto-flammable                   |
| q) | Decomposition temperature                    | > 233 °C (> 451 °F) -                                    |
| r) | Viscosity                                    | No data available  |
| s) | Explosive properties                         | No data available  |
| t) | Oxidizing properties                         | No data available  |

**Other safety information**

Bulk density	920 kg/m <sup>3</sup>
Particle size	< 0.1 mm - 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 data available

**Incompatible materials**

Strong oxidizing agents

**Hazardous decomposition products**

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

Other decomposition products - No data available In the event of fire: see section 5

**SECTION 11. ----- TOXICOLOGICAL INFORMATION -----**

**Information on toxicological effects**

**Acute toxicity**

LD50 Oral - Rat - 7,930 mg/kg

Remarks: (RTECS)

Inhalation: No data available Dermal: No data available

**Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h (OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation - 72 h (OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse Result: negative (OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster fibroblasts

Metabolic activation: without metabolic activation

Result: negative

Remarks: (ECHA)

**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: MB7600000

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

**SECTION 12. ----- ECOLOGICAL INFORMATION -----****Toxicity**

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

Toxicity to daphnia                  semi-static test EC50 - *Daphnia magna* (Water flea) - > 220 mg/l -

and other aquatic invertebrates	48 h (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 Remarks: (ECHA)

**Persistence and degradability**

Biodegradability aerobic - Exposure time 14 d  
Result: 76 - 82 % - Readily biodegradable.  
(OECD Test Guideline 301C)

**Bioaccumulative potential**

Bioaccumulation is unlikely.

**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.

**Other adverse effects**

No data available

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company.

**Contaminated packaging**

Dispose of as unused product.

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**DOT (US)**

Not dangerous goods

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**SECTION 15. ----- REGULATORY INFORMATION -----**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

**SECTION 16. ----- OTHER INFORMATION -----**

Further information: no limited for paper copy, just for internal uses.  
For research use only. Not intended for human or animal diagnostic or therapeutic uses.

**Disclaimer**

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

**Issuing Date:** 30-Sept-2019

**End of SDS**



## CERTIFICATE OF ANALYSIS

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Product	Glycine
Grade	Biotech Grade
Product Code	GB0235
Formula	C <sub>2</sub> H <sub>5</sub> NO <sub>2</sub>
MW	75.07
CAS#	56-40-6
Lot No	

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Test Items	Specifications	Results
Appearance	White crystals or crystalline powder	
Assay	≥99%	
pH (5% water)	5.5 ~ 7.0	
Heavy metals	≤0.001%	
Loss on dry	≤0.2%	
Residue on ignition	≤0.1%	
Chloride	≤0.010%	
Arsenic	≤0.0001%	
Appearance of solution	Pass test	

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Storage: R.T. Protect from moisture.





## **PRODUCT INFORMATION**

### **Glycine**

#### ***Product information for GB0235:***

#### **Product Description**

Molecular Formula:  $C_2H_5NO_2$

Molecular Weight: 75.07

CAS Number: 56-40-6

pI: 6.06

pKa: for the  $\alpha$  carboxyl group: 2.35; and for the  $\alpha$  amino group: 9.78

Melting Point: 233-290 °C

Glycine does not have a chiral center. Therefore, it does not have a D- or L- isomer designation. This material is synthetic.

This product is documented to have been tested, and shown to conform to the USP XXIII specifications for Organic Volatile Impurities (OVI). Organic Volatile Impurity Limits are (in ppm): Benzene, 100; Chloroform, 50; 1,4 Dioxane, 100; Methylene Chloride, 500; Trichloroethylene, 100. In addition, these organic compounds are not used in the manufacture of glycine and are not expected to be generated during manufacture. The controlled handling and storage of glycine ensures that contamination of glycine with these chemicals will not occur.

This product can be used to prepare buffers at approximately pH 3.2 and pH 9.

#### **Precautions and Disclaimer**

For Laboratory Use Only. Not for drug, household or other uses.

#### **Preparation Instructions**

This product is soluble in water at 200 mg/ml, resulting in a clear solution. Literature indicates that solubility in water at 25 °C is 25.0 g/100 ml.

#### **Storage/Stability**

Store at Room Temperature.

Solutions of this product can be autoclaved.