

SAFETY DATA SHEET

Revision date 2019-Feb-12

Revision number 2.04

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name	Glycine - All Grades Glycine - USP, Pharma (833-03); Glycine - USP-NF (833-01); Glycine Technical Grade (832-01)
Product code	1999
Synonyms	Aminoacetic acid
REACH registration number	01-2119962907-22-0002

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

Recommended use [RU]	pH Regulating agent
Uses advised against	No information available

1.3 Details of the supplier of the safety data sheet

Supplier

GEO Specialty Chemicals, Inc.
739 Independence Parkway South
Deer Park, TX 77536
+1-281-479-9525
Hours: Monday-Friday 9:00-5:00 CST (Central Standard Time)

Only representative

GEO Specialty Chemicals UK Ltd
Charleston Road, Hardley, Hythe
Southampton, Hampshire SO45 3ZG
United Kingdom
Phone: +44 (0)23 80894666
Fax No: +44 (0)23 80243113

Responsibility Statement For further information, please contact safety-data-sheet-fp@geosc.com

1.4 Emergency telephone number

Emergency telephone	24 Hour Emergency Phone Number GEO Specialty Chemicals UK Ltd +44 (0)23 80891806
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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

This substance is not classified as dangerous according to regulation (EC) 1272/2008 [GHS].

2.2 Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Signal word Not classified

Hazard statements

None

Precautionary statements

None

2.3 Other Information

None known

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Component	EU EINECS	weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	(REACH) Regulation (EC 1907/2006)
Glycine 56-40-6	200-272-2	> 98.5%	Not Classified as Hazardous	In compliance

For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixtures

Not applicable

4. FIRST AID MEASURES**4.1 Description of first aid measures****Eye contact**

Remove contact lenses, if worn. Immediately flush with plenty of water for at least 15 minutes, holding eyelids apart to ensure flushing of the entire surface. Washing within one minute is essential to achieve maximum effectiveness. Get medical attention if irritation develops and persists.

Skin contact

Immediately flush skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Ingestion

Do NOT induce vomiting. If vomiting should occur spontaneously, keep airway clear. Never give anything by mouth to an unconscious person. Get medical attention.

Inhalation

Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

4.2 Most important symptoms and effects, both acute and delayed**Most important symptoms and effects**

No information available.

4.3 Indication of any immediate medical attention and special treatment needed**Note to physicians**

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Water mist. Carbon dioxide (CO₂). Foam. Dry chemical.

Extinguishing media which must not be used for safety reasons

No information available.

5.2 Special hazards arising from the substance or mixture

Special Hazard

Container may rupture from gas generation in a fire situation. Do not permit dust to accumulate. Dust layers can be ignited by spontaneous combustion or other ignition sources. When suspended in air dust can pose an explosion hazard.

5.3 Advice for firefighters

Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for firefighting personnel.

Firefighting measures

Keep people away. Isolate fire area and deny unnecessary entry. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Fight fire from protected location or safe distance. Consider use of unmanned hose holder or monitor nozzles. Immediately withdraw all personnel from area in case of rising sound from venting safety device or discoloration of the container. Move container from fire area if this is possible without hazard. Hand held carbon dioxide or dry chemical extinguishers may be used for small fires. Dust explosion hazard may result from forceful application of fire extinguishing agents.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Wear suitable protective clothing and gloves.

6.2 Environmental precautions

Environmental precautions

Avoid runoff to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up

Clear non-emergency personnel from area. Remove with shovel. Transfer to suitable and properly labeled containers for disposal.

6.4 Reference to other sections

See Section 12 for additional Ecological Information

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling

Keep container closed when not in use

Avoid generation of dust

Use only with adequate ventilation. Use respiratory protection where dust may be generated. Do not breathe dust

Avoid contact with eyes, skin and clothing

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.
Wash thoroughly after handling
FOR INDUSTRIAL USE ONLY.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in a dry place
Store in a cool, well ventilated area
Keep away from heat, sparks and open flame

7.3 Specific end use(s)

Specific use(s)

Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit value

Component	European Union	United Kingdom	Spain	Germany
Glycine 56-40-6	NAV	NAV	NAV	NAV

Biological limit values

Component	European Union	United Kingdom	Spain	Germany
Glycine 56-40-6	NAV	NAV	NAV	NAV

Legend

NAV - Not available

Derived No Effect Level (DNEL)						
Name on List	End User	Exposure route	Health Effects	Exposure Time	Values	Remarks
Glycine	workers	Inhalation	Chronic effects, systemic			No hazard identified
Glycine	workers	Inhalation	Acute effects, systemic			No hazard identified
Glycine	workers	Dermal	Chronic effects, systemic			No hazard identified
Glycine	workers	Dermal	Acute effects, systemic			No hazard identified
Glycine	workers	Eyes	Local effects			No hazard identified
Glycine	consumers	Inhalation	Chronic effects, systemic			No hazard identified
Glycine	consumers	Inhalation	Acute effects, systemic			No hazard identified
Glycine	consumers	Dermal	Chronic effects, systemic			No hazard identified
Glycine	consumers	Dermal	Acute effects, systemic			No hazard identified
Glycine	consumers	Oral	Chronic effects, systemic			No hazard identified
Glycine	consumers	Oral	Acute effects, systemic			No hazard identified
Glycine	consumers	Eyes	Local effects			No hazard identified

Predicted No Effect Concentration (PNEC)				
Name on List	Environmental Compartment	Exposure Time	Values	Remarks
Glycine	Fresh water			No hazard identified
Glycine	Marine water			No hazard identified
Glycine	Intermittent releases to water			No hazard identified
Glycine	Fresh water sediment			No hazard identified
Glycine	Marine sediment			No hazard identified
Glycine	Soil			No hazard identified

8.2 Exposure controls

Personal Protective Equipment

Eye/face Protection

Wear chemical splash goggles and face shield (when eye and face contact is possible due to splashing or spraying of material).

Hand Protection

Appropriate chemical resistant gloves should be worn

Skin and body protection

Wear suitable protective clothing.

Respiratory protection

Appropriate respiratory protection shall be worn when applied engineering controls are not adequate to protect against inhalation exposure above the listed occupational exposure limits.

Other personal protection data

Eyewash fountains and safety showers must be easily accessible.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	powder
Color	white
Appearance	No information available
Odor	odorless
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	No information available	No information available
Melting / freezing point	Product decomposes at elevated temperatures	No information available
Boiling point / boiling range	No information available	No information available
Flash point	Not applicable	No information available
Evaporation rate	No information available	No information available
Flammability (solid, gas)	Not flammable	No information available
Flammability Limit in Air		
Upper flammability limit	No information available	No information available
Lower flammability limit	No information available	No information available
Vapor pressure	0.0000171 Pa @ 25 °C	No information available
Vapor density	No information available	No information available
Specific gravity	No information available	No information available
Solubility (water)	250 g/L @ 25 °C	No information available
Solubility in other solvents	No information available	No information available

Partition coefficient: n-octanol/water	Log Kow (Pow): -3.21	Calculation method
Autoignition temperature	No information available	No information available
Decomposition temperature	No information available	No information available
Kinematic viscosity	Not applicable	No information available
Dynamic viscosity	Not applicable	No information available
Density	1.161 g/cm ³	No information available

9.2 Other information

Bulk Density	No information available
Explosive properties	Not an explosive.
Oxidizing properties	The substance or mixture is not classified as oxidizing.
Softening point	No information available
Molecular weight	75.07 g/mol
Volatile Organic Compound (VOC) content, wt.%	No information available
Percent Volatile, wt.%	0.2 % max

10. STABILITY AND REACTIVITY

10.1 Reactivity

Reactivity

No information available.

10.2 Chemical stability

Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization

Not anticipated under normal or recommended handling and storage conditions.

10.4 Conditions to avoid

Conditions to avoid

Avoid temperatures above 180 °C. Product decomposes above melting temperature.

10.5 Incompatible materials

Materials to avoid

Avoid contact with oxidizing materials. Avoid unintended contact with acids, bases, halogenated hydrocarbons.

10.6 Hazardous decomposition products

Hazardous decomposition products

Hazardous decomposition products depend upon temperature, air supply and the presence of other materials. Gases are released during decomposition. Carbon dioxide, carbon monoxide, and nitrogen oxides can be expected.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute health hazard

Eye contact

Not expected to cause eye irritation.

Skin contact

Health injuries are not known or expected under normal use.

Ingestion

Single dose oral toxicity is considered to be extremely low. No hazards anticipated from swallowing small amounts incidental to normal handling operations.

Inhalation

No adverse effects expected under ordinary conditions of use.

Acute toxicity

Oral LD50	> 5000 mg/kg
Dermal LD50	No information available
Inhalation LC50	No information available

Skin corrosion/irritation

Not irritating

Method: OECD Test No. 404: Acute Dermal Irritation/Corrosion

Serious eye damage/eye irritation

Not irritating

Method: OECD Test No. 405: Acute Eye Irritation/Corrosion

Sensitization

Dermal sensitization: non-sensitizing

Method: OECD Test No. 429: Skin Sensitization: Local Lymph Node Assay

Germ cell mutagenicity

in vitro/in vivo: No adverse effect observed (negative)

Method: OECD Test No. 471: Bacterial Reverse Mutation Test; OECD Test No. 476: In vitro Mammalian Cell Gene Mutation Test

Carcinogenicity

No adverse effects observed. (oral route)

Repeated dose toxicity

No adverse effects observed. (oral route)

Method: OECD Test No. 407: Repeated Dose 28-day Oral Toxicity Study in Rodents

Reproductive toxicity

No information available

Developmental toxicity

No adverse effects observed

NOAEL Oral Value: 855 mg/kg bw/day

Method: OECD Test No. 414: Prenatal Development Toxicity Study

Specific target organ toxicity - Single exposure

No information available

Specific target organ toxicity - Repeated exposure

No information available

Aspiration hazard

No information available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Acute aquatic toxicity

Fish	LC50 (96 h): > 1000 mg/L (<i>Oryzias latipes</i>) Method: OECD Test No. 203: Fish, Acute Toxicity Test
Crustacea	EC50 (48 h): > 220 mg/L (<i>Daphnia magna</i>) Method: Acute daphnia toxicity according to test method OECD 202.
Algae/aquatic plants	EC50 (72 h): > 1000 mg/L (<i>Pseudokirchnerella subcapitata</i>) Method: OECD Test No. 201: Freshwater Alga and Cyanobacteria, Growth Inhibition Test

12.2 Persistence and degradability

Persistence and degradability

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

Ultimate biodegradation

Readily biodegradable. All organic substances contained in the product achieve > 60% BOD/COD or CO₂ liberation, or > 70% DOC reduction in tests for ease of degradability. Threshold values for 'readily degradable' (e.g. to OECD method 301) are reached. Method: OECD Test No. 302C: Inherent Biodegradability: Modified MITI Test (II).

12.3 Bioaccumulative potential

Bioconcentration factor (BCF)

0.893 L/kg ww (BCFBAF v3.01, Arnot Gobas)

Bioaccumulative potential

The bioaccumulation potential is low (log Pow = -3.21)

12.4 Mobility in soil

Mobility

Not expected to adsorb on soil.

12.5 Results of PBT and vPvB assessment

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)

This substance is not considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects

Other information

None

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Disposal of wastes

Do not put solutions containing this product into sewer systems. Dispose of according to regulations.

Contaminated packaging

Since empty containers retain product residue, follow label warnings even after container is emptied.

Waste codes / waste designations according to EWC / AVV

07.01.99; wastes not otherwise specified

14. TRANSPORT INFORMATION

US DOT Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

Land transport (ADR/RID) Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

Air transport (ICAO-TI / IATA-DGR) Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

Sea transport (IMDG) Not regulated

14.1. UN number

14.2. UN proper shipping name

14.3. Transport hazard class(es)

14.4. Packing group

14.5. Environmental hazards

14.6. Special precautions for user

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

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

National Regulations

Germany - Water Classification (VwVwS)

WGK 1 (Anhang 2, ID # 6704)

International Inventories

Australia (AICS)

All ingredients are on the inventory or exempt from listing

Canada (DSL)

All ingredients are on the inventory or exempt from listing

Canada (NDSL)

None of the ingredients are on the inventory.

China (IECSC)

All ingredients are on the inventory or exempt from listing

European Union (EINECS)

All ingredients are on the inventory or exempt from listing

European Union (ELINCS)

None of the ingredients are on the inventory.

Japan (ENCS)

All ingredients are on the inventory or exempt from listing

South Korea (KECL)

All ingredients are on the inventory or exempt from listing

Philippines (PICCS)

All ingredients are on the inventory or exempt from listing

United States (TSCA)

All ingredients are on the inventory or exempt from listing

Legend

AICS - Australian Inventory of Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

IECSC - China Inventory of Existing Chemical Substances

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

15.2 Chemical Safety Report

No information available.

16. OTHER INFORMATION

Product code 1999

Revision date 2019-Feb-12

Full text of H-Statements referred to under sections 2 and 3

None

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

NAV - Not available

This safety data sheet complies with the requirements of: Regulation (EC) No. 1907/2006.

Additional information

None

Disclaimer

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