

SAFETY DATA SHEET

Revision date 2014-08-11

Revision number 1

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

Product identifier

Product name Glycine - All Grades
Glycine - USP, Pharma; Glycine - USP-NF; Glycine Technical Grade

Other means of identification

Product code 1999
Synonyms Aminoacetic acid

Recommended use of the chemical and restrictions on use

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

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)

Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC: (800) 424-9300
Outside USA - 00 1 (703) 527-3887 collect calls accepted

Contact Point safety-data-sheet-fp@geosc.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Not a hazardous substance or mixture according to the Globally Harmonized System (GHS)

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

The product contains no substances which at their given concentration, are considered to be hazardous to health.

Physical state solid	Color white	Appearance powder	Odor odorless
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Other information

- Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	weight-%	TRADE SECRET
Glycine	56-40-6	> 98.5%	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**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. Seek medical advice immediately.

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.

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

None known.

Aggravated Medical Conditions

None known.

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

Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Extinguishing media****Suitable extinguishing media**

Water fog, carbon dioxide, foam, dry chemical.

Extinguishing media which must not be used for safety reasons

No information available

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.

Advice for firefighters**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.

Special protective equipment for firefighters

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

Explosion data**Sensitivity to Mechanical Impact**

None.

Sensitivity to Static Discharge

None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures**Personal precautions**

Wear suitable protective clothing and gloves.

Environmental precautions**Environmental precautions**

Avoid runoff to waterways and sewers.

Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

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

7. HANDLING AND STORAGE

Precautions for safe handling**Advice on safe handling**

Avoid generation of dust

Do not breathe (dust, vapor, mist, gas)

Use only with adequate ventilation

Use respiratory protection where dust may be generated.

Avoid contact with eyes, skin and clothing

Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing.

Wash thoroughly after handling

Keep container closed when not in use

FOR INDUSTRIAL USE ONLY.

Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Store in a dry place

Keep away from heat, sparks and open flame

Store in a cool, well ventilated area

Incompatible products

None known based on information supplied

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Appropriate engineering controls**Engineering controls**

Local exhaust ventilation as necessary to maintain exposures to within applicable limits. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details. If there are no applicable or established exposure limit requirements or guidelines, general ventilation should be sufficient.

Individual protection measures, such as personal protective equipment**Eye/face Protection**

Chemical goggles or a face shield if splashing hazard exists.

Hand Protection

Appropriate chemical resistant gloves should be worn.

Skin and body protection

Standard work clothing and work shoes.

Respiratory protection

If exposures exceed the PEL or TLV, use NIOSH/MSHA approved respirator in accordance with OSHA Respiratory Protection Requirements under 29 CFR 1910.134.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

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

<u>Property</u>	<u>Values</u>	<u>Method</u>
pH	No information available Unknown	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)	non 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

Other information

Density	1.161 g/cm ³
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 compounds (VOCs) content	No information available
Percent Volatile, wt. %	0.2 max %

10. STABILITY AND REACTIVITY**Reactivity****Reactivity**

No data available.

Chemical stability**Chemical stability**

Stable under normal conditions of handling, use and transportation.

Possibility of hazardous reactions**Possibility of hazardous reactions**

None under normal processing.

Hazardous polymerization

Not anticipated under normal or recommended handling and storage conditions.

Conditions to avoid**Conditions to avoid**

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

Incompatible materials**Materials to avoid**

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

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

Information on likely routes of exposure**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 - Product Information

Oral LD50 > 5000 mg/kg body weight

Dermal LD50 No information available

Inhalation LC50 No information available

Information on toxicological effects**Symptoms**

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**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

Germ cell mutagenicity

No information available.

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.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 7930 mg/kg

Other information

Conclusions are drawn from sources other than direct testing.

12. ECOLOGICAL INFORMATION

Ecotoxicity**Acute aquatic toxicity - Product Information**

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

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)

Bioaccumulative potential**Bioaccumulative potential**

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

Bioconcentration factor (BCF)

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

Mobility**Mobility**

Not expected to adsorb on soil

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)

Other adverse effects**Other information**

None

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

Dispose of product in an approved chemical waste landfill or incinerate in accordance with applicable Federal, state and local regulations. Do not put solutions containing this product into sewer systems.

Contaminated packaging

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

14. TRANSPORT INFORMATION

DOT Not regulated

ICAO/IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION**International Inventories****TSCA (United States)**

All ingredients are on the inventory or exempt from listing

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

EINECS (European Inventory of Existing Chemical Substances)

All ingredients are on the inventory or exempt from listing

ELINCS (European List of Notified Chemical Substances)

None of the ingredients are on the inventory.

ENCS (Japan)

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

Legend

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

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

U.S. Federal Regulations**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations

16. OTHER INFORMATION

NFPA Rating	Health - 1	Flammability - 1	Instability - 0	Special Hazard -
HMIS Rating	Health - 1	Flammability - 1	Physical hazard - 0	Personal protection - X

Product code 1999

Revision date 2014-08-11

Revision number 1

Disclaimer

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet