SAFETY DATA SHEET

Section 1. Identification

Product name: Glycine, 500 g

Catalogue Number: 17-1323-01

Chemical name: glycine

Other means of identification: Aminoacetic acid, glycocoll

Product type: Solid.

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

Identified uses

Use in laboratories


Supplier

GE Healthcare UK Ltd
Amersham Place
Little Chalfont
Buckinghamshire HP7 9NA
England
+44 0870 606 1921

GE Healthcare Bio-Sciences
800 Centennial Avenue
P.O. Box 1327
Piscataway, NJ 08855-1327
+1 800 526 3593

In case of emergency

ChemTrec US (available 24/7) 1-800-424-9300

Section 2. Hazards identification

OSHA/HCS status

While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture

Not classified.

GHS label elements

Signal word: No signal word.

Hazard statements: No known significant effects or critical hazards.

Precautionary statements

Prevention: Not applicable.
Response: Not applicable.
Storage: Not applicable.
Disposal: Not applicable.

Hazard not otherwise classified: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Substance

Chemical name: glycine

Other means of identification: Aminoacetic acid, glycocoll

CAS number/other identifiers

CAS number: 56-40-6

Product code: 17-1323-01

Ingredient name: glycine
%: 100

CAS number: 56-40-6

Any concentration shown as a range is to protect confidentiality or is due to batch variation.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

**Section 4. First aid measures**

**Description of necessary first aid measures**

| Eye contact | Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs. |
| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Skin contact | Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. |
| Ingestion | Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur. |

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

**Potential acute health effects**

| Eye contact | No known significant effects or critical hazards. |
| Inhalation | Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure. |
| Skin contact | No known significant effects or critical hazards. |
| Ingestion | No known significant effects or critical hazards. |

**Over-exposure signs/symptoms**

| Eye contact | No specific data. |
| Inhalation | No specific data. |
| Skin contact | No specific data. |
| Ingestion | No specific data. |

**Indication of immediate medical attention and special treatment needed, if necessary**

| Notes to physician | In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. |
| Specific treatments | No specific treatment. |
| Protection of first-aiders | No action shall be taken involving any personal risk or without suitable training. |

**See toxicological information (Section 11)**

**Section 5. Fire-fighting measures**

**Extinguishing media**

| Suitable extinguishing media | Use an extinguishing agent suitable for the surrounding fire. |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | No specific fire or explosion hazard. |
| Hazardous thermal decomposition products | Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides |

| Special protective actions for fire-fighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| Special protective equipment for fire-fighters | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. |

**Section 6. Accidental release measures**

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

| For non-emergency personnel | No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. |
| For emergency responders | If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". |
| Environmental precautions | Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). |

**Methods and materials for containment and cleaning up**
Glycine, 500 g

**Small spill**
Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill**
Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### Section 7. Handling and storage

#### Precautions for safe handling

**Protective measures**
Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**
Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities**
Store between the following temperatures: 5 to 30°C (41 to 86°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

### Section 8. Exposure controls/personal protection

#### Control parameters

**Occupational exposure limits**
None.

**Appropriate engineering controls**
Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls**
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

#### Individual protection measures

**Hygiene measures**
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection**
Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Skin protection**

**Hand protection**
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection**
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**
Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### Section 9. Physical and chemical properties

#### Appearance

**Physical state**
Solid. [Crystalline solid.]

**Color**
White.

**Odor**
Odorless.

**Odor threshold**
1300 ppm

**pH**
5.9 to 6.4 (Conc. (% w/w): 5%)

**Melting point**
245°C (473°F)

**Boiling point**
Not available.

**Flash point**
Closed cup: >93.3°C (>199.9°F) (Product does not sustain combustion.)

**Burning time**
Not available.

**Burning rate**
Not available.

**Evaporation rate**
Not available.

**Flammability (solid, gas)**
Not available.
Glycine, 500 g

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.16</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in the following materials: cold water and hot water. Very slightly soluble in the following materials: acetone. Insoluble in the following materials: diethyl ether. Not available.</td>
</tr>
<tr>
<td>Solubility in water</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>-3.21</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>233°C (451.4°F)</td>
</tr>
<tr>
<td>SADT</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**Section 10. Stability and reactivity**

**Reactivity**

No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**

The product is stable.

**Possibility of hazardous reactions**

Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**

No specific data.

**Incompatible materials**

No specific data.

**Hazardous decomposition products**

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Section 11. Toxicological information**

**Information on toxicological effects**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
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<tbody>
<tr>
<td>glycine</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>7930 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**Irritation/Corrosion**

Not available.

**Conclusion/Summary**

Skin

May cause skin irritation.

Eyes

May cause eye irritation.

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity [single exposure]**

Not available.

**Specific target organ toxicity [repeated exposure]**

Not available.

**Aspiration hazard**

Not available.

**Information on the likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

Eye contact

Inhalation

No known significant effects or critical hazards. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Glycine, 500 g

Skin contact
Ingestion
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics
Eye contact
Inhalation
Skin contact
Ingestion
No specific data.
No specific data.
No specific data.
No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
Potential immediate effects
Potential delayed effects
Not available.
Not available.

Long term exposure
Potential immediate effects
Potential delayed effects
Not available.
Not available.

Potential chronic health effects
General
Carcinogenicity
Mutagenicity
Teratogenicity
Developmental effects
Fertility effects
No known significant effects or critical hazards.
No known significant effects or critical hazards.
No known significant effects or critical hazards.
No known significant effects or critical hazards.
No known significant effects or critical hazards.
No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity
Not available.

Conclusion/Summary
Naturally occurring substance

Persistence and degradability

Conclusion/Summary
Not expected to bioaccumulate. Naturally occurring substance

Bioaccumulative potential
Product/ingredient name
LogP_{ow}
BCF
Potential
Glycine
-3.21
0.217
low

Mobility in soil

Soil/water partition coefficient (K_{oc})
Not available.

Other adverse effects
No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification
Not classified

Section 14. Transport information

Product is not regulated as dangerous goods for transport.
Section 15. Regulatory information

U.S. Federal regulations
- TSCA 4(a) proposed test rules: glycine
- TSCA 8(b) CDR Exempt/Partial exemption: Not determined
- United States inventory (TSCA 8(b)): This material is listed or exempted.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Not listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Not applicable.

Composition/information on ingredients
No products were found.

State regulations
Massachusetts: This material is not listed.
New York: This material is not listed.
New Jersey: This material is not listed.
Pennsylvania: This material is not listed.

International regulations
Canada inventory: This material is listed or exempted.
International lists
- Australia inventory (AICS): This material is listed or exempted.
- China inventory (IECSC): This material is listed or exempted.
- Japan inventory: This material is listed or exempted.
- Korea inventory: This material is listed or exempted.
- Malaysia Inventory (EHS Register): Not determined.
- New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
- Philippines inventory (PICCS): This material is listed or exempted.
- Taiwan inventory (CSNN): Not determined.
- Chemical Weapons Convention List Schedule I Chemicals: Not listed
- Chemical Weapons Convention List Schedule II Chemicals: Not listed
- Chemical Weapons Convention List Schedule III Chemicals: Not listed

Section 16. Other information
National Fire Protection Association (U.S.A.)

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History
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