



# MATERIAL SAFETY DATA SHEET

## 1. Product and Company Identification

**Material name** Glycine  
**Version #** 01  
**Issue date** 10-24-2012  
**Revision date** -  
**Supersedes date** -  
**CAS #** 56-40-6  
**SDS No** SCA-1041US  
**Product use** Food additive  
**Manufacturer/Supplier** SHOWA DENKO K.K.  
**Address** 1310 Omiya-cho, Saiwai-ku, Kawasaki, Kanagawa 212-0014 Japan  
**Telephone** +81-44-520-1348  
**Contact person** Ammonia & Derivatives Department, Basic Chemicals Division, Chemicals Sector  
**Emergency telephone** +81-44-276-5804

## 2. Hazards Identification

**Physical state** Solid.  
**Appearance** Crystalline. Crystalline powder.  
**OSHA regulatory status** This product is not hazardous according to OSHA 29CFR 1910.1200.  
**Potential health effects**  
**Routes of exposure** Inhalation. Ingestion. Skin contact. Eye contact.  
**Eyes** Dust may irritate the eyes. May cause redness and pain.  
**Skin** Prolonged skin contact may cause temporary irritation.  
**Inhalation** Dust may irritate respiratory system or lungs.  
**Ingestion** Large quantities: May cause discomfort if swallowed.  
**Target organs** Skin. Eyes. Respiratory system.  
**Chronic effects** None known.  
**Signs and symptoms** Irritation.  
**Potential environmental effects** The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
Glycine	56-40-6	>= 98.5

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

## 4. First Aid Measures

**First aid procedures**  
**Eye contact** Dust in the eyes: Do not rub eyes. Flush thoroughly with water. If irritation occurs, get medical assistance.  
**Skin contact** Wash with soap and water. Get immediate medical attention if symptoms occur after washing.  
**Inhalation** Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.  
**Ingestion** Rinse mouth thoroughly.  
**Notes to physician** Treat symptomatically.  
**General advice** Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire Fighting Measures

### Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with foam, carbon dioxide, dry powder or water fog.
<b>Unsuitable extinguishing media</b>	None.

### Protection of firefighters

<b>Specific hazards arising from the chemical</b>	By heating and fire, harmful vapors/gases may be formed.
<b>Protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

<b>Fire fighting equipment/instructions</b>	Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers. Move containers from fire area if you can do so without risk.
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## 6. Accidental Release Measures

<b>Personal precautions</b>	Avoid inhalation of dust. See Section 8 of the MSDS for Personal Protective Equipment.
<b>Environmental precautions</b>	Avoid discharge into water courses or onto the ground.
<b>Methods for containment</b>	Stop the flow of material, if this is without risk.
<b>Methods for cleaning up</b>	Avoid dust formation. Sweep up or gather material and place in appropriate container for disposal.
<b>Other information</b>	Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

<b>Handling</b>	Avoid inhalation of dust. Avoid prolonged and repeated contact. Use work methods which minimize dust production. Wear appropriate personal protective equipment.
<b>Storage</b>	Store in closed original container in a dry place. Keep away from moisture. Store away from incompatible materials.

## 8. Exposure Controls / Personal Protection

<b>Engineering controls</b>	Provide adequate ventilation.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Use tight fitting goggles if dust is generated.
<b>Skin protection</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact.
<b>Respiratory protection</b>	Wear respirator if there is dust formation. Dust mask/respirator. Wear NIOSH approved respirator with dust filter.
<b>General hygiene considerations</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Crystalline. Crystalline powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Crystalline. Crystalline powder.
<b>Color</b>	White.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	5.5 - 7 (as aqueous solution)
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Boiling point</b>	Not available.
<b>Melting point/Freezing point</b>	451.4 - 554 °F (233 - 290 °C)
<b>Solubility (water)</b>	25 g/100g (25°C) (water) 67.2 g/100g (100°C) (water)
<b>Specific gravity</b>	1.57
<b>Flash point</b>	Not available.

<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Molecular weight</b>	75.07 g/mol
<b>Molecular formula</b>	C2-H5-N-O2

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Excessive heat. Moisture.
<b>Incompatible materials</b>	Strong oxidizing agents. Strong acids. Strong bases.
<b>Hazardous decomposition products</b>	Nitrogen oxides (NOx). Carbon oxides.
<b>Possibility of hazardous reactions</b>	Will not occur.

## 11. Toxicological Information

### Toxicological data

Product	Species	Test Results
Glycine (CAS 56-40-6)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Mouse	8300 mg/kg
<b>Sensitization</b>	Not a skin sensitizer.	
<b>Acute effects</b>	Expected to be a low hazard for usual industrial or commercial handling by trained personnel.	
<b>Local effects</b>	Dusts may irritate the respiratory tract, skin and eyes.	
<b>Chronic effects</b>	None known.	
<b>Carcinogenicity</b>	This substance has no evidence of carcinogenic properties.	
<b>Mutagenicity</b>	Experimental evidence suggests that this product does not cause mutagenesis.	
<b>Reproductive effects</b>	No data available.	
<b>Symptoms and target organs</b>	Irritation.	

## 12. Ecological Information

<b>Ecotoxicity</b>	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	No data available.
<b>Bioaccumulation / Accumulation</b>	No data available.
<b>Mobility in environmental media</b>	The product is water soluble and may spread in water systems.

## 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose in accordance with all applicable regulations. Do not allow this material to drain into sewers/water supplies.
<b>Contaminated packaging</b>	Since emptied containers retain product residue, follow label warnings even after container is emptied.

## 14. Transport Information

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

## IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**US federal regulations** This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

### CERCLA (Superfund) reportable quantity

None

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Hazard categories** Immediate Hazard - No  
Delayed Hazard - No  
Fire Hazard - No  
Pressure Hazard - No  
Reactivity Hazard - No

**Section 302 extremely hazardous substance (40 CFR 355, Appendix A)** No

**Section 311/312 (40 CFR 370)** No

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

### US. Massachusetts RTK - Substance List

Not regulated.

### US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

### US. Pennsylvania RTK - Hazardous Substances

Not regulated.

## 16. Other Information

**Further information** HMIS® is a registered trade and service mark of the NPCA.  
E - Safety Glasses, Gloves, Dust Respirator

**HMIS® ratings** Health: 1  
Flammability: 1  
Physical hazard: 0  
Personal protection: E

**NFPA ratings**

Health: 1  
Flammability: 1  
Instability: 0  
Special hazards: -

**Disclaimer**

The information in this MSDS was obtained from sources which we believe are reliable, but no warranty or representation as to its accuracy or completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal, the safety and health of employees and customers and the protection of the environment.