

SAFETY DATA SHEET

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SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : **L-Glutathione**  
Chemical Name : Glutathione reduced  
INCI Name : GLUTATHIONE  
Manufacturer's Name : KOHJIN Life Sciences Co.,Ltd.  
Address : 1-3, Yurakucho 1-chome, Chiyoda-ku, Tokyo, 100-0006, Japan  
Tel No. : +81-3-3539-1691  
Fax No. : +81-3-3539-2896  
Tel No. for Emergency or Information : +81-972-22-1050 (Quality Assurance)

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SECTION 2. HAZARDS IDENTIFICATION

The product is not classified as dangerous according to Directive 1999/45/EC and its amendment

Potential Health Effects

Eye : May result in a mild irritation reaction.

Skin : May result in a mild irritation reaction.

Inhalation : Inhalation of dust may cause irritation to respiratory passages.

Ingestion : Small amounts swallowed during normal handling operations are not likely to cause injury.

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SECTION 3. COMPOSITION, INFORMATION ON INGREDIENTS

<u>Component</u>	<u>% by Wt.</u>	<u>CAS#</u>	<u>EINECS#</u>	<u>Exposure Limits</u>	
				<u>ACGIH TLV</u>	<u>OSHA</u>
<u>PEL</u> Glutathione reduced	100%	70-18-8	200-725-4	N/E	N/E

Alternate Name : N-(N-L- $\gamma$ -Glutamyl-L-Cysteinyl)-Glycine

Formula : C<sub>10</sub>H<sub>17</sub>N<sub>3</sub>O<sub>6</sub>S

Molecular Weight : 307.32

- N/E : Not Established
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#### SECTION 4. FIRST AID MEASURES

Eye Contact : Immediately flush eyes with water for at least 15 minutes.  
Skin Contact : Immediately wash skin with soap and water for at least 15 minutes.  
Inhalation : If a person breathes in large amounts, move the exposed person to fresh air.  
Ingestion : Swallowing less than 300 mg will not cause significant harm. For larger amounts, get medical attention.

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#### SECTION 5. FIRE FIGHTING MEASURES

Flash point : N/A ; Non-volatile.  
Flammable Limits : N/A  
Autoignition Temperature : N/A  
Hazardous Combustion Products : Oxides of nitrogen, ammonia, carbon monoxide, carbon dioxide.  
Extinguishing Media : Dry chemical powder, carbon dioxide, polymer foam or water spray.  
Fire Fighting : Wear self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.  
Unusual Fire and Explosion Hazards : None identified.

● N/A : Not Available

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#### SECTION 6. ACCIDENTAL RELEASE MEASURES

Land Spill : Wear suitable protective clothing. Carefully sweep up and remove.  
Water Spill : Not necessary.

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#### SECTION 7. HANDLING AND STORAGE

Handling : Use with adequate ventilation.  
Storage : Store in tight containers to prevent humidity, and keep at cool place.

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#### SECTION 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection : None required where adequate ventilation conditions exist.  
If airborne concentration is high, use an appropriate respirator or dust mask.  
Ventilation : Local exhaust  
Skin Protection : Gloves  
Eye Protection : Safety goggles

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point / Range (°C) : N/A  
Melting Point : 185°C  
Vapor Pressure : N/A  
Vapor Density : N/A  
Solubility in Water : Appreciable (>10%)  
Specific Gravity (H<sub>2</sub>O=1) : N/A  
pH : N/A  
Odor : N/A  
Appearance : White crystalline powder

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## SECTION 10. STABILITY AND REACTIVITY

Chemical Stability : Stable  
Hazardous Polymerization : Will not occur  
Conditions to Avoid : High temperature, high humidity.  
Incompatible Materials and Conditions to Avoid : None identified  
Hazardous Decomposition Products : Oxides of nitrogen, ammonia, carbon monoxide, Carbon dioxide.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### Mutation Data :

Cytogenetic analysis — Hamster : Lung :	1 mmol/L
DNA inhibition — Mammal : Lymphocytes :	10 mmol/L
Unscheduled DNA synthesis — Human : Fibroblast :	1 mmol/L
Sister chromatid exchange — Hamster : Lung :	1 mmol/L

### Reproductive Effects Data :

Oral — Rat : TDLo : 1,250 mg/kg (1-22D preg)

### Toxicity Data :

Oral — Mouse :	LD <sub>50</sub> : 5,000 mg/kg
Intravenous — Mouse :	LD <sub>50</sub> : 2,238 mg/kg
Intraperitoneal — Mouse :	LD <sub>50</sub> : 4,020 mg/kg
Subcutaneous — Mouse :	LD <sub>50</sub> : 5,000 mg/kg
Intramuscular — Mouse :	LD <sub>50</sub> : 4,000 mg/kg
Intravenous — Rabbit :	LD <sub>50</sub> : >2,000 mg/kg

Refer to the Registry of Toxic Effects of Chemical Substances (RTECS) for references and additional information. RTECS No.MC0556000

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SECTION 12. ECOLOGICAL INFORMATION

No data available.

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SECTION 13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable environmental regulations.

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SECTION 14. TRANSPORT INFORMATION

Preserve in tight containers to prevent humidity.  
Keep at cool place.

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SECTION 15. REGULATORY INFORMATION

None

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SECTION 16. OTHER INFORMATION

None

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