

SAFETY DATA SHEET

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Version 02

PRODUCT	L-GLUTAMINE
CAS NO.	56-85-9
MANUFACTURER	DAESANG Corporation

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY UNDERTAKING

Product identifier	Product name CAS number EC number Index number Registration number	L-Glutamine 56-85-9 200-291-1 Not applicable Not applicable
Relevant identified uses	Applications	Food supplement
Details of the supplier	Names Address Tel/Fax Contact email	Daesang Corporation 26, Cheonho-daero, Dongdaemun-gu, Seoul, South Korea Tel: +82 2 2657 5371 & Fax: +82 2 2657 5333 bio@daesang.com
Emergency telephone no.	Telephone	+1 201 488 4010 for USA & Canada +31 20 640 6080 for Europe +82 2 2657 5371 for the rest countries

2. HAZARDS IDENTIFICATION

Classification of the substance	Physical hazards Health hazards Environmental hazards	Not applicable Not applicable Not applicable
Label elements		Not applicable
Potential effects		May cause eye and skin irritation It will increase the biological oxygen demand (BOD) of water

3. COMPOSITION INFORMATION ON INGREDIENTS

Substance	Name of substance CAS number EC number Index number Concentration	L-Glutamine 56-85-9 200-291-1 - 100%
4. FIRST AID MEASURES		
Description of first aid measures	After eye contact	Immediately flush with a plenty of water
	After skin contact	Immediately wash skin with soap and flush with water
	After inhalation	Remove to fresh air Contact a medical doctor for gross inhalation
	After ingestion	Wash out mouth water with water Contact a medical doctor for gross ingestion as precaution
Most important symptoms and effects, both acute and delayed		Not determined
Indication of any immediate medical attention and special treatment needed		Not determined
5. FIRE FIGHTING MEASURES		
Extinguishing media		Water, foam, dry powder, or carbon dioxide
Special hazards arising from the substance or mixture		May form flammable dust/air mixtures; Release nitrous oxides when burning
Advice for firefighters		Fire fighting and others exposed to products of combustion must wear self-contained breathing apparatus Equipment should be thoroughly decontaminated after use
6. ACCIDENTAL RELEASE MEASURES		
Personal precautions, protective equipment and emergency procedures		None
Environmental precautions		None
Methods and material for containment and cleaning up		In case of spill, do not blow material Sweep up and place in a bag for disposal Flush residual spill area with water
Reference to other sections		None
7. HANDLING AND STORAGE		
Precautions for safe handling		Appropriate measures should be taken to minimize dust generation
Conditions for safe storage, including any incompatibilities		Store in a cool and dry place Recommended storage temperature is 15~30°C Keep container tightly closed and inner bag sealed
Specific end use(s)		Not applicable
8. EXPOSURE CONTROLS / PERSONAL PROTECTION		

Control parameters	Not applicable
Exposure controls	<u>Respiratory protection</u> : Not required. Use approved nuisance masks if needed
Exposure controls	<u>Eye protection</u> : Not required. Use approved goggles or eye protection if needed <u>Body protection</u> : No special requirements <u>Hygiene measures</u> : Ordinary ventilation

9. PHYSICAL AND CHEMICAL PROPERTIES

Information of basic physical and chemical properties	Physical state	White crystal or crystalline powder
	Colour	White
	Odour	Odorless
	Odour threshold	Not determined
	pH	4.0-6.0
	Melting point	185°C
	Boiling point	Not determined
	Flash point	Not determined
	Evaporation rate	Not determined
	Flammability	Not determined
	Auto flammability	Not determined
	Upper/lower flammability or explosive limits	Not determined
	Explosive properties	Not determined
	Oxidising properties	Not determined
	Vapour pressure	Not determined
	% volatile by volume	Not determined
	Vapour density	Not determined
	Relative density	Not determined
	Solubility in water	Approx. 3.4% in water (25°C)
	Other solvents	Not determined
Partition coefficient (n-octanol/water)	Not determined	
Decomposition temperature	Not determined	
Viscosity	Not determined	

Other information	No other information
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10. STABILITY AND REACTIVITY

Reactivity	Not determined
Chemical stability	Stable under recommended storage conditions
Possibility of hazardous reactions	Polymerization will not occur
Conditions to avoid	Not determined

Incompatible materials	Strong oxidizers
Hazardous decomposition materials	Nitrogen oxides, Carbon monoxide and Carbon dioxide
11. TOXICOLOGICAL INFORMATION	
Acute toxicity	May be harmful if inhaled May be harmful if swallowed
Skin corrosion/irritation	May cause skin irritation May be harmful if absorbed through the skin
Serious eye damage/irritation	May cause eye irritation
Respiratory or skin sensitization	Not determined
Germ cell mutagenicity	Not determined
Carcinogenicity	Not determined
Reproductive toxicity	Not determined
STOT-single exposure	May be irritating to mucous membranes and upper respiratory tract
STOT-repeated exposure	Not determined
Aspiration hazard	Not determined
RTECS No.	MA 2275100
12. ECOLOGICAL INFORMATION	
Toxicity	Not determined
Persistence and degradability	Not determined
Bioaccumulative potential	Not determined
Mobility in soil	Not determined
Results of PBT and vPvB assessment	Not determined
Other adverse effects	Not determined
13. DISPOSAL CONSIDERATIONS	
Waste treatment methods	Contact a licensed professional waste disposal service to dispose of this material Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber
List of CER codes	Allocation of the waste code numbers according EC Directive 91/692/EEC must be realized under considerations of existing sector specifics and processes
14. TRANSPORT INFORMATION	
UN Number	None
UN proper shipping name	None
Transport hazard classes	None
Packing group	None
Environmental hazards	None
Land transport (ADR/RID)	None

Onland waterway craft (ADN/ADNR)	None
Marine transport (IMDG)	None
Air transport (IATA)	None
Special precautions for user	None
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code	Not determined
No special requirements for transport according to international regulations. For more information, contact Daesang Europe b.v.	
15. REGULATORY INFORMATION	
Safety, health and environmental regulations/legislation specific for the substance or mixture	<p>US Federal Regulations TSCA 8(b) inventory : L-Glutamine No products found:</p> <ul style="list-style-type: none"> - SARA 302/304/311/312 extremely hazardous substances - SARA 302/304 emergency planning and notification - SARA 302/304/311/312 hazardous chemicals - SARA 311/312 MSDS distribution - chemical inventory – hazard identification - SARA 313 toxic chemical notification and release reporting - Clean Water Act (CWA) 307 - Clean air act (CAA) 112 regulated toxic substances
Chemical safety assessment	Not applicable
16. OTHER INFORMATION	
<p>This information is based on our present knowledge and is provided according to the relevant EC and national regulations. This information is intended as a characterization of the product in order to provide guidance for the relevant safety issues. However, this document does not provide any warranty, expressed or implied, regarding the properties of the product. In no event will Daesang Corp. be responsible for damages of any nature whatsoever resulting from the use of or reliance on information.</p>	