

## SAFETY DATA SHEET

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Version 01

PRODUCT	L-VALINE FEED GRADE
CAS NO.	72-18-4
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-Valine 72-18-4 200-773-6 Not applicable Not applicable
Relevant identified uses	Applications	Feed additive
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 <a href="mailto:bio@daesang.com">bio@daesang.com</a>
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 hazardous according to CLP (1272/2008/EC)
Label elements	Hazard pictograms Signal word Hazard statement Precautionary statement	Not applicable Not applicable Not applicable Not applicable
Other hazards		The product does not have any harmful effects if it is used and handled as specified

### 3. COMPOSITION INFORMATION ON INGREDIENTS

Substance	Name of substance CAS number EC number Index number Concentration	L-Valine 72-18-4 200-773-6 - 98% on a dry matter basis
<b>4. FIRST AID MEASURES</b>		
Description of first aid measures	After eye contact	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used.
	After skin contact	No known effect on skin contact, rinse with water for a few minutes.
	After inhalation	Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen and contact a medical doctor.
	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
<b>5. FIRE FIGHTING MEASURES</b>		
Electrostatic properties		Under certain conditions, electrostatic discharges may be capable of igniting dust cloud.
Maximum Explosion Pressure P <sub>max</sub> (bar)		8.1
Maximal Rate of Pressure Rise MRP (bar/s)		643
Constant of the dust tested - K <sub>max</sub> , KST(bar.m/s)		175
Explosion class (according to VDI recommendation):		St-1
Auto-ignition Temperature		of a dust layer, 400°C (752°F); of a dust cloud, 460°C (860°F)
Extinguishing media		Water, foam, dry powder, or carbon dioxide
Special hazards arising from the substance or mixture		May form flammable dust/air mixtures; Release nitric oxide 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
<b>6. ACCIDENTAL RELEASE MEASURES</b>		
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	
<b>7. HANDLING AND STORAGE</b>		
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	
<b>8. EXPOSURE CONTROLS / PERSONAL PROTECTION</b>		
Control parameters	Not applicable	
Engineering Controls	Not available	
Personal Protection	<u>Respiratory protection</u> : Not required. Use approved nuisance masks if needed <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 <u>Hand Protection</u> : It is recommended to wear gloves, especially in case of extended contact <u>Skin Protection</u> : It is recommended to wear protective clothes that cover the skin. Discard or wash protective clothes after being exposed to the dust	
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>		
Information of basic physical and chemical properties	Physical state	White crystal or crystalline powder
	Colour	White
	Odour	Not determined
	Odour threshold	Not determined
	pH	5.0 – 7.0
	Melting point	295-300°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	Partially soluble in cold water. Very slightly soluble in methanol, acetone.
	Other solvents	Not determined
	Partition coefficient (n-octanol/water)	Not determined
	Decomposition temperature	Not determined
	Viscosity	Not determined
Other information		No other information
<b>10. STABILITY AND REACTIVITY</b>		
Reactivity		Not determined
Chemical stability		Stable under recommended storage conditions
Possibility of hazardous reactions		Hazard polymerization will not occur
Conditions to avoid		Not determined
Incompatible materials		Strong oxidizers
Hazardous decomposition materials		Nitric oxide , Carbon monoxide and Carbon dioxide
<b>11. TOXICOLOGICAL INFORMATION</b>		
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.		YV9361000
<b>12. ECOLOGICAL INFORMATION</b>		
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
<b>13. DISPOSAL CONSIDERATIONS</b>	
Waste treatment methods	Prevent spills from entering sewers and water ways. Ventilate the work area and prevent dust generation. Collect the product and place it in bags or containers for later waste disposal. This product may be disposed of as would be with any other nonhazardous material as prescribed by local and state law. After the dry material is removed, rinse surfaces with water.
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
<b>14. TRANSPORT INFORMATION</b>	
UN Number	None
Proper shipping name	L-Valine
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.	
<b>15. REGULATORY INFORMATION</b>	
Safety, health and environmental regulations/legislation specific for the substance or mixture	US Federal Regulations TSCA 8(b) inventory : L-Valine Other Regulations : Not available
Chemical safety assessment	Not applicable
<b>16. OTHER INFORMATION</b>	
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.	