

## Identification of The Substance and of The Company

Product Description	Levulinic acid
Synonyms	4-oxopentanoic acid
CAS-No.	123-76-2
EC-No.	204-649-2
Molecular Formula	C5 H8 O3
Company	Zibo Cheungyung Advanced Material and Technology Co.,Ltd
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## Composition/Information on Ingredients

Component	CAS-No.	EC-No.	Weight%	CLP Classification Regulation (EC) No1272/2008
Levulinic acid	123-76-2	EEC No. 204-649-2	> 99	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)

## Hazards Identification

### Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

#### Physical hazards

Based on available data, the classification criteria are not met.

#### Health hazards

Acute oral toxicity	Category 4 (H302)
Skin Corrosion/Irritation	Category 2 (H315)
Serious Eye Damage/Eye Irritation	Category 2 (H319)

#### Environmental hazards

Based on available data, the classification criteria are not met.

### Label elements

#### Hazard Statements

H302 - Harmful if swallowed.

H315 - Causes skin irritation.

H319 - Causes serious eye irritation.

#### Precautionary Statements

P301 + P330 + P331 - IF SWALLOWED: rinse mouth.

Do NOT induce vomiting.

P312 - Call a POISON CENTER or doctor/physician if you feel unwell.

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.

P337 + P313 - If eye irritation persists: Get medical advice/attention.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

### Other hazards

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

Toxic to terrestrial vertebrates.

## First Aid Measures

### Description of first aid measures

General Advice If symptoms persist, call a physician.

#### Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

#### Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

#### Ingestion

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

#### Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

#### Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

### Most important symptoms and effects, both acute and delayed

None reasonably foreseeable.

### Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

## **Firefighting Measures**

### **Extinguishing media Suitable Extinguishing Media**

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam.

### **Extinguishing media which must not be used for safety reasons**

No information available.

### **Special hazards arising from the substance or mixture**

Thermal decomposition can lead to release of irritating gases and vapors.

### **Hazardous Combustion Products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

### **Advice for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## **Accidental Release Measures**

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

- Avoid dust formation.
- Avoid breathing mist, gas or vapours.
- Avoid contacting with skin and eye.
- Use personal protective equipment.
- Wear chemical impermeable gloves.
- Ensure adequate ventilation.
- Remove all sources of ignition.
- Evacuate personnel to safe areas.
- Keep people away from and upwind of spill/leak.

### **Environmental precautions**

- Should not be released into the environment.

### **Methods and material for containment and cleaning up**

- Keep in suitable, closed containers for disposal.
- Sweep up and shovel into suitable containers for disposal.

## Handling and Storage

### Precautions for safe handling

Wear personal protective equipment/face protection.

Do not get in eyes, on skin, or on clothing.

Ensure adequate ventilation.

Avoid ingestion and inhalation.

Avoid dust formation.

### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

### Conditions for safe storage, including any incompatibilities

Keep in a dry, cool and well-ventilated place.

Keep container tightly closed.

Protect from direct sunlight.

Store apart from foodstuff containers or incompatible materials.

## Exposure Controls/Personal Protection

### Control parameters

#### Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

#### Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS 14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust.

#### Derived No Effect Level (DNEL)

No information available.

<u>Route of exposure</u>	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

#### Predicted No Effect Concentration (PNEC)

No information available.

### Exposure controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eye-wash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation sys-

tems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection - Goggles (European standard - EN 166).

Hand Protection - Protective gloves (Natural rubber, Butyl rubber, Nitrile rubber, Neoprene, PVC with European standard - EN 374).

Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Remove gloves with care avoiding skin contamination.

Skin and body protection - Long sleeved clothing.

Respiratory Protection - When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use - Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended Filter type: Particulates filter conforming to EN 143.

Small scale/Laboratory use - Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN141 When RPE is used a face piece Fit Test should be conducted.

Environmental exposure controls - No information available.

## Physical And Chemical Properties

### Information on basic physical and chemical properties

Physical State	Low melting solid - Solid	
Appearance	Yellow	
Odor	Odorless	
Odor Threshold	No data available	
Melting Point/Range	33 - 35 °C / 91.4 - 95 °F	
Softening Point	No data available	
Boiling Point/Range	245 - 246 °C / 473 - 474.8 °F	@ 760 mmHg
Flammability (liquid)	Not applicable	Solid
Flammability (solid,gas)	No information available	
Explosion Limits	No data available	
Flash Point	98 °C / 208.4 °F	
Auto ignition Temperature	No data available	
Decomposition Temperature	No data available	
pH	No information available	
Viscosity	Not applicable	Solid
Water Solubility	Soluble	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Vapor Pressure	1 mmHg @ 102 °C	
Density / Specific Gravity	1.130	
Bulk Density	No data available	
Vapor Density	Not applicable	Solid
Particle characteristics	No data available	

### Other information

Molecular Formula: C<sub>5</sub> H<sub>8</sub> O<sub>3</sub>

Molecular Weight: 116.12

Evaporation Rate : Not applicable - Solid

## **Stability and Reactivity**

### **Reactivity**

None known, based on information available.

### **Chemical stability**

Stable under normal conditions.

### **Possibility of hazardous reactions**

Hazardous Polymerization - Hazardous polymerization does not occur.

Hazardous Reactions - None under normal processing.

### **Conditions to avoid**

Exposure to light. Incompatible products.

### **Incompatible materials**

Bases. Strong oxidizing agents. Reducing Agent.

### **Hazardous decomposition products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

## Toxicological Information

### Information on hazard classes as defined in Regulation (EC) No 1272/2008

#### Product Information

(a) acute toxicity	
Oral	Category 4
Dermal	Based on available data, the classification criteria are not met
Inhalation	Based on available data, the classification criteria are not met
(b) skin corrosion/irritation	Category 2
(c) serious eye damage/irritation	Category 2
(d) respiratory or skin sensitization	
Respiratory	No data available
Skin	No data available
(e) germ cell mutagenicity	No data available
(f) carcinogenicity	No data available There are no known carcinogenic chemicals in this product.
(g) reproductive toxicity	No data available
(h) STOT-single exposure	No data available
(i) STOT-repeated exposure	No data available
Target Organs	No information available.
(j) aspiration hazard	Not applicable Solid
Other Adverse Effects	The toxicological properties have not been fully investigated.
Symptoms / effects,both acute and delayed	No information available.

Endocrine Disrupting Properties - Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

## **Ecological Information**

### **Toxicity**

Ecotoxicity effects - Do not empty into drains.

### **Persistence and degradability**

Persistence - Miscible with water, Persistence is unlikely, based on information available, Soluble in water.

### **Bioaccumulative potential**

Bioaccumulation is unlikely.

### **Mobility in soil**

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

### **Results of PBT and vPvB assessment**

Substance is not considered persistent, bioaccumulative and toxic (PBT) / very persistent and very bioaccumulative (vPvB).

### **Endocrine disrupting properties**

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors.

### **Other adverse effects**

Persistent Organic Pollutant - This product does not contain any known or suspected substance.

Ozone Depletion Potential - This product does not contain any known or suspected substance.

## Disposal Considerations

### Waste treatment methods

#### Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

#### European Waste Catalogue (EWC)

According to the European Waste Catalog, Waste Codes are not product specific, but application specific.

#### Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains. Do not flush to sewer. Large amounts will affect pH and harm aquatic organisms.

## Transport Information

### IMDG/IMO - Not regulated

UN number

UN proper shipping name

Transport hazard class(es)

Packing group

### ADR - Not regulated

UN number

UN proper shipping name

Transport hazard class(es)

Packing group

### IATA - Not regulated

UN number

UN proper shipping name

Transport hazard class(es)

Packing group

Environmental hazards - No hazards identified

Special precautions for user - No special precautions required

Maritime transport in bulk according to IMO instruments - Not applicable, packaged goods.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet