
Safety Data Sheet

Product Name	Levulinic acid
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**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND
OF THE COMPANY/UNDERTAKING**

1.1 Product Identification:**Product Description:** Levulinic acid**Synonyms:** 4-Oxopentanoic acid**CAS-No:** 123-76-2**EC-No.:** 204-649-2**Molecular Formula:** C₅H₈O₃**REACH Registration No:** A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration, or the registration is envisaged for a later registration deadline.**1.2 Relevant identified uses of the substance or mixture and uses advised against:****Identified Uses:** Laboratory chemicals, Manufacture for substances, used as a pharma excipients**1.3 Details of the supplier of the safety data sheet:**

- **Company** **Finar Limited**
184-186/P, Chacharwadi Vasna,
Sarkhej-Bavla Highway,
Ta.: Sanand, Dist.: Ahmedabad - 382110, Gujarat, India
Web: www.finarchemicals.com
- **E-mail Address** safety.finar@aceto.com; info.finar@aceto.com

1.4 Emergency telephone number:

- For Emergency contact No: +91 - 2717 - 616 717

Safety Data Sheet

Product Name	Levulinic acid
---------------------	-----------------------

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Skin Corrosion/Irritation (Category 2), H315

Serious Eye Damage/Eye Irritation (Category 2), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements:

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal Word: Warning

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

Supplemental Hazard Information (EU): None

2.3 Other hazards:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Safety Data Sheet

Product Name	Levulinic acid
--------------	----------------

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances: Levulinic acid

3.2 Mixtures:

Component	CAS-No	EC-No.	Weight %
Levulinic acid	123-76-2	204-649-2	<= 100 %

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures:

- **General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.
- **If inhaled:** Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice
- **In case of skin contact:** Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.
- **In case of eye contact:** Rinse out with plenty of water. Immediately call-in ophthalmologist. Remove contact lenses.
- **If swallowed:** Immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed:

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed:

No data available

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media:

Suitable extinguishing media: Water Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media:

For this substance/mixture no limitations of extinguishing agents are given.

Safety Data Sheet

Product Name	Levulinic acid
---------------------	-----------------------

5.2. Special hazards arising from the substance or mixture:

Carbon oxides
 Combustible.
 Vapors are heavier than air and may spread along floors.
 Forms explosive mixtures with air on intense heating.
 Development of hazardous combustion gases or vapors possible in the event of fire.

5.3 Advice for firefighters:

I Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further Information:

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.
 For personal protection see section 8.

6.2 Environmental precautions:

Do not let product enter drains.

6.3 Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections:

For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1 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

Safety Data Sheet

Product Name	Levulinic acid
---------------------	-----------------------

contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work

7.2 Conditions for safe storage, including any incompatibilities:

Keep in a dry and well-ventilated place. Keep container tightly closed. Protect from direct sunlight.

7.3 Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Ingredients with workplace control parameters

8.2 Exposure controls:

Personal protective equipment:

Eye/Face Protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles.

Skin Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. and dry hands.

Full Contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 741)

Splash Contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 741)

Safety Data Sheet

Product Name	Levulinic acid
--------------	----------------

Body Protection

Complete suit protecting against chemicals, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P2

The Entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

- **Appearance:** Light Yellow
- **Physical State:** Solid
- **Odor:** Odourless
- **Odor Threshold:** No data available
- **pH:** No data available
- **Melting Point/Freezing Point:** 33 °C - 35 °C
- **Initial Boiling point and Boiling range:** 245 - 246 °C at 1.013 hPa
- **Flash Point:** 98 °C - closed cup
- **Evaporation Rate:** No data available
- **Upper/lower flammability or explosive limits:** No data available
- **Vapor pressure:** 1 hPa at 102 °C
- **Vapor Density:** No data available
- **Relative Density:** 1.14 at 20 °C
- **Water Solubility:** 791.3 g/l at 20 °C

Safety Data Sheet

Product Name	Levulinic acid
--------------	----------------

- **Partition coefficient: n-octanol/water log Pow:** -0.497 at 20 °C
- **Autoignition temperature:** No data available
- **Decomposition temperature:** No data available
- **Viscosity: Viscosity, kinematic:** No data available
Viscosity, dynamic: No data available
- **Explosive properties:** No data available
- **Oxidizing properties:** No data available

9.2 Other information:

Molecular Formula: C₅H₈O₃

Molecular Weight: 116.12 g/mol

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability:

The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions:

Violent reactions possible with:

Bases

Oxidizing agents

Reducing agents

10.4 Conditions to avoid:

Strong Heating

10.5 Incompatible materials:

No data available

10.6 Hazardous decomposition products:

In the event of fire: see section 5

Safety Data Sheet

Product Name	Levulinic acid
--------------	----------------

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

Acute Oral toxicity

LD50 Oral - Rat - female - 300 - 2.000 mg/kg

(OECD Test Guideline 423)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2.000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - In vitro study

Result: Negative

(OECD Test Guideline 439)

Serious eye damage/eye irritation

Eyes - Bovine cornea

Result: Causes serious eye damage

(OECD Test Guideline 437)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: Positive

(OECD Test Guideline 442B)

Germ cell mutagenicity

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: Negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: Negative

Safety Data Sheet

Product Name	Levulinic acid
---------------------	-----------------------

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information:

RTECS: OI1575000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

No data available

12.2 Persistence and degradability Persistence:

Biodegradability: aerobic - Exposure time 28 d
 Result: 60 % - Readily biodegradable.
 (OECD Test Guideline 301F)

12.3 Bio accumulative potential:

No data available

12.4. Mobility in soil:

No data available

12.5. Results of PBT and vPvB assessment:

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Safety Data Sheet

Product Name	Levulinic acid
---------------------	-----------------------

12.6. Other adverse effects:

No data available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods:

Product

Product Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chem scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	---		
14.2 Proper shipping name	Not Dangerous Goods		
14.3 Class	---		
14.4 Packing group	---		
14.5 Environmentally hazardous	No		
14.6 Special precautions for user	No data available		
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code			
Not Relevant			

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment:

For this product, a chemical safety assessment is not carried out.

Safety Data Sheet

Product Name	Levulinic acid
--------------	----------------

SECTION 16: OTHER INFORMATION

- **Full text of H-Statements referred to under sections 2 and 3:**

- H302 Harmful if swallowed
- H315 Causes skin irritation
- H319 Causes serious eye irritation

References: Not available

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Disclaimer:

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