

SAFETY DATA SHEET

1. Identification

Product identifier: Lactic acid

Other means of identification

Synonyms: 2-Hydroxypropanoic Acid

Product No.: 2676, 2672, 0200, 0197, 0196, 0194

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Details of the supplier of the safety data sheet

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax: 610-573-2610
Contact Person: Environmental Health & Safety
E-mail: info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada

CHEMTREC: 1-703-527-3887 outside US and Canada

2. Hazard(s) identification

Hazard Classification

Health Hazards

| | |
|---|------------|
| Acute toxicity (Oral) | Category 4 |
| Acute toxicity (Inhalation - dust and mist) | Category 4 |
| Skin Corrosion/Irritation | Category 2 |
| Serious Eye Damage/Eye Irritation | Category 1 |

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Harmful if swallowed.
Harmful if inhaled.
Causes skin irritation.
Causes serious eye damage.

Precautionary Statement

Prevention: Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response: Specific treatment (see this label). IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%)* |
|-------------------|--------------------------|------------|-------------------------|
| LACTIC ACID | | 50-21-5 | 85 - 90% |
| Water | | 7732-18-5 | 10 - 15% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Rinse mouth. Get medical attention immediately.

Inhalation: Move to fresh air. Get medical attention if symptoms persist. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Harmful if inhaled. Harmful if swallowed. Causes serious eye damage. Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

| | |
|--|---|
| Precautions for safe handling: | Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Wash hands thoroughly after handling. Use only with adequate ventilation. See Section 8 of the SDS for Personal Protective Equipment. |
| Conditions for safe storage, including any incompatibilities: | Keep containers tightly closed. Store in a well-ventilated place. Store in a dry place. |

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.

| | |
|---|--------------------|
| Appropriate Engineering Controls | No data available. |
|---|--------------------|

Individual protection measures, such as personal protective equipment

| | |
|--------------------------------|---|
| General information: | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. |
| Eye/face protection: | Wear safety glasses with side shields (or goggles) and a face shield. |
| Skin Protection | |
| Hand Protection: | Chemical resistant gloves |
| Other: | Wear suitable protective clothing. |
| Respiratory Protection: | In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge. |
| Hygiene measures: | Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. |

9. Physical and chemical properties

Appearance

| | |
|---|------------------------------|
| Physical state: | liquid |
| Form: | liquid |
| Color: | Colorless to slightly yellow |
| Odor: | Slight acrid odor |
| Odor threshold: | No data available. |
| pH: | No data available. |
| Melting point/freezing point: | 17 °C |
| Initial boiling point and boiling range: | 122 °C (2.00 kPa) |
| Flash Point: | > 112 °C |
| Evaporation rate: | No data available. |

| | |
|--|----------------------|
| Flammability (solid, gas): | No data available. |
| Upper/lower limit on flammability or explosive limits | |
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | No data available. |
| Vapor density: | No data available. |
| Relative density: | 1.2 (20 °C) 1.249 |
| Solubility(ies) | |
| Solubility in water: | Miscible with water. |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | No data available. |
| Auto-ignition temperature: | No data available. |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |
| Other information | |
| Molecular weight: | 90.08 g/mol (C3H6O3) |

10. Stability and reactivity

| | |
|--|---|
| Reactivity: | No dangerous reaction known under conditions of normal use. |
| Chemical Stability: | Material is stable under normal conditions. |
| Possibility of hazardous reactions: | Hazardous polymerization does not occur. |
| Conditions to avoid: | Heat. Contact with incompatible materials. |
| Incompatible Materials: | Hydrofluoric Acid. Oxidizing agents. Iodides. Albumin. |
| Hazardous Decomposition Products: | Thermal decomposition may release oxides of carbon. |

11. Toxicological information

Information on likely routes of exposure

| | |
|----------------------|----------------------------|
| Ingestion: | Harmful if swallowed. |
| Inhalation: | Harmful if inhaled. |
| Skin Contact: | Causes skin irritation. |
| Eye contact: | Causes serious eye damage. |

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

| | |
|-----------------|---|
| Product: | LD 50 (Rat): 3,730 mg/kg LD 50 (Guinea pig): 1,810 mg/kg |
|-----------------|---|

Dermal

| | |
|-----------------|--------------------|
| Product: | No data available. |
|-----------------|--------------------|

Inhalation

Product: LC 50 (Rat, 4 h): 7.94 mg/l Mists

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Causes skin irritation.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye damage.

Respiratory or Skin Sensitization

Product: Not a skin sensitizer.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure

Product: None known.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.

Aspiration Hazard

Product: Not classified

Other effects:

None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: Expected to be readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil: No data available.

Other Adverse Effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

| | |
|-------------------------------|--|
| UN Number: | UN 3265 |
| UN Proper Shipping Name: | Corrosive liquid, acidic, organic, n.o.s.(Lactic Acid) |
| Transport Hazard Class(es) | |
| Class(es): | 8 |
| Label(s): | 8 |
| Packing Group: | II |
| Marine Pollutant: | Not a Marine Pollutant |
| Special precautions for user: | — |

IMDG

UN Number: UN 3265
 UN Proper Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(Lactic Acid)
 Transport Hazard Class(es)
 Class(es): 8
 Label(s): 8
 EmS No.: F-A, S-B
 Packing Group: II
 Marine Pollutant: Not a Marine Pollutant
 Special precautions for user: -

IATA

UN Number: UN 3265
 Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.(Lactic Acid)
 Transport Hazard Class(es)
 Class(es): 8
 Label(s): 8
 Marine Pollutant: Not a Marine Pollutant
 Packing Group: II
 Special precautions for user: -

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
 None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
 None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Acute (Immediate)

SARA 302 Extremely Hazardous Substance
 None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
 None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

| <u>Chemical Identity</u> | <u>Threshold Planning Quantity</u> |
|--------------------------|------------------------------------|
| LACTIC ACID | 10000 lbs |

SARA 313 (TRI Reporting)
 None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
 None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
 None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
 No ingredient regulated by CA Prop 65 present.

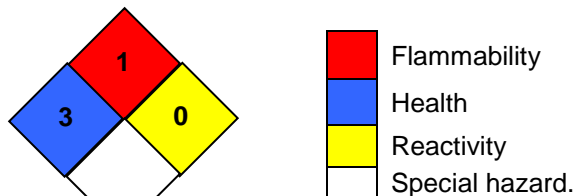
- US. New Jersey Worker and Community Right-to-Know Act**
No ingredient regulated by NJ Right-to-Know Law present.
- US. Massachusetts RTK - Substance List**
No ingredient regulated by MA Right-to-Know Law present.
- US. Pennsylvania RTK - Hazardous Substances**
No ingredient regulated by PA Right-to-Know Law present.
- US. Rhode Island RTK**
No ingredient regulated by RI Right-to-Know Law present.

Inventory Status:

| | |
|--|--|
| Australia AICS: | On or in compliance with the inventory |
| Canada DSL Inventory List: | On or in compliance with the inventory |
| EINECS, ELINCS or NLP: | On or in compliance with the inventory |
| Japan (ENCS) List: | On or in compliance with the inventory |
| China Inv. Existing Chemical Substances: | On or in compliance with the inventory |
| Korea Existing Chemicals Inv. (KECI): | On or in compliance with the inventory |
| Canada NDSL Inventory: | not applicable |
| Philippines PICCS: | On or in compliance with the inventory |
| US TSCA Inventory: | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals: | On or in compliance with the inventory |
| Japan ISHL Listing: | Not in compliance with the inventory. |
| Japan Pharmacopoeia Listing: | Not in compliance with the inventory. |

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

| | |
|-----------------------------|--------------------|
| Issue Date: | 01-11-2016 |
| Revision Date: | No data available. |
| Version #: | 2.0 |
| Further Information: | No data available. |

Disclaimer:

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