

SAFETY DATA SHEET

Preparation Date: 09/19/2019

Revision date 09/19/2019

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: L1004
Product Name: L-(+)-LACTIC ACID, HIGH PURITY

Other means of identification

Synonyms: (S)-2-Hydroxypropanoic acid
 (S)-2-Hydroxypropionic acid
 (+)-Lactic acid
 d-Lactic acid
 L-Lactic acid
 L-(+)-Lactic acid
 (S)-Lactic acid
 (S)-(+)-Lactic acid
 Paralactic acid
 Propanoic acid, 2-hydroxy-, (S)-
 Sarcosylactic acid

CAS #: 79-33-4
RTECS # OD3100000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>
Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Tom Tyner (USA - West Coast)
Contact Person: Ibad Tirmiz (USA - East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Corrosive to metals	Category 1

Label elements

Danger

Hazard statements

Causes severe skin burns and eye damage
May be corrosive to metals



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed

Precautionary Statements - Prevention

Do not breathe mist or vapors
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep only in original container

Precautionary Statements - Response

Immediately call a POISON CENTER or physician

Absorb spillage to prevent material damage

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 physician.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician.

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Store in corrosive resistant/ .? container with a resistant inner liner

Precautionary Statements - Disposal

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight-%
L-(+)-Lactic Acid	79-33-4	> 88

4. FIRST AID MEASURES

First aid measures

General Advice:

National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222. First aider needs to protect himself. Ensure that medical

personnel are aware of the material(s) involved and take precautions to protect themselves.

Skin Contact: Wash off immediately with soap and plenty of water. Continue flushing with plenty of water for at least 15 minutes. Remove all contaminated clothes and shoes. Immediate medical attention is required. Call a physician or poison control center immediately.

Eye Contact: Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. **WARNING!** It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled or ingested material is toxic, infectious or corrosive. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Call a physician or Poison Control Center immediately.

Most important symptoms and effects, both acute and delayed

Symptoms	Severe skin and eye irritation or burns Causes digestive (gastrointestinal) tract irritation May cause gastrointestinal (digestive) tract burns May cause abdominal pain, nausea, vomiting, diarrhea Can burn mouth, throat, and stomach Headache Sore throat May cause coughing and shortness of breath May cause cyanosis
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Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO₂).

Specific hazards May be ignited by heat, sparks or flames.

Special Protective Actions for Firefighters

Specific Methods: No information available

Special Protective Equipment for Firefighters:

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice:

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Use only in well-ventilated areas. Do not breathe vapors or spray mist. Do not ingest. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep refrigerated. Store at 2-8 deg. C. Keep tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials. Store in a segregated and approved area.

Incompatible Materials:

Oxidizing agents
Reducing agents
Acids

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Component	CAS No	OSHA	NIOSH	ACGIH	AIHA WEEL
L-(+)-Lactic Acid	79-33-4	None	None	None	None

Canada

Component	CAS No	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
L-(+)-Lactic Acid	79-33-4	None	None	None	None

Australia and Mexico

Component	CAS No	Australia	Mexico
L-(+)-Lactic Acid	79-33-4	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation, especially in confined areas.
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Face-shield. or Goggles
- Skin and body protection:** Long sleeved clothing
Chemical resistant apron
Gloves
If working with large quantities:
Chemical resistant protective suit
- Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent.
- Hygiene measures:** Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid	Appearance: No information available.	Color: Colorless to pale yellow.
Odor: No information available.	Taste No information available.	Formula C3H6O3
Molecular/Formula weight (g/mole): 90.08	Flammability (solid, gas) no data available	Flashpoint (°C/°F): > 112°C/ > 233.6°F
Flash Point Tested according to: Not available	Autoignition Temperature (°C/°F): No information available	Lower Explosion Limit (%): No information available
Upper Explosion Limit (%): No information available	Melting point/range(°C/°F): 53°C/ 127°F	Decomposition temperature(°C/°F): 200°C/ 392°F
Boiling point/range(°C/°F): 119-125°C/ 246.2-257°F	Bulk density: No information available	Density (g/cm3): 1.206
Specific gravity: No information available	pH No information available	Vapor pressure @ 20°C (kPa): No information available

Evaporation rate:
No information available

Vapor density:
3.11

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
No information available

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in cold water

10. STABILITY AND REACTIVITY

Reactivity

No information available

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Oxidizing agents
Reducing agents
Acids

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: May be corrosive to metals

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin. Eyes. Ingestion.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document
Component Information

L-(+)-Lactic Acid

CAS No 79-33-4

LD50/oral/rat = 3730 mg/kg Oral LD50 Rat

LD50/oral/mouse = 4875 mg/kg Oral LD50 Mouse

LD50/dermal/rabbit = > 2000 mg/kg Dermal LD50 Rabbit

LD50/dermal/rat = No information available

LC50/inhalation/rat = > 7.94 mg/L 4h Inhalation LC50 Rat

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =

Value - Acute Toxicity = 3730 mg/kg

LD50/oral/mouse =

Value - Acute Tox = 4875 mg/kg

LD50/dermal/rabbit

Value - Acute Toxicity = > 2000 mg/kg

LD50/dermal/rat

VALUE - Acute Tox = No information available

LC50/inhalation/rat

VALUE-Vapor = > 7.94 mg/L

VALUE-Gas = No information available

VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:

Causes skin burns.

Eye Contact:

Causes serious eye damage. Redness and pain.

Inhalation

May cause irritation of respiratory tract. May cause headache. May cause dry and sore throat. Symptoms may include coughing and shortness of breath.

Ingestion

Causes digestive or gastrointestinal tract burns. Ingestion may cause nausea, vomiting, diarrhea. May affect respiration (shortness of breath). May cause cyanosis.

Aspiration hazard

No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity

No information available.

Sensitization:

No information available.

Mutagenic Effects:

No information available

Carcinogenic effects:

Not considered carcinogenic.

Component	CAS No	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
L-(+)-Lactic Acid	79-33-4	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available
Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

L-(+)-Lactic Acid - 79-33-4

Algae/aquatic plants
Fish

EC50: =3.5mg/L (70h, Pseudokirchneriella subcapitata)
LC50: =320mg/L (96h, Brachydanio rerio) LC50: 100 - 180mg/L (96h, Lepomis macrochirus) LC50: 100 - 180mg/L (96h, Oncorhynchus mykiss)
Crustacea EC50: =240mg/L (48h, Daphnia magna) EC50: 180 - 320mg/L (48h, Daphnia magna)

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility in soil No information available

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Component	CAS No	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
L-(+)-Lactic Acid	79-33-4	None	None	None	None

14. TRANSPORT INFORMATION

DOT

Product code: L1004

Product name: L-(+)-LACTIC ACID,
HIGH PURITY

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UN-No: UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Hazard Class 8
Subsidiary Class No information available
Packing group: III
Emergency Response Guide Number 153
Marine Pollutant No data available
DOT RQ (lbs): No information available
Special Provisions IB3, T7, TP1, TP28
Symbol(s): No information available
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

TDG (Canada)

UN-No: UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No Information available
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

ADR

UN Number UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Transport hazard class(es) 8
Packing group III
Subsidiary Risk: No information available
Special Provisions 274
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

IMDG

UN-No: UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Hazard Class: 8
Subsidiary Risk: No information available
Packing Group: III
Marine Pollutant No information available
EMS: F-A
Special Provisions 223, 274
Description UN3265, Corrosive liquid, acidic, organic, n.o.s. (L-(+)-LACTIC ACID), 8, III

RID

UN Number UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Special Provisions 274
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

ICAO (air)

UN-No: UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Hazard Class 8
Subsidiary Risk: No information available
Packing Group: III
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

Special Provisions A3

IATA

UN Number UN3265
Proper Shipping Name: Corrosive liquid, acidic, organic, n.o.s.
Transport hazard class(es) 8
Subsidiary Risk: No information available
Packing group III
Precautionary Statements - 8L
Response
Special Provisions No information available
Description: UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

15. REGULATORY INFORMATION

International Inventories

Component	CAS No	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	China IECSC	Australia (AICS)	EINECS-No.
L-(+)-Lactic Acid	79-33-4	PresentACTIV E	Present KE-21803	Present	Present (2)-1369	Present	Present	Present 201-196-2

U.S. Regulations

L-(+)-Lactic Acid

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1061

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Component	CAS No	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
L-(+)-Lactic Acid	79-33-4	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Component	CAS No	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
L-(+)-Lactic Acid	79-33-4	None	None	None	None	None

U.S. TSCA

Component	CAS No	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
L-(+)-Lactic Acid	79-33-4	Not Applicable	Not Applicable

Canada

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

Canada Hazardous Products Regulation This product has not been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

DSL/NDSL

Component	CAS No	Canada (DSL)	Canada (NDSL)
L-(+)-Lactic Acid	79-33-4	Present	Not Listed

Component	CAS No	CEPA Schedule I - Toxic Substances
L-(+)-Lactic Acid	79-33-4	Not listed

Component	CAS No	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
L-(+)-Lactic Acid	79-33-4	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Component	CAS No	EU GHS - SV - CLP (1272/2008)
L-(+)-Lactic Acid	79-33-4	

EU - CLP (1272/2008)

R-phrases(s)

R35 - Causes severe burns

S -phrase(s)

- S 7 - Keep container tightly closed.
- S36 - Wear suitable protective clothing
- S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
- S37/39 - Wear suitable gloves and eye/face protection

Component	CAS No	Classification	Concentration Limits:	Safety Phrases
L-(+)-Lactic Acid	79-33-4		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

C - Corrosive



16. OTHER INFORMATION

Preparation Date: 09/19/2019
Revision date 09/19/2019
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet