

## SAFETY DATA SHEET

Preparation Date: 3/24/2015

Revision Date: 1/12/2018

Revision Number: G2

### 1. IDENTIFICATION

**Product identifier**

**Product code:** L2016  
**Product Name:** DL-LACTIC ACID

**Other means of identification**

**Synonyms:** 2-Hydroxypropanoic Acid; 2-Hydroxypropionic Acid; Racemic lactic acid; Ordinary lactic acid; Propanoic acid, 2-hydroxy-; DL-Lactic Acid; (+-)-Lactic Acid; Lactic Acid is a mixture of Lactic Acid (C<sub>3</sub>H<sub>6</sub>O<sub>3</sub>) and Lactic Acid Lactate (C<sub>6</sub>H<sub>10</sub>O<sub>5</sub>)

**CAS #:** 50-21-5  
**RTECS #** OD2800000  
**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:** Martin LaBenz (West Coast)  
**Contact Person:** Ibad Tirmiz (East Coast)

### 2. HAZARDS IDENTIFICATION

**Classification**

This chemical is considered hazardous according to 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 dust/fume/gas/mist/vapors/spray  
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 doctor/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 doctor/physician.

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

Wash contaminated clothing before reuse

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/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/container to an approved waste disposal plant

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

<b>Components</b>	<b>CAS-No.</b>	<b>Weight %</b>
Lactic Acid Racemic	50-21-5	100

### **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.

#### **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 Centre 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 not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Immediate medical attention is required.

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

**Symptoms** Severe skin and eye irritation or burns  
May cause eye injury  
May cause irreversible eye damage  
Causes digestive (gastrointestinal) tract irritation  
May cause gastrointestinal (digestive) tract burns  
Can burn mouth, throat, and stomach

**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:** Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Carbon oxides

**Hazardous Combustion Products:** No information available.

**Specific hazards:** May be combustible at high temperatures. May be ignited by heat, sparks or flames. Container explosion may occur under fire conditions or when heated.

**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. Use 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. Do not get water inside containers.

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Prevent product from entering 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. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

**Methods for cleaning up** Dilute with water. Neutralize with Sodium carbonate or Sodium bicarbonate. Absorb spill with inert material (e.g. vermiculite, dry sand or earth). 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**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not ingest. Do not breathe vapors or spray mist. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Hygroscopic. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. May corrode metallic surfaces. Do not store in uncoated metallic containers. Store away from incompatible materials.

#### **Incompatible Materials:**

Oxidizing agents  
Bases  
Metals  
Reducing agents

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Lactic Acid Racemic	50-21-5	None	None	None	None

##### **Canada**

Components	CAS-No.	Canada - Alberta	Canada - British	Canada - Ontario	Canada - Quebec
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			<b>Columbia</b>		
Lactic Acid Racemic	50-21-5	None	None	None	None

### Australia and Mexico

Components	CAS-No.	<b>Australia</b>	<b>Mexico</b>
Lactic Acid Racemic	50-21-5	None	None

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Ensure adequate ventilation. 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:** Goggles or Face-shield

**Skin and body protection:** Chemical resistant apron  
Long sleeved clothing  
Gloves

**Respiratory protection:** Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

#### Physical state:

Liquid

#### Appearance:

Syrupy. Viscous.

#### Color:

Colorless. Light yellow.

#### Odor:

Slight. Acrid.

#### Taste

Acrid.

#### Formula:

C3H6O3

#### Molecular/Formula weight:

90.10

#### Flammability:

No information available

#### Flashpoint (°C/°F):

112.78°C/235°F

#### Flash Point Tested according to:

Closed cup

#### Autoignition Temperature (°C/°F):

No information available

#### Lower Explosion Limit (%):

No information available

#### Upper Explosion Limit (%):

No information available

#### Melting point/range(°C/°F):

16.8°C/62.2°F

#### Decomposition temperature(°C/°F):

No information available

#### Boiling point/range(°C/°F):

122°C/251.6°F @ 14-15 mmHg

#### Bulk density:

No information available

#### Density (g/cm3):

No information available

#### Specific gravity:

1.249 @ 15°C

1.2 @ 20°C

#### pH:

No information available

#### Vapor pressure @ 20°C (kPa):

0 kPa @ 25°C

**Product code:** L2016

**Product name:** DL-LACTIC ACID

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**Evaporation rate:**  
No information available

**Vapor density:**  
No information available

**VOC content (g/L):**  
No information available

**Odor threshold (ppm):**  
No information available

**Partition coefficient  
(n-octanol/water):**  
-0.7

**Viscosity:**  
No information available

**Miscibility:**  
No information available

**Solubility:**  
Partially soluble in diethyl ether  
Practically insoluble in Chloroform  
Practically insoluble in Petroleum Ether  
Practically insoluble in carbon disulfide  
Soluble in Alcohol  
Soluble in cold water  
Soluble in Furfural  
Soluble in hot water

## 10. STABILITY AND REACTIVITY

### Reactivity

Reactive with alkalis  
Reactive with oxidizing agents

### Chemical stability

**Stability:** Hygroscopic. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials. Exposure to moisture.

**Incompatible Materials:**  
Oxidizing agents  
Bases  
Metals  
Reducing agents

**Hazardous decomposition products:** Carbon oxides.

### Other Information

**Corrosivity:**  
Slightly corrosive in the presence of aluminum, of copper  
Slightly corrosive in presence of stainless steel (304)  
Slightly corrosive in presence of stainless steel (316)  
Minor corrosive effect on bronze  
Severe corrosive effect on Brass

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Eyes. Skin.

### Acute Toxicity

### Component Information

**Product code:** L2016

**Product name:** DL-LACTIC ACID

Lactic Acid Racemic	
CAS-No.	50-21-5

**LD50/oral/rat** = 3543 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = 4875 mg/kg  
**LD50/dermal/rabbit** = >2000 mg/kg  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = >7.940 mg/l 4 hr  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = 1810 mg/kg LD50 oral Guinea pig

## Product Information

**LD50/oral/rat** =  
**VALUE- Acute Tox Oral** = 3543 mg/kg

**LD50/oral/mouse** =  
**Value - Acute Tox Oral** = 4875 mg/kg

**LD50/dermal/rabbit**  
**VALUE-Acute Tox Dermal** = > 2000 mg/kg

**LD50/dermal/rat**  
**VALUE -Acute Tox Dermal** = No information available

**LC50/inhalation/rat**  
**VALUE-Vapor** = No information available  
**VALUE-Gas** = No information available  
**VALUE-Dust/Mist** = >7.940 mg/l (4-hr.)

**LC50/Inhalation/mouse**  
**VALUE-Vapor** = No information available  
**VALUE - Gas** = No information available  
**VALUE - Dust/Mist** = No information available

## Symptoms

<b>Skin Contact:</b>	Severe skin irritation. May cause burns. It can be absorbed through the skin.
<b>Eye Contact:</b>	Causes severe eye irritation and possible burns. May cause conjunctivitis. May cause corneal damage.
<b>Inhalation</b>	Causes severe respiratory tract and mucous membrane irritation with possible burns. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Aspiration may lead to pulmonary edema. Other symptoms may include shortness of breath, coughing, and sore throat.
<b>Ingestion</b>	May be harmful if swallowed. May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea, and possible burns (in the throat, mouth, and stomach). May cause severe and permanent damage to the digestive tract. May cause perforation of the digestive tract. May also cause shortness of breath and in severe cases may produce cyanosis and vascular collapse.
<b>Aspiration hazard</b>	No information available.

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

**Chronic Toxicity** The Registry of Toxic Effects of Chemical Substance (RTECS) notes that during animal testing that the prolonged/repeated administration of Lactic on the skin of

rats affected the urinary system and blood.

**Sensitization:** No information available.

**Mutagenic Effects:** May affect genetic material  
Mutations in microorganisms  
Experiments with bacteria and/or yeast have shown mutagenic effects

**Carcinogenic effects:** Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Lactic Acid Racemic	50-21-5	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:** May cause adverse reproductive effects based on animal data  
**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:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility:** 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



Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Lactic Acid Racemic	50-21-5	None	None	None	None

## 14. TRANSPORT INFORMATION

### DOT

**UN-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**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):** [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description.  
**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.(lactic acid)  
**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-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**Hazard Class:** 8  
**Packing Group:** III  
**Subsidiary Risk:** No information available  
**Special Provisions:** 274  
**Description:** UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

### IMO / IMDG

**UN-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**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. (LACTIC ACID RACEMIC), 8, III

### RID

**UN-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**Special Provisions:** 274  
**Description:** UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

**ICAO**

**UN-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**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-No:** UN3265  
**Proper Shipping Name:** Corrosive liquid, acidic, organic, n.o.s.(lactic acid)  
**Hazard Class:** 8  
**Subsidiary Risk:** No information available  
**Packing Group:** III  
**ERG Code:** 8L  
**Special Provisions** No information available  
**Description:** UN3265, Corrosive liquid, acidic, organic, n.o.s., 8, III

<b>15. REGULATORY INFORMATION</b>
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**International Inventories**

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Lactic Acid Racemic</i>	50-21-5	PresentACTIV E	Present KE-21802	Present	Present (2)-1369	Present	Present	Present 200-018-0

**U.S. Regulations***Lactic Acid Racemic*

**FDA - 21 CFR - Total Food Additives** 133.123, 133.124, 133.129, 133.169, 133.173, 133.178, 133.179, 150.141, 150.161, 172.814, 178.1010, 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)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Lactic Acid Racemic</i>	50-21-5	Not Listed	Not Listed	Not Listed	Not Listed

**CERCLA/SARA**

Components	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
<i>Lactic Acid Racemic</i>	50-21-5	None	None	None	None	None

**U.S. TSCA**

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules	TSCA 8(d) -Health and Safety Reporting

		<b>(SNURS)</b>	
Lactic Acid Racemic	50-21-5	Not Applicable	Not Applicable

## Canada

### WHMIS 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 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

### WHMIS 1988 Hazard Class

E Corrosive material

### Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

<b>Components</b>	<b>WHMIS Ingredient Disclosure List -</b>
Lactic Acid Racemic	1 %

### Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Lactic Acid Racemic	50-21-5	Present	Not Listed

<b>Components</b>	<b>CAS-No.</b>	<b>CEPA Schedule I - Toxic Substances</b>
Lactic Acid Racemic	50-21-5	Not listed
<b>Components</b>	<b>CAS-No.</b>	<b>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</b>
Lactic Acid Racemic	50-21-5	Not listed

## EU Classification

### EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Lactic Acid Racemic	50-21-5	No information

### EU - CLP (1272/2008)

### R-phrase(s)

R38 - Irritating to skin.

R41 - Risk of serious damage to eyes.

### S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S39 - Wear eye/face protection.

Components	CAS-No.	<b>Classification</b>	<b>Concentration Limits:</b>	<b>Safety Phrases</b>
Lactic Acid Racemic	50-21-5		No information	

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

### Indication of danger:

Xi - Irritant.

Xi



## 16. OTHER INFORMATION

**Preparation Date:** 3/24/2015  
**Revision Date:** 1/12/2018  
**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**