Product Name: L-Lactic Acid

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Personalformulator.com</th>
<th>Product Name: L-Lactic Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>97 S. Red Willow Rd.</td>
<td>Ingredient(s) &amp; CAS Number(s):</td>
</tr>
<tr>
<td>Evanston, WY 82930</td>
<td>Lactic Acid, 50-21-5</td>
</tr>
<tr>
<td>Revision date: January 1, 2014</td>
<td>Water, 7732-18-5</td>
</tr>
<tr>
<td>Supersedes:</td>
<td>For Chemical Emergency, 24 hours, 7 days, Call: InfoTrac® 800-535-5053</td>
</tr>
</tbody>
</table>

Section 2 - HAZARDOUS IDENTIFICATION

Appearance: Clear colorless to slightly yellow solution

Caution! May cause eye, skin, and respiratory tract irritation. May cause digestive tract irritation with nausea, vomiting, and diarrhea.

Target Organs: Blood, kidneys, eyes, skin, respiratory system

Potential Health Effects

Eye: Causes eye irritation or burns. Risk of serious damage to eyes.

Skin: Causes skin irritation or burns with irritation, redness, burns, blisters, and brown or yellow stains.

Ingestion: May cause severe irritation to gastrointestinal tract with burning of the mouth, vomiting, and diarrhea.

Inhalation: Lactic acid, 85%--may cause severe irritation to the respiratory tract with coughing, headache, dizziness, shortness of breath.

Chronic: Adverse reproductive effects have been reported in animals. Laboratory experiments have resulted in mutagenic effects.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Composition:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid</td>
<td>77-92-9</td>
<td>100</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients: Citric acid: ORAL (LD50): Acute: 5040 mg/kg [Mouse]. 3000 mg/kg [Rat].

Section 4 - FIRST AID MEASURES

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Cover burns with a dry sterile bandage.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Get medical aid at once. Give oxygen if respiration is depressed. DO NOT induce vomiting. If victim is conscious, give 2-4 glasses of water to dilute acid. Never give anything by mouth to an unconscious person.
Section 5 - FIRE FIGHTING MEASURES

General Information:
As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Move container if possible; avoid breathing vapors or dust.

Extinguishing Media:
For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Autoignition Temperature:
Not available

Flash Point:
>110°C (>230°F)

NFPA Rating:
CAS# 7732-18-5: Health- 0, Flammability- 0, Instability- 0.
CAS# 50-21-5: Health- 2, Flammability- 1, Instability- 1.

Explosion Limits:
Lower: n/a Upper: n/a

Section 6 - ACCIDENTAL RELEASE MEASURES

General Information:
Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:
Absorb spill with inert material (vermiculite, sand, earth), and then place in a suitable container. Provide ventilation.

Section 7 - HANDLING AND STORAGE

Handling:
Use with adequate ventilation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.

Storage:
Keep container tightly closed. Keep container in a cool dry area. Do not store in metal containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

OSHA Vacated PELs:
None.

Personal Protective Equipment
Eyes:
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
Wear appropriate gloves to prevent skin exposure.

Clothing:
Wear appropriate protective clothing to prevent skin exposure.

Respirators:
Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Liquid
Odor: Odorless.
Color: Clear, colorless to slightly yellow.
Molecular Weight: Not available.
\( \text{pH}: \) 2.8 (1\% w/v soln.)
Vapor Pressure: Not available
Viscosity: Not available
Boiling Point: 100 – 122°C (212 – 252°F)
Freezing/Melting Point: 0 – 17°C (32 – 63°F)
Solubility in water: Soluble
Specific Gravity/Density: 1.0 – 1.2
Molecular Formula: Not applicable

Section 10 - STABILITY AND REACTIVITY

Chemical Stability:
Stable under normal temperatures and pressures.

Conditions to Avoid:
Incompatible materials, excess heat, temperatures above 200°C.

Incompatibilities with Other Materials:
Metals, strong oxidizing agents, strong reducing agents, strong bases, nitric acid, iodides.

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide.

Hazardous Polymerization:
Has not been reported.

Section 11 - TOXICOLOGICAL INFORMATION

RTECS:
CAS# 7732-18-5: ZC0110000.
CAS# 50-21-5: OD2800000.

LD50/LC50:
CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg.
CAS# 50-21-5:
Oral, mouse: LD50 = 4875 mg/kg
Oral, rat: LD50 = 3543 mg/kg
Skin, rabbit: LD50 = >2 gm/kg.

Carcinogenicity:
CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.
The Personal Formulator
Safety Data Sheet

CAS# 50-21-5: Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65.

**Epidemiology:**
No information found

**Teratogenicity:**
No information found

**Reproductive:**
Adverse reproductive effects have occurred in experimental animals.

**Mutagenicity:**
Mutagenic effects have occurred in experimental animals

**Section 12 - ECOLOGICAL INFORMATION**

Ecotoxicity: Not available.
No information found.

**Section 13 - DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL: Material should be disposed of in accordance to current local and national regulations. Contacting a waste disposal service is recommended.

**Section 14 - TRANSPORT INFORMATION**

Not classified as hazardous according to the Department of Transportation.

**Section 15 - REGULATORY INFORMATION**

US Federal
TSCA:
CAS# 7732-18-5 is listed on the TSCA Inventory.
CAS# 50-21-5 is listed on the TSCA Inventory.
SARA Reportable Quantities (RQ):
None of the components are on this list.
CERCLA/SARA Section 313:
None of the components are on this list.
OSHA - Highly Hazardous:
None of the chemicals in this product are considered highly hazardous by OSHA.
US State
State Right to Know:
None of the components are on this list.
California Regulations:
None.
European/International Regulations
Canadian DSL/NDSL:
CAS# 7732-18-5 is listed on Canada’s DSL List.
CAS# 50-21-5 is listed on Canada’s DSL List.
Canada Ingredient Disclosure List:
CAS# 7732-18-5 is not listed on Canada’s Ingredient Disclosure List.
CAS# 50-21-5 is listed on Canada’s Ingredient Disclosure List
Protective Equipment: Gloves (impervious). Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16 - OTHER INFORMATION

SDS REVISION STATUS: Revised to meet the ANSI standard of 16 sections