SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form: Substance
Trade name: LACTIC ACID (DL)(88%) SYNTHETIC
CAS No: 50-21-5
Product code: AB08008
Formula: C3H6O3

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture: Laboratory use/Manufacturing component/Research
Use of the substance/mixture: Food industry: additive

1.3. Details of the supplier of the safety data sheet

AmericanBio, Inc.
15 Erie Dr.
Natick, MA 01760 - USA
T 800.443.0600 - F 508.655.2754
info@americanbio.com - www.americanbio.com

1.4. Emergency telephone number

Emergency number: 855.835.2572 (U.S.) :: 760.602.8703 (Outside U.S.)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)
Not classified

2.2. Label elements

GHS-US labeling
No labeling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LACTIC ACID (DL)(88%) SYNTHETIC (Main constituent)</td>
<td>(CAS No) 50-21-5</td>
<td>100</td>
<td>Not classified</td>
</tr>
</tbody>
</table>

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures


First-aid measures after inhalation: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service. Assure fresh air breathing. Allow the victim to rest.
First-aid measures after skin contact: Wash immediately with lots of water. Take victim to a doctor if irritation persists. In case of burns: Consult a doctor/medical service. Wash immediately with lots of water (15 minutes)/shower. Remove clothing while washing. Do not remove clothing if it sticks to the skin. Cover wounds with sterile bandage. Consult a doctor/medical service. If burned surface > 10%, take victim to hospital. Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.


Symptoms/injuries after inhalation: AFTER INHALATION OF DUST: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/injuries after skin contact: Tingling/irritation of the skin. AFTER CONTACT WITH WATER: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact: Corrosion of the eye tissue.


Chronic symptoms: No effects known.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**


Unsuitable extinguishing media: No unsuitable extinguishing media known. Do not use a heavy water stream.

**5.2. Special hazards arising from the substance or mixture**

Fire hazard: DIRECT FIRE HAZARD. Insufficient data available on direct fire hazard (flashpoint > 100°C).

Explosion hazard: DIRECT EXPLOSION HAZARD. No direct explosion hazard.

Reactivity: Upon combustion: CO and CO2 are formed. May polymerize. Reacts violently with (some) acids/bases, (strong) oxidizers and (strong) reducers.

**5.3. Advice for firefighters**

Precautionary measures fire: Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions: Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

Protection during firefighting: Heat/fire exposure: compressed air/oxygen apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**6.1.1. For non-emergency personnel**


**6.1.2. For emergency responders**

Protective equipment: Equip cleanup crew with proper protection.

Emergency procedures: Ventilate area.

**6.2. Environmental precautions**

Prevent spreading in sewers. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.
### 6.3. Methods and material for containment and cleaning up

**For containment**: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill.

**Methods for cleaning up**: Cover the solid spill with sand, earth, vermiculite or powdered limestone/sodium bicarbonate. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. On land, sweep or shovel into suitable containers. Minimize generation of dust. Store away from other materials.

### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Precautions for safe handling**: Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Wash hands and other exposed areas with mild soap and water before eat, drink or smoke and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage conditions**: Keep only in the original container in a cool, well ventilated place away from Direct sunlight. Keep container closed when not in use.

**Incompatible products**: Strong bases. strong acids.

**Incompatible materials**: Sources of ignition. Direct sunlight.

**Heat-ignition**: KEEP SUBSTANCE AWAY FROM: heat sources.

**Prohibitions on mixed storage**: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. metals. water/moisture.

**Storage area**: Store in a dry area. Meet the legal requirements.

**Special rules on packaging**: SPECIAL REQUIREMENTS: hermetical. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

**Packaging materials**: SUITABLE MATERIAL: stainless steel. synthetic material. glass. MATERIAL TO AVOID: steel. lead. iron. nickel. bronze. aluminium. copper.

#### 7.3. Specific end use(s)

No additional information available.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available.

#### 8.2. Exposure controls

**Personal protective equipment**: Avoid all unnecessary exposure.

**Materials for protective clothing**: GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. polyurethane. PVC. viton. GIVE LESS RESISTANCE: chloroprene rubber. PVA. GIVE POOR RESISTANCE: No data available.

**Hand protection**: Gloves. Wear protective gloves.

**Eye protection**: Face shield. In case of dust production: protective goggles. Chemical goggles or safety glasses.

**Skin and body protection**: Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.

**Respiratory protection**: Dust production: dust mask with filter type P2. Wear approved mask.

**Other information**: When using, do not eat, drink or smoke.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

**Physical state**: Solid

**Appearance**: Crystalline solid.

**Molecular mass**: 90.08 g/mol

**Color**: White.
LACTIC ACID (DL)(88%) SYNTHETIC
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Odor: Mild odour.
Odor threshold: 2.5 ppm
pH: 2.3 (1 %)
pH solution: 1 %
Relative evaporation rate (butyl acetate=1): No data available
Melting point: 53 °C
Freezing point: No data available
Boiling point: 217 °C (3 hPa)
Flash point: > 110 °C
Self ignition temperature: No data available
Decomposition temperature: No data available
Flammability (solid, gas): No data available
Vapor pressure: No data available
Relative vapor density at 20 °C: No data available
Relative density: 1.2
Density: 1249 kg/m³

Log Pow: -0.6 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 20 °C)
Log Kow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: No data available
Explosive properties: No data available
Oxidizing properties: No data available
Explosive limits: No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
Upon combustion: CO and CO2 are formed. May polymerize. Reacts violently with (some) acids/bases, (strong) oxidizers and (strong) reducers.

10.2. Chemical stability
Hygroscopic. Unstable on exposure to air. Not established.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Direct sunlight. Extremely high or low temperatures.

10.5. Incompatible materials
Strong acids. Strong bases.

10.6. Hazardous decomposition products

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified
LACTIC ACID (DL)(88%) SYNTHETIC

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>LACTIC ACID (DL)(88%) SYNTHETIC (50-21-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
</tr>
<tr>
<td>LD50 dermal rabbit</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation: Not classified
pH: 2.3 (1 %)

Serious eye damage/irritation: Not classified
pH: 2.3 (1 %)

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): Not classified

Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Potential Adverse human health effects and symptoms: Based on available data, the classification criteria are not met.

Symptoms/injuries after inhalation: AFTER INHALATION OF DUST: Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/injuries after skin contact: Tingling/irritation of the skin. AFTER CONTACT WITH WATER: Caustic burns/corrosion of the skin.

Symptoms/injuries after eye contact: Corrosion of the eye tissue.


Chronic symptoms: No effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: Classification concerning the environment: not applicable.

Ecology - air: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).

Ecology - water: Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). Not harmful to algae (EC50 >1000 mg/l). pH shift. Not harmful to activated sludge.

<table>
<thead>
<tr>
<th>LACTIC ACID (DL)(88%) SYNTHETIC (50-21-5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>EC50 other aquatic organisms 1</td>
</tr>
<tr>
<td>Threshold limit algae 1</td>
</tr>
<tr>
<td>Threshold limit algae 2</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Persistence and degradability: Readily biodegradable in water. Not established.

Biochemical oxygen demand (BOD): 0.45 g O²/g substance

Chemical oxygen demand (COD): 0.9 g O²/g substance

ThOD: 1.066 g O²/g substance

BOD (% of ThOD): 0.22 - 0.59 % ThOD

12.3. Bioaccumulative potential

Log Pow: -0.6 (Experimental value; OECD 117: Partition Coefficient (n-octanol/water), HPLC method; 20 °C)

Bioaccumulative potential: Bioaccumulation: not applicable. Not established.

12.4. Mobility in soil

No additional information available
12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove for physico-chemical/biological treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Dispose in a safe manner in accordance with local/national regulations.

Additional information : LWCA (the Netherlands): KGA category 06. Hazardous waste according to Directive 2008/98/EC.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

No dangerous good in sense of transport regulations

Additional information

Other information : No supplementary information available.

ADR

Transport document description : UN 3261, 8, III, (E)

Packing group (ADR) : III

Class (ADR) : 8 - Corrosive substances

Hazard identification number (Kemler No.) : 80

Classification code (ADR) : C4

Danger labels (ADR) : 8 - Corrosive substances

Orange plates

Tunnel restriction code : E

Transport by sea

UN-No. (IMDG) : 3261

Class (IMDG) : 8 - Corrosive substances

EmS-No. (1) : F-A

EmS-No. (2) : S-B

Air transport

UN-No.(IATA) : 3261

Class (IATA) : 8 - Corrosives

Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

LACTIC ACID (DL)(88%) SYNTHETIC (50-21-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
## 15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

### Classification according to Regulation (EC) No. 1272/2008 [CLP]

- Met. Corr. 1 H290
- Skin Irrit. 2 H315
- Eye Dam. 1 H318

Full text of H-phrases: see section 16

### Classification according to Directive 67/548/EEC or 1999/45/EC

- Xi: R41
- Xi: R38

Full text of R-phrases: see section 16

### 15.2.2. National regulations

No additional information available

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NFPA health hazard</strong></td>
<td>3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.</td>
</tr>
<tr>
<td><strong>NFPA fire hazard</strong></td>
<td>0 - Materials that will not burn.</td>
</tr>
<tr>
<td><strong>NFPA reactivity</strong></td>
<td>2 - Normally unstable and readily undergo violent decomposition but do not detonate. Also: may react violently with water or may form potentially explosive mixtures with water.</td>
</tr>
</tbody>
</table>

SDS US (GHS HazCom 2012)

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