1 Identification

- **Product identifier**
- **Trade name:** Lactic Acid Synthetic
- **Product number:** 2048
- **CAS Number:** 50-21-5
- **EC number:** 200-018-0
- **Application of the substance / the mixture** Flavoring Ingredients

2 Hazard(s) identification

- **Classification of the substance or mixture**
  
  GHS05 Corrosion
  
  Skin Corrosion 1C H314 Causes severe skin burns and eye damage.
  Eye Damage 1 H318 Causes serious eye damage.

- **GHS label elements**
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
  The substance is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  
  GHS05

- **Signal word** Danger
Trade name: Lactic Acid Synthetic

- Hazard-determining components of labeling:
  - Lactic acid

- Hazard statements
  - H314 Causes severe skin burns and eye damage.

- Precautionary statements
  - P260 Do not breathe/dust/fume/gas/mist/vapors/spray.
  - P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  - P310 Immediately call a poison center/doctor.
  - P321 Specific treatment (see on this label).
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Classification system:
  - NFPA ratings (scale 0 - 4)
    - Health = 3
    - Fire = 1
    - Reactivity = 0
  - HMIS-ratings (scale 0 - 4)
    - HEALTH Health = *3
    - FIRE Fire = 1
    - REACTIVITY Reactivity = 0

- Other hazards
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.

3 Composition/information on ingredients

- Chemical characterization: Substances
- CAS No. Description
  - CAS: 50-21-5 Lactic acid
- Identification number(s)
  - EC number: 200-018-0

4 First-aid measures

- Description of first aid measures
  - General information: Immediately remove any clothing soiled by the product.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing: If symptoms persist consult doctor.
  - Information for doctor:
    - Most important symptoms and effects, both acute and delayed
      - No further relevant information available.
5 Fire-fighting measures

- Extinguishing media
- Suitable extinguishing agents:
  - CO2, powder or alcoholresistant foam.
  - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
  - Use fire fighting measures that suit the environment.
- Special hazards arising from the substance or mixture
  - During heating or in case of fire poisonous gases are produced.
- Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.
- Additional information
  - Cool endangered receptacles with water spray.
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- Environmental precautions: Dilute with plenty of water.
- Methods and material for containment and cleaning up:
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Use neutralizing agent.
  - Dispose contaminated material as waste according to item 13.
  - Ensure adequate ventilation.
- Reference to other sections
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- Protective Action Criteria for Chemicals

- PAC-1:
  - Substance is not listed.

- PAC-2:
  - Substance is not listed.

- PAC-3:
  - Substance is not listed.

7 Handling and storage

- Handling:
- Precautions for safe handling
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of aerosols.
Trade name: Lactic Acid Synthetic

- Information about protection against explosions and fires:
  Keep respiratory protective device available.

- Conditions for safe storage, including any incompatibilities

- Storage:
  - Requirements to be met by storerooms and receptacles:
    No special requirements.
    Please refer to the product specification and/or Certificate of Analysis for product storage requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
  - Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters

- Components with limit values that require monitoring at the workplace: Not required.

- Additional information: The lists that were valid during the creation were used as a basis.

- Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:
  Keep away from foodstuffs, beverages and feed.
  Immediately remove all soiled and contaminated clothing.
  Wash hands before breaks and at the end of work.
  Avoid contact with the skin.
  Avoid contact with the eyes and skin.

- Breathing equipment:
  In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

- Protection of hands:

  The glove material has to be impermeable and resistant to the product/the substance/the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/the preparation/the chemical mixture.
  Selection of the glove material should be based on consideration of the penetration times, rates of diffusion and the degradation.

  **Material of gloves**
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

  **Penetration time of glove material**
  The exact break through time has to be determined by the manufacturer of the protective gloves and has to be observed.
## 9 Physical and chemical properties

### Information on basic physical and chemical properties

**General Information**
- Molecular Weight: 90.08 g/mol

**Appearance:** Liquid

**Color:** According to product specification

**Odor:** According to product specification

**Odor threshold:** Not determined.

**pH-value:** Not determined.

**Change in condition**
- Melting point/Melting range: Undetermined.
- Boiling point/Boiling range: 122 °C (251.6 °F) (@ 15 mm Hg)

**Flash point:** 110 °C (230 °F).

**Flammability (solid, gaseous):** Not applicable.

**Decomposition temperature:** Not determined.

**Auto igniting:** Not determined.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**
- Lower: Not determined.
- Upper: Not determined.

**Vapor pressure:** Not determined.

**Density at 20 °C (68 °F):** 1.205 g/cm³ (10.05573 lbs/gal)

**Relative density:** Not determined.

**Vapor density:** Not determined.

**Evaporation rate:** Not determined.

**Solubility in / Miscibility with Water:** Fully miscible.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**
- Dynamic: Not determined.
- Kinematic: Not determined.

**VOC content:**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
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<td>g/l</td>
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</tr>
<tr>
<td>lb/gal</td>
<td>0.00</td>
</tr>
</tbody>
</table>

(Continued on page 6)
10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability:
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    - ATE (Acute Toxicity Estimate)
      - Oral LD50: 3,540 mg/kg (ATE)
    - CAS: 50-21-5 Lactic acid
      - Oral LD50: 3,540 mg/kg (ATE)
  - Primary irritant effect:
    - on the skin: Irritant to skin and mucous membranes.
    - on the eye: Strong irritant with the danger of severe eye injury.
  - Sensitization: No sensitizing effects known.
  - Additional toxicological information:
  - Carcinogenic categories
    - IARC (International Agency for Research on Cancer)
      - Substance is not listed.
    - NTP (National Toxicology Program)
      - Substance is not listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      - Substance is not listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - Persistence and degradability: No further relevant information available.
  - Behavior in environmental systems:
    - Bioaccumulative potential: No further relevant information available.
    - Mobility in soil: No further relevant information available.
56.0.2 · Additional ecological information:
   · General notes:
     Not hazardous for water.
     Must not reach bodies of water or drainage ditch undiluted or unneutralized.
   · Results of PBT and vPvB assessment
     · PBT: Not applicable.
     · vPvB: Not applicable.
   · Other adverse effects No further relevant information available.

13 Disposal considerations
   · Waste treatment methods
     · Recommendation:
       Must not be disposed of together with household garbage. Do not allow product to reach sewage
       system.
   · Uncleaned packagings:
     · Recommendation: Disposal must be made according to official regulations.
     · Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information
   · UN-Number
     · DOT, IMDG, IATA UN3265
   · UN proper shipping name
     · DOT
     · IMDG, IATA Corrosive liquid, acidic, organic, n.o.s. (Lactic acid)
   · Transport hazard class(es)
     · DOT
       · Class 8 Corrosive substances
       · Label 8
     · IMDG, IATA
       · Class 8 Corrosive substances
       · Label 8
       · Packing group III
       · DOT, IMDG, IATA
       · Environmental hazards: Not applicable.
Trade name: Lactic Acid Synthetic

- Special precautions for user: Warning: Corrosive substances
- Segregation groups: (SGG1) Acids
- Stowage Category: A
- Stowage Code: SW2 Clear of living quarters.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

- Transport/Additional information:
  - DOT
    - Quantity limitations: On passenger aircraft/rail: 5 L, On cargo aircraft only: 60 L
  - IMDG
    - Limited quantities (LQ): 5L
    - Excepted quantities (EQ): Code: E1
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 1000 ml

- UN "Model Regulation": UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (LACTIC ACID), 8, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Sara
    - Section 355 (extremely hazardous substances): Substance is not listed.
    - Section 313 (Specific toxic chemical listings): Substance is not listed.
  - TSCA (Toxic Substances Control Act): ACTIVE
  - Hazardous Air Pollutants Substance is not listed.
  - Proposition 65
    - Chemicals known to cause cancer: Substance is not listed.
    - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
    - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
    - Chemicals known to cause developmental toxicity: Substance is not listed.
  - Carcinogenic categories
    - EPA (Environmental Protection Agency) Substance is not listed.
Safety Data Sheet
acc. to OSHA HCS (29 CFR § 1910.1200)

Printing date 01/11/2023 Reviewed on 01/10/2023

Trade name: Lactic Acid Synthetic

56.0.2

· TLV (Threshold Limit Value)
  Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
  Substance is not listed.

· GHS label elements
  Pictograms on label shall be in the shape of a square set at a point and shall include a black hazard symbol on a white background with a red frame sufficiently wide to be clearly visible.
  The substance is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms
  GHS05

· Signal word Danger

· Hazard-determining components of labeling:
  Lactic acid

· Hazard statements
  H314 Causes severe skin burns and eye damage.

· Precautionary statements
  P260 Do not breathe/dust/fume/gas/mist/vapors/spray.
  P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P310 Immediately call a poison center/doctor.
  P321 Specific treatment (see on this label).
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Department issuing SDS: Product Safety Department

· Contact:
  Product Safety Department
  productsafety@adv-bio.com

· Date of preparation / last revision 01/11/2023

· Abbreviations and acronyms:
  ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)

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Trade name: Lactic Acid Synthetic

VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Corrosion 1C: Skin corrosion/irritation – Category 1C
Eye Damage 1: Serious eye damage/eye irritation – Category 1