



CERTIFICATE OF ANALYSIS

PRODUCT	:	Lactic Acid 80
BATCH NUMBER	:	4414701
BEST BEFORE END	:	November 2023
Description	:	Syrupy and hygroscopic liquid. Soluble in water and alcohol
Colour fresh		10 apha
Assay		80,1 % (w/w)
Colour after 6 months (25 ° C)		Max. 50 apha
Color		Clourless/yellowish
Odour		Agreeable
Stereochemical purity (L-isomer)		Min. 97,0 %
Sulphated ash / residue on ignition		Max. 0,1 %
Density (20 ° C)		1,18 – 1,20 g/ml
Heavy metals total		Max. 10 ppm
Iron		Max. 10 ppm
Mercury		Max. 1 ppm
Lead		Max. 0,5 ppm
Arsenic		Max. 1 ppm
Calcium		Max. 20 ppm
Chloride		Max. 10 ppm
Sulphate		Max. 20 ppm
Cyanide		Max. 1 ppm
Positive test for acid		1 in 10 in water litmus paper
Positive test for lactate		Passes test
Citric, oxalic, phosphoric, tartaric acid		Passes test
Reducing sugars		Passes test
Sugars		Passes test
Volatile fatty acids		Passes test
Clarity of solution		Clear
Methanol		Max. 0,2 %
Ethertest		Max. 0,7 % (w/w)
Readily carbonizable substances		Passes test
Form		Syrupy liquid
Solubility		Soluble in water and ethanol



TO WHOM IT MAY CONCERN

We hereby certify that our product ranges LACTIC ACID 80% complies with the Regulation (EU) No 1169/2011, do not contain the allergens listed in Annex II, and do not contain ingredients derived from any of the allergens identified by FALCPA (The Food Allergen Labeling and Consumer Protection Act US). In addition, we comply with the US (21USC 321.201) from the FDA.

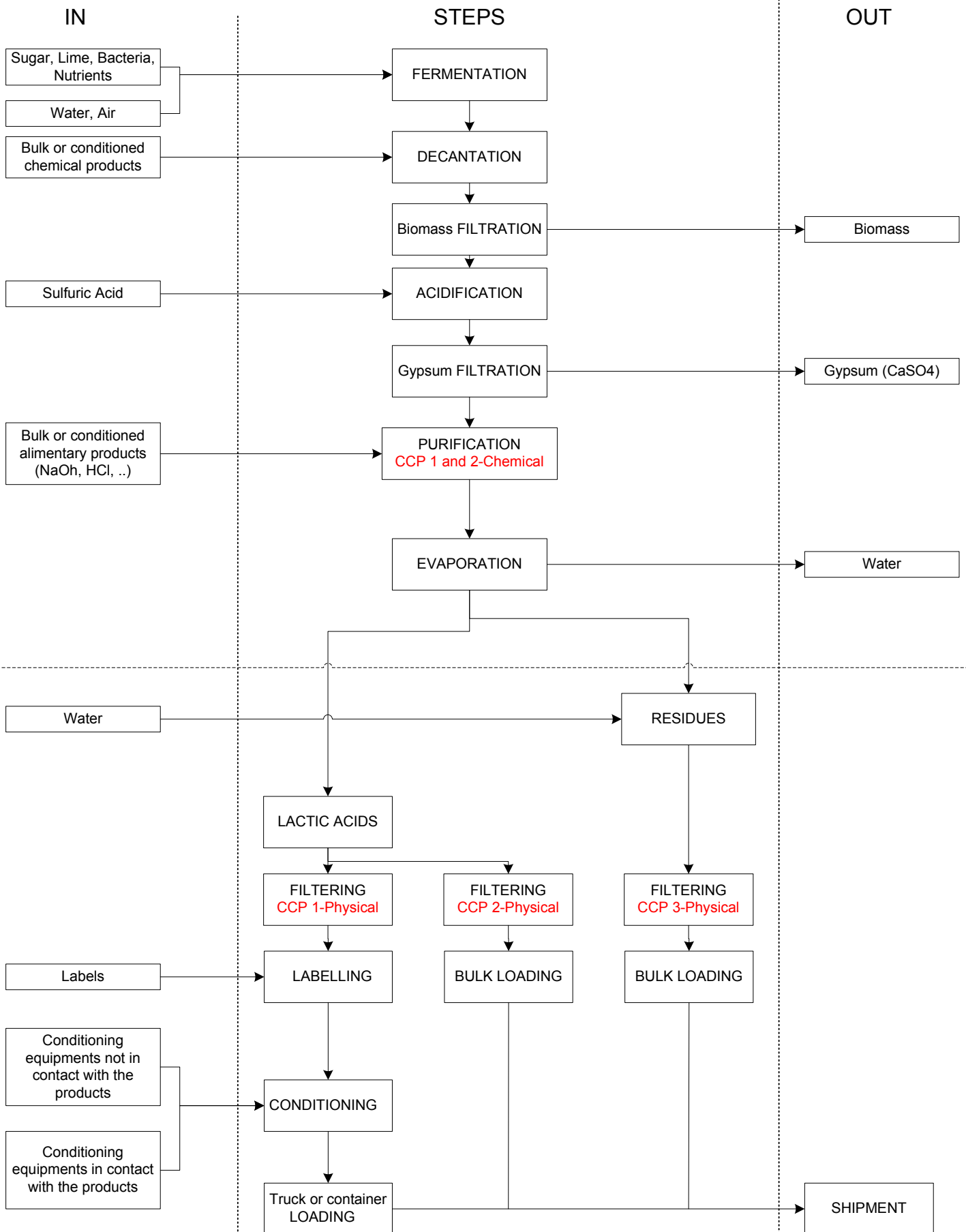
Our supplier uses lactose for the manufacturing of some products. Nonetheless, cross-contamination with all other ranges is avoided due to the availability of the dedicated line and proper training of personnel. Cross-contamination with other products from this range is also avoided due to proper cleaning and training of personnel.

In addition, our supplier use sulphites for water treatment. Nevertheless, they guarantee that the level of sulphites is below 10 ppm in the water. Cross-contamination is avoided as the product is not used in the manufacturing site, but in the utilities facility and the personnel received proper training.

No cross contamination may occur until the products have left our warehouse and as long as the packaging remains closed.

January 12th, 2018.

LACTIC ACID : HACCP Diagram





GMO STATEMENT

We hereby declare that our Lactic Acid 80% is producing a fully natural L(+) lactic acid by bacterial fermentation at our suppliers plant located in Belgium.

The bacterial strain is natural, isolated in the nature, non-pathogen and not genetically manipulated. The bacterium is not mutant and not manipulated neither actively (electroporation, ...) nor through any technique (irradiation, controlled mutagenesis).

The raw materials used by our supplier are not derived from genetically modified plants.

The material is not bioengineered, not genetically engineered and not genetically modified through the use of modern biotechnology.

May 2019

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

1.1. Product identifier

Name : Lactic acid / (L+) lactic acid
 Trade name : Lactic acid
 EC-No. : 200-018-0 / 201-196-2
 CAS-No. : 50-21-5 / 79-33-4
 REACH registration No : 01-2119548400-48-0001 / 01-2119474164-39-0001

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Agriculture, forestry, fishery
 Mining, (including offshore industries)
 Mining (without offshore industries)
 Manufacture, processing and distribution of substances and mixtures
 Manufacture of pulp, paper and paper products
 Manufacture of bulk, large scale chemicals (including petroleum products)
 Manufacture of fine chemicals
 Manufacture of plastics products, including compounding and conversion
 Building and construction work
 Health services
 Washing and cleaning products (including solvent based products)
 Formulation of preparations (mixtures)
 Manufacture of food products
 (See exposure scenario(s) nr 1)
 Private household
 (See exposure scenario(s) nr 2)

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

MADAR Corporation Limited
 19-20 Sandleheath Industrial Estate
 Fordingbridge
 Hampshire
 SP6 1PA

Tel: 01425 655555

Email: sales@madarcorporation.co.uk

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Ireland	National Poisons Information Centre Beaumont Hospital	PO Box 1297 Beaumont Road 9 Dublin	+353 1 809 2566 (Healthcare professionals-24/7) +353 1 809 2166 (public, 8am - 10pm, 7/7)	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital, Guy's & St Thomas' Hospital Trust	Dudley Road B18 7QH Birmingham	0844 892 0111 (UK only, Monday to Friday, 08.00 to 18.00 hours)	-
USA	American Association of Poison Control Centers	515 King Street, Suite 510 VA 22314 Alexandria	1-800-222-1222	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Skin Irrit. 2 H315
Eye Dam. 1 H318

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

Causes serious eye damage. Causes skin irritation.

2.2. Label elements

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

Hazard pictograms (CLP) :



GHS05

Signal word (CLP) : Danger
Hazard statements (CLP) : H315 - Causes skin irritation.
H318 - Causes serious eye damage.
Precautionary statements (CLP) : P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection.
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, a doctor.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P332+P313 - If skin irritation occurs: Get Obtain medical attention.

2.3. Other hazards

Other hazards not contributing to the classification : None, to our knowledge.

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Lactic acid / (L+) lactic acid	(CAS-No.) 50-21-5 / 79-33-4 (EC-No.) 200-018-0 / 201-196-2 (REACH-no) 01-2119548400-48-0001 / 01-2119474164-39-0001	≥ 10	Skin Irrit. 2, H315 Eye Dam. 1, H318

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move the affected person away from the contaminated area and into the fresh air. If irritation persists, consult a doctor.
First-aid measures after skin contact : Remove all contaminated clothing and footwear. Rinse immediately with plenty of water. In case of redness or irritation, call a doctor.
First-aid measures after eye contact : Rinse immediately and thoroughly, pulling the eyelids well away from the eye (15 minutes minimum). Remove contact lenses, if present and easy to do. Continue rinsing. Consult an eye specialist immediately, even if there are no immediate symptoms.
First-aid measures after ingestion : Rinse mouth out with water. Never attempt to induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects : Burns. Headache. Abdominal pain, nausea. Vomiting.

Symptoms/effects after skin contact : Irritation.
 Symptoms/effects after eye contact : Serious damage to eyes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Carbon dioxide (CO₂). Foam.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released. Carbon oxides (CO, CO₂).

5.3. Advice for firefighters

Firefighting instructions : Cool down the containers exposed to heat with a water spray. Contain the extinguishing fluids by bunding.

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid contact with skin and eyes. Do not breathe vapours. In case of important spillage : Only qualified personnel equipped with suitable protective equipment may intervene.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Contain the spilled material by bunding. Do not discharge into drains or rivers.

6.3. Methods and material for containment and cleaning up

For containment : Liquid spill: take up in sand, earth, vermiculite.

Methods for cleaning up : Wash non-recoverable remainder with large amounts of water.

Other information : Dispose of contaminated materials in accordance with current regulations.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe vapours.

Hygiene measures : Do not drink, eat or smoke in the workplace. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Storage conditions : Keep container tightly closed and dry. Protect from heat and direct sunlight. Keep away from ignition sources.

Incompatible products : Strong oxidizing agents. Acids.

7.3. Specific end use(s)

Not applicable.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
DNEL/DMEL (Workers)	
Acute - local effects, inhalation	592 mg/m ³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	35.4 mg/kg bodyweight/day
Acute - local effects, inhalation	296 mg/m ³
PNEC (Water)	

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
PNEC aqua (freshwater)	1.3 mg/l
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Personal protective equipment:

Insulated gloves. Face-shield.

Hand protection:

Protective gloves made of rubber. Breakthrough time (min) : > 480

Eye protection:

Face-shield

Skin and body protection:

Protective clothing

Respiratory protection:

If the ventilation is suitable, it is not essential to wear respiratory equipment. Mist formation: aerosol mask with filter type P2

Personal protective equipment symbol(s):



Environmental exposure controls:

Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Viscous.
Colour	: No data available
Odour	: odourless.
Odour threshold	: Not established
pH	: < 2 (25 °C)
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: 53 °C (crystal lactic acid)
Freezing point	: Not applicable
Boiling point	: 105 - 150 °C
Flash point	: Not applicable
Auto-ignition temperature	: 400 °C
Decomposition temperature	: > 200 °C
Flammability (solid, gas)	: Non flammable
Vapour pressure	: Negligible.
Relative vapour density at 20 °C	: No data available
Relative density	: 1.04 - 1.25
Solubility	: Water: Soluble
Log Pow	: -0.72 (20 °C)
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: 5 - 60 mPa.s
Explosive properties	: Not applicable.
Oxidising properties	: Not applicable.
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

To our knowledge, the product does not present any particular risk.

10.2. Chemical stability

Stable at ambient temperature and under normal conditions of use.

10.3. Possibility of hazardous reactions

Can react violently with. Strong oxidizing agents.

10.4. Conditions to avoid

High temperature.

10.5. Incompatible materials

Strong oxidizing agents. Strong acids.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal) : Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation) : Not classified (Based on available data, the classification criteria are not met)

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
LD50 oral rat	3543 mg/kg (EPA OPP 81-1)
LD50 dermal rabbit	> 2000 mg/kg (EPA OPP 81-2)
LC50 inhalation rat	> 7.94 mg/l/4h (OECD 403)

Skin corrosion/irritation : Causes skin irritation. (OECD 404)
pH: < 2 (25 °C)
Serious eye damage/irritation : Causes serious eye damage.
pH: < 2 (25 °C)
Respiratory or skin sensitisation : Not classified (EPA OPP 81-6)
Germ cell mutagenicity : Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity : Not classified (Based on available data, the classification criteria are not met)
Reproductive toxicity : Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure : Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure : Not classified (Based on available data, the classification criteria are not met)
Aspiration hazard : Not classified (Based on available data, the classification criteria are not met)

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity : Not classified
Chronic aquatic toxicity : Not classified

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
LC50 fish	130 mg/l/96h (Lepomis macrochirus)
EC50 Daphnia	130 mg/l/48h (Daphnia magna)
ErC50 (algae)	2800 mg/l/72h (Pseudokirchnerella subcapitata)
NOEC (acute)	1900 mg/l (OECD 201)

12.2. Persistence and degradability

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
Persistence and degradability	Readily biodegradable.

12.3. Bioaccumulative potential

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
Log Pow	-0.72 (20 °C)
Bioaccumulative potential	Not bioaccumulable.

12.4. Mobility in soil

Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	
Mobility in soil	Small adsorption

12.5. Results of PBT and vPvB assessment

Component	
Lactic acid / (L+) lactic acid (50-21-5 / 79-33-4)	The product does not meet the PBT and vPvB classification criteria

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of in accordance with relevant local regulations.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.2. UN proper shipping name				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards				
Not regulated	Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available				

14.6. Special precautions for user

Special transport precautions : No additional information available

- Overland transport

Not regulated

- Transport by sea

Not regulated

- Air transport

Not regulated

- Inland waterway transport

Not regulated

- Rail transport

Not regulated

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Lactic acid / (L+) lactic acid is not on the REACH Candidate List

Lactic acid / (L+) lactic acid is not on the REACH Annex XIV List

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Indication of changes:

SDS changed sections : 2.

Data sources

: CSR (Chemical safety report). IUCLID. HSDB (Hazardous Substances Data Bank).

Full text of H- and EUH-statements:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
H315	Causes skin irritation.
H318	Causes serious eye damage.

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



LACTIC ACID 80%

DESCRIPTION

Lactic Acid 80% is a natural L(+) lactic acid produced by fermentation from sugar. It has a mild acid taste and is widely used as an acidulant for preservation and flavor enhancement in various food applications.

PHYSICO-CHEMICAL PROPERTIES

Chemical name		2-Hydroxypropanoic acid
Molecular weight	<i>g/mol</i>	90
Molecular formula		C ₃ H ₆ O ₃
Density (@20°C/68°F)	<i>g/mL</i>	1.18 - 1.19
Solubility	-	Soluble in water and ethanol

SENSORY CHARACTERISTICS

Color (fresh solution)	<i>Hazen</i>	Max. 150
Odor	-	Nearly odorless
Taste	-	Mild acid

PURITY

Positive test for lactate	-	Passes test
Total acidity (as lactic acid)	<i>% w/w</i>	79.5 - 80.5
Stereochemical purity	<i>% L(+)</i>	Min. 97
Heavy metals (as Pb)	<i>ppm</i>	Max. 10
Iron	<i>ppm</i>	Max. 10
Calcium	<i>ppm</i>	Max. 10
Chloride	<i>ppm</i>	Max. 10
Sulphate	<i>ppm</i>	Max. 10
Sulphated ash	<i>% w/w</i>	Max. 0.1
Cyanide	<i>ppm</i>	Max. 5
Lead	<i>ppm</i>	Max. 0.5
Arsenic	<i>ppm</i>	Max. 1
Mercury	<i>ppm</i>	Max. 1
Reducing substances (sugars)	-	Passes test
Citric, oxalic, tartaric and phosphoric acids	-	Passes test

REGISTRATION

Labeling	E 270
CAS number	79-33-4
GRAS status	Yes
Complies with	Eur Reg 231/2012 - FCC ⁽¹⁾ Kosher - Halal

STORAGE CONDITIONS

Dry, well ventilated room.

SHELF-LIFE

24 months

⁽¹⁾ Latest edition

May 2018



Vegetarian & Vegan Suitability Statement

PRODUCT NAME: LACTIC ACID

MADAR Corporation Limited can confirm that the above listed product has not been tested in animals and does not contain dairy or any other animal product, by product or derivative and is therefore suitable for vegetarian and vegan use.

29/04/19