

Revision Date 06/24/2014
Date of the previous version 04/01/2014

Version 2
US

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Lactic acid
Trade name	PURAC® PURAC® 80 PURAC® 80-DW PURAC® 88-T PURAC® 93-T PURAC® FCC PURAC® HiPure PURAC® HS PURAC® PF PURAC® PH PURAC® Sanilac PURAC® Vin
Recommended Use Uses advised against	Food additive, Specialty chemical. No information available.
Supplier	Purac Biochem Arkelsedijk 46 NL-4206 AC Gorinchem The Netherlands Tel.: +31 183 695695 Fax: +31 183 695604 E-mail: sds@corbion.com
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2. HAZARDS IDENTIFICATION

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).



Signal Word	Danger
Hazard Statements	Causes skin irritation Causes serious eye damage

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Precautionary statements
Prevention

Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Eyes

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 CENTRE or doctor/physician.

Skin

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Take of contaminated clothing and wash before re-use.

Main symptoms

Causes severe damage to eyes: Burning feeling and temporary redness, Pain. Causes skin irritation: Itching, Redness.

Environmental hazard

Contains no substances known to be hazardous for the environment. See Section 12 for additional information.

Physical state @20°C

Liquid

Appearance

Clear

Colour

Colourless / yellowish

Odour

Characteristic

Interactions with Other Chemicals

Incompatible materials: Oxidizing agents.

Hazards Not Otherwise Classified (HNOC)

None known.

Unknown toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %
L-(+)-lactic acid	79-33-4	>= 50



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4. FIRST AID MEASURES

General advice	Keep person warm and at rest. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before reuse.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Consult a physician.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician.
Ingestion	Rinse mouth. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. Get medical attention immediately if symptoms occur.
Notes to physician	Treat symptomatically. If breathing is difficult, give oxygen. Keep victim under observation. Symptoms may be delayed.
Protection of first-aiders	Use personal protective equipment. Avoid contact with skin, eyes and clothing.

5. FIRE FIGHTING MEASURES

Flammable properties	No information available.			
Flash point	Not applicable			
Autoignition Temperature	> 400 °C solution (93 %)			
Suitable extinguishing media	Water spray, Foam, Dry powder, Carbon dioxide (CO ₂).			
Extinguishing media which must not be used for safety reasons	Do not use a solid water stream as it may scatter and spread fire.			
Special hazard	None in particular.			
Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit.			
Fire fighting measures	Evacuate non-essential personnel. Move containers from fire area if you can do it without risk. Keep containers and surroundings cool with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.			
Sensitivity to Mechanical Impact	None.			
Sensitivity to Static Discharge	None.			
NFPA	Health Hazard 2	Flammability 0	Instability 0	Physical and chemical hazards -
HMIS	Health Hazard 2	Flammability 0	Physical Hazard 0	Personal precautions B

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate personnel to safe areas. Do not touch or walk through spilled material. Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mists. Use personal protective equipment. Ensure adequate ventilation.
Environmental precautions	Should not be released into the environment. Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Large amounts: Prevent further leakage or spillage if safe to do so. Dike to collect large spills. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Sweep up and shovel into suitable containers for disposal. Following product recovery, flush area with water. Small amounts: Wipe up with absorbent material (e.g. cloth, fleece). After cleaning, flush away traces with water. Never return spills in original containers for re-use.

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7. HANDLING AND STORAGE

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mists. Ensure adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

Storage

Store in accordance with local regulations Keep containers tightly closed in a cool, well-ventilated place Keep at temperatures below 200 °C / 392 °F Incompatible with oxidising agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Contains no substances with occupational exposure limit values.

Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Keep at temperatures below 200 °C / 392 °F. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye protection

Safety glasses with side-shields (EN166).

Hand protection

Protective gloves (EN374): Butyl rubber. Glove thickness: 0.5 mm . Break through time: >8 hours. Unsuitable materials: Natural Rubber, Nitrile rubber, Fluorinated rubber, PVC.

Skin and body protection

Long sleeved clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection: Wear a positive-pressure supplied-air respirator.

Recommended filter type

A, brown.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Workers must be trained in the proper use and handling of this product as required under applicable regulations. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before re-use.

Environmental Exposure Controls

The product should not be allowed to enter drains, water courses or the soil.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state @20°C	Liquid
Appearance	Clear
Colour	Colourless / yellowish
Odour	Characteristic
pH	< 1.2 (@25°C)
Melting/freezing point	No information available
Boiling point/boiling range	120-130 °C / 249-266 °F (@ 1013 hPa)
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	No information available
Flammability Limits in Air	No information available
Explosion Limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	No information available
Solubility	
Water solubility	Miscible
Partition coefficient (n-octanol/water)	-0.62
Autoignition Temperature	> 400 °C solution (93 %)
Decomposition temperature	> 200 °C / > 392 °F
Viscosity, dynamic	5-60 mPa.s (@25°C)
Explosive properties	Not applicable
Oxidising Properties	Not applicable
Density	1.2 g/cm ³
Surface tension	44-50 mN/m (@ 50-90%)

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Materials to Avoid	Oxidizing agents.
Conditions to Avoid	Temperatures above 200 °C / 392 °F.
Hazardous Decomposition Products	None under normal use.
Hazardous Polymerisation	None known.
Hazardous reactions	No information available.

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11. TOXICOLOGICAL INFORMATION

Acute toxicity

Acute toxicity

Ingestion

No known effect.

Skin contact

No known effect (LD50 Dermal, rabbit: >2000 mg/kg).

Inhalation

No known effect.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
L-(+)-lactic acid	3543 mg/kg (Rat, female) 4936 mg/kg (Rat, male)	>2000 mg/kg (Rabbit)	>7.94 mg/L (Rat) 4h

Skin corrosion/irritation

Causes skin irritation. OECD 404, In vivo, rabbit, solution (88 %): Corrosive.

Serious eye damage/irritation

Causes serious eye damage. CEET, Ex vivo, solution (88 %): Severe eye irritation.

Respiratory or skin sensitisation

No known effect.

Aspiration hazard

No known effect.

Chronic Toxicity

Carcinogenicity

Contains no ingredient listed as a carcinogen.

Germ cell mutagenicity

Not known to cause heritable genetic damage.

Reproductive toxicity

Not known to cause birth defects or have a deleterious effect on a developing fetus. Not known to adversely affect reproductive functions and organs.

STOT-single exposure

No known effect.

STOT-repeated exposure

No known effect.

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12. ECOLOGICAL INFORMATION

Ecotoxicity Effects Contains no substances known to be hazardous for the environment.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
L-(+)-lactic acid	EC50: >2.8 g/L 72h Pseudokirchnerella subcapitata EC50: 3.5 g/L 70h Pseudokirchnerella subcapitata	LC50: 130 mg/L 96h Oncorhynchus mykiss LC50: 320 mg/L 96h Danio rerio	LC50: > 100 mg/L 3h	EC50: 130 mg/L 48h Daphnia magna EC50: 250 mg/L 48h Daphnia magna

Persistence and Degradability Readily biodegradable.

Bioaccumulative potential Does not bioaccumulate.

Chemical Name	log Pow	Bioconcentration factor (BCF)
L-(+)-lactic acid	-0.62	

Mobility in Soil No information available.

PBT and vPvB assessment This substance is not considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

According to: US DOT, IMDG, ICAO/IATA, ADR.

Not regulated.



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15. REGULATORY INFORMATION

International Inventories

TSCA	Listed
DSL	Listed
NDSL	Not listed

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

Federal Regulations

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA This material, as supplied, does not contain substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302).

State Regulations

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

No information available.

Other information

No information available.

International Regulations

Canada No information available.

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16. OTHER INFORMATION

Revision Date	06/24/2014
Version	2
Revision Note	Personal protective equipment, New layout, Fire fighting measures, Handling and storage, Toxicological information, Ecotoxicity.
Training Advice	Workers must be trained in the proper use and handling of this product as required under applicable regulations.
Abbreviations/acronyms	ACGIH TLV: American Conference of Governmental Industrial Hygienists - Treshold Limit Value OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits NIOSH IDLH: National Institute for Occupational Safety and Health - Immediately Dangerous to Life or Health OSHA: Occupational Safety and Health Administration IARC: International Agency for Research on Cancer NTP: National Toxicity Program SARA: Superfund Amendments and Reauthorization Act ACGIH: American Conference of Governmental Industrial Hygienists CFR: U.S. Code of Federal Regulations NFPA: National Fire Protection Association HMIS: Hazardous Materials Identification System ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route DOT: Department of Transport IMDG: International Maritime Dangerous Goods Code IATA: International Air Transport Association ICAO: International Civil Aviation Organization
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Disclaimer

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End of Safety Data Sheet