

SAFETY DATA SHEET

According to Regulation (EC) No. 1907/2006 (REACH) Article 31, Annex II as amended 2015/830.

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

1.1 Product identifier

Product name:

Product No. 0200

Synonyms, Trade Names: 2-Hydroxypropanoic Acid
Additional identification

Chemical name: Lactic acid

Chemical formula: C₃H₆O₃

INDEX No. -

CAS-No. 50-21-5

EC No. 200-018-0

REACH Registration No.

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

Identified uses: For Laboratory, Research or Manufacturing Use.

Uses advised against: Not determined.

1.3 Details of the supplier of the safety data sheet

Avantor Performance Materials Poland S.A.
Sowinskiego 11str., 44-101 Gliwice,
Poland

Telephone: 48 32 239-20-00
Fax: 48 32 239-23-70

Contact person: Product Information Compliance

E-mail: export@avantormaterials.com

E-mail address of person responsible for this SDS: SDS@avantormaterials.com

1.4 Emergency telephone number: CHEMTREC: (44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification according to Regulation (EC) No 1272/2008 as amended.

Health Hazards

Skin corrosion	Category 2	H315: Causes skin irritation.
Serious eye irritation	Category 1	H318: Causes serious eye damage.

2.2 Label Elements



Signal Word: Danger

Hazard Statement(s): H315: Causes skin irritation.
H318: Causes serious eye damage.

Precautionary Statements

Prevention: P264: Wash thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310: Immediately call a POISON CENTER/doctor.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or 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.
P337+P313: If eye irritation persists: Get medical advice/attention.

2.3 Other hazards No data available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
Lactic acid	50 - <100%	50-21-5	200-018-0	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration.	No data available.	

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

This substance has workplace exposure limit(s).

SECTION 4: First Aid Measures

General: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

4.1 Description of first aid measures

Inhalation: Move to fresh air. Get medical attention if symptoms persist. If breathing stops, provide artificial respiration. For breathing difficulties, oxygen may be necessary.

Skin Contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before re-use. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a doctor or poison control centre immediately.

Ingestion: Rinse mouth. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed: Harmful if inhaled. Harmful if swallowed. Causes serious eye damage. Irritating to eyes, respiratory system and skin.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: No data available.

Treatment: Treat symptomatically. Symptoms may be delayed.

SECTION 5: Firefighting Measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

5.1 Extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture:

During fire, gases hazardous to health may be formed.

5.3 Advice for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for firefighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:	Keep unauthorised personnel away. Ventilate closed spaces before entering them. Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
6.2 Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or on to the ground.
6.3 Methods and material for containment and cleaning up:	Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dyke far ahead of larger spill for later recovery and disposal.
6.4 Reference to other sections:	No data available.

SECTION 7: Handling and Storage:

7.1 Precautions for safe handling:	Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapour. Do not taste or swallow. Do not eat, drink or smoke when using the product. Wash hands thoroughly after handling. Use only with adequate ventilation. See Section 8 of the SDS for Personal Protective Equipment.
7.2 Conditions for safe storage, including any incompatibilities:	Keep containers tightly closed. Store in a well-ventilated place. Store in a dry place.
7.3 Specific end use(s):	No data available.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters Occupational Exposure Limits	None of the components have assigned exposure limits.
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8.2 Exposure controls Appropriate Engineering Controls:	No data available.
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Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection
Hand Protection:** Material: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapour cartridge.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Environmental Controls: No data available.

SECTION 9: Physical And Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Colour:	Colourless
Odour:	No data available.
Odour Threshold:	No data available.
pH:	No data available.
Freezing point:	17 °C
Boiling Point:	122 °C (2,00 kPa)
Flash Point:	> 74 °C
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability limit - upper (%)	No data available.
Flammability limit - lower (%)	No data available.
Vapour pressure:	0,41 Pa (20 °C) 0,11 hPa (25 °C)
Vapour density (air=1):	No data available.
Density:	1,2 g/ml (20 °C)
Relative density:	1,2 (20 °C)
Solubility(ies)	
Solubility in Water:	Miscible
Solubility (other):	chloroform: Practically insoluble petroleum ether: Practically insoluble
Partition coefficient (n-octanol/water):	-0,72 - -0,65
Autoignition Temperature:	400 °C
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.
Oxidising Properties:	No data available.

9.2 Other information

Molecular weight:	90,08 g/mol (C ₃ H ₆ O ₃)
VOC content:	EC Directive 2004/42: 880 g/l ~88 % (calculated)

SECTION 10: Stability and Reactivity

10.1 Reactivity:	No data available.
10.2 Chemical Stability:	Material is stable under normal conditions.
10.3 Possibility of Hazardous Reactions:	Hazardous polymerization does not occur.

- 10.4 Conditions to Avoid:** Heat. Contact with incompatible materials.
- 10.5 Incompatible Materials:** Oxidising agents. Iodides.
- 10.6 Hazardous Decomposition Products:** Thermal decomposition may release oxides of carbon.

SECTION 11: Toxicological Information

Information on likely routes of exposure

- Inhalation:** None known or expected under normal use.
- Skin Contact:** Causes skin irritation.
- Eye contact:** Causes serious eye damage.
- Ingestion:** None known or expected under normal use.

11.1 Information on toxicological effects

Acute toxicity

Oral

- Product:** LD 50 (Rat): 3.543 - 4.936 mg/kg
- Specified substance(s)**
Lactic acid LD 50 (Rat): 3.543 - 4.936 mg/kg

Dermal

- Product:** LD 50 (Rabbit) > 2.000 mg/kg
No data available.
- Specified substance(s)**
Lactic acid LD 50 (Rabbit) : > 2.000 mg/kg

Inhalation

- Product:** LC 50 (Rat, 4 h): 7,94 mg/l
- Specified substance(s)**
Lactic acid LC 50 (Rat, 4 h): 7,94 mg/l

Repeated dose toxicity

- Product:** No data available.
- Specified substance(s)**
Lactic acid No data available.

Skin Corrosion/Irritation:

- Product:** Causes skin irritation.
- Specified substance(s)**
Lactic acid No data available.

Serious Eye Damage/Eye Irritation:

- Product:** Causes serious eye damage.
- Specified substance(s)**
Lactic acid ex vivo (Chicken, Enucleated Eye Test, 30 - 240 min): Highly irritating

Respiratory or Skin Sensitisation:

Product:	Not a skin nor a respiratory sensitizer.
Specified substance(s) Lactic acid	No data available.
Germ Cell Mutagenicity	
In vitro	
Product:	No mutagenic components identified
Specified substance(s) Lactic acid	No data available.
In vivo	
Product:	No mutagenic components identified
Specified substance(s) Lactic acid	No data available.
Carcinogenicity	
Product:	This substance has no evidence of carcinogenic properties.
Specified substance(s) Lactic acid	No data available.
Reproductive toxicity	
Product:	No components toxic to reproduction
Specified substance(s) Lactic acid	No data available.
Specific Target Organ Toxicity - Single Exposure	
Product:	None known.
Specified substance(s) Lactic acid	No data available.
Specific Target Organ Toxicity - Repeated Exposure	
Product:	None known.
Specified substance(s) Lactic acid	No data available.
Aspiration Hazard	
Product:	Not classified
Specified substance(s) Lactic acid	No data available.
Other Adverse Effects:	None known.

SECTION 12: Ecological Information

12.1 Toxicity

Acute toxicity

Fish

Product:	No data available.
Specified substance(s) Lactic acid	LC 50 (Oncorhynchus mykiss, 96 h): 130 mg/l LC 50 (Danio rerio, 96 h): 195 - 320 mg/l LC 50 (Lepomis macrochirus, 96 h): 130 mg/l NOAEL (Danio rerio, 96 h): 180 mg/l

Aquatic Invertebrates

Product:	No data available.
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Specified substance(s)
Lactic acid EC 50 (Daphnia magna, 48 h): 130 - 750 mg/l
NOAEL (Daphnia magna, 48 h): 180 - 320 mg/l

Chronic toxicity

Fish
Product: No data available.

Specified substance(s)
Lactic acid LOAEL (Oreochromis mossambicus, 90 d): 2,18 mg/l

Aquatic Invertebrates
Product: No data available.

Specified substance(s)
Lactic acid No data available.

Toxicity to aquatic plants
Product: No data available.

Specified substance(s)
Lactic acid No data available.

12.2 Persistence and Degradability

Biodegradation
Product: Expected to be readily biodegradable.

Specified substance(s)
Lactic acid No data available.

BOD/COD Ratio
Product No data available.

Specified substance(s)
Lactic acid No data available.

12.3 Bioaccumulative Potential

Product: No data available on bioaccumulation.

Specified substance(s)
Lactic acid No data available.

12.4 Mobility in Soil: No data available.

Known or predicted distribution to environmental compartments
Lactic acid No data available.

12.5 Results of PBT and vPvB Not available.

assessment:
Lactic acid No data available.

12.6 Other Adverse Effects: The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.7 Additional Information: No data available.

SECTION 13: Disposal Considerations

13.1 Waste treatment methods

General information: No data available.

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

SECTION 14: Transport Information
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ADR

14.1 UN Number:	UN 3265
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(Lactic Acid)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
Hazard No. (ADR):	80
Tunnel restriction code:	(E)
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

RID

14.1 UN Number:	UN 3265
14.2 UN Proper Shipping Name	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

IMDG

14.1 UN Number:	UN 3265
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.(Lactic Acid)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

IATA

14.1 UN Number:	UN 3265
14.2 Proper Shipping Name:	Corrosive liquid, acidic, organic, n.o.s.(Lactic Acid)
14.3 Transport Hazard Class(es):	
Class:	8
Label(s):	8
14.4 Packing Group:	II
14.5 Environmental Hazards:	No
14.6 Special precautions for user:	Not determined.

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:

EU Regulations

Regulation (EC) No. 2037/2000 Substances that deplete the ozone layer: none

Regulation (EC) No. 850/2004 on persistent organic pollutants: none

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals: none

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended: none

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use: none

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.: none

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.: none

Directive 2012/18/EU (Seveso III): on the control of major accident hazards involving dangerous substances: none

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants: none

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work: none

Listed on the Candidate List of substances of very high concern (SVHC) Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Contains:

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other Information

Revision Information: Not relevant.

References

PBT PBT: persistent, bioaccumulative and toxic substance.
vPvB vPvB: very persistent and very bioaccumulative substance.

Key literature references and sources for data:

Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

Wording of the H-statements in sections 2 and 3

H303 May be harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.

Training information: No data available.

Issue Date: 03.03.2021

SDS No.:

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