

SAFETY DATA SHEET

Safety data sheet according to (EF) no. 1907/2006.

POINT 1: Identification of material/compounds and of the company/factory

1.1. Product identifier:

KetoLact Boost

1.2. Relevant identifying use of the material or compound and the usage that is contraindicated:

Feed ingredient. Only for commercial use.

1.3. Detailed information about the supplier for the safety data sheet:

Jorenku A/S
Teglvaerksvej 11
4733 Tappernoeye
Denmark
Tel.: +45 56214070

Responsible for safety data sheet (e-mail): jorenku@jorenku.dk

1.4. Emergency phone:

Contact the poison centre in your own country.

POINT 2: Identification of danger

2.1. Classification of the material or compound:

CLP (1272/2008): None.

2.2. Label elements:

EUH 210: Safety data sheet available on request.

2.3. Other dangers:

PBT/vPvB: The ingredients are not PBT/vPvB according to the criteria in Regulation 2023/707.

Endocrine disrupting properties: The ingredients are not considered endocrine disruptors according to the criteria of Regulation 2023/707.

POINT 3: Compensation of/information about contents

3.1. Compensation of/information about contents

3.2. Compounds:

Substance name	CAS	EF-No.	Index-no.	REACH reg.no.	Substance Classification	Note
Propylene glycol	57-55-6	200-338-0	-	-	None	-
Lactic acid	79-33-4	201-196-2	607-743-00-5	-	Skin Corr. 1C;H314 Eye Dam. 1;H318	-
Citric acid	77-92-9	201-069-1	607-750-00-3	01-2119457026-42	Eye Irrit. 2;H319 STOT SE 3;H335	-



Substance name	CAS	EF-No.	Index-no.	REACH reg.no.	Substance Classification	Note
Propionic acid	79-09-4	201-176-3	607-089-00-0	01-2119486971-24	Flam. Liq. 3;H226 Skin Corr. 1B;H314 Eye Dam. 1;H318 STOT SE 3;H335	1,2
Acetic acid	64-19-7	200-580-7	607-002-00-6	-	Flam. Liq. 3;H226 Skin Corr. 1A;H314	2,3

- 1) SCL (Specific Concentration limits) for classification: Skin Corr. 1B;H314: $C \geq 25\%$; Skin Irrit. 2;H315: $10\% \leq C < 25\%$; Eye Irrit. 2;H319: $10\% \leq C < 25\%$; STOT SE 3;H335: $C \geq 10\%$ (harmonised classification)
- 2) The substance is an organic solvent.
- 3) SCL (Specific Concentration limits) for classification (harmonised): Skin Corr. 1A;H314: $C \geq 90\%$; Skin Corr. 1B;H314: $25\% \leq C < 90\%$; Eye Irrit. 2;H319: $10\% \leq C < 25\%$; Skin Irrit. 2;H315: $10\% \leq C < 25\%$

The wording of the hazard statements - see paragraph 16.

POINT 4: First aid measures

4.1. Description of first aid measures:

- Inhalation: Bring the person to fresh air. Keep the person calm under supervision. In case of discomfort: Seek medical attention
- Skin: Immediately remove contaminated clothing. Rinse skin and wash thoroughly with water and soap. If irritation continues: Seek medical attention.
- Eyes: Rinse immediately with water or physiological saline. Remove any contact lenses and open the eye wide. If irritation continues: Seek medical attention.
- Ingestion: Immediately rinse mouth thoroughly and drink water in copious amounts. **Do not induce vomiting.** If vomiting occurs, keep the head low to avoid stomach contents in the lungs. Immediately call an ambulance.

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

May cause irritation of skin and eyes with redness and burning.

4.3. Indication of whether emergency medical attention and special treatment are needed:

Show this safety data sheet to doctors or casualty ward.

POINT 5: Fire suppression

5.1. Suppression methods:

Water fogging (never water jet - spreads the fire), foam, powder or carbon dioxide.

5.2. Special dangers in connection with the material or compound:

Avoid inhalation of flue gases. In case of fire, very toxic gases are formed: Primarily carbon oxides.

5.3. Indication for a fire department:

If possible, remove containers. Use compressed air mask by heavy smoke.

POINT 6: Accidental release measures

6.1. Personal precautions, personal protective equipment, and emergency procedures:

Use personal protective equipment - see point 8. Limit spread. Ensure good ventilation.

6.2. Environmental protection indications:

Avoid discharge to drains - see point 12. Inform local environmental authorities in case of spillage to the environment.

6.3. Methods and equipment for containment and cleaning:

Smaller amounts are soaked up with a cloth and larger amounts with granulate or similar. Collect in suitable containers. Rinse thoroughly with water. Further waste handling - see point 13.

6.4. References to other points:

See above.

POINT 7: Handling and storage

7.1. Measures for safe handling:

Avoid contact with skin and eyes. Provide effective ventilation. Immediately change contaminated clothing. If skin becomes contaminated, wash immediately.

7.2. Conditions for safe storage, including any incompatibility:

In a closed container in a cool and well-ventilated place.

7.3. Special usage:

See use - point 1.

PUNKT 8: Exposure control/personal protective equipment

8.1. Control parameter:

AT-limit value (reg. 1619 of 19.12.2024):

	8-hours limit value	Short-term limit value	Anm.
Propionic acid	10 ppm = 31 mg/m ³	20 ppm = 62 mg/m ³	E
Acetic acid	10 ppm = 25 mg/m ³	20 ppm = 50 mg/m ³	E

E = The substance has an EF-limit value

DNEL:	Exposure	Value	Population	Effects
Propionic acid	Long-term, skin	0.26 mg/kg	Workers	Local
	Long-term, skin	20.9 mg/kg	Workers	Systemic
	Acute, inhalation	62 mg/m ³	Workers	Local
	Acute, inhalation	62 mg/m ³	Workers	Systemic
	Long-term, inhalation	31 mg/m ³	Workers	Local
	Long-term, inhalation	73 mg/m ³	Workers	Systemic
Acetic acid	Long-term, inhalation	25 mg/m ³	Workers	Local
	Short-term, inhalation	25 mg/m ³	Workers	Lokal

PNEC:	Medium	Value
Citric acid	Fresh water	0.44 mg/l
	Sea water	0.044 mg/l
	Fresh water sediment	34.6 mg/l
	Sea water sediment	3.46 mg/l
	Sewage works (WWTP)	1000 mg/l
	Soil	33.1 mg/kg jord
Propionic acid	Fresh water	0.5 mg/l
	Sea water	0.05 mg/l
	Fresh water sediment	1.86 mg/kg
	Sea water sediment	0.186 mg/kg
	Sewage works (WWTP)	5 mg/l
	Soil	0.126 mg/kg
Acetic acid	Fresh water	3.058 mg/l
	Sea water	0.306 mg/l
	Fresh water sediment	11.36 mg/kg
	Sea water sediment	1.136 mg/kg
	Sewage works (WWTP)	85 mg/l
	Soil	0.47 mg/kg

8.2. Exposure control:

Appropriate measures for exposure control: Provide effective ventilation during handling.

Personal protective equipment:

Inhalation: In case of insufficient ventilation: use approved mask with gas filter type E (yellow - against acid gases). The filters have a limited service life (must be replaced). Read the manufacturer's instructions.

Skin: Protective gloves of neoprene or butyl rubber (material thickness: 0.65 mm). Breakthrough time approx. 8 hours.

Eyes: Tightly fitted safety goggles (EN ISO 16321-1) in case of risk of eye contact.

Environmental exposure control: None.

POINT 9: Physical and chemical characteristics

9.1. Information about basic physical and chemical characteristics:

Appearance:	Liquid
Colour:	Uncoloured
Odor:	Karakteristisk
Melting point/freezing point (°C):	Not decided
Boiling point or bubble-point and boiling point interval (°C):	Not decided
Ignitability (solid, gaseous):	Not decided
Upper and lower explosion limits (vol-%):	Not decided
Flash point (°C):	Not decided
Auto-ignition temperature (°C):	Not decided
Decomposition temperature (°C):	Not relevant
pH:	Not decided
Kinematic viscosity (mm ² /s at 40°C):	Not decided
Solubility (mg/l):	Soluble in water
Partition coefficient n-octanol/water Log K _{ow} :	Not relevant – solution

Vapor pressure (hPa, 20°C):

Density and/or relative density (g/cm³):

Relative vapor density (luft=1):

Particulate properties:

(see point 12)

Not decided

Not decided

Not decided

Not relevant for liquids

9.2. Other information:

None known.

POINT 10: Stability and reactivity

10.1. Reactivity:

No available data.

10.2. Chemical stability:

Stable under recommended storage conditions - see point 7.

10.3. Risk of dangerous reactions:

None known.

10.4. Conditions that should be avoided:

Avoid heavy heat and direct sunlight.

10.5. Materials that should be avoided:

Reacts with strong bases, hypochlorite, and oxidants.

10.6. Dangerous decomposition products:

In case of fire, very toxic gases are formed: Primarily carbon oxides.

POINT 11: Toxicological information

11.1. Information about hazard classes as defined in Regulation (EC) No 1272/2008:

Acute toxicity: Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitization: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproduction toxicity: Based on available data, the classification criteria are not met.

Single STOT-exposure: Based on available data, the classification criteria are not met.

Repeated STOT-exposures: Based on available data, the classification criteria are not met.

Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Danger class	Data	Test	Data source
Acute toxicity: Inhalation	LC ₅₀ (rat) > 317 mg/l/2h (Propylene glycol) LC ₅₀ (rat) > 19.7 mg/l/1h (dampe) (Propionic acid) LC ₅₀ (rat, aerosol) > 7.94 mg/l/4h (Lactic acid)	Not informed Not informed OECD 403	ECHA ECHA ECHA
Dermal	LC ₅₀ (rat, dust) = 5800 mg/l (Citric acid) LC ₅₀ (rat) > 40 mg/l/4h (Acetic acid) LD ₅₀ (rabbit) = 20,800 mg/kg (Propylene glycol) LD ₅₀ (rabbit) = 3235 mg/kg (Propionic acid) LD ₅₀ (rabbit) > 2000 mg/kg (Lactic acid)	Not informed Not informed OECD 402 Not informed EPA OPP 81-2	Supplier Supplier ECHA ECHA ECHA
Oral	LD ₅₀ (rat) > 2000 mg/kg (Citric acid) LD ₅₀ (rabbit) = 1060 mg/kg (Acetic acid) LD ₅₀ (rat) = 20,000 mg/kg (Propylene glycol) LD ₅₀ (rat) = 2600 mg/kg (Propionic acid) LD ₅₀ (rat): 3543-4936 mg/kg (Lactic acid) LD ₅₀ (rat) = 11,700 mg/kg (Citric acid) LD ₅₀ (rat) = 3310 mg/kg (Acetic acid)	OECD 402 Not informed OECD 401 Not informed EPA OPP 81-1 OECD 401 Not informed	ECHA ECHA ECHA TOXNET ECHA Supplier Supplier
Corrosivity/ irritation:	No skin irritation, rabbit (Propylene glycol) No eye irritation, rabbit (Propylene glycol) Corrosive, rabbit (Propionic acid) No skin irritation, rabbit (Citric acid) Eye irritation, rabbit (Citric acid) Severe irritation to corrosion of skin and eyes, rabbit (Acetic acid)	OECD 404 OECD 405 OECD 404 OECD 404 OECD 405 Not informed	ECHA ECHA ECHA Supplier Supplier IUCLID
Sensitisation:	No skin sensitizing, guinea pig (Propylene glycol) No skin sensitizing, guinea pig (Propionic acid) Not sensitized, guinea pig (Citric acid)	OECD 406 OECD 406 OECD 406	ECHA ECHA Supplier
CMR:	No CMR-effects (Propylene glycol) NOAEL (90d) = 1700 mg/kg/d (Propylene glycol) No CMR-effects (Propionic acid) No mutagenic effects, in vitro (Citric acid)	Different Not informed Different OECD 474	ECHA ECHA ECHA Supplier

Usual exposure methods: Lungs, skin, and gastrointestinal tract.

Inhalation: May irritate the respiratory tract with sore throat and cough.

Skin: Can be irritating with redness and burning.

Eyes: Can be irritating with redness and burning.

Ingestion: May irritate mucous membranes in the mouth, throat and stomach.

Chronic effects: Inhalation of high concentrations or frequent inhalation of even small amounts of organic solvent can cause damage to e.g., liver, kidneys and central nervous system (including brain damage). Ingestion of large amounts of propylene glycol can, in severe cases, cause kidney damage.

11.2. Information about other hazards: None known.

POINT 12: Environmental information

12.1. Toxicity:

Aquatic	Data	Test (Media)	Data source
Fish	LC ₅₀ (Fish, 96h) > 10000 mg/l (Propylene glycol)	DIN 38412 (FW)	ECHA
	LC ₅₀ (Leuciscus idus, 96h) > 10,000 mg/l (Propionic acid)	DIN 38412 (FW)	Supplier
	NOEC (Leuciscus idus, 96h) > 5,000 mg/l (Propionic acid)	OECD 203 (FW)	ECHA
	LC ₅₀ (Leuciscus idus, 48h): 440 mg/l (Citric acid)	OECD 203 (FW)	IUCLID
	LC ₅₀ (Lepomis macrochirus, 96h) = 75 mg/l (Acetic acid)	OECD 203 (FW)	Supplier
Crustacean	EC ₅₀ (Daphnia magna, 48h) > 10000 mg/l (Propylene glycol)	Not informed (FW)	ECHA
	EC ₅₀ (Daphnia magna, 48h) > 500 mg/l (Propionic acid)	Not informed (FW)	Supplier
	NOEC (Daphnia magna, 48h) = 250 mg/l (Propionic acid)	OECD 202 (FW)	ECHA
	EC ₅₀ (Daphnia magna, 24h) = 1535 mg/l (Citric acid)	Not informed (FW)	ECHA
	EC ₅₀ (Daphnia magna, 48h) > 300 mg/l (Acetic acid)	OECD 202 (FW)	Supplier
Alga	EC ₅₀ (Scenedesmus subspicatus, 72h) > 500 mg/l (Propionic acid)	OECD 201 (FW)	Supplier
	EC ₅₀ (Scenedesmus quadricauda, 168h) = 425 mg/l (Citric acid)	Not informed (FW)	Supplier
	EC ₅₀ (Skeletonema costatum, 72h) > 300 mg/l (Acetic acid)	OECD 201 (FW)	ECHA

12.2. Persistence and degradability:

Propylene glycol is rapidly biodegradable at an OECD 301-test.

Propionic acid is rapidly biodegradable, 95 % in 10 days (OECD 302B).

Citric acid s rapidly biodegradable in 28 days, 97% (OECD 301 B).

Acetic acid: BOD₁₅ = 85-88 % of ThOD & BOD5 = 66-76 % of ThOD (the substance s rapidly degradable).

12.3. Bioaccumulative potential:

Propionic acid: Log K_{ow} = 0.3 (OECD 107) (no bioaccumulation).

Citric acid: Log K_{ow} = -1.72 (no significant bioaccumulation).

The bioconcentration factor (BCF) is for citric acid calculated to 3.2 and the and the substance is therefore not considered to be bioaccumulative.

Acetic acid: Log K_{ow} -0.17 (no significant bioaccumulation). BCF = 3.16

12.4. Mobility in soil:

No available data

12.5. Results of PBT and vPvB assessment:

The ingredients are not PBT/vPvB according to the criteria in Regulation 2023/707.

12.6. Endocrine-disrupting capacities:

None known.

12.7. Other adverse effects:

None known.

POINT 13: Removal

13.1. Methods for waste handling:

Use the local authority's collection scheme.

Chemical waste group: EAK-code:

H	02 01 06 (residue)
H/Z	15 02 03 (absorbents polluted with the product)

POINT 14: Transport information

Not covered by transport regulations (ADR/RID/IMDG/IATA).

14.1. UN-number or ID-number: None.

14.2. UN-shipment designation (UN proper shipping name): None.

14.3. Transport danger class(es): None.

14.4. Packaging group: None.

14.5. Environmental dangers: None.

14.6. Special regulations for the user: None.

14.7. Bulk transport by sea according to IMO instruments: Not relevant.

POINT 15: Information about regulations

15.1. Special determinations/special rules for the material or compound with respect to safety, health and environment:

May not be used by young people under 18 years of age (cf. the working environment authority's report on young people's work).

In a workplace assessment, it must be ensured that employees are not exposed to effects that may involve a risk during pregnancy or breastfeeding (cf. the working environment authority's report on the performance of work).

Feed additives are covered by EU regulation no. 1831/2003 on feed additives.

15.2. Chemical safety evaluation:

No CSR.

POINT 16: Other information

Hazard statements given under point 3:

H226: Flammable liquid and vapour.

H314: Causes severe skin burns and eye damage.

H318: Causes serious eye damage.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

Abbreviations:

AT = Working environment authority

CMR = carcinogenic, mutagenic, or toxic to reproduction

CSR = Chemical Safety Report

DNEL = Derived No-Effect Level

EC₅₀ = Effect Concentration 50 %

FW = Fresh Water

LC₅₀ = Lethal Concentration 50 %

LD₅₀ = Lethal dosage 50 %

PBT = Persistent, Bioaccumulative, Toxic
PNEC = Predicted No-Effect Concentration
vPvB = very Persistent, very Bioaccumulative

Literature:

ECHA = REACH Registration dossier from ECHA's website
IUCLID = International Uniform Chemical Database Information.
The supplier's safety data sheet
TOXNET = Toxicology Data Network via Toxline database

Advice on training / instruction:

The product may only be used by persons who are carefully instructed in the execution of the work and who have knowledge of the contents of this safety data sheet.

Changes since previous version:

Not relevant.

Made by: Altos a/s - Tonsbakken 16-18 – DK-2740 Skovlunde - Tel. +45 38 34 77 98 / PH – Quality control PW
Translated by: Jorenku A/S - Teglvaerksvej 11 - DK-4733 Tappernoeye - Tel. +45 56 21 40 70 / LVB

