



MATERIAL SAFETY DATA SHEET

Issue Date: 15-February-2019

Version 01

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier

Product Name	Lactate Calibration Solution
Product Code	LAC10-13

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

Recommended Use	Use as laboratory reagent
Uses advised against	No information available

1.3 Manufacture/Supplier

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1.4 Emergency Telephone

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification – Mixture

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

Skin irritation (Category 2), H315

Serious eye damage (Category 1), H318

Classification according to EU Directives 67/548/EEC or 1999/45/EC

Xi Irritant R38 Irritating to skin

R41 Risk of serious damage to eyes.

For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Hazard symbol



Signal word	Danger
Hazard statement	H315 Causes skin irritation. H318 Causes serious eye damage.
Precautionary statement	P280 Wear protective gloves/clothing/eye protection. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Response	Avoid contact with skin and eyes. Wash hands after handling.
Storage	Store at 2 – 8 °C. Store away from incompatible materials.
Disposal	Dispose of waste in accordance with local authority requirements.

2.3 Other Hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPbB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No	Weight %
Water	7732-18-5	>97 %
Sodium Chloride	7647-14-5	0-1 %
Sodium phosphate dibasic	7558-80-7	<0.1 %
Sodium dihydrogen phosphate dihydrate	13472-35-0	<0.05%
Potassium Chloride	7447-40-7	0-1 %
Lactic Acid	79-33-4	<0.04%

4. FIRST AID MEASURES

4.1 First Aid Measures

General Advice	Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. Show this safety data sheet to the doctor in attendance.
Eye Contact	Remove contact lens and rinse immediately with plenty of water at least 15 minutes. Seek medical attention.

Skin Contact	Wash off immediately with soap and water for at least 15 minutes. Seek medical attention if irritation persists.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If symptoms persist, seek medical attention.
Ingestion	Clean mouth with water and drink plenty of water. Seek medical attention if symptoms occur.
Production of First-Aiders	Use personal protective equipment. Do not use mouth to mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical devices.

4.2 Most important symptoms and effects, both acute and delayed

May cause eye, skin, digestive, or respiratory system irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1 Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray, alcohol-resistant foam, dry chemical carbon dioxide.

5.2 Specific Hazards Arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapours including oxides of phosphorus, hydrogen chloride gas, potassium oxides, sodium oxides, carbon oxides.

5.3 Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 General fire hazards

No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation.

6.2 Environmental Precautions

Environmental Precautions Avoid discharge into the ground and water courses.

6.3 Method and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Soak up with inert absorbent material. Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use.

Large spill: Stop flow of material. Dike the spilled material. Absorb in vermiculite, dry sand or each and place into containers. Following product recovery flush area with water.

7. HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Handling	To avoid risks to human health and the environment, comply with the instructions for use. Wear personal protective equipment. Avoid breathing dust/fume/gas/mist/vapours/spray. Ensure adequate ventilation, especially in confined areas. Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Storage	Store at 2 – 8 °C in the original container. Keep container tightly closed in a dry and well-ventilated place.
Incompatible Products	No information available.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2 Exposure controls

Appropriate Engineering Controls Handle in accordance with good industrial hygiene and safety practice.

Individual protection measures, such as personal protective equipment

Eye/face Protection Wear chemical splash goggles. If splashes are likely to occur wear face-shield.

Skin and Body Protection Wear protection gloves/clothing. Gloves must be inspected prior to use. Use proper glove removal technique to avoid skin contact. Dispose of contaminated gloves in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory Protection No protective equipment is needed under normal use conditions. In case of inadequate ventilation wear respiratory protection.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties.

a) Physical State	Liquid
b) Appearance	Clear
c) Odour	None
d) Odour Threshold	No information available
e) pH Range	Phosphate buffered saline 7.2 – 7.6 at 25°C

f) Melting point/freezing point	No information available
g) Boiling Point/Range	No information available
h) Flash Point (High in °C)	Lactic Acid: 113 °C – closed cup
i) Evaporation Rate	No information available
j) Flammability (solid, gas)	No information available
k) Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
l) Vapor pressure	Highest known value 2.3kPa (@20°C) (Water)
m) Vapor Density	Highest known value 0.62 (Air=1) (Water)
n) Specific Gravity	Weighted average: 1.01 (Water=1)
o) Water Solubility	Soluble
p) Solubility in other solvents	No information available
q) Partition coefficient	No information available
r) Autoignition Temperature	No information available
s) Decomposition Temperature	No information available
t) Kinematic Viscosity	No information available
u) Dynamic Viscosity	No information available
v) Explosive Properties	No information available
w) Oxidizing Properties	No information available
x) Softening Point	No information available
y) VOC Content (%)	No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

This product is stable and no-reactive under normal conditions of use, storage and transport.

10.2 Chemical Stability

Stable for 1 month when stored at 2-8°C.

10.3 Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

10.4 Possibility of Hazardous Reactions

None under normal processing.

10.5 Conditions to Avoid

No information available.

10.6 Incompatible Materials

Strong oxidizing agents.

10.7 Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhalation May cause irritation.

Eye Contact May cause irritation.

Skin Contact May cause irritation.

Ingestion Hypertonic salt solutions can produce inflammatory reactions in GI tract.

11.2 Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water 7732-18-5	LD50 > 90 ml/kg (Rat)	-	-
Sodium Chloride (NaCl) 7947-14-5	LD50> 3ml/kg (Rat) LD50>4ml/kg (Mouse)	LD50> 10ml/kg (Rabbit)	LD50> 4.2ml/kg (Rat)
Lactic Acid 79-33-4	LD50>3543mg/kg (Rat)	LD50>2000mg/kg (rabbit)	LC507.94mg/l 4h (Rat)

Skin corrosion/irritation

Skin – Rabbit

Result: Irritating to skin. -24h

11.3 Information on Toxicological Effects

Symptoms No information available.

11.4 Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Mutagenic Effects No data available to indicate product components are mutagenic or genotoxic.

Carcinogenicity This product is not considered to a carcinogen by IARC, AOGIH, NTP, or OSHA.

Reproductive Effects Classified productive system/toxin/female. Reproductive system/toxin/male [SUSPECTED], [Phosphate Buffered Saline]

STOT – single exposure No information available.

STOT – repeated exposure No information available.

Aspiration hazard No information available.

11.5 Numerical measures of toxicity – Product Information

Unknown Acute Toxicity No information available.

12. ECOLOGICAL INFORMATION**12.1 Ecotoxicity**

Component	Freshwater Algae	Freshwater Fish	Water Flea
Potassium Chloride	EC50: 2500 mg/l/72h	750-1020 mg/l LC50 96h 1060 mg/l LC50 96 h	EC50: 825 mg/l/48h
Sodium Chloride			EC50: 1000 mg/l/48h
Lactic Acid	EC50: 2800 mg/l/72h	130 mg/l LC50 96h	EC50: 130 mg/l/48h

12.2 Persistence and Degradability

Biodegradability Lactic acid: aerobic – exposure time 20 d

Result: 67% - readily biodegradable

Remarks: The 10-day time window criterion is not fulfilled.

12.3 Bioaccumulation/Accumulation

No information available.

12.4 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.5 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

12.6 Endocrine Disruptor Information

No information available.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal Instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

13.2 Waste Disposal Methods Disposal should be in accordance with applicable regional, national and local laws and regulations.

13.3 Contaminated Packaging Empty containers should be taken to approved waste handling site for disposal.

14. TRANSPORT INFORMATION

DOT	Not regulated
ICAO	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
RID	Not regulated
ADR	Not regulated

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

No information available.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

16. OTHER INFORMATION**16.1 Full test of H-statements referred to under sections 2 and 3**

H315 Causes skin irritation.

H318 Causes serious eye damage.

16.1 Full test of R-statements referred to under sections 2 and 3

Xi Irritant

R38 Irritating to skin

R41 Risk of serious damage to eyes

16.3 Further information

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Disclaimer:

IMPORTANT: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.