

SAFETY DATA SHEET

Revision Date 01-Apr-2024

Revision Number 3

1. Identification

Product Name	Ringer's Solution, lactate-buffered
Cat No. :	J67572
Synonyms	No information available
Recommended Use	Laboratory chemicals.
Uses advised against	Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Water	7732-18-5	98.9
Sodium chloride	7647-14-5	0.585
Sodium bicarbonate	144-55-8	0.235
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	0.224
Potassium chloride	7447-40-7	0.028
Magnesium sulfate	7487-88-9	0.014
Calcium chloride	10043-52-4	0.014

4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Not combustible.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available
Method -	No information available
Autoignition Temperature	No information available
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

None reasonably foreseeable.

Hazardous Combustion Products

Hydrogen chloride. Calcium oxides. Potassium oxides. Magnesium oxides.

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.

NFPA

Health	Flammability	Instability	Physical hazards
0	0	0	-

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required.
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Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment/face protection. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures None under normal use conditions.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection No protective equipment is needed under normal use conditions.

Recommended Filter type: Particle filter.

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

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	No information available
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Specific Gravity	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Hydrogen chloride, Calcium oxides, Potassium oxides, Sodium oxides, Magnesium oxides
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50

Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50

Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Sodium chloride	LD50 = 3 g/kg (Rat)	LD50 > 10000 mg/kg (Rabbit)	LC50 > 42 mg/L (Rat) 1 h
Sodium bicarbonate	LD50 = 4220 mg/kg (Rat)	Not listed	Not listed
Propanoic acid, 2-hydroxy-, monosodium salt	Not listed	LD50 > 2000 mg/kg (Rabbit)	LC50 > 7.94 mg/L (Rat) 4 h
Potassium chloride	LD50 = 2600 mg/kg (Rat)	Not listed	Not listed
Calcium chloride	2301 mg/kg (Rat)	LD50 > 5000 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products

No information available

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

Irritation

No information available

Sensitization

No information available

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium chloride	7647-14-5	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium bicarbonate	144-55-8	Not listed	Not listed	Not listed	Not listed	Not listed
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	Not listed	Not listed	Not listed	Not listed	Not listed
Potassium chloride	7447-40-7	Not listed	Not listed	Not listed	Not listed	Not listed
Magnesium sulfate	7487-88-9	Not listed	Not listed	Not listed	Not listed	Not listed
Calcium chloride	10043-52-4	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects

No information available

Reproductive Effects

No information available.

Developmental Effects

No information available.

Teratogenicity	No information available.
STOT - single exposure	None known
STOT - repeated exposure	None known
Aspiration hazard	No information available
Symptoms / effects, both acute and delayed	No information available
Endocrine Disruptor Information	No information available
Other Adverse Effects	The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium chloride	Not listed	Pimephals prome: LC50: 7650 mg/L/96h	Not listed	EC50: 1000 mg/L/48h
Sodium bicarbonate	EC50: 650 mg/L/120h	LC50: 8250 - 9000 mg/L, 96h static (Lepomis macrochirus)	-	EC50: 2350 mg/L/48h
Potassium chloride	EC50: 2500 mg/L/72h	Lepomis macrochirus: LC50: 1060 mg/L /96h Pimephales promelas: LC50: 750 - 1020 mg/L /96h	Not listed	EC50: 825 mg/L/48h
Magnesium sulfate	EC50: = 2700 mg/L, 72h (Desmodesmus subspicatus)	LC50: 2610 - 3080 mg/L, 96h static (Pimephales promelas)	= 84000 mg/L EC50 Photobacterium phosphoreum 30 min	EC50: 266.4 - 417.3 mg/L, 48h Static (Daphnia magna)
Calcium chloride	Not listed	Lepomis macrochirus: LC50: 10650 mg/L/96h	Not listed	EC50: 52 mg/L/48h

Persistence and Degradability Miscible with water Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT	Not regulated
TDG	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Sodium chloride	7647-14-5	X	ACTIVE	-
Sodium bicarbonate	144-55-8	X	ACTIVE	-

Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	X	ACTIVE	-
Potassium chloride	7447-40-7	X	ACTIVE	-
Magnesium sulfate	7487-88-9	X	ACTIVE	-
Calcium chloride	10043-52-4	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-35400
Sodium chloride	7647-14-5	X	-	231-598-3	X	X	X	X	X	KE-31387
Sodium bicarbonate	144-55-8	X	-	205-633-8	X	X	X	X	X	KE-31360
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	X	-	200-772-0	X	X	X	X	X	KE-20862
Potassium chloride	7447-40-7	X	-	231-211-8	X	X	X	X	X	KE-29086
Magnesium sulfate	7487-88-9	X	-	231-298-2	X	X	X	X	X	KE-22752
Calcium chloride	10043-52-4	X	-	233-140-8	X	X	X	X	X	KE-04496

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

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

U.S. State Right-to-Know

Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Water	7732-18-5	-	-	-
Sodium chloride	7647-14-5	-	-	-
Sodium bicarbonate	144-55-8	-	-	-
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	-	-	-
Potassium chloride	7447-40-7	-	-	-
Magnesium sulfate	7487-88-9	-	-	-
Calcium chloride	10043-52-4	-	Use restricted. See item 75. (see link for restriction details)	-

REACH links

<https://echa.europa.eu/substances-restricted-under-reach>

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Sodium chloride	7647-14-5	Listed	Not applicable	Not applicable	Not applicable
Sodium bicarbonate	144-55-8	Listed	Not applicable	Not applicable	Not applicable
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	Not applicable	Not applicable	Not applicable	Not applicable
Potassium chloride	7447-40-7	Listed	Not applicable	Not applicable	Not applicable
Magnesium sulfate	7487-88-9	Listed	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicable
Sodium chloride	7647-14-5	Not applicable	Not applicable	Not applicable	Not applicable
Sodium bicarbonate	144-55-8	Not applicable	Not applicable	Not applicable	Not applicable
Propanoic acid, 2-hydroxy-, monosodium salt	72-17-3	Not applicable	Not applicable	Not applicable	Not applicable
Potassium chloride	7447-40-7	Not applicable	Not applicable	Not applicable	Not applicable
Magnesium sulfate	7487-88-9	Not applicable	Not applicable	Not applicable	Not applicable
Calcium chloride	10043-52-4	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Health, Safety and Environmental Department
 Email: chem.techinfo@thermofisher.com
 www.thermofisher.com

Revision Date 01-Apr-2024
Print Date 01-Apr-2024
Revision Summary New emergency telephone response service provider.

Disclaimer

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

End of SDS