SAFETY DATA SHEET

This safety data sheet complies with the requirements of:
SS586: 2008 (2014)

Revision date 10-Feb-2022 **Revision Number** 1

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

Product identifier

Product Name Liquichek Hematology-16 Control

Other means of identification

Catalogue Number(s) 760, 761, 762, 763, 760X

Pure substance/mixture Mixture

Recommended use of the chemical and restrictions on use

Recommended use In vitro diagnostic

Uses advised against No information available

Details of the supplier of the safety data sheet

Corporate Headquarters
Bio-Rad Laboratories Inc.
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Hercules, CA 94547
USA

Manufacturer
Bio-Rad Laboratories Inc.
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Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Singapore: 65-31581349

SECTION 2: Hazards identification

GHS Classification

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS): SS586: 2008 (2014)

Label elements

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS): SS586: 2008 (2014)
Contains Gentamicin, sulfate (salt), 5-Chloro-2-methyl-3(2H)-isothiazolone, mixture with 2-methyl-3(2H)-isothiazolone May produce an allergic reaction

Other hazards which do not result in classification

SECTION 3: Composition/information on ingredients

Substance

Not applicable

Mixture

Chemical name	EC No	CAS No	Weight-%
Human Red Blood Cells	-	NO-CAS-19	50 - 100
Water	231-791-2	7732-18-5	20 - 35
Ethyl alcohol	200-578-6	64-17-5	2.5 - 5
Lactose, monohydrate	-	64044-51-5	2.5 - 5
Sodium chloride	231-598-3	7647-14-5	0.3 - 0.999
Albumins, blood serum	232-936-2	9048-46-8	0.3 - 0.999
4-Morpholinepropanesulfonic acid	214-478-5	1132-61-2	0.1 - 0.299
Methanol	200-659-6	67-56-1	0.1 - 0.299
Isopropyl alcohol	200-661-7	67-63-0	0.1 - 0.299
Glucose	200-075-1	50-99-7	0.1 - 0.299
Citric acid	201-069-1	77-92-9	0.01 - 0.099
Sodium hydroxide	215-185-5	1310-73-2	0.01 - 0.099
Trade secret	.?	-	0.01 - 0.099
Trade secret	.?	-	0.01 - 0.099
Magnesium nitrate	233-826-7	10377-60-3	0.01 - 0.099
Trade secret	.?	-	0.01 - 0.099
Inosine	200-390-4	58-63-9	0.001 - 0.01
Adenine	200-796-1	73-24-5	0.001 - 0.01
Animal Source Material	-	NO-CAS-61	0.001 - 0.01
5-Chloro-2-methyl-3(2H)-isothiazolone, mixture with 2-methyl-3(2H)-isothiazolone	-	55965-84-9	< 0.001
Magnesium chloride	232-094-6	7786-30-3	< 0.001
Non-hazardous ingredients	Proprietary	Balance	

SECTION 4: First aid measures

Description of first aid measures

General advice No hazards which require special first aid measures.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash with soap and water.

Ingestion Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

For emergency responders

Self-protection of the first aider No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

Suitable Extinguishing Media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical

Specific hazards arising from the chemical None known.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

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

Methods for cleaning up Clean contaminated surface thoroughly.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Advice on safe handling Ensure adequate ventilation.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical name	Singapore	ACGIH TLV
Ethyl alcohol 64-17-5	PEL: 1000 ppm PEL: 1880 mg/m³	STEL: 1000 ppm
Methanol 67-56-1	PEL: 200 ppm PEL: 262 mg/m³ STEL: 250 ppm STEL: 328 mg/m³	STEL: 250 ppm TWA: 200 ppm S*
Isopropyl alcohol 67-63-0	PEL: 400 ppm PEL: 983 mg/m³ STEL: 500 ppm STEL: 1230 mg/m³	STEL: 400 ppm TWA: 200 ppm
Sodium hydroxide 1310-73-2	STEL: 2 mg/m³	Ceiling: 2 mg/m³

Biological occupational exposure limits

Chemical name	Singapore	ACGIH
Methanol 67-56-1	No data available	15 mg/L - urine (Methanol) - end of shift
Isopropyl alcohol 67-63-0	No data available	40 mg/L - urine (Acetone) - end of shift at end of workweek

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear suitable protective clothing.

Hand protection Wear suitable gloves.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state Liquid
Appearance Opaque
Colour dark red
Odour Odourless.
Odour threshold No information available

Property	Values	Remarks • Method
pH	7.15-7.25	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known

Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Other information No information available

SECTION 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials None known based on information supplied.

Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

Information on likely routes of exposure

Product Information
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Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 56,917.10 mg/kg

ATEmix (inhalation-dust/mist) 333.70 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)		
Ethyl alcohol	= 7060 mg/kg (Rat)		= 124.7 mg/L (Rat) 4 h
Sodium chloride	= 3 g/kg (Rat)	> 10 g/kg (Rabbit)	> 42 g/m³ (Rat) 1 h
Methanol	= 6200 mg/kg (Rat)	= 15840 mg/kg (Rabbit) = 15800 mg/kg (Rabbit)	= 22500 ppm (Rat) 8 h = 64000 ppm (Rat) 4 h
Isopropyl alcohol	= 1870 mg/kg (Rat)	= 4059 mg/kg (Rabbit)	= 72600 mg/m³ (Rat) 4 h
Glucose	= 25800 mg/kg (Rat)		
Citric acid	= 3 g/kg (Rat) = 3000 mg/kg (Rat)	> 2000 mg/kg (Rat)	
Sodium hydroxide	= 325 mg/kg (Rat)	= 1350 mg/kg (Rabbit)	
Trade secret	> 5 g/kg (Rat)		
Magnesium nitrate	= 5440 mg/kg (Rat)		
Trade secret	= 6443 mg/kg (Rat)		
Inosine	> 10 g/kg (Rat)		
Adenine	= 227 mg/kg (Rat)		
5-Chloro-2-methyl-3(2H)-isothiazolone, mixture with 2-methyl-3(2H)-isothiazolone	= 53 mg/kg (Rat)		
Magnesium chloride	= 2800 mg/kg (Rat)		

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

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.

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

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

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

Aspiration hazard Classification not possible.

SECTION 12: Ecological information

Ecotoxicity

Ecotoxicity Harmful to aquatic life.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethyl alcohol	-	LC50: 12.0 - 16.0mL/L (96h, Oncorhynchus mykiss) LC50: 13400 - 15100mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas)	LC50: 9268 - 14221mg/L (48h, Daphnia magna) EC50: =10800mg/L (24h, Daphnia magna) EC50: =2mg/L (48h, Daphnia magna)
Sodium chloride	-	LC50: 4747 - 7824mg/L (96h, Oncorhynchus mykiss) LC50: 5560 - 6080mg/L (96h, Lepomis macrochirus) LC50: 6020 - 7070mg/L (96h, Pimephales promelas) LC50: 6420 - 6700mg/L (96h, Pimephales promelas) LC50: =12946mg/L (96h, Lepomis macrochirus) LC50: =7050mg/L (96h, Pimephales promelas)	EC50: 340.7 - 469.2mg/L (48h, Daphnia magna) EC50: =1000mg/L (48h, Daphnia magna)
Methanol	-	LC50: 13500 - 17600mg/L (96h, Lepomis macrochirus) LC50: 18 - 20mL/L (96h, Oncorhynchus mykiss) LC50: 19500 - 20700mg/L (96h, Oncorhynchus mykiss) LC50: =28200mg/L (96h, Pimephales promelas) LC50: >100mg/L (96h, Pimephales promelas)	-
Isopropyl alcohol	EC50: >1000mg/L (72h, Desmodesmus subspicatus) EC50: >1000mg/L (96h, Desmodesmus subspicatus)	LC50: =11130mg/L (96h, Pimephales promelas) LC50: =9640mg/L (96h, Pimephales promelas) LC50: >1400000µg/L (96h, Lepomis macrochirus)	EC50: =13299mg/L (48h, Daphnia magna)
Citric acid	-	LC50: =1516mg/L (96h, Lepomis macrochirus)	EC50: =120mg/L (72h, Daphnia magna)
Sodium hydroxide	-	LC50: =45.4mg/L (96h, Oncorhynchus mykiss)	-
Magnesium chloride	EC50: >82.7mg/L (72h,	LC50: 1970 - 3880mg/L (96h,	EC50: =140mg/L (48h, Daphnia

	Pseudokirchneriella subcapitata)	Pimephales promelas) LC50: =4210mg/L (96h, Gambusia affinis)	magna) EC50: =1400mg/L (24h, Daphnia magna)

Persistence and degradability

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Ethyl alcohol	-0.32
4-Morpholinepropanesulfonic acid	-2.94
Methanol	-0.77
Isopropyl alcohol	0.05
Citric acid	-1.72

Mobility

Mobility in soil No information available.

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Ethyl alcohol	The substance is not PBT / vPvB PBT assessment does not apply
Sodium chloride	The substance is not PBT / vPvB PBT assessment does not apply
4-Morpholinepropanesulfonic acid	The substance is not PBT / vPvB
Methanol	The substance is not PBT / vPvB PBT assessment does not apply Further information relevant for the PBT assessment is necessary
Isopropyl alcohol	The substance is not PBT / vPvB PBT assessment does not apply
Citric acid	The substance is not PBT / vPvB
Sodium hydroxide	The substance is not PBT / vPvB PBT assessment does not apply
Magnesium nitrate	The substance is not PBT / vPvB PBT assessment does not apply
5-Chloro-2-methyl-3(2H)-isothiazolone, mixture with 2-methyl-3(2H)-isothiazolone	The substance is not PBT / vPvB
Magnesium chloride	The substance is not PBT / vPvB PBT assessment does not apply

Other adverse effects

Other adverse effects No information available

SECTION 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

ADR Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

IATA Not regulated

SECTION 15: Regulatory information

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

Singapore

Chemical name	Hazardous Substances	transport
Sodium hydroxide	Exclusions: 1. Substances containing <=17%, weight in weight, of Sodium hydroxide. 2. Made-up formulated preparations either liquid or solid for biochemical tests	1000kg

Environmental Public Health Act
Dispose of waste product or used containers according to local regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations
Verify that licence requirements are met.

Chemical name	Regulated	Hazard class
Ethyl alcohol	SCDETH1170L2	3
Methanol	SCDMNL1230L2	3
Isopropyl alcohol	SCDIPA1219L2	3

Hazardous Waste (Control of Export, Import and Transit) Act
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Poison
None Listed

Chemical name	Poison	Poison Schedule Number
Trade secret	X	First schedule Third schedule
Trade secret	X	First schedule Second schedule Third schedule

Workplace Safety and Health Act
See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories
Contact supplier for inventory compliance status

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet
Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Label elements

Issuing Date	Bio-Rad Laboratories, Environmental Health and Safety
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Revision Note	Reviewed existing information and made minor updates.

This safety data sheet complies with the requirements of: SS586: 2008 (2014)

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 Safety Data Sheet