

Safety Data Sheet

BIO-52071

BIO-52072

BIO-52073

ISOLATE II RNA Mini Kit



Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

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

1.1 Product identifier

Product form:	Mixture
Product name:	Lysis Buffer RLY
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses: Product for analytical use

Uses advised against: Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number: +44 (0)1865 407 333 – English speaking (24 hours, 7 days)

Contact: CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Lysis Buffer RLY

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Chronic aquatic toxicity (Category 3), H412

2.2 Label elements

According to **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identifier (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

Lysis Buffer RLY

Labelling according Regulation (EC) No 1272/2008

GHS Pictogram



Signal word: **WARNING**

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

Hazard Statements (CLP)	Precautionary Statements (CLP)
H302 - Harmful if swallowed H412 - Harmful to aquatic life with long-lasting effects	P264 - Wash thoroughly after handling P273 - Avoid release to the environment P301, P312 & P330 - IF SWALLOWED: Rinse mouth and Call a POISON CENTER/doctor if you feel unwell.

2.3 Other hazards

Possible hazards from physicochemical properties:

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

Lysis Buffer RLY

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
Guanidinium rhodanide, Guanidinium thiocyanate. CH ₅ N ₃ - CHNS	(CAS No.) 593-84-0 (EC No.) 209-812-1	45 - <60 %	Acute Tox. 4; Skin Corr. 1B; Aquatic Chronic 3; H302, H332, H312, H314, H412

3.3 Remarks

List of H, EUR and P phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	Use DRY POWDER or CARBON DIOXIDE. In case of more serious fires, also alcohol-resistant foam.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Not flammable.
Hazardous decomposition products in case of fire	Formation of hazardous and caustic vapour-air mixtures possible. Carbon oxides, Nitrogen oxides, Sulphur oxides, Hydrogen cyanide gas, Ammonia.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Use only acid-resistant safety equipment. Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

Danger for environment only in the event of a large-scale leakage or formation of hazardous substances.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Evacuate unnecessary personnel. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
For emergency responders	Wear suitable protective equipment as defined in section 8.2 Prevent further leakage or spillage if safe to do so. Avoid release of materials into the environment.

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Small Scale release	Make use of general chemical spill kit or other absorbent material. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and dispose via appropriate chemical waste stream.
Large Scale release	Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar). Block/ prevent liquid entering any open drain. Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	Handling in accordance with the instructions supplied with the product. Provide adequate ventilation. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container. Store in a cool well ventilated place out of direct sunlight. Keep container closed when not in use.
Incompatible materials	Store separately from: Acids, Strong oxidizing agents, Cyanides.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Guanidinium rhodanide		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not required. For nuisance exposures or if risk assessment requires, use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. Splash contact – Material suggested Nitrile Rubber, PVC, Neoprene or natural Latex. Full contact – Material suggested Nitrile, PVC, Neoprene or natural Latex. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Recommended to avoid contamination with these hazards.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Lysis Buffer RLY	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Odourless
Odour threshold:	No data available
pH:	6.5 - 7.5
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	1.13 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

Note: Can form very reactive substances with oxidizing agents.

Possible: Contact with acids liberates toxic gas. No further data available.

10.4 Conditions to avoid

Not necessary.

10.5 Incompatible materials

Acids, Strong oxidizing agents, Cyanides.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions - Formation of hazardous and caustic vapour-air mixtures possible.

Carbon oxides, Nitrogen oxides, Sulphur oxides, Hydrogen cyanide gas, Ammonia.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Guanidinium rhodanide	
LD50 oral rat	593 mg/kg
LC50 inhalation rat 4hr	5.319 mg/L
LC50 dermal rabbit	>2000 mg/m ³
LD50 intraperitoneal mouse	300 mg/kg
TSCA Inventory:	Listed
California Proposition 65 List:	Not listed
Australia NICNAS:	Not listed
Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	Not listed
Japan PDSCL:	Not listed
Japan ISHL:	Not listed
South Korea TCCA:	Not listed
Korea Exist.Chem.Inventory:	Not listed

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

Quantitative data on the toxicity of this product is not available.

Lysis Buffer RLY	
Acute toxicity	Oral Category 4
Additional information	Based on the concentration of Guanidinium rhodanide in the solution.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Cause after oral intake, impairments of health when ingested in small quantities.

SECTION 12: Ecological information

12.1 Toxicity

Guanidinium rhodanide	
Ecology - Water	Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
EC50 - Daphnia (water flea) 48hr	42.4 mg/L

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Guanidinium rhodanide	
Biodegradation	No data available

12.3 Bioaccumulative potential

Guanidinium rhodanide	
Bioconcentration factor (BCF REACH)	No data available
Log Pow	No data available

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

12.4 Mobility in soil

Guanidinium rhodanide	
Ecology - Soil	No data available

12.5 Results of PBT and vPvB assessment

Guanidinium rhodanide
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6 Other adverse effects

Guanidinium rhodanide
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product Offer surplus and non-recyclable solutions to a licensed disposal company. Do not collect in acidic waste. May form toxic gases. Contaminated packaging Dispose of as unused product.
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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1 UN number

UN-No. (ADR)	Not regulated
UN-No. (IMDG)	Not regulated
UN-No. (IATA)	Not regulated
UN-No. (ADN)	Not regulated
UN-No. (RID)	Not regulated

14.2 UN proper shipping name

Proper Shipping Name	Not regulated
Proper Shipping Name (IMDG)	Not regulated
Proper Shipping Name (IATA)	Not regulated
Proper Shipping Name (ADN)	Not regulated
Proper Shipping Name (RID)	Not regulated

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	Not regulated
Transport hazard class(es) (IMDG)	Not regulated
Transport hazard class(es) (IATA)	Not regulated
Transport hazard class(es) (ADN)	Not regulated
Transport hazard class(es) (RID)	Not regulated

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

14.4 Packing group

Packing group	Not regulated
Packing group (IMDG)	Not regulated
Packing group (IATA)	Not regulated
Packing group (ADN)	Not regulated
Packing group (RID)	Not regulated

14.5 Environmental hazards

Dangerous for the environment	No
Marine pollutant	No
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

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

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list $\geq 0,1\%$ / SCL

Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

H302	Acute toxicity, Oral (Category 4).
H412	Chronic aquatic toxicity (Category 3)
P264	Wash thoroughly after handling
P273	Avoid release to the environment
P301, P312 & P330	IF SWALLOWED: Rinse mouth and Call a POISON CENTER/doctor if you feel unwell.

16.2 Training Advice

Regular safety training

Lysis Buffer RLY

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.

Consider employee restrictions for young people (e.g. 94/33/EC)

Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

Bioline Reagents Ltd, part of Meridian Bioscience, makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers.

Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

Lysis Buffer RLY

Safety Data Sheet

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Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

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

1.1 Product identifier

Product form:	Mixture
Product name:	Wash Buffer RW1
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses: Product for analytical use

Uses advised against: Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number: +44 (0)1865 407 333 – English speaking (24 hours, 7 days)

Contact: CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Wash Buffer RW1

Classification according to Regulation (EC) No 1272/2008

Flammable liquid and vapour, (Category 3), H226

Acute toxicity, Oral (Category 4), H302

2.2 Label elements

According **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identifier (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL or 125 g** (EU 1272/2008 Annex I - 1.5.2).

Wash Buffer RW1

Labelling according Regulation (EC) No 1272/2008

GHS Pictogram

Signal word:



WARNING

Wash Buffer RW1

Safety Data Sheet

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Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

Hazard Statements (CLP)	Precautionary Statements (CLP)
H226 – Flammable liquid and vapour. H302 – Harmful if swallowed.	P210 – Keep away from heat/sparks/open flames/hot surfaces. — No smoking. P264 – Wash with water thoroughly after handling. P301 & P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P330 – Rinse mouth.

2.3 Other hazards**Possible hazards from physicochemical properties:**

Flammable properties. Vapour forms explosive mixtures with air.

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients**3.1/3.2 Substance or Mixture****Wash Buffer RW1**

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
Guanidine hydrochloride, Aminoformamidinium hydrochloride, CH ₅ N ₃ · HCl	(CAS No.) 50-01-1 (EC No.) 200-002-3 REACH Reg. No.: 01-2119977063-35-0005	24 - <36%	Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2; H302, H332, H315, H319
Ethanol, Ethyl alcohol, C ₂ H ₆ O	(CAS No.) 64-17-5 (EC No.) 200-578-6	20 - <35%	Flam. Liq. 2; Eye Irrit. 2; H225, H319 Concentration limits: ≥ 50 %: Eye Irrit. 2A, H319;

3.3 Remarks

List of H, EUR and P phrases: see section 16

Wash Buffer RW1

Safety Data Sheet

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Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
May cause serious irritation on contact with eyes and toxic effects if swallowed.

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Flammable. May form explosive vapour-air mixtures.
Hazardous decomposition products in case of fire	Carbon oxides, Nitrogen oxides, Hydrogen chloride gas.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Formation of hazardous and caustic vapour-air mixtures possible. Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	<p>Avoid sources of ignition.</p> <p>Evacuate unnecessary personnel.</p> <p>Avoid breathing vapours, mist or gas.</p> <p>Avoid contact with skin, eyes and clothing.</p> <p>Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions.</p> <p>Restrictions on activity must be observed.</p>
For emergency responders	<p>Remove all sources of ignition.</p> <p>Beware of vapours accumulating to form explosive concentrations.</p> <p>Vapours can accumulate in low areas.</p> <p>Wear suitable protective equipment as defined in section 8.2</p> <p>Prevent further leakage or spillage if safe to do so.</p> <p>Avoid release of materials into the environment.</p>

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

6.3 Methods and material for containment and cleaning up

Small Scale release	<p>Remove sources of ignition.</p> <p>Make use of general chemical spill kit or other absorbent material.</p> <p>Clean any contaminated equipment and floors with plenty of water.</p> <p>Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.</p>
Large Scale release	<p>Remove sources of ignition.</p> <p>Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar).</p> <p>Block/ prevent liquid entering any open drain.</p> <p>Only use intrinsically safe equipment during clean up.</p> <p>Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.</p>

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	<p>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.</p> <p>Take precautionary measures against static discharge.</p> <p>Handling in accordance with the instructions supplied with the product.</p> <p>Provide adequate ventilation.</p> <p>Avoid breathing vapours, mist or gas.</p> <p>Avoid contact with skin, eyes and clothing.</p>
Hygiene measures	<p>Handle in accordance with good industrial hygiene and safety practice.</p> <p>Take off contaminated clothing and wash before reuse.</p> <p>Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</p>

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	<p>Keep only in the original container.</p> <p>Store in a cool well ventilated place out of direct sunlight and away from ignition sources.</p> <p>Keep container closed when not in use.</p> <p>Hygroscopic.</p>
Incompatible materials	Store separately from: Alkali metals, Oxidizing agents, Peroxides.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Guanidine hydrochloride		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.
Ethanol		
United Kingdom	WEL TWA (mg/m ³)	1,920 mg/m ³
United Kingdom	WEL TWA (ppm)	1,000 ppm
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not normally required. For nuisance exposures or if risk assessment requires use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. Splash contact – Material suggested Nitrile Rubber. Full contact – Material suggested Butyl Rubber. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Wash Buffer RW1	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Alcoholic
Odour threshold:	No data available
pH:	6.5-7.5
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	28 °C
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	1.06 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

SECTION 10: Stability and reactivity**10.1 Reactivity**

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

Can form very reactive substances with oxidizing agents.

10.4 Conditions to avoid

Extremes of temperature and direct sunlight.

Heat, flames and sparks.

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

10.5 Incompatible materials

Alkali metals, Oxidizing agents, Peroxides.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – Carbon oxides, Nitrogen oxides, Hydrogen chloride gas.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Guanidine hydrochloride	
LD50 Oral - Rat	475 mg/kg
LD50 Oral - Mouse	571 mg/kg
LC50 Inhalation - Rat - female - 4hr (OECD Test Guideline 403)	3.181 mg/l
TSCA Inventory:	Listed
California Proposition 65 List:	Not listed
Australia NICNAS:	Not listed
Canada CEPA 1999:DSL:	Yes
Japan CSCL/PRTR:	Not listed
Japan PDSCL:	Not listed
Japan ISHL:	Not listed
South Korea TCCA:	Not listed
Korea Exist.Chem.Inventory:	KE-18111
RTECS:	MF4300000
Ethanol	
LD50 Oral - Rat	10,470 mg/kg
LD50 Dermal - Rabbit	15,800 mg/kg
LC50 Inhalation - Rat - 4hr	30.000 mg/l
RTECS:	KQ6300000

Quantitative data on the toxicity of this product is not available.

Wash Buffer RW1	
Acute toxicity	Oral Category 4
Additional information	Based on the concentration of Guanidine hydrochloride in mixture.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1 Toxicity

Guanidine hydrochloride	
Ecology - Water	No additional information available
LC50 - Leuciscus idus (Golden orfe)	1,759 mg/l
Ethanol	
Ecology - Water	No additional information available
LC50 - Pimephales promelas (fathead minnow) 96hr	14,200 mg/l
LC50 - Ceriodaphnia dubia (water flea) 48hr	5,012 mg/l
EC50 - Chlorella vulgaris (Fresh water algae) 72 h (OECD Test Guideline 201)	275 mg/l

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Guanidine hydrochloride	
Biodegradation	No data available.
Ethanol	
Biodegradation	No data available.

12.3 Bioaccumulative potential

Guanidine hydrochloride	
Bioconcentration factor (BCF REACH)	No additional information available.
Log Pow	No data available.
Ethanol	
Bioconcentration factor (BCF REACH)	No additional information available.
Log Pow	≤ 4

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

12.4 Mobility in soil

Guanidine hydrochloride	
Ecology - Soil	No data available.
Ethanol	
Ecology - Soil	No data available.

12.5 Results of PBT and vPvB assessment

Guanidine hydrochloride	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
Ethanol	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6 Other adverse effects

Guanidine hydrochloride	
No additional information available.	
Ethanol	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product
	Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging
	Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / AND

14.1 UN number

UN-No. (ADR)	1993
UN-No. (IMDG)	1993
UN-No. (IATA)	1993
UN-No. (ADN)	1993
UN-No. (RID)	1993

14.2 UN proper shipping name

Proper Shipping Name	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (IMDG)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (IATA)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (ADN)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (RID)	Flammable liquid, n.o.s. (ethanol mixture)

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	3
Transport hazard class(es) (IMDG)	3
Transport hazard class(es) (IATA)	3
Transport hazard class(es) (ADN)	3
Transport hazard class(es) (RID)	3

14.4 Packing group

Packing group	III
Packing group (IMDG)	III
Packing group (IATA)	III
Packing group (ADN)	III
Packing group (RID)	III

14.5 Environmental hazards

Dangerous for the environment	No.
Marine pollutant	No.
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Regulated
Classification Code	F1
Limited Quantity	5 L
Tunnel restriction code	E
Excepted quantity	E1
Special instructions	640E

Transport by sea	Regulated
EmS	F-E, S-E
Storage category	A

Air transport	Regulated
PAX	355
Max weight PAX	60 L
CAO	366
Max weight CAO	220 L

Inland waterway transport	Not regulated
Rail transport	Not regulated

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

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list $\geq 0,1 \%$ / SCL

Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P264	Wash with water thoroughly after handling.
P301 & P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.

16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.

Consider employee restrictions for young people (e.g. 94/33/EC)

Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

Wash Buffer RW1

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 10/04/2018 Current revision: 30/07/2020 Version 1.1 Supersedes: 10/04/2018 Version 1.0

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

Bioline Reagents Ltd, part of Meridian Bioscience, makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers.

Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

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

1.1 Product identifier

Product form:	Mixture
Product name:	Wash Buffer RW2 Conc.
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:	Product for analytical use
Uses advised against:	Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number:	+44 (0)1865 407 333 – English speaking (24 hours, 7 days)
Contact:	CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Wash Buffer RW2 Conc.

Classification according to Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

2.2 Label elements

Wash Buffer RW2 Conc.

Labelling according Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

Hazard Statements (CLP)	Precautionary Statements (CLP)
None	None

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

2.3 Other hazards

Possible hazards from physicochemical properties:

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

Wash Buffer RW2 Conc.

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
N/A	N/A	N/A	N/A

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH annex II

3.3 Remarks

List of H, EUR and P phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
Not expected to present a significant hazard under anticipated conditions of normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Not flammable.
Hazardous decomposition products in case of fire	No data available.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Evacuate unnecessary personnel. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
For emergency responders	Wear suitable protective equipment as defined in section 8.2 Prevent further leakage or spillage if safe to do so. Avoid release of materials into the environment.

6.2 Environmental precautions

Not necessary.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

6.3 Methods and material for containment and cleaning up

Small Scale release	Make use of general chemical spill kit or other absorbent material. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with copious amounts of water into drains.
Large Scale release	Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar). Block/ prevent liquid entering any open drain. Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.
SECTION 8: Exposure controls/personal protection.
SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	Handling in accordance with the instructions supplied with the product. Provide adequate ventilation. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container. Store in a cool well ventilated place out of direct sunlight. Keep container closed when not in use.
Incompatible materials	No data available.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Wash Buffer RW2 Conc.		
United Kingdom	WEL TWA (mg/m³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not required. For nuisance exposures or if risk assessment requires, use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Wash Buffer RW2 Conc.	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Odourless
Odour threshold:	No data available
pH:	7-8
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	~1.0 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid

Extremely high or low temperatures.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

No data available.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Quantitative data on the toxicity of this product is not available.

Wash Buffer RW2 Conc.	
Acute toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Not expected to present a significant hazard under anticipated conditions of normal use.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 12: Ecological information

12.1 Toxicity

Wash Buffer RW2 Conc.	
Ecology - Water	Not Classified

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Wash Buffer RW2 Conc.	
Biodegradation	No data available

12.3 Bioaccumulative potential

Wash Buffer RW2 Conc.	
Bioconcentration factor (BCF REACH)	No additional information available
Log Pow	No data available

12.4 Mobility in soil

Wash Buffer RW2 Conc.	
Ecology - Soil	No data available.

12.5 Results of PBT and vPvB assessment

Wash Buffer RW2 Conc.	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6 Other adverse effects

Wash Buffer RW2 Conc.	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging Dispose of as unused product.

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1 UN number

UN-No. (ADR)	Not regulated
UN-No. (IMDG)	Not regulated
UN-No. (IATA)	Not regulated
UN-No. (ADN)	Not regulated
UN-No. (RID)	Not regulated

14.2 UN proper shipping name

Proper Shipping Name	Not regulated
Proper Shipping Name (IMDG)	Not regulated
Proper Shipping Name (IATA)	Not regulated
Proper Shipping Name (ADN)	Not regulated
Proper Shipping Name (RID)	Not regulated

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	Not regulated
Transport hazard class(es) (IMDG)	Not regulated
Transport hazard class(es) (IATA)	Not regulated
Transport hazard class(es) (ADN)	Not regulated
Transport hazard class(es) (RID)	Not regulated

14.4 Packing group

Packing group	Not regulated
Packing group (IMDG)	Not regulated
Packing group (IATA)	Not regulated
Packing group (ADN)	Not regulated
Packing group (RID)	Not regulated

14.5 Environmental hazards

Dangerous for the environment	No
Marine pollutant	No
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

SECTION 15: Regulatory information

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

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list $\geq 0,1 \%$ / SCL
Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

None	N/A
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16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.
Consider employee restrictions for young people (e.g. 94/33/EC)
Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

Wash Buffer RW2 Conc.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 08/04/2021 Current revision: 08/04/2021 Version 1.0 Supersedes: None

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

Bioline Reagents Ltd, part of Meridian Bioscience, makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers.

Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

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

1.1 Product identifier

Product form:	Mixture
Product name:	Membrane Desalting Buffer MEM
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses: Product for analytical use

Uses advised against: Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number: +44 (0)1865 407 333 – English speaking (24 hours, 7 days)

Contact: CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Membrane Desalting Buffer MEM

Classification according to Regulation (EC) No 1272/2008

Flammable liquid and vapour, (Category 3), H226

2.2 Label elements

According **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identifier (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL or 125 g** (EU 1272/2008 Annex I - 1.5.2).

Membrane Desalting Buffer MEM

Labelling according Regulation (EC) No 1272/2008

GHS Pictogram

Signal word:



WARNING

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

Hazard Statements (CLP)	Precautionary Statements (CLP)
H226 – Flammable liquid and vapour.	P210 – Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

2.3 Other hazards

Possible hazards from physicochemical properties:

Flammable properties. Vapour forms explosive mixtures with air.

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

Membrane Desalting Buffer MEM

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
Guanidinium rhodanide, Guanidinium thiocyanate. CH ₅ N ₃ - CHNS	(CAS No.) 593-84-0 (EC No.) 209-812-1	5 - <10 %	Acute Tox. 4; Skin Corr. 1B; Aquatic Chronic 3; H302, H332, H312, H314, H412
Ethanol, Ethyl alcohol, C ₂ H ₆ O	(CAS No.) 64-17-5 (EC No.) 200-578-6	5 - <20%	Flam. Liq. 2; Eye Irrit. 2; H225, H319 Concentration limits: >= 50 %: Eye Irrit. 2A, H319;

3.3 Remarks

List of H, EUR and P phrases: see section 16

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
May cause serious irritation on contact with eyes and toxic effects if swallowed.

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	Use DRY POWDER or CARBON DIOXIDE. In case of more serious fires, also alcohol-resistant foam.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Flammable. May form explosive vapour-air mixtures.
Hazardous decomposition products in case of fire	Formation of hazardous and caustic vapour-air mixtures possible. Carbon oxides, Nitrogen oxides, Sulphur oxides, Hydrogen cyanide gas, Ammonia.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Formation of hazardous and caustic vapour-air mixtures possible. Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	<p>Avoid sources of ignition.</p> <p>Evacuate unnecessary personnel.</p> <p>Avoid breathing vapours, mist or gas.</p> <p>Avoid contact with skin, eyes and clothing.</p> <p>Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions.</p> <p>Restrictions on activity must be observed.</p>
For emergency responders	<p>Remove all sources of ignition.</p> <p>Beware of vapours accumulating to form explosive concentrations.</p> <p>Vapours can accumulate in low areas.</p> <p>Wear suitable protective equipment as defined in section 8.2</p> <p>Prevent further leakage or spillage if safe to do so.</p> <p>Avoid release of materials into the environment.</p>

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Small Scale release	<p>Remove sources of ignition.</p> <p>Make use of general chemical spill kit or other absorbent material.</p> <p>Clean any contaminated equipment and floors with plenty of water.</p> <p>Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.</p>
Large Scale release	<p>Remove sources of ignition.</p> <p>Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar).</p> <p>Block/ prevent liquid entering any open drain.</p> <p>Only use intrinsically safe equipment during clean up.</p> <p>Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.</p>

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	<p>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.</p> <p>Take precautionary measures against static discharge.</p> <p>Handling in accordance with the instructions supplied with the product.</p> <p>Provide adequate ventilation.</p> <p>Avoid breathing vapours, mist or gas.</p> <p>Avoid contact with skin, eyes and clothing.</p>
Hygiene measures	<p>Handle in accordance with good industrial hygiene and safety practice.</p> <p>Take off contaminated clothing and wash before reuse.</p> <p>Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</p>

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	<p>Keep only in the original container.</p> <p>Store in a cool well ventilated place out of direct sunlight and away from ignition sources.</p> <p>Keep container closed when not in use.</p> <p>Hygroscopic.</p>
Incompatible materials	<p>Store separately from: Acids, Cyanides, Alkali metals, Oxidizing agents, Peroxides.</p>

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Guanidinium rhodanide		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.
Ethanol		
United Kingdom	WEL TWA (mg/m ³)	1,920 mg/m ³
United Kingdom	WEL TWA (ppm)	1,000 ppm
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not normally required. For nuisance exposures or if risk assessment requires use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. Splash contact – Material suggested Nitrile Rubber. Full contact – Material suggested Butyl Rubber. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Membrane Desalting Buffer MEM	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Alcoholic
Odour threshold:	No data available
pH:	6.7-7.2
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	55 °C
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	1.01 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

Can form very reactive substances with oxidizing agents.

10.4 Conditions to avoid

Extremes of temperature and direct sunlight.

Heat, flames and sparks.

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

10.5 Incompatible materials

Acids, Cyanides, Alkali metals, Oxidizing agents, Peroxides.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – Carbon oxides, Nitrogen oxides, Sulphur oxides, Hydrogen cyanide gas, Ammonia.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Guanidinium rhodanide	
LD50 oral rat	593 mg/kg
LC50 inhalation rat 4hr	5.319 mg/L
LC50 dermal rabbit	>2000 mg/m ³
LD50 intraperitoneal mouse	300 mg/kg
TSCA Inventory:	Listed
California Proposition 65 List:	Not listed
Australia NICNAS:	Not listed
Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	Not listed
Japan PDSCL:	Not listed
Japan ISHL:	Not listed
South Korea TCCA:	Not listed
Korea Exist.Chem.Inventory:	Not listed
Ethanol	
LD50 Oral - Rat	10,470 mg/kg
LD50 Dermal - Rabbit	15,800 mg/kg
LC50 Inhalation - Rat - 4hr	30.000 mg/l
RTECS:	KQ6300000

Quantitative data on the toxicity of this product is not available.

Membrane Desalting Buffer MEM	
Acute toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Not expected to present a significant hazard under anticipated conditions of normal use.

SECTION 12: Ecological information

12.1 Toxicity

Guanidinium rhodanide	
Ecology - Water	Harmful to aquatic life with long lasting effects. Avoid contact of substance/mixture to environment.
EC50 - Daphnia (water flea) 48hr	42.4 mg/L
Ethanol	
Ecology - Water	No data available.
LC50 – Pimephales promelas (fathead minnow) 96hr	14,200 mg/l
LC50 – Ceriodaphnia dubia (water flea) 48hr	5,012 mg/l
EC50 – Chlorella vulgaris (Fresh water algae) 72 h (OECD Test Guideline 201)	275 mg/l

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Guanidinium rhodanide	
Biodegradation	No data available.
Ethanol	
Biodegradation	No data available.

12.3 Bioaccumulative potential

Guanidinium rhodanide	
Bioconcentration factor (BCF REACH)	No data available.
Log Pow	No data available.
Ethanol	
Bioconcentration factor (BCF REACH)	No data available.
Log Pow	≤ 4

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

12.4 Mobility in soil

Guanidinium rhodanide	
Ecology - Soil	No data available.
Ethanol	
Ecology - Soil	No data available.

12.5 Results of PBT and vPvB assessment

Guanidinium rhodanide	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	
Ethanol	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6 Other adverse effects

Guanidinium rhodanide	
No additional information available.	
Ethanol	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product
	Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging
	Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / AND

14.1 UN number

UN-No. (ADR)	1993
UN-No. (IMDG)	1993
UN-No. (IATA)	1993
UN-No. (ADN)	1993
UN-No. (RID)	1993

14.2 UN proper shipping name

Proper Shipping Name	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (IMDG)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (IATA)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (ADN)	Flammable liquid, n.o.s. (ethanol mixture)
Proper Shipping Name (RID)	Flammable liquid, n.o.s. (ethanol mixture)

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	3
Transport hazard class(es) (IMDG)	3
Transport hazard class(es) (IATA)	3
Transport hazard class(es) (ADN)	3
Transport hazard class(es) (RID)	3

14.4 Packing group

Packing group	III
Packing group (IMDG)	III
Packing group (IATA)	III
Packing group (ADN)	III
Packing group (RID)	III

14.5 Environmental hazards

Dangerous for the environment	No.
Marine pollutant	No.
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Regulated
Classification Code	F1
Limited Quantity	5 L
Tunnel restriction code	E
Excepted quantity	E1
Special instructions	640E

Transport by sea	Regulated
EmS	F-E, S-E
Storage category	A

Air transport	Regulated
PAX	355
Max weight PAX	60 L
CAO	366
Max weight CAO	220 L

Inland waterway transport	Not regulated
Rail transport	Not regulated

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

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list $\geq 0,1 \%$ / SCL

Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

H226	Flammable liquid and vapour.
P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.

Consider employee restrictions for young people (e.g. 94/33/EC)

Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

Membrane Desalting Buffer MEM

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 9/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

Bioline Reagents Ltd, part of Meridian Bioscience, makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers.

Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

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

1.1 Product identifier

Product form:	Mixture
Product name:	Reaction Buffer for Dnase I RDN
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:	Product for analytical use
Uses advised against:	Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number:	+44 (0)1865 407 333 – English speaking (24 hours, 7 days)
Contact:	CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Reaction Buffer for Dnase I RDN

Classification according to Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

2.2 Label elements

Reaction Buffer for Dnase I RDN

Labelling according Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

Hazard Statements (CLP)	Precautionary Statements (CLP)
None	None

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

2.3 Other hazards

Possible hazards from physicochemical properties:

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

Reaction Buffer for Dnase I RDN

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
N/A	N/A	N/A	N/A

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH annex II

3.3 Remarks

List of H, EUR and P phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
Not expected to present a significant hazard under anticipated conditions of normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Not flammable.
Hazardous decomposition products in case of fire	No data available.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Evacuate unnecessary personnel. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
For emergency responders	Wear suitable protective equipment as defined in section 8.2 Prevent further leakage or spillage if safe to do so. Avoid release of materials into the environment.

6.2 Environmental precautions

Not necessary.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

6.3 Methods and material for containment and cleaning up

Small Scale release	Make use of general chemical spill kit or other absorbent material. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with copious amounts of water into drains.
Large Scale release	Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar). Block/ prevent liquid entering any open drain. Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	Handling in accordance with the instructions supplied with the product. Provide adequate ventilation. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container. Store in a cool well ventilated place out of direct sunlight. Keep container closed when not in use.
Incompatible materials	No data available.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Reaction Buffer for Dnase I RDN		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not required. For nuisance exposures or if risk assessment requires, use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Reaction Buffer for Dnase I RDN	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Odourless
Odour threshold:	No data available
pH:	6-8
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	~1.0 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid

Extremely high or low temperatures.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition products

No data available.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Quantitative data on the toxicity of this product is not available.

Reaction Buffer for Dnase I RDN	
Acute toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Not expected to present a significant hazard under anticipated conditions of normal use.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 12: Ecological information

12.1 Toxicity

Reaction Buffer for Dnase I RDN	
Ecology - Water	Not Classified

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Reaction Buffer for Dnase I RDN	
Biodegradation	No data available

12.3 Bioaccumulative potential

Reaction Buffer for Dnase I RDN	
Bioconcentration factor (BCF REACH)	No additional information available
Log Pow	No data available

12.4 Mobility in soil

Reaction Buffer for Dnase I RDN	
Ecology - Soil	No data available.

12.5 Results of PBT and vPvB assessment

Reaction Buffer for Dnase I RDN	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6 Other adverse effects

Reaction Buffer for Dnase I RDN	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging Dispose of as unused product.

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1 UN number

UN-No. (ADR)	Not regulated
UN-No. (IMDG)	Not regulated
UN-No. (IATA)	Not regulated
UN-No. (ADN)	Not regulated
UN-No. (RID)	Not regulated

14.2 UN proper shipping name

Proper Shipping Name	Not regulated
Proper Shipping Name (IMDG)	Not regulated
Proper Shipping Name (IATA)	Not regulated
Proper Shipping Name (ADN)	Not regulated
Proper Shipping Name (RID)	Not regulated

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	Not regulated
Transport hazard class(es) (IMDG)	Not regulated
Transport hazard class(es) (IATA)	Not regulated
Transport hazard class(es) (ADN)	Not regulated
Transport hazard class(es) (RID)	Not regulated

14.4 Packing group

Packing group	Not regulated
Packing group (IMDG)	Not regulated
Packing group (IATA)	Not regulated
Packing group (ADN)	Not regulated
Packing group (RID)	Not regulated

14.5 Environmental hazards

Dangerous for the environment	No
Marine pollutant	No
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 15: Regulatory information

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

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list $\geq 0,1\%$ / SCL
Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

None	N/A
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16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.
Consider employee restrictions for young people (e.g. 94/33/EC)
Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

Reaction Buffer for Dnase I RDN

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

Bioline Reagents Ltd, part of Meridian Bioscience, makes NO REPRESENTATIONS or WARRANTIES, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers.

Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product form:	Mixture
Product name:	DNase I, RNase-free (Lyophilized)
CAS No.:	9003-98-9
EC No.:	232-667-0
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:	Product for analytical use
Uses advised against:	Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number:	+44 (0)1865 407 333 – English speaking (24 hours, 7 days)
Contact:	CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

DNase I, RNase-free (Lyophilized)

Classification according to Regulation (EC) No 1272/2008

Respiratory Sensitiser, (Category 1), H334

2.2 Label elements

According to **CLP (GHS)** inner packages must be only labelled with symbol(s) and product identifier (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

DNase I, RNase-free (Lyophilized)

Labelling according Regulation (EC) No 1272/2008

GHS Pictogram:
Signal word:



DANGER

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

Hazard Statements (CLP)	Precautionary Statements (CLP)
H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled.	P261 – Avoid breathing dust/fume/gas/mist/vapours/spray. P342 & P311 – If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

2.3 Other hazards

Possible hazards from physicochemical properties:

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

DNase I, RNase-free (Lyophilized)

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
Deoxyribonuclease I from Bovine Pancreas. Enzyme Comm. No. 3.1.21.1, origin: cloned	(CAS No.) 9003-98-9 (EC No.) 232-667-0	90 - <100%	Resp. Sens. 1; H334

3.3 Remarks

List of H, EUR and P phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	No data available.
Hazardous decomposition products in case of fire	Carbon oxides, Nitrogen oxides.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Evacuate unnecessary personnel. Avoid generation of dust. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
For emergency responders	Wear suitable protective equipment as defined in section 8.2 Prevent further leakage or spillage if safe to do so. Avoid release of materials into the environment.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so.

Do not let product enter drains.

Discharge into the environment must be avoided.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

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6.3 Methods and material for containment and cleaning up

Small Scale release	<p>Make use of general chemical spill kit or other absorbent material if in solution.</p> <p>Carefully sweep up residual solids, avoiding generation of dust.</p> <p>Clean any contaminated equipment and floors with plenty of water.</p> <p>Collect small amounts of spilled material and dispose via appropriate chemical waste stream.</p>
Large Scale release	<p>Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar).</p> <p>Carefully sweep up solids avoiding generation of dust, or make use of HEPA filtered, intrinsically safe vacuum.</p> <p>Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.</p>

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	<p>Handling in accordance with the instructions supplied with the product.</p> <p>Avoid formation of dust and aerosols.</p> <p>Provide appropriate exhaust ventilation at places where dust is formed.</p> <p>Avoid inhalation of dust and aerosols.</p> <p>Avoid contact with skin, eyes and clothing.</p>
Hygiene measures	<p>Handle in accordance with good industrial hygiene and safety practice.</p> <p>Take off contaminated clothing and wash before reuse.</p> <p>Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.</p>

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	<p>Keep only in the original container.</p> <p>Store in a cool well ventilated place out of direct sunlight.</p> <p>Keep container closed when not in use.</p> <p>Hygroscopic.</p>
Incompatible materials	<p>Store separately from: Strong oxidizing agents.</p>

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNase I, RNase-free (Lyophilized)		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	For dust exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 14385) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.
Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

DNase I, RNase-free (Lyophilized)	
Physical state:	Solid, lyophilized
Colour:	White
Molecular Mass:	No data available
Odour:	Odourless
Odour threshold:	No data available
pH:	No data available
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	No data available
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	No data available
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	Not explosive
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

None known.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
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10.4 Conditions to avoid

Extremely high or low temperatures.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – Carbon oxides, Nitrogen oxides.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Deoxyribonuclease I	
TSCA Inventory:	Listed (CAS 9003-98-9)
Japan CSCL/PRTR:	Not listed
Japan ISHL:	Not listed
Korea Exist.Chem.Inventory:	KE-09612
RTECS:	RF0750000

Quantitative data on the toxicity of this product is not available.

DNase I, RNase-free (Lyophilized)	
Acute toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Respiratory Category 1
Additional information	Based on the concentration of Deoxyribonuclease I in mixture.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

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Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 12: Ecological information

12.1 Toxicity

Deoxyribonuclease I	
Ecology - Water	Not Classified
EC50 - Daphnia magna (Water flea) 48 h (OECD Test Guideline 202)	32.9 mg/l
EC50 - Pseudokirchneriella subcapitata (green algae) 72 h (OECD Test Guideline 201)	>200 mg/l

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Deoxyribonuclease I	
Biodegradation	Aerobic - Exposure time 28 d Result: 99 % - Readily biodegradable.

12.3 Bioaccumulative potential

Deoxyribonuclease I	
Bioconcentration factor (BCF REACH)	No additional information available.
Log Pow	No data available.

12.4 Mobility in soil

Deoxyribonuclease I	
Ecology - Soil	No data available.

12.5 Results of PBT and vPvB assessment

Deoxyribonuclease I	
No data available.	
No data available.	

12.6 Other adverse effects

Deoxyribonuclease I	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging Dispose of as unused product.

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

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Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / AND

14.1 UN number

UN-No. (ADR)	Not regulated
UN-No. (IMDG)	Not regulated
UN-No. (IATA)	Not regulated
UN-No. (ADN)	Not regulated
UN-No. (RID)	Not regulated

14.2 UN proper shipping name

Proper Shipping Name	Not regulated
Proper Shipping Name (IMDG)	Not regulated
Proper Shipping Name (IATA)	Not regulated
Proper Shipping Name (ADN)	Not regulated
Proper Shipping Name (RID)	Not regulated

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	Not regulated
Transport hazard class(es) (IMDG)	Not regulated
Transport hazard class(es) (IATA)	Not regulated
Transport hazard class(es) (ADN)	Not regulated
Transport hazard class(es) (RID)	Not regulated

14.4 Packing group

Packing group	Not regulated
Packing group (IMDG)	Not regulated
Packing group (IATA)	Not regulated
Packing group (ADN)	Not regulated
Packing group (RID)	Not regulated

14.5 Environmental hazards

Dangerous for the environment	No.
Marine pollutant	No
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

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

Contains no REACH substances with Annex XVII restrictions

Contains no substance on the REACH candidate list $\geq 0,1 \%$ / SCL

Contains no REACH Annex XIV substances

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

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15.2 Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P342 & P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.

Consider employee restrictions for young people (e.g. 94/33/EC)

Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

DNase I, RNase-free (Lyophilized)

Safety Data Sheet

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16.5 Further Information

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Accordingly, **Bioline Reagents Ltd**, Meridian Bioscience or other subsidiaries, will not be responsible for damages resulting from use of or reliance upon this information. See terms and conditions at the end of our price lists for additional information.

16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
 Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

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

1.1 Product identifier

Product form:	Mixture
Product name:	Rnase-Free Water
CAS No.:	N/A
EC No.:	N/A
REACH No.:	A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Relevant identified uses:	Product for analytical use
Uses advised against:	Not described

1.3 Details of the supplier of the safety data sheet

Bioline Reagents Ltd, part of Meridian Bioscience	
Humber Road	Phone: +44 (0)20 8830 5300
London	Fax: +44 (0)20 8452 2822
NW2 6EW	E-mail: mbi.tech@meridianlifescience.com
United Kingdom	

1.4 Emergency telephone number

Emergency number:	+44 (0)1865 407 333 – English speaking (24 hours, 7 days)
Contact:	CareChem 24

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Rnase-Free Water

Classification according to Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

2.2 Label elements

Rnase-Free Water

Labelling according Regulation (EC) No 1272/2008

Not a hazardous substance or mixture

Hazard Statements (CLP)	Precautionary Statements (CLP)
None	None

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

2.3 Other hazards

Possible hazards from physicochemical properties:

Some hazards associated with individual components of this mixture are not relevant because the substances are present in concentrations below the GHS cut-off levels, change of physical state or because the mixture/ solution is buffered to pH 4-9 (see GHS Directive 1272/2008/EC Annex I, chapter 3.2.3.1.2.).

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.

SECTION 3: Composition/information on ingredients

3.1/3.2 Substance or Mixture

Rnase-Free Water

Name, synonyms and formulae	Product Identifier	Composition	Classification according to Regulation (EC) No. 1272/2008 (CLP)
N/A	N/A	N/A	N/A

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of REACH annex II

3.3 Remarks

List of H, EUR and P phrases: see section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

First-aid measures general	If necessary consult a physician. Show this safety data sheet to the medical professional in attendance.
First-aid measures after inhalation	Remove to fresh air, keep the patient warm and provide resuscitation if necessary. If symptoms develop, obtain medical attention.
First-aid measures after skin contact	Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.
First-aid measures after eye contact	After contact with the eyes rinse thoroughly with plenty of water for at least 15 minutes with the eyelid wide open.
First-aid measures after ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth and drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling section 2.2 and/or in section 11
Not expected to present a significant hazard under anticipated conditions of normal use.

4.3 Indication of any immediate medical attention and special treatment needed

No additional recommendations.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area.

Suitable extinguishing media	All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.
Unsuitable extinguishing media	None known.

5.2 Special hazards arising from the substance or mixture

Fire Hazard	Not flammable.
Hazardous decomposition products in case of fire	None known.

5.3 Advice for firefighters

Firefighting instructions	Product package burns like paper or plastic. Spray any vapours released with water. Retain fire water where possible.
Protection during firefighting	Protective breathing apparatus, independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of large-scale formation of toxic substances.

5.4 Additional Information

None.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Evacuate unnecessary personnel. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.
For emergency responders	Wear suitable protective equipment as defined in section 8.2 Prevent further leakage or spillage if safe to do so. Avoid release of materials into the environment.

6.2 Environmental precautions

None.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

6.3 Methods and material for containment and cleaning up

Small Scale release	Make use of general chemical spill kit or other absorbent material. Clean any contaminated equipment and floors with plenty of water. Collect small amounts of leaked liquid and flush with copious amounts of water into drains.
Large Scale release	Bind any escaping liquid with inert absorbent material (sand, vermiculite or similar). Block/ prevent liquid entering any open drain. Collect contaminated materials and dispose in accordance to local regulations for the disposal of hazardous chemicals.

6.4 Reference to other sections

SECTION 5.4: Additional fire precautions.

SECTION 8: Exposure controls/personal protection.

SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions for safe handling	Handling in accordance with the instructions supplied with the product. Provide adequate ventilation. Avoid breathing vapours, mist or gas. Avoid contact with skin, eyes and clothing.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions	Keep only in the original container. Store in a cool well ventilated place out of direct sunlight. Keep container closed when not in use.
Incompatible materials	Store separately from: None known.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Rnase-Free Water		
United Kingdom	WEL TWA (mg/m ³)	N/A
United Kingdom	WEL TWA (ppm)	N/A
United Kingdom	WEL STEL (mg/m ³)	N/A
United Kingdom	WEL STEL (ppm)	N/A
United Kingdom	Remark (WEL)	Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls:	Good ventilation or extraction system in the room, floor resistant to chemicals and washing facilities available.
General controls	Avoid all unnecessary exposure. Handle in accordance with good industrial hygiene and safety practice.
Respiratory protection	Respiratory protection not required. For nuisance exposures or if risk assessment requires, use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN166 (EU) with integrated side shields or wrap-around protection.
Hand protection	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Wear protective gloves that satisfy the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it. Exact breakthrough times to be found through the manufacturer of the protective gloves and must be observed. Gloves should be removed and replaced if there are any signs of degradation or breakthrough. Splash contact – Material suggested Nitrile Rubber. Full contact – Material suggested Nitrile Rubber. If used in solution, or mixed with other substances, and under conditions which differ from EN374, contact the supplier of the CE approved gloves.
Skin and body protection	Long sleeved protective clothing.
Thermal protection	Not required for normal conditions of use.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

Other information	Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating.
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These recommendations are advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Rnase-Free Water	
Physical state:	Liquid
Colour:	Colourless
Molecular Mass:	No data available
Odour:	Odourless
Odour threshold:	No data available
pH:	6-8
Relative evaporation rate (butylacetate=1):	No data available
Melting point:	No data available
Freezing point:	No data available
Boiling point:	No data available
Flash point:	No data available
Auto-ignition temperature:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	Not applicable
Vapour pressure:	No data available
Relative vapour density at 20 °C:	No data available
Relative density:	~1.0 g/cm ³ (Water = 1)
Solubility:	No data available
Log Pow:	No data available
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
Oxidising properties:	No data available
Explosive properties:	No data available
Explosive limits:	No data available

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group: None

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended conditions.

10.3 Possibility of hazardous reactions

None known.

10.4 Conditions to avoid

Extremely high or low temperatures.

10.5 Incompatible materials

None known.

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions – None known.

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Quantitative data on the toxicity of this product is not available.

Rnase-Free Water	
Acute toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Respiratory or skin sensitisation	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Carcinogenicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Aspiration hazard	Not classified.
Additional information	Based on available data, the classification criteria are not met.
Potential adverse human health effects and symptoms:	Not expected to present a significant hazard under anticipated conditions of normal use.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 12: Ecological information

12.1 Toxicity

Rnase-Free Water	
Ecology - Water	Not Classified

Environmental hazards must not be labelled with P phrases until 125 mL or 125 g (EU 1272/2008 Annex I - 1.5.2).

12.2 Persistence and degradability

Rnase-Free Water	
Biodegradation	No data available

12.3 Bioaccumulative potential

Rnase-Free Water	
Bioconcentration factor (BCF REACH)	No additional information available
Log Pow	Not applicable

12.4 Mobility in soil

Rnase-Free Water	
Ecology - Soil	Miscible with water.

12.5 Results of PBT and vPvB assessment

Rnase-Free Water	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6 Other adverse effects

Rnase-Free Water	
No additional information available.	

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste disposal recommendations:	Product Offer surplus and non-recyclable solutions to a licensed disposal company.
	Contaminated packaging Dispose of as unused product.

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1 UN number

UN-No. (ADR)	Not regulated
UN-No. (IMDG)	Not regulated
UN-No. (IATA)	Not regulated
UN-No. (ADN)	Not regulated
UN-No. (RID)	Not regulated

14.2 UN proper shipping name

Proper Shipping Name	Not regulated
Proper Shipping Name (IMDG)	Not regulated
Proper Shipping Name (IATA)	Not regulated
Proper Shipping Name (ADN)	Not regulated
Proper Shipping Name (RID)	Not regulated

14.3 Transport hazard class(es)

Transport hazard class(es) (ADR)	Not regulated
Transport hazard class(es) (IMDG)	Not regulated
Transport hazard class(es) (IATA)	Not regulated
Transport hazard class(es) (ADN)	Not regulated
Transport hazard class(es) (RID)	Not regulated

14.4 Packing group

Packing group	Not regulated
Packing group (IMDG)	Not regulated
Packing group (IATA)	Not regulated
Packing group (ADN)	Not regulated
Packing group (RID)	Not regulated

14.5 Environmental hazards

Dangerous for the environment	No
Marine pollutant	No
Other information	No supplementary information available

14.6 Special precautions for user

Overland transport	Not regulated
Transport by sea	Not regulated
Air transport	Not regulated
Inland waterway transport	Not regulated
Rail transport	Not regulated

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

SECTION 15: Regulatory information

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

Contains no REACH substances with Annex XVII restrictions
Contains no substance on the REACH candidate list $\geq 0,1 \%$ / SCL
Contains no REACH Annex XIV substances

15.2 Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other Information

16.1 Full text of H, EUH and P statements

None	N/A
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16.2 Training Advice

Regular safety training

16.3 Abbreviations and acronyms

ADR	Accord européen relatif au transport international des marchandises Dangereuses par Route
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service number
CLP	Classification, Labeling and Packaging
DNEL	Derived No effect Limit
EC	European Community
EC50	Effective Concentration 50%
EN	European Norm
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods Code
IMO	International Maritime Organisation
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MAC	Maximal Allowed Concentration
O/W	Oil-in-Water (chemistry)
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative and toxic
PMcc	Pensky-Martens Closed Cup test
PNEC	Predicted no effect concentration
REACH	Registration, Evaluation and Authorisation of CHemicals
RID	Règlement concernant le transport international ferroviaire de marchandises
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
UNXXXX	Number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods
vPvB	Very persistent and very bioaccumulative

16.4 Recommended Restriction on Use

Only for professional user working under controlled conditions.
Consider employee restrictions for young people (e.g. 94/33/EC)
Consider employee restrictions for pregnant women and nursing women (e.g. 92/85/EEC)

Rnase-Free Water

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of original issue: 09/04/2021 Current revision: 09/04/2021 Version 1.0 Supersedes: None

16.5 Further Information

Bioline Reagents Ltd, part of Meridian Bioscience, provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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16.6 Sources of Key Data

UK – Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Guidance Workplace Exposure Limits EH40.

EU – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006. Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress. Legislation Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013 German order governing protection from hazardous substances (Ordinance on Hazardous Substances /

Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC

TRGS 900, German engineering rules governing limits in air at work, updated February 2015 SUVA .CH, Limits in air at work 2009, revised on 01.2009. KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)., updated October 2011

Republic of China – 职业病防治法

USA – Occupational Safety and Health Administration (OSHA) Occupational Exposure Limits - Table Z-1 Limits for Air Contaminants. The American Conference of Governmental Industrial Hygienists (ACGIH).

Australia - Work Health and Safety (WHS) Act and the WHS Regulations.

Canada – Hazardous Products Regulations SOR/2015-17