RT Buffer

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

Date of Issue: 15/07/2024 Version: 1.0

SECTION 1: PRODUCT IDENTIFIER & IDENTIFIER FOR THE CHEMICAL

Product Identifier

Product Form: Mixture

Product Name: RT Buffer

Product Registration #: 145389

Intended Use of the Product

CE-IVD

Name, Address, and Telephone of the Responsible Party

Company

Asuragen, Inc.
2150 Woodward St. Suite 100
Austin, TX 78744
USA
+1 512-681-5200
USA, Toll-free T: +1 877-777-1874
E-mail: support@asuragen.com
Web address: www.asuragen.com

Emergency Telephone Number

Emergency Number : Tel: +1 -512-681-5200 US, Toll-free Tel: 1-877-777-1874

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-AU)

Not classified.

Label Elements

GHS-AU Labelling

No labelling applicable

Non-GHS Hazards

No additional information available

Other Hazards

Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions.

Unknown Acute Toxicity

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Not applicable

Mixture

Name	Product Identifier	%*	GHS-AU Classification
Water	(CAS-No.) 7732-18-5	96 – 98	Not classified.
1,3-Propanediol, 2-amino-2-(hydroxymethyl)-	(CAS-No.) 77-86-1	< 10	Skin Corr./Irrit. Not classified Eye Dam./Irrit. Not classified
Potassium chloride	(CAS-No.) 7447-40-7	< 10	Not classified.
Magnesium chloride (MgCl2), hexahydrate	(CAS-No.) 7791-18-6	< 0.1	Not classified.
2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate)	(CAS-No.) 1927-31-7	< 0.1	Not classified.
: 2’-Deoxycytidine 5’-triphosphate disodium salt	(CAS-No.) 102783-51-7	< 0.1	Not classified.
Guanosine 5'-(tetrahydrogen triphosphate), 2'-deoxy-, trisodium salt	(CAS-No.) 93919-41-6	< 0.1	Not classified.
Thymidine 5’-triphosphate sodium salt	(CAS-No.) 18423-43-3	< 0.1	Not classified.

*Percentages are listed in weight-by-weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume-by-volume percentage (v/v%)

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens.
Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.
Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists.
Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.
Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.
Personal Protection in First Aid and Measures: Use appropriate personal protective equipment (PPE).

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.
Inhalation: Prolonged exposure may cause irritation.
Skin Contact: Prolonged exposure may cause skin irritation. Contact with hot liquid may cause thermal burns.
Eye Contact: May cause slight irritation to eyes. Contact with hot liquid may cause thermal burns.
Ingestion: Ingestion may cause adverse effects.
Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Solutions do not burn. Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media: None known.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.
Explosion Hazard: Product is not explosive.
Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.
Firefighting Instructions: Use water spray or fog for cooling exposed containers.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products: None known.
Other Information: No additional information available.
HAZCHEM Emergency Action Code (Australia): None

Reference to Other Sections

Refer to Section 9 for Flammability Properties

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapour, mist, spray). If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel.
Measures in case of dust release: Dust suppressant.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area. Upon arrival at the scene, a first responder is expected to recognise the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Soak up with inert absorbent material (for example sand, sawdust, a universal binder, silica gel). Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Other information: No additional information available.

Reference to Other Sections

See Heading 8. Exposure controls and personal protection. See Section 13, Disposal Considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Material may be biologically contaminated with pathogenic organisms during use.

Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing vapours, mist, spray.

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

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidisers.

Specific End Use(s)

CE-IVD

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), and Australia OELs.

No Occupational Exposure Limits (OELs) have been established for this product or its chemical components.

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles or glasses.

Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical goggles or safety glasses.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Thermal Hazard Protection: If material is hot, wear thermally resistant protective gloves.

Environmental Exposure Controls: Avoid unnecessary release into the environment.

Consumer Exposure Controls: Not applicable

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	:	Liquid
Appearance/Colour	:	No data available
Odour	:	No data available
pH	:	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	:	No data available
Lower Flammable Limit	:	No data available
Upper Flammable Limit	:	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
Partition Coefficient n-Octanol/Water	:	No data available
Viscosity, Kinematic	:	No data available
Particle Size	:	No data available
Particle Size Distribution	:	No data available
Particle Shape	:	No data available
Particle Size Distribution	:	No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions

Hazardous polymerisation will not occur.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials

Strong acids, strong bases, strong oxidisers.

10.6. Hazardous Decomposition Products

In trace amounts: Oxides of carbon, nitrogen, and phosphorous . Chlorine compounds.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Likely routes of exposure: Dermal, Eye Contact, Inhalation, Oral.

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified.

Serious Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitisation: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation. Contact with hot liquid may cause thermal burns.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes. Contact with hot liquid may cause thermal burns.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Other information: No additional information available.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (77-86-1)	
LD50 Oral Rat	5900 mg/kg
LD50 Dermal Rat	> 5000 mg/kg

Potassium chloride (7447-40-7)	
LD50 Oral Rat	3020 mg/kg (Species: Wistar)

Magnesium chloride (MgCl2), hexahydrate (7791-18-6)	
LD50 Oral Rat	8100 mg/kg (Source: NLM_CIP)

Water (7732-18-5)	
LD50 Oral Rat	> 90 ml/kg (Source: FOOD_JOURN)

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Hazardous To The Aquatic Environment, Short–Term (Acute): Not classified.

Hazardous To The Aquatic Environment, Long–Term (Chronic): Not classified.

Potassium chloride (7447-40-7)	
LC50 Fish 1	1060 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
EC50 - Crustacea [1]	825 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	750 (750 – 1020) mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 - Crustacea [2]	660 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Persistence and Degradability

RT Buffer	
Persistence and Degradability	Expected to be biodegradable.

Bioaccumulative Potential

RT Buffer	
Bioaccumulative Potential	Not expected to bioaccumulate.

1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (77-86-1)	
BCF Fish 1	3 (Estimated using a regression-derived equation)

Mobility in Soil

RT Buffer	
Ecology - Soil	Adsorbs into the soil. Leaches if exposed to water.

Other Adverse Effects

Other Adverse Effects: None known.

Effect On Global Warming: Not classified.

Other Information: Avoid release to the environment.

Ozone: Not classified.

SECTION 13: DISPOSAL CONSIDERATIONS

Regional Legislation (Waste): Disposal must be done according to official regulations.

Waste Treatment Methods: Incineration is the preferred method for disposal of waste product. . Can be landfilled, when in compliance with local regulations.

Sewage Disposal Recommendations: Do not dispose of waste into sewer. Do not empty into drains.

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Biologically contaminated materials should be incinerated.

Ecology - Waste Materials: Avoid unnecessary release into the environment.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

According to the UNRTDG and ADG Code

Not regulated for transport

HAZCHEM Emergency Action Code (Australia) : None.

SECTION 15: REGULATORY INFORMATION

National Regulations

1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (77-86-1)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

Potassium chloride (7447-40-7)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
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Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

Magnesium chloride (MgCl2), hexahydrate (7791-18-6)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

2'-Deoxyadenosine 5'-(tetrahydrogen triphosphate) (1927-31-7)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)

Guanosine 5'-(tetrahydrogen triphosphate), 2'-deoxy-, trisodium salt (93919-41-6)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

International Agreements

No additional Information available

Australia National Regulations

RT Buffer	
Relevant Poisons Schedule number	Unscheduled substance

1,3-Propanediol, 2-amino-2-(hydroxymethyl)- (77-86-1)	
Relevant Poisons Schedule number	Schedule 4

Potassium chloride (7447-40-7)	
Relevant Poisons Schedule number	Schedule 4
High Volume Industrial Chemicals List	Present

Water (7732-18-5)	
High Volume Industrial Chemicals List	Present

SECTION 16: ADDITIONAL INFORMATION

Date of Preparation or Latest Revision : 15/07/2024

Data Sources : Information and data obtained and used in the authoring of this safety data sheet could come from database subscriptions, official government regulatory body websites, product/ingredient manufacturer or supplier specific information, and/or resources that include substance specific data and classifications according to GHS or their subsequent adoption of GHS.

Other Information : In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

GHS Full Text Phrases:

Eye Dam./Irrit. Not classified	Serious eye damage/eye irritation Not classified
Skin Corr./Irrit. Not classified	Skin corrosion/irritation Not classified

Indication of Changes

No additional information available

Abbreviations and Acronyms

ACGIH – American Conference of Governmental Industrial Hygienists
ADG – Australian Dangerous Goods (Code)
AIHA – American Industrial Hygiene Association
ATE - Acute Toxicity Estimate
AU - Australia
BCF - Bioconcentration Factor
BEI - Biological Exposure Indices (BEI)
BOD – Biochemical Oxygen Demand
CAS No. - Chemical Abstracts Service Number
COD – Chemical Oxygen Demand
EC50 - Median Effective Concentration
ErC50 - EC50 in Terms of Reduction Growth Rate
EU - European Union
GHS – Globally Harmonized System of Classification and Labeling of Chemicals
IARC - International Agency for Research on Cancer
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level
LOEC - Lowest-Observed-Effect Concentration
Log Koc - Soil Organic Carbon-water Partitioning Coefficient
Log Kow - Octanol/water Partition Coefficient
Log Pow - Ratio of the equilibrium concentration (C) of a dissolved substance in a two-phase system consisting of two largely immiscible solvents, in this case octanol and water
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NTP – National Toxicology Program
OEL - Occupational Exposure Limits
pH – Potential Hydrogen
SADT - Self Accelerating Decomposition Temperature
SDS - Safety Data Sheet
STEL - Short Term Exposure Limit
ThOD – Theoretical Oxygen Demand
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TPQ - Threshold Planning Quantity
TWA - Time Weighted Average
UN – United Nations
UN RTDG – United Nations Recommendations on the Transport of Dangerous Goods
VOC – Volatile Organic Compounds
WEEL - Workplace Environmental Exposure Levels

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)
AU_WES: Australia WES
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)
EC_RAR: European Commission Renewal Assessment Report
EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports
ECHA_API: European Chemicals Agency API
ECHA_RAC: ECHA Committee for Risk Assessment
EFSA: European Food Safety Authority
EPA: U.S. Environmental Protection Agency
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)
EPA_HPV: High Production Volume Chemicals (U.S. Environmental Protection Agency)
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)
EU_CLH: European Union Harmonised Classification and Labelling Proposal
EU_RAR: European Union Risk Assessment Report
FOOD_JOURN: Food Research Journal (1956)
IARC: The International Agency for Research on Cancer
IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
IUCLID: International Uniform Chemical Information Database
JAPAN_GHS: Japan GHS Basis for Classification Data
JP_J-CHECK: Japan J-Check
KR_NIER: South Korea National Institute of Environmental Research Evaluations
NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
NLM_CIP: National Library of Medicine ChemID plus database
NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
NLM_PUBMED: National Library of Medicine PubMed database
NTP: National Toxicology Program
NZ_CCID: New Zealand Chemical Classification and Information Database
OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
WHO: World Health Organization

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.