

SAFETY DATA SHEET

Buffer TN

Section 1. Identification

Product Identifier: Buffer TN
Product code: 90086, 90088, 90087
Product Type: Liquid

Supplier's details: Norgen Biotek Corporation
3430 Schmon Parkway
Thorold, ON
Canada L2V 4Y6
Tel: (905) 227-8848
Fax: (905) 227-1061
Toll Free: 1-866-667-4362
E-mail: techsupport@norgenbiotek.com

Emergency telephone number (with hours of operation): CHEMTREC
U.S. & Canada: 1-800-424-9300

Section 2. Hazard Identification

Classification of the Substance or mixture: ACUTE ORAL TOXICITY -Category 4
ACUTE INHALATION TOXICITY - Category 4
SKIN CORROSIVE/IRRITATION - Category 3
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SPECIFIC TARGET ORAGN TOXICITY (SINGLE EXPOSURE)
TARGET ORGANS - CENRTAL NERVOUS SYSTEM (CNS)
COMBUSTABLE DUST - YES

GHS label elements



Hazard Pictograms:
Signal Word: Warning

Hazard Statements: H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H402 Harmful to aquatic life.

Precautionary Statements

Prevention: P261 Avoid breathing dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response: P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant

Storage: Not applicable.

Disposal: P501 Dispose of contents and container to an approved waste disposal plant.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of identification:

Ingredient name	% (w/w)	CAS number
Guanidine Hydrochloride	10-50	50-10-1
Potassium acetate	2-15	127-08-2

Ranges id listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye Contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact:** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

First - Aid response

- Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
- Inhalation:** Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration
- Skin contact:** Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur
- Ingestion:** Do NOT induce vomiting. Get medical attention.

Over-exposure signs/symptoms

- Eye contact:** Irritation, redness, watering
- Inhalation:** No data available
- Skin contact:** Irritation, redness
- Ingestion:** Drowsiness, dizziness, stomach pain, gastrointestinal issues

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically

Specific treatments: No specific treatments

Protection of

first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media: Water spray
Alcohol-resistant foam
Carbon dioxide
Dry Chemicals

Unsuitable

extinguishing media: None known

Specific hazards

arising from the chemical:

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Exposure to combustion products may be a hazard to health.

Hazardous thermal decomposition

products: Carbon oxides
Nitrogen oxides (NO_x)
Chlorine compounds
Metal oxide

Special protective actions for

fire-fighters: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Special protective equipment for

fire-fighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency

personnel: Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions:

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water

Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Work under hood. Do not inhale substance/mixture.

Advice on general occupational

hygiene: Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Conditions for safe storage, including

incompatibilities: Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Store in doors. Incompatible Materials. Strong oxidizing agents.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Guanidine Hydrochloride	600 ug/m ³

Appropriate engineering

controls: Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations. Apply measures to prevent dust explosions. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment)

Environmental

exposure controls: No information available

Individual protection measures

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.
Eye/face protection: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Hand protection: Wear appropriate protective gloves to prevent contact with skin.
Body protection: Wear clothes that appropriately cover exposed areas of the body to avoid contact with the body

Other skin protection: Not applicable

Respiratory protection: No protective measures under normal conditions while working in a well ventilated area.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance:

Physical State: Liquid
Color: Not available
Odor: Not available.
Odor threshold: Not available.
pH: 4-6
Melting point/ freezing point: Not applicable.
Boiling point, initial boiling point, and boiling range: Not available.
Flash point: Not applicable.
Evaporation rate: Not available.
Flammability: Not available.
Lower and upper explosion limit/ flammability limit: Not available.
Vapor pressure: Not available.
Relative vapor density: Not available.
Relative density: Not available.
Solubility: Miscible in water.
Partition coefficient: n-octanol/water Not applicable.
Auto-ignition temperature: Not available.

Decomposition

temperature: Not available.

Viscosity: Not available.

Flow time

(ISO 2431): Not available.

Particle characteristics

Median particle size: Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of

hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible

materials: Reactive or incompatible with the following materials; oxidizing materials, acids and alkalis.

Hazardous

decomposition

products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicology information

Information on toxicology effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Guanidine Hydrochloride	LD50 Oral	Rat	475 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LC50 Inhalation	Rat	3.2 mg/L	4h
Potassium Acetate	LD50 Oral	Rat	3250 mg/kg	-
	LD50 Dermal	Rabbit	>20000 mg/kg	-

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

**Information on the
likely routes of**

exposure: Oral, dermal, eyes, inhalation

Potential acute health effects

Eye contact: Irritation, redness, watering
Inhalation: Not data available
Skin contact: Irritation, redness, rash
Ingestion: Gastrointestinal issues, vomiting, pain,

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: Not data available
Inhalation: Not data available
Skin contact: Not data available
Ingestion: Not data available

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

Short term exposure

Potential immediate effects: Not data available
Potential delayed effects: Damage to the central nervous system

Long term exposure

Potential immediate effects: Not data available
Potential delayed effects: Damage to the central nervous system

Potential chronic health effects

General: Damage to the central nervous system

Carcinogenicity: Not data available
Mutagenicity: Not data available
Reproductive toxicity: Not data available

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Guanidine Hydrochloride	70.2 mg/l	Daphnia	48h
	33.5 mg/l	Algae	72h
	7125 mg/l	Bacteria	18h
	181 mg/l	Fish (chronic)	35days
	2.9 mg/l	Daphnia (chronic)	21days

Persistence and degradability

There is no data available.

Mobility in soil

Soil/water partition

coefficient (K_{oc}): Not available.

Other adverse effects: No known significant effect or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TGD Classification	DOT Classification (US)	IMGD	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.

UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG: Not applicable.

Special precautions for user: **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments: Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI: None of the components are listed.

CEPA Toxic substances: None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II, & III Chemicals

Not listed

Montreal Protocol

Not listed

Stockholm Convention on Persistent Organic Pollutants

Not listed

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed

Inventory list

Canada: All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision: 07/19/2024

Date of previous

issue: 12/15/2021

Version: 00

Prepared by: Norgen Biotek Corp.

Key to abbreviations: ATE = Acute Toxicity Estimate
BCF = Bio-concentration Factor
GHS = Globally Harmonized System of Classification and Labeling of Chemicals
HPR = Hazardous Products Regulations
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogP_{OW} = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution)
SGG = Segregation Group
UN = United Nations

Procedure used to derive the classification

All classifications were determined using calculation methods

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Elution Buffer K

Section 1. Identification

Product Identifier:	Elution Buffer K
Product code:	90003, 90004
Product Type:	Liquid
Supplier's details:	Norgen Biotek Corporation 3430 Schmon Parkway Thorold, ON Canada L2V 4Y6 Tel: (905) 227-8848 Fax: (905) 227-1061 Toll Free: 1-866-667-4362 E-mail: techsupport@norgenbiotek.com
Emergency telephone number (with hours of operation):	CHEMTREC U.S. & Canada: 1-800-424-9300

Section 2. Hazard Identification

Classification of the Substance or mixture:	Not a dangerous substance or mixture
<u>GHS label elements</u>	
Hazard Pictograms:	Not a dangerous substance or mixture
Signal Word:	Not a dangerous substance or mixture
Hazard Statements:	Not a dangerous substance or mixture
<u>Precautionary statements:</u>	
Prevention:	Not applicable
Response:	Not applicable
Storage:	Not applicable.
Disposal:	Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of

identification: THAM Tris (hydroxymethyl) amino methane, Trisamine, Trimethylol amino methane, Trisaminol, TRIS, 2-Amino-2-(hydroxymethyl)-1,3-propanediol, 1,1,1-Tris(hydroxy methyl) Methyl amine, Tromethamol

Ingredient name	% (w/w)	CAS number
Trimethylol amino methane	<0.2	77-86-1
Hydrochloric Acid	<0.02	7647-01-0

Ranges id listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye Contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact:** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Over-exposure signs/symptoms

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Indication of immediate medical attention and special treatment needed, if necessary

Data not available.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media: Use water spray, dry chemical powder, carbon dioxide or alcohol-resistant foam.

Unsuitable

extinguishing media: Carbon oxides, nitrogen oxides, hydrogen chloride gas

Specific hazards

arising from the

chemical:

Not available

Hazardous thermal

decomposition

products:

Not available

Special protective
actions for

fire-fighters:

Not available

Special protective

equipment for

fire-fighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency

personnel:

Not available

For emergency

responders:

Not available

Environmental

precautions:

Not available

Methods and materials for containment and cleaning up

Clean up spills immediately, observing precautions in the safety data sheet and label. Dispose into chemical waste container

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Use with adequate ventilation as necessary or desired

Advice on general occupational hygiene:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse

Conditions for safe storage, including incompatibilities:

Not available

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Hydrochloric Acid	5ppm/7.5mg/m ³

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls:

Do not let product enter drains.

Individual protection measures

Hygiene measures: If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is 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

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

Other skin protection:

Not applicable

Respiratory

protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance:

Physical State: Liquid
Color: Clear
Odor: Not available.
Odor threshold: Not available.
pH: 9-11
**Melting point/
freezing point:** Not applicable.
**Boiling point, initial
boiling point, and
boiling range:** Not available.
Flash point: Not applicable.
Evaporation rate: Not available.
Flammability: Not available.
**Lower and upper
explosion limit/
flammability limit:** Not available.
Vapor pressure: Not available.
**Relative vapor
density:** Not available.
Relative density: Not available.
Solubility: Miscible in water.
Partition coefficient: Not applicable.
**n-octanol/water
Auto-ignition
temperature:** Not available.
**Decomposition
temperature:** Not available.
Viscosity: Not available.
**Flow time
(ISO 2431):** Not available.
Particle characteristics
Median particle size: Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials; oxidizing materials, acids and alkalies.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicology information

Information on toxicology effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
--	-	-	-	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
-	-	-	-	-	-

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC..

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure:

There is no data available.

Potential acute health effects

Eye contact: There is no data available.

Inhalation: There is no data available.

Skin contact: There is no data available.

Ingestion: There is no data available.

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: There is no data available.

Inhalation: There is no data available.

Skin contact: There is no data available.

Ingestion: There is no data available.

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

Short term exposure

Potential immediate

effects: There is no data available.

Potential delayed

effects: There is no data available.

Long term exposure

Potential immediate

effects: There is no data available.

Potential delayed

effects: There is no data available.

Potential chronic health effects

General: There is no data available.

Carcinogenicity: There is no data available.

Mutagenicity: There is no data available.

Reproductive

toxicity: There is no data available.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
-	-	-	-	-	-

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
-	-	-	-

Persistence and degradability

There is no data available.

Product/ingredient name	LogPow	BCF	Potential
-	-	-	-

Mobility in soil

Soil/water partition coefficient (K_{oc}):

Not available.

Other adverse effects:

No known significant effect or critical hazards.

Section 13. Disposal considerations

Disposal methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TGD Classification	DOT Classification (US)	IMGD	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG: Not applicable.

Special precautions for user:

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments:

Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI: The following components are listed: Trimethylol amino methane, Hydrochloric Acid

CEPA Toxic substances: None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II, & III Chemicals

Not listed

Montreal Protocol

Not listed

Stockholm Convention on Persistent Organic Pollutants

Not listed

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed

UNECE Aarhus Protocol on POPs and Heavy Metals

Inventory list

Canada: All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date

of revision: 07/11/2024

Date of previous

issue: 12/15/2021

Version: 00

Prepared by: Norgen Biotek Corp.

Key to abbreviations: ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HPR = Hazardous Products Regulations

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogP_{ow} = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution)

SGG = Segregation Group

UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not a dangerous substance or mixture	-

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Lysis Buffer N

Section 1. Identification

Product Identifier:	Lysis Buffer N
Product code:	90114, 90115, 90230
Product Type:	Liquid
Supplier's details:	Norgen Biotek Corporation 3430 Schmon Parkway Thorold, ON Canada L2V 4Y6 Tel: (905) 227-8848 Fax: (905) 227-1061 Toll Free: 1-866-667-4362 E-mail: techsupport@norgenbiotek.com
Emergency telephone number (with hours of operation):	CHEMTREC U.S. & Canada: 1-800-424-9300

Section 2. Hazard Identification

Classification of the Substance or mixture:	Not a dangerous substance or mixture
<u>GHS label elements</u>	
Hazard Pictograms:	Not a dangerous substance or mixture
Signal Word:	Not a dangerous substance or mixture
Hazard Statements:	Not a dangerous substance or mixture
<u>Precautionary statements:</u>	
Prevention:	Not applicable
Response:	Not applicable
Storage:	Not applicable.
Disposal:	Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of identification:

Ingredient name	% (w/w)	CAS number
Sodium dodecyl sulfate	2.4	151-21-3
Sodium Chloride	<5	7647-14-5

Ranges id listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye Contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact:** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Over-exposure signs/symptoms

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Indication of immediate medical attention and special treatment needed, if necessary

Data not available.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media: Use water spray, dry chemical powder, carbon dioxide or alcohol-resistant foam.

Unsuitable

extinguishing media: Carbon oxides, nitrogen oxides, hydrogen chloride gas

Specific hazards

arising from the

chemical: None known

Hazardous thermal

decomposition

products: Not available

Special protective

actions for

fire-fighters: Not available

Special protective

equipment for

fire-fighters: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency

personnel: Ensure adequate ventilation. Use personal protective equipment as required.

For emergency

responders: Not available

Environmental

precautions:

Should not be released into the environment. Dispose of the material following local, regional or international regulations.

Methods and materials for containment and cleaning up

Clean up spills immediately, observing precautions in the safety data sheet and label. Dispose into chemical waste container

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Use with adequate ventilation as necessary or desired

Advice on general occupational

hygiene: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse

Conditions for safe storage, including

incompatibilities: Not available

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Appropriate engineering

controls: Handle in accordance with good industrial hygiene and safety practice.

Environmental

exposure controls: Do not let product enter drains.

Individual protection measures

Hygiene measures: If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is 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

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

Other skin

protection: Not applicable

Respiratory

protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use

respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance:

Physical State:	Liquid
Color:	Not available
Odor:	Not available.
Odor threshold:	Not available.
pH:	Not available.
Melting point/ freezing point:	Not applicable.
Boiling point, initial boiling point, and boiling range:	Not available.
Flash point:	Not applicable.
Evaporation rate:	Not available.
Flammability:	Not available.
Lower and upper explosion limit/ flammability limit:	Not available.
Vapor pressure:	Not available.
Relative vapor density:	Not available.
Relative density:	Not available.
Solubility:	Miscible in water.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Flow time (ISO 2431):	Not available.
<u>Particle characteristics</u>	
Median particle size:	Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials; oxidizing materials, acids and alkalis.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicology information

Information on toxicology effects

Acute toxicity

Product/ingredient name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium Dodecyl Sulfate	1288 mg/kg (Rat)	>2000 mg/kg (Rabbit)	>3900 mg/m ³ (Rat) 1h

Irritation/Corrosion

No information available

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC..

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the

likely routes of exposure:

There are no significant effects or hazards.

Potential acute health effects

Eye contact: There are no significant effects or hazards..
Inhalation: There are no significant effects or hazards..
Skin contact: There are no significant effects or hazards..
Ingestion: There are no significant effects or hazards..

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: There are no significant effects or hazards..
Inhalation: There are no significant effects or hazards..
Skin contact: There are no significant effects or hazards..
Ingestion: There are no significant effects or hazards..

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

Short term exposure

Potential immediate

effects: There are no significant effects or hazards.

Potential delayed

effects: There are no significant effects or hazards.

Long term exposure

Potential immediate

effects: There are no significant effects or hazards.

Potential delayed

effects: There are no significant effects or hazards.

Potential chronic health effects

General: There are no significant effects or hazards..
Carcinogenicity: There are no significant effects or hazards..
Mutagenicity: There are no significant effects or hazards..
Reproductive toxicity: There are no significant effects or hazards..

Numerical measures of toxicity

Acute toxicity estimates

There is not data available

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Sodium Chloride	LC50 7650 mg/L	Fish	96h
	EC50 1000 mg/L	Water Flea	48h
Sodium dodecyl sulfate	LC50 22.5 mg/L	Fish	96h
	EC50 15.6 mg/L	Algae	96h
	EC50 1.8 mg/L	Water Flea	48h

Persistence and degradability

There is no data available.

Mobility in soil

Soil/water partition

coefficient (K_{oc}): No data available

Other adverse effects: No known significant effect or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TGD Classification	DOT Classification (US)	IMGD	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-

Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG: Not applicable.

Special precautions for user:

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments:

Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI: None of the components are listed.
Hydrochloric Acid

CEPA Toxic substances: None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II, & III Chemicals

Not listed

Montreal Protocol

Not listed

Stockholm Convention on Persistent Organic Pollutants

Not listed

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed

UNECE Aarhus Protocol on POPs and Heavy Metals

Inventory list

Canada: All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision: 07/12/2024
Date of previous issue: 12/15/2021
Version: 00
Prepared by: Norgen Biotek Corp.
Key to abbreviations: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 HPR = Hazardous Products Regulations
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogP_{ow} = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution)
 SGG = Segregation Group
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not a dangerous substance or mixture	-

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

Resuspension Solution AZ

Section 1. Identification

Product Identifier:	Resuspension Solution AZ
Product code:	90120, 90123, 90124, 90125, 90126
Product Type:	Liquid
Supplier's details:	Norgen Biotek Corporation 3430 Schmon Parkway Thorold, ON Canada L2V 4Y6 Tel: (905) 227-8848 Fax: (905) 227-1061 Toll Free: 1-866-667-4362 E-mail: techsupport@norgenbiotek.com
Emergency telephone number (with hours of operation):	CHEMTREC U.S. & Canada: 1-800-424-9300

Section 2. Hazard Identification

Classification of the Substance or mixture:	Not a dangerous substance or mixture.
<u>GHS label elements</u>	
Hazard Pictograms:	Not a dangerous substance or mixture.
Signal Word:	Not a dangerous substance or mixture.
Hazard Statements:	Not a dangerous substance or mixture.
<u>Precautionary statements:</u>	
Prevention:	
Response:	Not a dangerous substance or mixture.
Storage:	Not applicable.
Disposal:	Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Other means of identification:

Ingredient name	% (w/w)	CAS number
EDTAdisodium salt (Ethylenedinitrilo)tetraacetic aciddisodium salt	<2	6381 - 92 - 6
Trimethylol amino methane	<5	77-86-1
Hydrochloric Acid	<5	7647-01-0

Ranges id listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye Contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact:** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: Not applicable

Inhalation: Not applicable
Skin contact: Not applicable
Ingestion: Not applicable

Over-exposure signs/symptoms

Eye contact: Not applicable
Inhalation: Not applicable
Skin contact: Not applicable
Ingestion: Not applicable

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Not applicable
Specific treatments: Not applicable
Protection of first-aiders: Not applicable

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable

extinguishing media: For this substance/mixture no limitations of extinguishing agents are given

Specific hazards arising from the

chemical: Not combustible. Ambient fire may liberate hazardous vapors.

Hazardous thermal decomposition

products: Nature of decomposition products not known

Special protective actions for

fire-fighters: Prevent fire extinguishing water from contaminating surface water or the ground water system

equipment for

fire-fighters: In the event of fire, wear self-contained breathing apparatus

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency

personnel: Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert

For emergency responders: Not available
Environmental precautions: Do not let product enter drains

Methods and materials for containment and cleaning up

Small spill: Use inert material such as sand or earth to contain spill or leak Absorb spills with chemical absorbent or vermiculite and dispose of in accordance with local regulations. .
Large spill: Do not let product enter drains.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Avoid prolonged or repeated exposure.

Advice on general occupational hygiene:

Do not get in eyes, on skin, on clothing

Conditions for safe storage, including incompatibilities:

Store sealed in original container in a cool well ventilated situation away from foods and other chemicals. Do not store in direct sunlight. Observe good hygiene and housekeeping practices.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

No data available

Appropriate engineering controls:

Not required with normal use.

Environmental exposure controls:

Not required with normal use.

Individual protection measures

Hygiene measures: Do not eat drink or smoke when handling product.

Eye/face protection: Use face shield, chemical goggles or safety glasses with side shield protection

Skin protection

Hand protection: Use of nitrile or neoprene gloves when handling.

Body protection:

Other skin protection:

Not required with normal use

Respiratory protection:

Not required with normal use

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance:

Physical State:	Liquid
Color:	Colorless
Odor:	Not available.
Odor threshold:	Not available.
pH:	Not available.
Melting point/ freezing point:	Not applicable.
Boiling point, initial boiling point, and boiling range:	Not available.
Flash point:	Not applicable.
Evaporation rate:	Not available.
Flammability:	Not available.
Lower and upper explosion limit/ flammability limit:	Not available.
Vapor pressure:	Not available.
Relative vapor density:	Not available.
Relative density:	Not available.
Solubility:	Miscible in water.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Flow time (ISO 2431):	Not available.

Particle characteristics

Median particle size: Not applicable.

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Possibility of

hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible

materials: Reactive or incompatible with the following materials; oxidizing materials, acids and alkalis.

Hazardous

decomposition

products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicology information

Information on toxicology effects

Acute toxicity

There is no data available.

Irritation/Corrosion

There is no data available.

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

There is no data available.

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure:

There is no data available.

Potential acute health effects

Eye contact: There is no data available.
Inhalation: There is no data available.
Skin contact: There is no data available.
Ingestion: There is no data available.

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: There is no data available.
Inhalation: There is no data available.
Skin contact: There is no data available.
Ingestion: There is no data available.

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

Short term exposure

Potential immediate effects: There is no data available.
Potential delayed effects: There is no data available.

Long term exposure

Potential immediate effects: There is no data available.
Potential delayed effects: There is no data available.

Potential chronic health effects

General: There is no data available.
Carcinogenicity: There is no data available.
Mutagenicity: There is no data available.
Reproductive toxicity: There is no data available.

Numerical measures of toxicity

Acute toxicity estimates

There is no data available.

Section 12. Ecological information

Toxicity

There is no data available.

Persistence and degradability

There is no data available.

Mobility in soil

Soil/water partition

coefficient (K_{oc}): Not available.

Other adverse effects: No known significant effect or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TGD Classification	DOT Classification (US)	IMGD	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG: Not applicable.

Special precautions for user:

Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments:

Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI: None of the components are listed.

CEPA Toxic substances: None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II, & III Chemicals

Not listed

Montreal Protocol

Not listed

Stockholm Convention on Persistent Organic Pollutants

Not listed

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed

UNECE Aarhus Protocol on POPs and Heavy Metals

Inventory list

Canada: All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date of revision:

07/15/2024

Date of previous issue:

12/15/2021

Version:

00

Prepared by:

Norgen Biotek Corp.

Key to abbreviations:

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

HPR = Hazardous Products Regulations

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogP_{ow} = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution)

SGG = Segregation Group

UN = United Nations

Procedure used to derive the classification

None of the components are classified.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

SAFETY DATA SHEET

RNase A

Section 1. Identification

Product Identifier:	RNasae A
Product code:	17804, 26203, 26208, 26243, 26260, 26270, 26902, 26908, 28354, 500777, 51106, DNB400A-8500UN, Dx15318
Product Type:	Liquid
Supplier's details:	Norgen Biotek Corporation 3430 Schmon Parkway Thorold, ON Canada L2V 4Y6 Tel: (905) 227-8848 Fax: (905) 227-1061 Toll Free: 1-866-667-4362 E-mail: techsupport@norgenbiotek.com
Emergency telephone number (with hours of operation):	CHEMTREC U.S. & Canada: 1-800-424-9300

Section 2. Hazard Identification

Classification of the Substance or mixture: Not a dangerous substance or mixture

GHS label elements

Hazard Pictograms: Not a dangerous substance or mixture

Signal Word: Not a dangerous substance or mixture

Hazard Statements: Not a dangerous substance or mixture

Precautionary statements:

Prevention: Not applicable

Response: Not applicable

Storage: Not applicable.

Disposal: Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Other means of identification:

Ingredient name	% (w/w)	CAS number
Nuclease free water	>98	7732-18-5

Ranges id listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye Contact:** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Get medical attention.
- Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact:** Flush contaminated skin with plenty of water. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion:** Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Over-exposure signs/symptoms

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated

Indication of immediate medical attention and special treatment needed, if necessary

Not applicable.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media: Use water spray, dry chemical powder, carbon dioxide or alcohol-resistant foam.

Unsuitable

extinguishing media: No unsuitable extinguishing media

Specific hazards

arising from the

chemical:

Not applicable

Hazardous thermal

decomposition

products:

Not applicable

Special protective

actions for

fire-fighters:

Not applicable

Special protective

equipment for

fire-fighters:

Not applicable

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency

personnel:

Not applicable.

For emergency

responders:

Not applicable

Environmental

precautions:

Not applicable

Methods and materials for containment and cleaning up

Clean up spills immediately, observing precautions in the safety data sheet and label. Dispose into chemical waste container

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Not applicable

Advice on general occupational

hygiene: Not applicable

Conditions for safe storage, including

incompatibilities: Not applicable

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Not applicable

Appropriate engineering

controls: Handle in accordance with good industrial hygiene and safety practice.

Environmental

exposure controls: Do not let product enter drains.

Individual protection measures

Hygiene measures: If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is 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

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace

Other skin

protection: Not applicable

Respiratory

protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance:

Physical State:	Liquid
Color:	Not available
Odor:	Not available.
Odor threshold:	Not available.
pH:	7
Melting point/ freezing point:	Not applicable.
Boiling point, initial boiling point, and boiling range:	Not available.
Flash point:	Not applicable.
Evaporation rate:	Not available.
Flammability:	Not available.
Lower and upper explosion limit/ flammability limit:	Not available.
Vapor pressure:	Not available.
Relative vapor density:	Not available.
Relative density:	Not available.
Solubility:	Miscible in water.
Partition coefficient: n-octanol/water	Not applicable.
Auto-ignition temperature:	Not available.
Decomposition temperature:	Not available.
Viscosity:	Not available.
Flow time (ISO 2431):	Not available.
<u>Particle characteristics</u>	
Median particle size:	Not applicable.

Section 10. Stability and reactivity

Reactivity:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability:	The product is stable.

Possibility of hazardous reactions: Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible

materials: Reactive or incompatible with the following materials; oxidizing materials, acids and alkalis.

Hazardous decomposition

products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicology information

Information on toxicology effects

Acute toxicity

Not applicable

Irritation/Corrosion

No information available

Sensitization

There is no data available.

Mutagenicity

There is no data available.

Carcinogenicity

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC..

Reproductive toxicity

There is no data available.

Teratogenicity

There is no data available.

Specific target organ toxicity (single exposure)

There is no data available.

Specific target organ toxicity (repeated exposure)

There is no data available.

Aspiration hazard

There is no data available.

Information on the

likely routes of

exposure: There is no data available.

Potential acute health effects

Eye contact: There is no significant hazard.

Inhalation: There is no significant hazard.

Skin contact: There is no significant hazard..

Ingestion: There is no significant hazard.

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: There is no significant hazard.
Inhalation: There is no significant hazard.
Skin contact: There is no significant hazard.
Ingestion: There is no significant hazard.

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

Short term exposure

Potential immediate

effects: There is no significant hazard.

Potential delayed

effects: There is no significant hazard.

Long term exposure

Potential immediate

effects: There is no significant hazard..

Potential delayed

effects: There is no significant hazard..

Potential chronic health effects

General: There is no significant hazard.

Carcinogenicity: There is no significant hazard.

Mutagenicity: There is no significant hazard.

Reproductive

toxicity: There is no significant hazard.

Numerical measures of toxicity

Acute toxicity estimates

There is not data available

Section 12. Ecological information

Toxicity

Not applicable

Persistence and degradability

There is no data available.

Mobility in soil

Soil/water partition

coefficient (K_{oc}): No data available

Other adverse effects: No known significant effect or critical hazards.

Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TGD Classification	DOT Classification (US)	IMGD	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-
Transport hazard class(es)	-	-	-	-
Packing group	-	-	-	-
Environmental hazards	No.	No.	No.	No.

AERG: Not applicable.

Special precautions for user: **Transport within user’s premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments: Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI: None of the components are listed.
Hydrochloric Acid

CEPA Toxic substances: None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II, & III Chemicals

Not listed

Montreal Protocol

Not listed

Stockholm Convention on Persistent Organic Pollutants

Not listed

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed

UNECE Aarhus Protocol on POPs and Heavy Metals

Inventory list

Canada: All components are listed or exempted.

Section 16. Other information

History

Date of issue/Date

of revision: 07/24/2024

Date of previous

issue: 12/15/2021

Version: 00

Prepared by: Norgen Biotek Corp.

Key to abbreviations: ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
HPR = Hazardous Products Regulations
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogP_{OW} = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 (Marpol = marine pollution)

SGG = Segregation Group
UN = United Nations

Procedure used to derive the classification

Classification	Justification
Not a dangerous substance or mixture	-

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.