SAFETY DATA SHEET

Buffer SK

Section 1. Identification

Product Identifier: **Buffer SK**
Product code: **24122, 90059, 90060, 90061, 90062, 90217, NBSKBUFF-30ML, NBSKBUFF-40ML, NBSKBUFF-60ML, T014, T030**
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 TOXICITY (oral) - Category 4
AQUATIC HAZARD(LONG-TERM) -Category 3
ACUTE INHALATION TOXOCITY (DUST AND MIST) Category 4
SERIOUS EYE IRRITATION/DAMAGE - Category 1

GHS label elements
Hazard Pictograms:

Signal Word: Danger
Hazard Statements: Causes skin and eye irritation
Harmful if swallowed, in contact with skin or if inhaled

Precautionary statements:
Prevention: Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink, or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear respiratory protection

Response: Immediately call a POISON CENTER or doctor/physician
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Do NOT induce vomiting

Section 2. Hazard Identification

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
Guanidine thiocyanate	**10-50**	**593-84-0**
Sodium citrate	**<5**	**6132-04-3**
Sodium lauroyl sarcosinate	**<1**	**137-16-6**

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.

Section 4. First-aid measures

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

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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards

Inhalation: No known significant effects or critical hazards

Skin contact: No known significant effects or critical hazards

Ingestion: No known significant effects or critical hazards

Over-exposure signs/symptoms

Eye contact: No known significant effects or critical hazards

Inhalation: No known significant effects or critical hazards

Skin contact: No known significant effects or critical hazards

Ingestion: No known significant effects or critical hazards

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

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire

Unsuitable extinguishing media: None known

Specific hazards arising from the chemical: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products: Decomposition products may include the following materials:
Carbon dioxide
Carbon mono dioxide
Nitrogen oxides
Sulfur oxides
Metal oxides/oxides

Special protective actions for fire-fighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

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: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures

Conditions for safe storage, including incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None known.

Appropriate engineering controls: Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection:	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of 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:	Colourless
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:	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
Guanidine Thiocyanate	LD50 oral	Rat	593 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 or inhalation

Potential acute health effects

Eye contact: No known significant effects or critical hazards

Inhalation: No known significant effects or critical hazards

Skin contact: No known significant effects or critical hazards

Ingestion: Harmful if swallowed

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: No known significant effects or critical hazards

Inhalation: No known significant effects or critical hazards

Skin contact: No known significant effects or critical hazards

Ingestion: No known significant effects or critical hazards

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

Short term exposure

Potential immediate effects: No known significant effects or critical hazards

Potential delayed effects: No known significant effects or critical hazards

Long term exposure

Potential immediate effects: No known significant effects or critical hazards

Potential delayed effects: No known significant effects or critical hazards

Potential chronic health effects

General: No known significant effects or critical hazards

Carcinogenicity: No known significant effects or critical hazards

Mutagenicity: No known significant effects or critical hazards

Reproductive toxicity: No known significant effects or critical hazards

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)
Guanidine thiocyanate	593	1100	N/A	11	N/A
NPX2	1254.5	2327.1	N/A	23.3	N/A

Section 12. Ecological information

Toxicity

There is no available data

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: 07/12/2024
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 Ait 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
ACUTE TOXICITY (oral) - Category 4	Calculation method
AQUATIC HAZARD(LONG-TERM) -Category 3	Calculation method
ACUTE INHALATION TOXOCITY (DUST AND MIST) Category 4	Calculation method
SERIOUS EYE IRRITATION/DAMAGE - Category 1	Calculation method

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 I

Section 1. Identification

Product Identifier: **Elution Buffer I**
Product code: **90006, 90007**
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:
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:	Clolorless
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 Ait 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

Endotoxin Removal Solution

Section 1. Identification

Product Identifier: **Endotoxin Removal Solution**
Product code: **15315, 22201, 43603, 90130, 90147**
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
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

GHS label elements
Hazard Pictograms:

Signal Word: Danger
Hazard Statements: Harmful if swallowed

Causes serious eye damage

Precautionary statements:

Prevention: Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection

Response: IF IN EYES:
Rinse cautiously with water for several minutes.Remove contact lenses, if present and easy to do. Continue rinsing Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED:
Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Storage: Not applicable.
Disposal: Dispose of contents/container to an approved waste disposal plant

Section 3. Composition/information on ingredients

Substance/mixture: Substance
Other means of identification: Triton X-114

Ingredient name	% (w/w)	CAS number
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega. -hydroxy	95	9002-93-1

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: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Inhalation: Remove to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Get medical attention. If not breathing, give artificial respiration.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Ingestion: Do NOT induce vomiting. Call a physician or poison control center immediately.

Over-exposure signs/symptoms

Eye contact: Causes eye burns. Causes severe eye damage.

Inhalation: Not applicable

Skin contact: Not applicable

Ingestion: Not applicable

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

Notes to physician: Treat symptomatically

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: Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media: No information available

Specific hazards arising from the chemical: Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous thermal decomposition products: Carbon monoxide (CO). Carbon dioxide (CO2). Formaldehyde. peroxides

Special protective actions for fire-fighters: As in any fire, wear self-contained breathing apparatus pressure-demand,

Special protective equipment for fire-fighters: MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel: Use personal protective equipment as required. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing.

For emergency responders: Use personal protective equipment as required. Ensure adequate ventilation. Avoid contact with skin, eyes or clothing.

Environmental precautions: Should not be released into the environment. See Section 12 for additional Ecological Information. Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up

Small spill: Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Large spill: Follow protocol for small spill.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Wear personal protective equipment/face protection. Ensure adequate ventilation

Advice on general occupational

hygiene: Do not get in eyes, on skin, or on clothing. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Conditions for safe storage, including incompatibilities: Keep containers tightly closed in a dry, cool and well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong acids. Strong reducing agents.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega. -hydroxy	Not applicable

Appropriate engineering controls: Ensure adequate ventilation, especially in confined areas. Ensure that eye wash stations and safety showers are close to the workstation location.

Environmental exposure controls: Not applicable

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: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory protection: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

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

Odor: Not available.

Odor threshold: Not available.

pH: 6

Melting point/ freezing point:	Not applicable.
Boiling point, initial boiling point, and boiling range:	> 117 °C / > 392 °F @ 760 mmHg
Flash point:	254 °C / 490 °F
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 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
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy	-	Rat	1800 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl) phenyl]-.omega.-hydroxy	-	-	-	-	-

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: No information available

Potential acute health effects

Eye contact: Severe eye irritant
Inhalation: No information available
Skin contact: No information available
Ingestion: No information available

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: No information available
Inhalation: No information available
Skin contact: No information available
Ingestion: No information available

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

Short term exposure

Potential immediate effects: No information available
Potential delayed effects: No information available

Long term exposure

Potential immediate effects: No information available
Potential delayed effects: No information available

Potential chronic health effects

General: No information available
Carcinogenicity: No information available
Mutagenicity: No information available
Reproductive toxicity: No information available

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetrameth ylbutyl)phenyl]-.omega.-hydr oxy-	LC50 = 8.9 mg/L LC50 = 4.0 mg/l EC50 = 26 mg/	Freshwater Fish Freshwater Fish Water Flea	96H 96H 48H

Persistence and degradability

There is no data available.

Product/ingredient name	$LogP_{OW}$	BCF	Potential
Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetrameth ylbutyl)phenyl]-.omega.-hydr oxy-	2.7	-	-

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

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: Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetrameth ylbutyl)phenyl]-.omega.-hydr oxy-

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: 07/10/2024

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 Ait 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
ACUTE ORAL TOXICITY - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation Methods Calculations 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

Wash Solution H

Section 1. Identification

Product Identifier: **Wash Solution H**
Product code: **90046**
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:

SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - category 2
TARGET ORGAN - RESPIRATORY SYSTEM

GHS label elements
Hazard Pictograms:

Signal Word: **Warning**
Hazard Statements: Causes serious eye irritation
May cause damage to organs through prolonged o repeated exposure

Precautionary statements:

Prevention: Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray

Response: Get medical attention/advice if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Section 2. Hazard Identification

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
Water	>85	7732-18-5
Ethylenediamine tetraacetic acid	10-15	60-00-4
Trimethylol amino methane	<5	77-86-1
Hydrochloric Acid	<10	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.

Section 4. First-aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

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. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Skin contact: Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician

Ingestion: Clean mouth with water and drink afterwards plenty of water.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following:
Pain or irritation, watering, redness

Inhalation: No known significant effects or critical hazards

Skin contact: No known significant effects or critical hazards

Ingestion: No known significant effects or critical hazards

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

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under, medical surveillance for 48 hours

Specific treatments: No specific treatments

Protection of

first-aiders: No actions shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: No information available

Unsuitable extinguishing media: No information available

Specific hazards arising from the chemical: Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty containers away from head and sources of ignition

Hazardous thermal decomposition products: No information available

Special protective actions for fire-fighters: No information available

Special protective equipment for fire-fighters: No information available

Section 6. Accidental release measures

Personal precautions, protective equipment, and emergency procedures

For non-emergency personnel: Use personal protective equipment as required. Ensure adequate ventilation.

For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in section 8 on suitable and unsuitable materials. See the information in “For non-emergency personnel”.

Environmental precautions: Avoid disposal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental ;pollution(sewers, waterways, soil or air)

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: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

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: Good general ventilation should be sufficient to control worker exposure to airborne contaminants

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location

Eye/face protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product

Respiratory protection:	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of 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:	Not available.
Odor:	Not available.
Odor threshold:	Not available.
pH:	8
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 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
Ethylenediamine tetraacetic acid	LD50 ORAL	RAT	>2000mg	-
	LD50 DERMAL		Not listed	-
	LC50 INHALATION	RAT	1 mg / L	-

Irritation/Corrosion

Irritation to eyes

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)

Respiratory System.

Aspiration hazard

There is no data available.

Information on the likely routes of exposure: Oral, dermal or inhalation

Potential acute health effects

Eye contact: Causes eye irritation
Inhalation: No known significant effects or critical hazards
Skin contact: No known significant effects or critical hazards
Ingestion: No known significant effects or critical hazards

Symptoms related to the physical, chemical, and toxicological characteristics

Eye contact: Adverse symptoms may include the following :
Pain or irritation
Watering
Redness
Inhalation: No known significant effects or critical hazards
Skin contact: No known significant effects or critical hazards
Ingestion: No known significant effects or critical hazards

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

Short term exposure

Potential immediate effects: No known significant effects or critical hazards

Potential delayed

effects: No known significant effects or critical hazards

Long term exposure

Potential immediate effects: No known significant effects or critical hazards

Potential delayed effects: No known significant effects or critical hazards

Potential chronic health effects

General: No known significant effects or critical hazards

Carcinogenicity: No known significant effects or critical hazards

Mutagenicity: No known significant effects or critical hazards

Reproductive toxicity: No known significant effects or critical hazards

Numerical measures of toxicity

Acute toxicity estimates

There is no data available

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Ethylenediamine tetraacetic acid	Acute EC50 113000 µg/L Fresh water	Daphnia - Daphnia magna -Neonate	48 h
	Acute LC50 129000 µg/L Fresh water	Fish - Ictalurus punctatus -Fingerling	48 h

Persistence and degradability

There is no data available.

Product/ingredient name	$LogP_{OW}$	BCF	Potential
Ethylenediamine tetraacetic acid	-	1.8	Low

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: 07/11/2024

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 Ait 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
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - category 2	Calculation method
TARGET ORGAN - RESPIRATORY SYSTEM	Calculation method

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.