Gzyme 3x

Safety Data Sheet

According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

Date of issue: 12/20/2019 Revision date: 12/20/2019 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Gzyme 3x

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

Recommended use : Enzymatic Cleaning Solution

1.3. Details of the supplier of the safety data sheet

Manufacturer
Germiphene Corperation
1379 Colborne Street East
Brantford, N3T 5M1 - Canada
T 519-759-7100 - F 519-759-1625

1.4. Emergency telephone number

Emergency number : CANUTEC 613-996-6666 (Transport only)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS classification

Flam. Liq. 4
Acute Tox. 4 (Inhalation:vapour)
Skin Irrit. 2
Eye Irrit. 2A
Resp. Sens. 1
Carc. 2
Repr. 1B
STOT RE 1

2.2. Label elements

GHS labelling

Hazard pictograms (GHS) :

GHS07 GHS08

Signal word (GHS) : Danger

Hazard statements (GHS) : Combustible liquid. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Precautionary statements (GHS) : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wear respiratory protection. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. If experiencing respiratory symptoms: Call a poison center or doctor. 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. If exposed or concerned: Get medical advice/attention. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity

54.63% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Ethanol, 2,2',2''-nitrilotris-	(CAS-No.) 102-71-6	7 - 13
2-Butoxyethanol	(CAS-No.) 111-76-2	7 - 13
Boric acid	(CAS-No.) 10043-35-3	3 - 7
Calcium chloride	(CAS-No.) 10035-04-8	1 - 5
Diethanolamine	(CAS-No.) 111-42-2	0.5 - 1.5
Subtilisins (proteolytic enzymes)	(CAS-No.) 9014-01-1	0.1 - 1
Methyl alcohol	(CAS-No.) 67-56-1	0.1 - 1

***Chemical name, CAS number and/or exact concentration have been withheld as a trade secret**

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : IF INHALED: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

First-aid measures after skin contact : IF ON SKIN: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact : 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.

First-aid measures after ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/effects after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic symptoms : Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

SECTION 5: Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO2). Dry chemical. Water spray.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Combustible liquid. Products of combustion may include, and are not limited to: oxides of carbon. Ammonia. Oxides of nitrogen.

Explosion hazard : May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust, fume, gas, mist, spray, vapours. Avoid contact with skin, eyes and clothing. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Keep away from sources of ignition. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.

Hygiene measures : Take off contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up. Protect from freezing.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Ethanol, 2,2',2''-nitrilotris- (102-71-6)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³

2-Butoxyethanol (111-76-2)		
ACGIH	ACGIH TWA (ppm)	20 ppm
ACGIH	Remark (ACGIH)	Eye & URT irr
OSHA	OSHA PEL (TWA) (mg/m³)	240 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	50 ppm
IDLH	US IDLH (ppm)	700 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	24 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	5 ppm

Boric acid (10043-35-3)		
ACGIH	ACGIH TWA (mg/m³)	2 mg/m³ (inhalable particulate matter (Borate compounds, inorganic)
ACGIH	ACGIH STEL (mg/m³)	6 mg/m³ (inhalable particulate matter (Borate compounds, inorganic)

Calcium chloride (10035-04-8)
Not applicable

Diethanolamine (111-42-2)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (inhalable fraction and vapour)
NIOSH	NIOSH REL (TWA) (mg/m³)	15 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	3 ppm

Subtilisins (proteolytic enzymes) (9014-01-1)		
ACGIH	ACGIH Ceiling (mg/m³)	0.00006 mg/m³ (Subtilisins)
NIOSH	NIOSH REL (STEL) (mg/m³)	0.00006 mg/m³ (Subtilisins)

Methyl alcohol (67-56-1)		
ACGIH	ACGIH TWA (ppm)	200 ppm
ACGIH	ACGIH STEL (ppm)	250 ppm
OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA	OSHA PEL (TWA) (ppm)	200 ppm
IDLH	US IDLH (ppm)	6000 ppm
NIOSH	NIOSH REL (TWA) (mg/m³)	260 mg/m³
NIOSH	NIOSH REL (TWA) (ppm)	200 ppm
NIOSH	NIOSH REL (STEL) (mg/m³)	325 mg/m³
NIOSH	NIOSH REL (STEL) (ppm)	250 ppm

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Hand protection : Wear suitable gloves resistant to chemical penetration.
Eye protection : Wear eye/face protection.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Wear respiratory protection. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Environmental exposure controls : Avoid release to the environment.
Other information : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear
Colour : Blue-green
Odour : No data available
Odour threshold : No data available
pH : 7 - 9
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Relative evaporation rate (butylacetate=1) : No data available
Flammability (solid, gas) : Combustible liquid
Vapour pressure : No data available
Relative vapour density at 20 °C (68 °F) : No data available
Relative density : No data available
Density : 1 - 1.2 g/ml @ 25 ± 1 °C (77 ± 1.8 °F)
Solubility : No data available
Partition coefficient n-octanol/water : No data available
Auto-ignition temperature : No data available

Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive limits	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available

9.2. Other information

Proteolytic activity : Min. 0.217 AU/ml

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Incompatible materials. Sources of ignition. Freezing.

10.5. Incompatible materials

Oxidizing materials.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Ammonia. Oxides of nitrogen. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified.
Acute toxicity (dermal) : Not classified.
Acute toxicity (inhalation) : Harmful if inhaled.

ATE CA (vapours)	10.508 mg/l/4h
Unknown acute toxicity (GHS CA)	54.63% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))

2-Butoxyethanol (111-76-2)	
LD50 oral rat	470 mg/kg
LD50 dermal rat	220 mg/kg
LC50 inhalation rat	2.35 mg/l
LC50 inhalation rat	486 ppm/4h

Boric acid (10043-35-3)	
LD50 oral rat	2660 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	> 0.16 mg/l/4h

Diethanolamine (111-42-2)	
LD50 oral rat	780 mg/kg
LD50 oral	2300 mg/kg
LD50 dermal rabbit	11.9 ml/kg

Subtilisins (proteolytic enzymes) (9014-01-1)	
LD50 oral rat	3700 mg/kg

Methyl alcohol (67-56-1)	
LD50 oral rat	6200 mg/kg
LD50 dermal rabbit	15840 mg/kg
LC50 inhalation rat	22500 ppm (Exposure time: 8 h)

Skin corrosion/irritation : Causes skin irritation.
pH: 7 - 9

Serious eye damage/irritation : Causes serious eye irritation.
pH: 7 - 9

Respiratory or skin sensitisation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity : Not classified.

Carcinogenicity : Suspected of causing cancer.

Ethanol, 2,2',2''-nitrilotris- (102-71-6)	
IARC group	3 - Not classifiable

2-Butoxyethanol (111-76-2)	
IARC group	3 - Not classifiable

Diethanolamine (111-42-2)	
IARC group	2B - Possibly carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : May damage fertility or the unborn child.

STOT-single exposure : Not classified.

2-Butoxyethanol (111-76-2)	
STOT-single exposure	May cause respiratory irritation.

Subtilisins (proteolytic enzymes) (9014-01-1)	
STOT-single exposure	May cause respiratory irritation.

Methyl alcohol (67-56-1)	
STOT-single exposure	Causes damage to organs. May cause drowsiness or dizziness.

STOT-repeated exposure : Causes damage to organs through prolonged or repeated exposure.

2-Butoxyethanol (111-76-2)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Diethanolamine (111-42-2)	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified.

Symptoms/effects after inhalation : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : Causes skin irritation. Symptoms may include redness, drying, defatting and cracking of the skin.

Symptoms/effects after eye contact : Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.

Symptoms/effects after ingestion : May be harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic symptoms : Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

Ethanol, 2,2',2''-nitrilotris- (102-71-6)	
LC50 fish 1	11800 mg/l
EC50 Daphnia 1	1386 mg/l
LC50 fish 2	> 1000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
ErC50 (algae)	169 mg/l
NOEC chronic crustacea	16 mg/l

2-Butoxyethanol (111-76-2)	
LC50 fish 1	1490 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)

2-Butoxyethanol (111-76-2)	
LC50 fish 2	2950 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

Boric acid (10043-35-3)	
EC50 Daphnia 1	115 - 153 mg/l (Exposure time: 48 h - Species: Daphnia magna)

Diethanolamine (111-42-2)	
LC50 fish 1	4460 - 4980 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	2.15 mg/l
LC50 fish 2	1200 - 1580 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 other aquatic organisms 2	2.1 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata)
ErC50 (algae)	2.1 mg/l
NOEC chronic crustacea	0.78 mg/l

Subtilisins (proteolytic enzymes) (9014-01-1)	
LC50 fish 1	200 mg/l

Methyl alcohol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

12.2. Persistence and degradability

Gzyme 3x FF	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Gzyme 3x FF	
Bioaccumulative potential	Not established.

Ethanol, 2,2',2''-nitrilotris- (102-71-6)	
BCF fish 1	< 3.9
Partition coefficient n-octanol/water	-2.53

2-Butoxyethanol (111-76-2)	
Partition coefficient n-octanol/water	0.81 (at 25 °C)

Boric acid (10043-35-3)	
BCF fish 1	0
Partition coefficient n-octanol/water	-0.757 (at 25 °C)

Diethanolamine (111-42-2)	
BCF fish 1	(no significant bioconcentration)
Partition coefficient n-octanol/water	-2.18 (at 25 °C)

Methyl alcohol (67-56-1)	
BCF fish 1	< 10
Partition coefficient n-octanol/water	-0.77

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

In accordance with DOT/TDG

Not determined

SECTION 15: Regulatory information

15.1. Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories except for:

Calcium chloride	CAS-No. 10035-04-8
Subtilisins (proteolytic enzymes)	CAS-No. 9014-01-1
Lipase, triacylglycerol	CAS-No. 9001-62-1
Amylase, .alpha.-	CAS-No. 9000-90-2

15.2. International regulations

No additional information available

15.3. US State regulations

⚠ **WARNING:** This product can expose you to Diethanolamine, which is known to the State of California to cause cancer, and Methyl alcohol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Revision date : 12/20/2019

Other information : None.

Prepared by : Nexreg Compliance Inc.
www.Nexreg.com

SDS HazCom 2012 - WHMIS 2015 (NexReg)

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