



Material Data Safety Sheet

AutoGen, Inc.
84 October Hill Rd.
Holliston, MA 01746
(508) 429-5965

Date revised: 11-01-17
Emergency Telephone Number: (800) 424-9300
Agent: CHEMTREC

Section 1 – Product and Company Information

Product Name: 102/104/105/106/110/202/211/210/301/401/405/502/601
Cartridges

Recommended use: Laboratory Chemicals

Company: AutoGen, Inc.
Address: 84 October Hill Rd.
Holliston, MA 01746
Phone: (774) 223-3000
Fax: (508) 429-9765

E-mail: info@autogen.com

Section 2 – Composition/Information on Ingredients

Substance/Mixture: Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
ethanol	64-17-5	50~80
2-Propanol	67-63-0	60~80
Guanidine Hydrochloride	50-01-1	30~50

Section 3 - Hazards Identification

GHS Classification:

Flammable liquids: Category 2
Acute toxicity (Oral): Category 4
Acute toxicity (inhalation): Category 4
Skin corrosion: Category 1C
Serious eye damage: Category 1

Respiration sensitization: Category 1

Specific target organ systemic: Category 3 (Central nervous system)

Toxicity-single exposure

Acute aquatic toxicity: Category 3

GHS Label element:

Hazard pictograms:



Signal Word: Danger

Hazard Statements:

H225 Highly Flammable liquid and vapour.

H302+H332 Harmful if swallowed. In contact with skin or if inhaled.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage

H402 Harmful to aquatic life

Precautionary Statements:

Prevention

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P305+P351+P338 if in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P311 if exposed or consumed: Call a poison centre or doctor/ physician.

Potential Health Effects:

Aggravated Medical Condition: None known.

Symptoms of Overexposure: No information available.

Carcinogenicity

IARC	Group 1: Carcinogenic to humans Ethanol 64-17-5
ACGIH	Confirmed animal carcinogen with unknown relevance to humans Ethanol 64-17-5
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Section 4- First Aid Measures

General advice:

Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled:

If unconscious place in recovery position and seek medical advice. Keep respiratory tract clear. If symptoms persist, call a physician.

In case of skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

In case of eye contact:

Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye.

If swallowed:

If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

Harmful if swallowed or if inhaled. Causes serious eye damage. Causes severe burns.

Note to Physician:

No information available

Section 5- Fire Fighting Measures

Suitable Extinguishing media:

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

Specific hazards during firefighting:

Don't allow run-off from firefighting to enter drains or water courses. Exposure to decomposition products may be a hazard to health.

Hazardous combustion products:

Carbon oxides. Sulfur oxides

Specific extinguishing methods:



In the event of fire and/or explosion don't breathe fumes. Use a water spray to cool fully closed containers.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus for firefighting if necessary

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personal to safe areas. Avoid breathing dust/fume/gas/mist/vapors/spray. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions:

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up:

Contain spillage, and then collect with non-combustible absorbent material. (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13.). Unsuitable cleaning agents sodium hypochlorite.

Section 7 – Handling and Storage

Advice on safe handling:

Avoid formation of aerosol. Don't breathe vapors/dust. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage:

Keep container tightly closed in a dry and well-ventilated place.

Materials to avoid:

Don't store together with oxidizing and self-igniting products

Section 8 – Exposure controls/Personal Protection

Ingredients with workplace control parameters:

Ingredients	CAS-No.	Value type (Form of exposure)	Control Parameters/ Permissible concentration	Basis
ethanol	64-17-5	TWA	1000 ppm 1900mg/m ³	NIOSH REL
		TWA	1000 ppm 1900 mg/m ³	OSHA Z-1
		TWA	1000 ppm 1900 mg/m ³	OSHA P0
		STEL	1000 ppm	ACGIH
2-Propanol	67-63-0	TWA	200 ppm	ACGIH
		STEL	400 ppm	ACGIH
		TWA	400 ppm 980 mg/m ³	NIOSH REL
		ST	500 ppm 1225 mg/m ³	NIOSH REL
		TWA	400 ppm 980 mg/m ³	OSHA Z-1
		TWA	400 ppm 980 mg/m ³	OSHA P0
		STEL	500 ppm 1225 mg/m ³	OSHA P0

Biological occupational exposure limits:

Component	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
2-Propanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI

Personal protective equipment

Respiratory protection:

In the case of vapor formation use a respirator with an approved filter.

Hand protection remarks:

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact)

Material:

Protective gloves

Eye protection:



Tightly fitting safety goggles. Wear face-shield and protective suit for abnormal processing problems. Don't wear contact lenses. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place. Acid-resistant protective clothing. Footwear protecting against chemicals. Workers should wear antistatic footwear.

Hygiene measures:

Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

Appearance: liquid

Color: No data available.

Odor: No data available.

Odor Threshold: No data available.

pH: No data available.

Melting point/range: No data available.

Boiling point/range: No data available.

Flash point: No data available.

Evaporation rate: No data available.

Burning rate: No data available.

Upper explosion limit: No data available.

Lower explosion limit: No data available.

Vapor pressure: No data available.

Relative vapor density: No data available.

Relative density: No data available.

Density: No data available.

Solubility: No data available.

Water solubility: No data available.

Solubility in other solvents: No data available.

Partition coefficient n-octanol/water: No data available.

Auto ignition temperature: No data available.

Thermal decomposition: No data available.

Viscosity: No data available.

Viscosity, dynamic: No data available.

Viscosity, kinematic: No data available.

Explosive properties: No data available.

Oxidizing properties: No data available.

Section 10 – Stability and Reactivity

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Stable under recommended storage conditions.

Conditions to avoid: Heat, Flames and sparks.

Incompatible materials: No data available

Hazardous decomposition products: No decomposition if stored and applied as directed.

Section 11 – Toxicological Information

Acute toxicity

Product:

Acute oral toxicity: No data available

Acute inhalation toxicity: No data available

Acute dermal toxicity: No data available

Ingredients:

Ethanol

Acute oral toxicity: LD50 Oral (Rat): 10470 mg/kg

Acute inhalation toxicity: LC50 (Rat): 20000 ppm, Exposure time: 10 h

2-Propanol

Acute oral toxicity: LD50 Oral (Rat): 5045 mg/kg

Acute inhalation toxicity: LD50 Dermal (Rabbit): 12800 mg/kg

Guanidine hydrochloride

Acute oral toxicity: LD50 Oral(Rat): 1120 mg/kg

Skin corrosion/irritation

Product:

Extremely corrosive and destructive to tissue. Causes skin burns.

Ingredients:

2-Propanol:

Species: Rabbit

Result: Mild skin irritation

Serious eye damage/eye irritation

Product:

Remarks: May cause irreversible eye damage.

Ingredients:

Ethanol

Result: Eye irritation

2-Propanol:

Species: Rabbit

Exposure time: 24h

Result: Eye irritation

Respiratory or skin sensitization

Product

Remarks: May cause sensitization by inhalation and skin contact.

Germ Cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

Ingredients:

2-Propanol

Assessment: May cause drowsiness or dizziness.

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

Further information

Product

Remarks:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV values may cause narcotic effects. Solvents may degrease the skin.

Section 12 – Ecological Information

Eco toxicity

Product



Toxicity to fish: No data available
Toxicity to algae: No data available
Toxicity to bacteria: No data available

Ingredients

2-Propanol

Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 9640 mg/l,
Exposure time: 96 h
Toxicity to algae: EC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 2000
mg/l, Exposure time: 72 h

Persistence and degradability

Ingredients:

Guanidine hydrochloride

Biodegradability: Method: OECD Test Guideline 301C

Remarks:

According to the results of tests of biodegradability. This product is not readily biodegradable.

Bio accumulative potential

Product

Bio accumulation: No data available

Partition coefficient n-octanol/water: No data available

Ingredients

Guanidine hydrochloride

Partition coefficient n-octanol/water: log Pow: ca.-1.7 (20°C)

Mobility in soil

No data available

Other adverse effects

No data available

Section 13 – Disposal Considerations

Disposal Methods

Waste from residues:

The product should not be allowed to enter drains, water courses or the soil. Send to a licensed wastes management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of contents/container in accordance with local regulation.

Contaminated packaging:

Dispose of as unused product. Don't re-use empty containers.

Section 14 – Transport Information

IATA-DGR

UN/ID No.: 2924

Proper shipping name: Flammable liquid, corrosive, n.o.s.(ethanol)

Class: 3

Subsidiary risk: 8

Packing group: II

Labels: Flammable Liquids, Corrosive

IMDG-Code

UN number: 2924

Proper shipping name: Flammable liquid, corrosive, n.o.s.(ethanol)

Class: 3

Subsidiary risk: 8

Packing group: II

Labels: 3(8)

EmS Code: F-E, S-C ,

Marine pollutant: no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

Domestic regulation**49 CFR**

UN/ID/NA No.: 2924

Proper shipping name: Flammable liquid, corrosive, n.o.s.(ethanol)

Class: 3

Subsidiary risk: 8

Packing group: II

Labels: Class 3 - Flammable Liquid, Class 8 - Corrosive

ERG Code: 132

Marine pollutant: no

Special precaution for user:

For personal protection see section 8.

Section 15 – Regulatory Information

TSCA List: Not relevant.**OSHA Hazards:** Toxic by ingestion, Respiratory sensitizer, Sever skin irritant. Server eye irritant. Server respiratory irritant.**EPCRA-Emergency Planning and Community Right-to-Know**



SARA 311/312 Hazards: Fire Hazard. Acute Health Hazard

SARA 302:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Prop 65

Warning! This product contains a chemical known in the State of California to cause cancer

Ethanol

64-17-5

Warning! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm

Ethanol

64-17-5

Section 16 – Other Information

This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



Material Data Safety Sheet

AutoGen, Inc.
84 October Hill Rd.
Holliston, MA 01746
(508) 429-5965

Date revised: 11-01-17

Emergency Telephone Number: (800) 424-9300

Agent: CHEMTREC

Section 1 – Product and Company Information

Product Name: GT buffer

Recommended use: Laboratory Chemicals

Company: AutoGen, Inc.

Address: 84 October Hill Rd.
Holliston, MA 01746

Phone: (774) 223-3000

Fax: (508) 429-9765

E-mail: info@autogen.com

Section 2 – Composition/Information on Ingredients

Substance/Mixture: Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Sodium dodecyl sulfate	151-21-3	1~5

Section 3 - Hazards Identification

GHS Classification:

Not a hazardous substance or mixture

GHS Label element:

Not a hazardous substance or mixture

Potential Health Effects:

Aggravated Medical Condition: None known.

Symptoms of Overexposure: No information available.



Carcinogenicity

IARC

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

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Section 4- First Aid Measures

General advice:

Show this material safety data sheet to the doctor in attendance.

If inhaled:

Move to fresh air. If symptoms persist, call a physician.

In case of skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

In case of eye contact:

Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

No information available.

Note to Physician:

No information available.

Section 5- Fire Fighting Measures

Suitable Extinguishing media:

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



Specific hazards during firefighting:

Exposure to decomposition products may be a hazard to health.

Hazardous combustion products:

No hazardous combustion products are known.

Specific extinguishing methods:

In the event of fire and/or explosion don't breathe fumes.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus for firefighting if necessary

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid breathing dust/fume/gas/mist/vapors/spray.

Environmental precautions:

Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up:

Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

Advice on safe handling:

Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage:

Keep container tightly closed in a dry and well-ventilated place.



Materials to avoid:

Do not store near acids.

Section 8 – Exposure controls/Personal Protection

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Hand protection remarks:

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact)

Eye protection:

Safety glasses.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals.

Hygiene measures:

Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

Appearance: liquid

Color: No data available.

Odor: characteristic.

Odor Threshold: No data available.

pH: 8.2.

Melting point/range: No data available.

Boiling point/range: No data available.

Flash point: No data available.

Evaporation rate: No data available.

Burning rate: No data available.

Upper explosion limit: No data available.

Lower explosion limit: No data available.

Vapor pressure: No data available.

Relative vapor density: No data available.

Relative density: No data available.



Density: 1.0 g/cm³.

Solubility: No data available.

Water solubility: No data available.

Solubility in other solvents: No data available.

Partition coefficient n-octanol/water: No data available.

Auto ignition temperature: No data available.

Thermal decomposition: No data available.

Viscosity: No data available.

Viscosity, dynamic: No data available.

Viscosity, kinematic: No data available.

Explosive properties: No data available.

Oxidizing properties: No data available.

Section 10 – Stability and Reactivity

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Stable under recommended storage conditions.

Conditions to avoid: Heat, Flames and sparks.

Incompatible materials: No data available

Hazardous decomposition products: No decomposition if stored and applied as directed.

Section 11 – Toxicological Information

Acute toxicity

Product:

Acute oral toxicity: No data available

Acute inhalation toxicity: No data available

Acute dermal toxicity: No data available

Ingredients

Sodium dodecyl sulfate:

Acute oral toxicity: LD50 Oral(Rat): 1228 mg/kg

Acute inhalation toxicity: LC50 (Rat): 3.9 mg/l, Exposure time: 1h, Test atmosphere: dust/mist

Acute dermal toxicity: LD50 Dermal (Rabbit): 580 mg/kg

Skin corrosion/irritation

Product:



May cause skin irritation and/or dermatitis.

Ingredients

Sodium dodecyl sulfate:

Species: Rabbit, Exposure time: 24h, Result: irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: the product causes irritation of eyes, skin and mucous membranes.

Ingredients

Sodium dodecyl sulfate:

Species: Rabbit, Result: Risk of serious damage to eyes, Method: OECD Test Guideline 405.

Respiratory or skin sensitization

No data available

Germ Cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

Ingredients

Sodium dodecyl sulfate:

Routes of exposure: inhalation

Assessment: May cause respiratory irritation.

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

Further information

No data available

Section 12 – Ecological Information

Eco toxicity

Product



Toxicity to fish: No data available
Toxicity to algae: No data available
Toxicity to bacteria: No data available

Ingredients

Sodium dodecyl sulfate:

Toxicity to fish: NOEC (Oncorhynchus mykiss (rainbow trout)): 19.5 mg/l, Exposure time: 96h

LC50 (Oncorhynchus mykiss (rainbow trout)): 3.6 mg/l, Exposure time: 96h

Toxicity to algae: (Pseudokirchneriella subcapitata (green algae)): 2.68 mg/l
Exposure time: 150h, Test Type: Growth inhibition.

Persistence and degradability

No data available

Bio accumulative potential

Product

Bio accumulation: No data available

Partition coefficient n-octanol/water: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Section 13 – Disposal Considerations

Disposal Methods

Waste from residues:

Send to a licensed wastes management company. Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging:

Dispose of as unused product. Don't re-use empty containers.

Section 14 – Transport Information

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code



No data available

Domestic regulation

49 CFR

Not regulated as a dangerous good

Special precaution for user:

Remarks: Not classified as dangerous in the meaning of transport regulations.

Section 15 – Regulatory Information

OSHA Hazards:

Harmful by ingestion. Toxic by skin absorption.

EPCRA-Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: No SARA Hazard

SARA 302:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth or any other reproductive defects.

Section 16 – Other Information

This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.

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84 October Hill Rd.
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(508) 429-5965

Date revised: 11-01-17

Emergency Telephone Number: (800) 424-9300

Agent: CHEMTREC

Section 1 – Product and Company Information

Product Name: Proteinase K

Recommended use: Laboratory Chemicals

Company: AutoGen, Inc.

Address: 84 October Hill Rd.
Holliston, MA 01746

Phone: (774) 223-3000

Fax: (508) 429-9765

E-mail: info@autogen.com

Section 2 – Composition/Information on Ingredients

Substance/Mixture: Substance

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Proteinase K	39450-01-6	1~5

Section 3 - Hazards Identification

GHS Classification:

Respiration sensitization: Category 1

GHS Label element:

Hazard pictograms:



Signal Word: Danger



Hazard Statements:

H334 May Cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements:

Prevention

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P284 Wear respiratory protection.

Response

P304+P341 if inhaled: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P342+P311 if experiencing respiratory symptoms: Call a poison centre or doctor/physician.

Potential Health Effects:

Aggravated Medical Condition: None known.

Symptoms of Overexposure: No information available.

Carcinogenicity

IARC

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

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Section 4- First Aid Measures

General advice:

Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.

If inhaled:

If unconscious place in recovery position and seek medical advice. Keep respiratory tract clear. If symptoms persist, call a physician.

In case of skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.



In case of eye contact:

Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

May Cause allergy or asthma symptoms or breathing difficulties if inhaled.

Note to Physician:

No information available

Section 5- Fire Fighting Measures

Suitable Extinguishing media:

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

Specific hazards during firefighting:

Exposure to decomposition products may be a hazard to health.

Hazardous combustion products:

No hazardous combustion products are known.

Specific extinguishing methods:

In the event of fire and/or explosion don't breathe fumes.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus for firefighting if necessary

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Ensure adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray.

Environmental precautions:

Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and materials for containment and cleaning up:



Soak up with inert absorbent material. (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

Advice on safe handling:

Avoid formation of aerosol. Don't breathe vapors/dust. Avoid exposure – obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage:

Keep container tightly closed in a dry and well-ventilated place.

Section 8 – Exposure controls/Personal Protection

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection:

In the case of vapor formation use a respirator with an approved filter.

Hand protection remarks:

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact)

Material:

Protective gloves

Eye protection:

Tightly fitting safety goggles. Don't wear contact lenses.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals.

Hygiene measures:



Keep away from food and drink. Wash hands before breaks and at the end of workday. Ensure adequate ventilation, especially in confined areas. Avoid contact with the skin and the eyes. When using do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

Appearance: Solid, (lyophilized)
Color: No data available.
Odor: characteristic.
Odor Threshold: No data available.
pH: No data available.
Melting point/range: No data available.
Boiling point/range: No data available.
Flash point: No data available.
Evaporation rate: No data available.
Burning rate: No data available.
Upper explosion limit: No data available.
Lower explosion limit: No data available.
Vapor pressure: No data available.
Relative vapor density: No data available.
Relative density: No data available.
Density: No data available.
Solubility: No data available.
Water solubility: No data available.
Solubility in other solvents: No data available.
Partition coefficient n-octanol/water: No data available.
Auto ignition temperature: No data available.
Thermal decomposition: No data available.
Viscosity: No data available.
Viscosity, dynamic: No data available.
Viscosity, kinematic: No data available.
Explosive properties: No data available.
Oxidizing properties: No data available.

Section 10 – Stability and Reactivity

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Stable under recommended storage conditions.

Conditions to avoid: Heat, Flames and sparks.

Incompatible materials: No data available



Hazardous decomposition products: No decomposition if stored and applied as directed.

Section 11 – Toxicological Information

Acute toxicity

Product:

Acute oral toxicity: No data available

Acute inhalation toxicity: No data available

Acute dermal toxicity: No data available

Skin corrosion/irritation

Product:

May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Product:

Remarks: the product causes irritation of eyes, skin and mucous membranes.

Respiratory or skin sensitization

Product

Remarks: May cause sensitization by inhalation and skin contact.

Germ Cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

Further information

No data available

Section 12 – Ecological Information

Eco toxicity

Product

Toxicity to fish: No data available

Toxicity to algae: No data available

Toxicity to bacteria: No data available

Persistence and degradability

No data available

Bio accumulative potential

Product

Bio accumulation: No data available

Partition coefficient n-octanol/water: No data available

Mobility in soil

No data available

Other adverse effects

No data available

Section 13 – Disposal Considerations

Disposal Methods

Waste from residues:

Send to a licensed wastes management company. Dispose of as hazardous waste in compliance with local and national regulations.

Contaminated packaging:

Dispose of as unused product. Don't re-use empty containers.

Section 14 – Transport Information

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available



Domestic regulation

49 CFR

Not regulated as a dangerous good

Special precaution for user:

Remarks: Not classified as dangerous in the meaning of transport regulations.

Section 15 – Regulatory Information

OSHA Hazards:

Respiratory sensitizer, Sever skin irritant. Server eye irritant. Server respiratory irritant.

EPCRA-Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Acute Health Hazard

SARA 302:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

US State Regulations

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth or any other reproductive defects.

Section 16 – Other Information

This bulletin is for your guidance and is based upon information and tests believed to be reliable. AutoGen makes no guarantee of the accuracy or completeness of the data and shall not be liable for any damages thereto. The data are offered solely for your consideration, investigation, and verification. These suggestions should not be confused with state, municipal, or insurance requirements, or with national



safety codes and constitute no warranty. Any use of these data and information must be determined by the user to be in accordance with applicable federal, state, and local regulations.



Material Data Safety Sheet

AutoGen, Inc.
84 October Hill Rd.
Holliston, MA 01746
(508) 429-5965

Date revised: 11-01-17

Emergency Telephone Number: (800) 424-9300

Agent: CHEMTREC

Section 1 – Product and Company Information

Product Name: PK Storage buffer

Recommended use: Laboratory Chemicals

Company: AutoGen, Inc.

Address: 84 October Hill Rd.
Holliston, MA 01746

Phone: (774) 223-3000

Fax: (508) 429-9765

E-mail: info@autogen.com

Section 2 – Composition/Information on Ingredients

Substance/Mixture: Mixture

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
glycerol	56-81-5	40~55

Section 3 - Hazards Identification

GHS Classification:

Not a hazardous substance or mixture

GHS Label element:

Not a hazardous substance or mixture

Potential Health Effects:

Aggravated Medical Condition: None known.

Symptoms of Overexposure: No information available.



Carcinogenicity

IARC

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

ACGIH

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Section 4- First Aid Measures

General advice:

Show this material safety data sheet to the doctor in attendance.

If inhaled:

Move to fresh air. If symptoms persist, call a physician.

In case of skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.

In case of eye contact:

Remove contact lenses. Protect unharmed eye. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed:

If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:

No information available.

Note to Physician:

No information available.

Section 5- Fire Fighting Measures

Suitable Extinguishing media:

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



Specific hazards during firefighting:

Exposure to decomposition products may be a hazard to health.

Hazardous combustion products:

No hazardous combustion products are known.

Specific extinguishing methods:

In the event of fire and/or explosion don't breathe fumes.

Special protective equipment for fire-fighters:

Wear self-contained breathing apparatus for firefighting if necessary

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapors/spray.

Methods and materials for containment and cleaning up:

Keep in suitable, closed containers for disposal.

Section 7 – Handling and Storage

Advice on safe handling:

For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Section 8 – Exposure controls/Personal Protection

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters/Permissible concentration	Basis
Glycerol	56-81-5	TWA(mist, respirable fraction)	5mg/m ³	OSHA Z-1
		TWA (mist, total dust)	15 mg/m ³	OSHA Z-1
		TWA (Total)	10 mg/m ³	OSHA P0
		TWA (Respirable fraction)	5mg/m ³	OSHA P0

		TWA	10 mg/m ³	ACGIH
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Personal protective equipment

Hand protection remarks:

The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact)

Eye protection:

Safety glasses.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place. Footwear protecting against chemicals.

Hygiene measures:

Keep away from food and drink. When using do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

Appearance: Liquid

Color: colorless.

Odor: characteristic.

Odor Threshold: No data available.

pH: 6-8.

Melting point/range: No data available.

Boiling point/range: No data available.

Flash point: No data available.

Evaporation rate: No data available.

Burning rate: No data available.

Upper explosion limit: No data available.

Lower explosion limit: No data available.

Vapor pressure: No data available.

Relative vapor density: No data available.

Relative density: No data available.

Density: 1.1 g/cm³.

Solubility: No data available.

Water solubility: No data available.

Solubility in other solvents: No data available.

Partition coefficient n-octanol/water: No data available.

Auto ignition temperature: not determined

Thermal decomposition: No data available.

Viscosity: No data available.

Viscosity, dynamic: No data available.



Viscosity, kinematic: No data available.

Explosive properties: No data available.

Oxidizing properties: No data available.

Section 10 – Stability and Reactivity

Reactivity: No decomposition if stored and applied as directed.

Chemical stability: No decomposition if stored and applied as directed.

Possibility of hazardous reactions: Stable under recommended storage conditions.

Conditions to avoid: No data available.

Incompatible materials: No data available

Hazardous decomposition products: No decomposition if stored and applied as directed.

Section 11 – Toxicological Information

Acute toxicity

Product:

Acute oral toxicity: No data available

Acute inhalation toxicity: No data available

Acute dermal toxicity: No data available

Ingredients:

Acute oral toxicity: LD50 Oral (Rat): 12,000 mg/kg

Acute dermal toxicity: LD50 Dermal (Rabbit): 10,000mg/kg

Skin corrosion/irritation

Product:

May cause skin irritation susceptible persons.

Ingredients:

Glycerol:

Species: Rabbit Exposure time: 24h Result: Mild skin irritation

Serious eye damage/eye irritation

Product:

Remarks: May irritate eyes.

Ingredients:

Glycerol:

Species: Rabbit Exposure time: 24h Result: Mild eye irritation

Respiratory or skin sensitization

No data available..

Germ Cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

STOT-single exposure

No data available

STOT-repeated exposure

No data available

Aspiration toxicity

No data available

Further information

No data available

Section 12 – Ecological Information

Eco toxicity

Product

Toxicity to fish: No data available

Toxicity to algae: No data available

Toxicity to bacteria: No data available

Ingredients:

Glycerol:

Toxicity to fish: LCO (Leuciscus idus (Golden orfe)): >250mg/l Exposure time:
48h

Persistence and degradability

No data available

Bio accumulative potential

Product

Bio accumulation: No data available

Partition coefficient n-octanol/water: No data available

Mobility in soil



No data available

Other adverse effects

No data available

Section 13 – Disposal Considerations

Disposal Methods

Contaminated packaging:

Empty containers should be taken to an approved waste handling site for recycling or disposal containers.

Section 14 – Transport Information

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No data available

Domestic regulation

49 CFR

Not regulated as a dangerous good

Special precaution for user:

Remarks: Not classified as dangerous in the meaning of transport regulations.

Section 15 – Regulatory Information

OSHA Hazards: No OSHA Hazards

EPCRA-Emergency Planning and Community Right-to-Know

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: No SARA Hazards

SARA 302:



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SARA 313:

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US State Regulations

California Prop 65

This product does not contain any chemicals known to the State of California to cause cancer, birth or any other reproductive defects.

Section 16 – Other Information

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