



## 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:** 101 Cartridge

**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](mailto: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
Proteinase K	39450-01-6	1~5

---

### 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

<b>IARC</b>	Group 1: Carcinogenic to humans Ethanol 64-17-5
<b>ACGIH</b>	Confirmed animal carcinogen with unknown relevance to humans Ethanol 64-17-5
<b>OSHA</b>	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.
<b>NTP</b>	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 <sup>3</sup>	NIOSH REL
		TWA	1000 ppm 1900 mg/m <sup>3</sup>	OSHA Z-1
		TWA	1000 ppm 1900 mg/m <sup>3</sup>	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 <sup>3</sup>	NIOSH REL
		ST	500 ppm 1225 mg/m <sup>3</sup>	NIOSH REL
		TWA	400 ppm 980 mg/m <sup>3</sup>	OSHA Z-1
		TWA	400 ppm 980 mg/m <sup>3</sup>	OSHA P0
		STEL	500 ppm 1225 mg/m <sup>3</sup>	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.