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A Geno Technology, Inc. (USA) brand name

# Safety Data Sheet

Cat. # 786-805

## Sulfhydryl Immobilization Kit for Peptides

Size: 5 columns



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# Wash Solution

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 08/15/2013

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Wash Solution  
Product code : 102W

#### 1.2. Recommended use and restrictions on use

Use of the substance/mixture : Research and development

#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

No labeling applicable

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Coughing.

Symptoms/effects after skin contact : Red skin. Tingling/irritation of the skin.

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

# Wash Solution

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.  
Unsuitable extinguishing media : Container may slop over if solid jet (water/foam) is applied.

#### 5.2. Specific hazards arising from the chemical

No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Dilute toxic gases with water spray.  
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material.  
Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.  
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.  
Storage temperature : RT

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Wash Solution

No additional information available

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

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Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

### Respiratory protection:

Dust formation: dust mask

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Clear
Odor	: None
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Unstable on exposure to moisture.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Coughing.
Symptoms/effects after skin contact	: Red skin. Tingling/irritation of the skin.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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#### 12.2. Persistence and degradability

Wash Solution	
Persistence and degradability	Biodegradability in water: no data available.

#### 12.3. Bioaccumulative potential

Wash Solution	
Bioaccumulative potential	Bioaccumulation: not applicable.

#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods	: Waste treatment methods.
Product/Packaging disposal recommendations	: Specific preliminary treatment. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

#### Transportation of Dangerous Goods

#### Transport by sea

Not regulated

#### Air transport

Not regulated

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## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

No additional information available

#### 15.2. International regulations

##### CANADA

##### EU-Regulations

##### National regulations

No additional information available

#### 15.3. US State regulations

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 05/11/2017

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Optimizer Buffer II [5X]

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/29/2016

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Optimizer Buffer II [5X]  
Product code : 258O

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Not classified

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

No labeling applicable

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

# Optimizer Buffer II [5X]

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
edetic acid	(ethylenedinitrilo)tetraacetic acid / 3,6-bis(carboxymethyl)3,6-diazaoctanedioic acid / 3,6-bis(carboxymethyl)edathamil / 3,6-diazaoctanedioic acid, 3,6-bis(carboxymethyl)- / 3,6-diazaoctanediol acid / acetic acid, (ethylenedinitrilo)tetra- / acetic acid, 2,2',2'',2'''-(1,2-ethanediyldinitrilo)tetrakis- / AI3-17181 / caswell No 438 / celon A / celon ATH / cheelox / cheelox BF acid / chemcolox 340 / clewat TAA / complexon II / complexone II / detaric acid / edathamil / edetic / edetic acid / editic acid / EDTA / EDTA acid / EDTA, chelating agent / endrate / EPA pesticide chemical code 039101 / ethylene-bis(iminodiacetic acid) / ethylenediamine-N,N,N',N'-tetraacetic acid / ethylenediaminetetra(acetic acid) / ethylenediaminetetraacetate / ethylenedinitrilotetraacetic acid / gluma cleanser / glycine, N,N'-1,2-ethanediybis(N-(carboxymethyl)- / hamp-ene acid / havidote / ICRF185 / idranal II / metaquest A / methaquest A / N,N'-1,2-ethanediybis(N-(carboxymethyl)glycine) / N,N'-1,2-ethanediybis(N-(carboxymethyl)glycine) / NA9117 / nervanaid B acid / nullapon B acid / nullapon BF acid / perma kleer 50 acid / SEQ100 / sequestrene AA / sequestric acid / sequestrol / tetrine acid / titriplex / trilon BW / trilon B(=EDTA) / trilon BS / trilon BW / universne acid / versene acid / versene(=EDTA) / vinkell 100 / warkeelate acid / YD30	(CAS-No.) 60-00-4	0.05 - 0.5	Eye Irrit. 2, H319

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.



# Optimizer Buffer II [5X]

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Optimizer Buffer II [5X]

No additional information available

##### edetic acid (60-00-4)

No additional information available

#### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : No data available

Odor : No data available

# Optimizer Buffer II [5X]

## Safety Data Sheet

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Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

edetac acid (60-00-4)	
LD50 oral rat	4500 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
ATE US (oral)	4500 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

# Optimizer Buffer II [5X]

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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edetic acid (60-00-4)	
LC50 fish 1	159 mg/l (US EPA, 96 h, Lepomis macrochirus, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	140 mg/l (DIN 38412-11, 48 h, Daphnia magna, Static system, Fresh water, Read-across, Locomotor effect)
ErC50 (algae)	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, GLP)

### 12.2. Persistence and degradability

edetic acid (60-00-4)	
Persistence and degradability	Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.01 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	0.85 g O <sub>2</sub> /g substance
ThOD	1.09 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.0091

### 12.3. Bioaccumulative potential

edetic acid (60-00-4)	
BCF fish 1	1.1 - 1.8 (28 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Read-across, Fresh weight)
Log Pow	0.13 (Weight of evidence approach)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

edetic acid (60-00-4)	
Log Koc	2.495 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods	: Waste treatment methods.
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## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

# Optimizer Buffer II [5X]

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### edetic acid (60-00-4)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory  
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ	5000 lb
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### 15.2. International regulations

#### CANADA

#### EU-Regulations

#### National regulations

No additional information available

### 15.3. US State regulations

## SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 05/11/2017

Full text of H-phrases:

H319	Causes serious eye irritation
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SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/08/2011

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form	: Substance
Substance name	: L-Cysteine.HCl
CAS-No.	: 52-89-1
Product code	: 295C
Formula	: C3H7NO2S.HCl
Synonyms	: (R)-(+)-cysteine hydrochloride / (R)-cysteine hydrochloride / 2-amino-3-mercaptopropionic acid hydrochloride, L- / 3-mercapto-2-aminopropionic acid hydrochloride, L- / cystein chloride, L- / cysteine chlorhydrate, L- / cysteine chlorohydrate, L- / cysteine HCl, L- / cysteine hydrochloride / cysteine hydrochloride, (R)- / cysteine hydrochloride, (R)-(+)- / cysteine hydrochloride, L- / cysteine hydrochloride, L(+)- / cysteine hydrochloride, L-(+)- / cysteine hydrochloride, L-, anhydrous / cysteine monohydrochloride, L- / cysteine, hydrochloride, L- / cystein-hydrochloride, L- / L(+)-cysteine hydrochloride / L-(+)-cysteine hydrochloride / L-2-amino-3-mercaptopropionic acid hydrochloride / L-3-mercapto-2-aminopropionic acid hydrochloride / L-cystein chloride / L-cysteine chlorhydrate / L-cysteine chlorohydrate / L-cysteine HCl / L-cysteine hydrochloride, anhydrous / L-cysteine monohydrochloride / L-cysteine, hydrochloride / L-cystein-hydrochloride / WR 348
BIG No	: 37494

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Skin corrosion/irritation Category 2	H315 Causes skin irritation
Serious eye damage/eye irritation Category 2	H319 Causes serious eye irritation
Specific target organ toxicity (single exposure) Category 3	H335 May cause respiratory irritation

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H335 - May cause respiratory irritation

Precautionary statements (GHS US) : P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P302+P352 - If on skin: Wash with plenty of water  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P312 - Call a poison center or doctor if you feel unwell  
P321 - Specific treatment (see supplemental first aid instruction on this label)  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P337+P313 - If eye irritation persists: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - 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 which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Mono-constituent

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
L-Cysteine.HCl (Main constituent)	(R)-(+)-cysteine hydrochloride / (R)-cysteine hydrochloride / 2-amino-3-mercaptopropionic acid hydrochloride, L- / 3-mercapto-2-aminopropionic acid hydrochloride, L- / cystein chloride, L- / cysteine chlorhydrate, L- / cysteine chlorohydrate, L- / cysteine HCl, L- / cysteine hydrochloride / cysteine hydrochloride, (R)- / cysteine hydrochloride, (R)-(+)- / cysteine hydrochloride, L- / cysteine hydrochloride, L(+)- / cysteine hydrochloride, L(+)- / cysteine hydrochloride, L-, anhydrous / cysteine monohydrochloride, L- / cysteine, hydrochloride, L- / cystein-hydrochloride, L- / L(+)-cysteine hydrochloride / L-(+)-cysteine hydrochloride / L-2-amino-3-mercaptopropionic acid hydrochloride / L-3-mercapto-2-aminopropionic acid hydrochloride / L-cystein chloride / L-cysteine chlorhydrate / L-cysteine chlorohydrate / L-cysteine HCl / L-cysteine hydrochloride, anhydrous / L-cysteine monohydrochloride / L-cysteine, hydrochloride / L-cystein-hydrochloride / WR 348	(CAS-No.) 52-89-1	100	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre ([www.big.be/antgif.htm](http://www.big.be/antgif.htm)).

### 4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.

Symptoms/effects after inhalation : AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.

Symptoms/effects after skin contact : Tingling/irritation of the skin.

Symptoms/effects after eye contact : Irritation of the eye tissue.

Symptoms/effects after ingestion : Irritation of the gastric/intestinal mucosa.

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Quick-acting ABC powder extinguisher. Class A foam extinguisher. Water (quick-acting extinguisher, reel). Water. Class A foam.

Unsuitable extinguishing media : Quick-acting BC powder extinguisher. Quick-acting CO2 extinguisher.

### 5.2. Specific hazards arising from the chemical

Fire hazard : INDIRECT FIRE HAZARD: Reactions involving a fire hazard: see "Reactivity Hazard".

### 5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Protective equipment : Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit.

Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. On heating: dilute combustible/toxic gases/vapours.

Methods for cleaning up : Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Keep container tightly closed.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
- Storage temperature : 20 °C
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. metals. water/moisture.
- Storage area : Store in a dry area. Store in a dark area. May be stored under argon. Store at room temperature. Keep out of direct sunlight. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: hermetical. watertight. dry. clean. opaque. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : MATERIAL TO AVOID: iron. copper.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### L-Cysteine.HCl (52-89-1)

No additional information available

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Gloves

##### Eye protection:

Face shield. In case of dust production: protective goggles

##### Skin and body protection:

Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing

##### Respiratory protection:

Dust formation: dust mask. On heating: full face mask

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- Physical state : Solid
- Appearance : Crystalline solid.
- Color : White
- Odor : Unpleasant odour
- Odor threshold : No data available
- pH : No data available
- Melting point : 175 °C
- Freezing point : Not applicable
- Boiling point : Not applicable
- Flash point : Not applicable
- Relative evaporation rate (butyl acetate=1) : No data available



# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: Not applicable
Relative density	: Not applicable
Molecular mass	: 157.62 g/mol
Solubility	: Soluble in water. Soluble in ethanol. Soluble in acetone. Water: soluble, Literature
Log Pow	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 175 °C
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

Other properties : Hygroscopic. Acid reaction.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Oxidizes slowly on exposure to air.

### 10.2. Chemical stability

Discolours on exposure to light. Discolours on exposure to air. Hygroscopic. Unstable on exposure to air.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: May cause respiratory irritation.
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Causes skin irritation. May cause respiratory irritation. Causes serious eye irritation.

# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/effects after inhalation	: AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: Tingling/irritation of the skin.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Irritation of the gastric/intestinal mucosa.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: No water pollutant (surface water). Insufficient data available on ecotoxicity. pH shift.

#### 12.2. Persistence and degradability

##### L-Cysteine.HCl (52-89-1)

Persistence and degradability	Biodegradability in water: no data available.
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#### 12.3. Bioaccumulative potential

##### L-Cysteine.HCl (52-89-1)

Bioaccumulative potential	No bioaccumulation data available.
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#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

Waste treatment methods	: Waste treatment methods.
Product/Packaging disposal recommendations	: Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an incinerator for chlorinated waste materials with energy recovery. Dissolve or mix with a combustible solvent.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

#### Transportation of Dangerous Goods

#### Transport by sea

Not regulated

#### Air transport

Not regulated

# L-Cysteine.HCl

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### L-Cysteine.HCl (52-89-1)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

##### EU-Regulations

##### National regulations

No additional information available

#### 15.3. US State regulations

### SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 05/11/2017

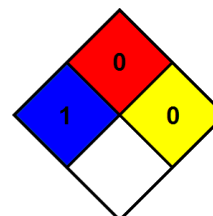
Full text of H-phrases:

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Sulfhydryl Coupling Resin

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 11/28/2016

Revision date: 09/20/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Sulfhydryl Coupling Resin  
Product code : 479S\_480S

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flammable liquids Category 4 H227 Combustible liquid

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Signal word (GHS US) : Warning  
Hazard statements (GHS US) : H227 - Combustible liquid  
Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P370+P378 - In case of fire: Use media other than water to extinguish.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P501 - 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 which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
ethanol	ethanol (ethyl alcohol) / ethanol, anhydrous, undenatured / ethyl alcohol	(CAS-No.) 64-17-5	10 - 50	Flam. Liq. 2, H225

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.  
First-aid measures after skin contact : Wash skin with plenty of water.  
First-aid measures after eye contact : Rinse eyes with water as a precaution.  
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

# Sulphydryl Coupling Resin

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.

### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Sulphydryl Coupling Resin

No additional information available

#### ethanol (64-17-5)

#### USA - ACGIH - Occupational Exposure Limits

ACGIH STEL (ppm)	1000 ppm
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### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

# Sulphydryl Coupling Resin

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: No data available
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 65 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

# Sulphydryl Coupling Resin

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	> 20 mg/l (4 h, Rat, Inhalation)

Skin corrosion/irritation : Not classified  
Serious eye damage/irritation : Not classified  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified  
Viscosity, kinematic : No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

ethanol (64-17-5)	
LC50 fish 1	14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	9300 mg/l (48 h, Daphnia magna, Pure substance)

### 12.2. Persistence and degradability

ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O <sub>2</sub> /g substance
Chemical oxygen demand (COD)	1.7 g O <sub>2</sub> /g substance
ThOD	2.1 g O <sub>2</sub> /g substance
BOD (% of ThOD)	0.43

### 12.3. Bioaccumulative potential

ethanol (64-17-5)	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### 12.4. Mobility in soil

# Sulphydryl Coupling Resin

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ethanol (64-17-5)	
Surface tension	0.0245 N/m (20 °C)
Ecology - soil	Highly mobile in soil.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. International regulations

#### CANADA

ethanol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

#### National regulations

ethanol (64-17-5)
Listed on IARC (International Agency for Research on Cancer)

### 15.3. US State regulations

## SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 09/20/2017



# Sulphydryl Coupling Resin

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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Full text of H-phrases:

H225	Highly flammable liquid and vapour
H227	Combustible liquid

SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*



# Protein SS Reductant

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 10/06/2016

Revision date: 05/11/2017

Version: 7.1

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Protein SS Reductant  
Product code : 512P

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Geno Technology, Inc./ G-Biosciences  
9800 Page Avenue  
Saint Louis, 63132-1429 - United States  
T 800-628-7730 - F 314-991-1504  
[technical@GBiosciences.com](mailto:technical@GBiosciences.com) - [www.GBiosciences.com](http://www.GBiosciences.com)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Skin corrosion/irritation Category 1B H314 Causes severe skin burns and eye damage

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H314 - Causes severe skin burns and eye damage

Precautionary statements (GHS US) :

- P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
- P264 - Wash hands, forearms and face thoroughly after handling.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
- P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
- P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
- P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a poison center or doctor
- P321 - Specific treatment (see supplemental first aid instruction on this label)
- P363 - Wash contaminated clothing before reuse.
- P405 - Store locked up.
- P501 - 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 which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

# Protein SS Reductant

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
tris(2-carboxyethyl)phosphine hydrochloride	3,3',3''-phosphinidynetrispropanoic acid, hydrochloride / 3,3',3''-phosphinidynetrispropanoic acid, hydrochloride / propanoic acid, 3,3',3''-phosphinidynetris-, hydrochloride / propionic acid, 3,3',3''-phosphinidynetri-, hydrochloride / TCEP (= tris(2-carboxyethyl)phosphine hydrochloride) / TCEP-HCl (= tris(2-carboxyethyl)phosphine hydrochloride)	(CAS-No.) 51805-45-9	10 - 50	Skin Corr. 1B, H314

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : Call a physician immediately.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Rinse skin with water/shower. Remove/Take off immediately all contaminated clothing. Call a physician immediately.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Rinse mouth. Do not induce vomiting. Call a physician immediately.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after skin contact : Burns.
- Symptoms/effects after eye contact : Serious damage to eyes.
- Symptoms/effects after ingestion : Burns.

#### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters

- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

Avoid release to the environment.

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Take up liquid spill into absorbent material.
- Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

# Protein SS Reductant

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Protein SS Reductant

No additional information available

##### tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)

No additional information available

#### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
- Environmental exposure controls : Avoid release to the environment.

#### 8.3. Individual protection measures/Personal protective equipment

##### Hand protection:

Protective gloves

##### Eye protection:

Safety glasses

##### Skin and body protection:

Wear suitable protective clothing

##### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Color : No data available
- Odor : No data available
- Odor threshold : No data available
- pH : No data available
- Melting point : Not applicable
- Freezing point : No data available
- Boiling point : No data available
- Flash point : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : Not applicable.
- Vapor pressure : No data available
- Relative vapor density at 20 °C : No data available
- Relative density : No data available
- Solubility : No data available
- Log Pow : No data available
- Auto-ignition temperature : No data available
- Decomposition temperature : No data available

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Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Hazardous decomposition products.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

#### tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)

LD50 oral rat	3500 mg/kg (Rat, Oral)
LD50 dermal rat	> 3000 mg/kg (Rat, Dermal)

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Eye damage, category 1, implicit
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after skin contact	: Burns.
Symptoms/effects after eye contact	: Serious damage to eyes.
Symptoms/effects after ingestion	: Burns.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general	: Before neutralisation, the product may represent a danger to aquatic organisms.
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### 12.2. Persistence and degradability

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### tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)

Persistence and degradability	Biodegradability in water: no data available.
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#### 12.3. Bioaccumulative potential

### tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)

Bioaccumulative potential	No bioaccumulation data available.
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#### 12.4. Mobility in soil

No additional information available

#### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Waste treatment methods.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transportation of Dangerous Goods

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

### tris(2-carboxyethyl)phosphine hydrochloride (51805-45-9)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory
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### 15.2. International regulations

#### CANADA

#### EU-Regulations

#### National regulations

No additional information available

### 15.3. US State regulations

## SECTION 16: Other information

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Full text of H-phrases:

H314	Causes severe skin burns and eye damage
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SDS US (GHS HazCom 2012)

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*