Safety Data Sheet

Cat. # 786-285

Copper Chelating Resin

Size: 10ml Resin
Copper Chelating Resin
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 11/24/2015  Revision date: 05/11/2017  Version: 7.1

SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: Copper Chelating Resin
Product code: 273C

1.2. Recommended use and restrictions on use
No additional information available

1.3. Supplier
Geno Technology, Inc./GBiosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - 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
Hazardous to the aquatic environment - Acute Hazard Category 3  H402 - Harmful to aquatic life
Hazardous to the aquatic environment - Chronic Hazard Category 3  H412 - Harmful to aquatic life with long lasting effects
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
H402 - Harmful to aquatic life
H412 - Harmful to aquatic life with long lasting effects
Precautionary statements (GHS US): P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 - Avoid release to the environment.
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

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol</td>
<td>ethanol (ethyl alcohol) / ethanol, anhydrous, undenatured / ethyl alcohol</td>
<td>(CAS-No.) 64-17-5</td>
<td>10 - 50</td>
<td>Flam. Liq. 2, H225</td>
</tr>
</tbody>
</table>
Copper Chelating Resin
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Name</th>
<th>Common Name (Synonyms)</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>copper(II) sulfate, pentahydrate</td>
<td>blue copper / blue copperas / blue stone / blue viking / blue vitriol / chalcanthite / chalcanthite, natural / copper sulfate, pentahydrate / copper sulphate, pentahydrate / copper vitriol / copper(2+) sulfate, pentahydrate / couperose bleue / CSP (=copper(II)sulfate, pentahydrate) / cupric sulfate, pentahydrate / Environmentally hazardous substance, solid, n.o.s. / phyto-bordeaux (=copper(II)sulfate, pentahydrate) / phyton-27 (=copper(II)sulfate, pentahydrate) / roman vitriol (=copper(II)sulfate, pentahydrate) / sulfacop / sulfuric acid, copper(2+) salt (1:1), pentahydrate / sulfuric acid, copper(2+) salt, pentahydrate / triangle (=copper(II)sulfate, pentahydrate) / vencedor</td>
<td>(CAS-No.) 7758-99-8</td>
<td>2 - 5</td>
<td>Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 1, H410</td>
</tr>
</tbody>
</table>

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


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

For containment: Collect spillage.

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

<table>
<thead>
<tr>
<th>Copper Chelating Resin</th>
<th>No additional information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>ethanol (64-17-5)</td>
<td></td>
</tr>
<tr>
<td>USA - ACGIH - Occupational Exposure Limits</td>
<td></td>
</tr>
<tr>
<td>ACGIH STEL (ppm)</td>
<td>1000 ppm</td>
</tr>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>No additional information available</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>65 °C</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Copper Chelating Resin
Safety Data Sheet

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

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)

<table>
<thead>
<tr>
<th>LD50 oral rat</th>
<th>10740 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 16000 mg/kg (Rabbit; Literature study)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 20 mg/l (4 h, Rat, Inhalation)</td>
</tr>
</tbody>
</table>

copper(II) sulfate, pentahydrate (7758-99-8)

<table>
<thead>
<tr>
<th>LD50 oral rat</th>
<th>300 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 482 mg/kg bodyweight; Rat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 dermal rabbit</td>
<td>&gt; 2000 mg/kg (Rabbit; Literature study; OECD 402: Acute Dermal Toxicity)</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>300 mg/kg body weight</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>IARC group</th>
<th>1 - Carcinogenic to humans</th>
</tr>
</thead>
</table>

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: Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

<table>
<thead>
<tr>
<th>ethan&lt;br&gt;ol (64-17-5)</th>
<th>LC50 fish 1</th>
<th>14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EC50 Daphnia 1</td>
<td>9300 mg/l (48 h, Daphnia magna, Pure substance)</td>
</tr>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>Threshold limit algae 2</td>
<td>0.368 mg/l (ErC50; OECD 201: Alga, Growth Inhibition Test; 72 h; Pseudokirchneriella subcapitata; Static system; Fresh water; Read-across)</td>
</tr>
</tbody>
</table>

#### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>ethan&lt;br&gt;ol (64-17-5)</th>
<th>Persistence and degradability</th>
<th>Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Biochemical oxygen demand (BOD)</td>
<td>0.8 - 0.967 g O₂/g substance</td>
</tr>
<tr>
<td></td>
<td>Chemical oxygen demand (COD)</td>
<td>1.7 g O₂/g substance</td>
</tr>
<tr>
<td></td>
<td>ThOD</td>
<td>2.1 g O₂/g substance</td>
</tr>
<tr>
<td></td>
<td>BOD (% of ThOD)</td>
<td>0.43</td>
</tr>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable. No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td></td>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td></td>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>ethan&lt;br&gt;ol (64-17-5)</th>
<th>BCF fish 1</th>
<th>1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Log Pow</td>
<td>-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)</td>
</tr>
<tr>
<td>copper(II) sulfate, pentahydrate (7758-99-8)</td>
<td>Bioaccumulative potential</td>
<td>Low potential for bioaccumulation (Log Kow &lt; 4).</td>
</tr>
</tbody>
</table>

#### 12.4. Mobility in soil

<table>
<thead>
<tr>
<th>ethan&lt;br&gt;ol (64-17-5)</th>
<th>Surface tension</th>
<th>0.0245 N/m (20 °C)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ecology - soil</td>
<td>Highly mobile in soil.</td>
</tr>
</tbody>
</table>

#### 12.5. Other adverse effects

No additional information available
Copper Chelating Resin
Safety Data Sheet

SECTION 13: Disposal considerations
13.1. Disposal methods

SECTION 14: Transport information
Department of Transportation (DOT)
In accordance with DOT
Not applicable
Transportation of Dangerous Goods

Transport by sea

Air transport

SECTION 15: Regulatory information
15.1. US Federal regulations
ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory
copper(II) sulfate, pentahydrate (7758-99-8)
Not 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: 05/11/2017

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-Phrase</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H225</td>
<td>Highly flammable liquid and vapour</td>
</tr>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H400</td>
<td>Very toxic to aquatic life</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
<tr>
<td>H410</td>
<td>Very toxic to aquatic life with long lasting effects</td>
</tr>
<tr>
<td>H412</td>
<td>Harmful to aquatic life with long lasting effects</td>
</tr>
</tbody>
</table>
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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.