Safety Data Sheet

Cat. # 786-32DSCU

Destaining Solution for Reversible Copper Stain™ [10X]

Size: 500ml
SECTION 1: Identification

1.1. Identification
Product form: Mixture
Product name: Cu Destaining Solution [10X]
Product code: 037D

1.2. Recommended use and restrictions on use
Use of the substance/mixture: Electrophoresis

1.3. Supplier
Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
Saint Louis, 63132 - 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
Skin corrosion/irritation Category 1  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
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+P331 - 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
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Full text of hazard classes and H-statements: see section 16

SECTION 4: First-aid statements

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.

<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>edetic acid</td>
<td>(ethylenedinitrilotetraacetic acid / 3,6-bis(carboxymethyl)3,6-diazaoctanedioic acid / 3,6-bis(carboxymethyl)edathamil / 3,6-diazaoctanediol acid, 3,6-bis(carboxymethyl)- / 3,6-diazaoctanedioic acid / acetic acid, (ethylenedinitrilotetra- / acetic acid, 2,2',2''- (1,2-ethanediyl)dinitrilotetra- / tetrakis- / Al3-17181 / caswell No 438 / celon A / celon ATH / cheelox / cheelox BF acid / chemcolox 340 / chewat TAA / complexon II / complexone II / detanic acid / edathamil / edetic / edetic acid / edetic acid / EDTA / EDTA acid / EDTA.chelating agent / endrate / EPA pesticide chemical code 039101 / ethylene-bis/(iminodiacetic acid) / ethylenediamine-N,N',N'-tetraacetic acid / ethylenediaminotetra(acetic acid) / ethylenediaminetetraacetate / ethylenedinitrilotetraacetic acid / gluma cleanser / glycine, N,N'-1,2-ethanediylbis(N-(carboxymethyl))- / hamp-ene acid / havidote / ICRF185 / idranal II / metaquest A / methaquest A / N,N'-1,2-ethanediylbis(N-(carboxymethyl)glycine) / N,N'-1,2-ethanediylbis(N-carboxymethyl)glycine / NA9117 / nervanaid B acid / nullapon B acid / nullapon BF acid / perma kleer 50 acid / SEQ100 / sequestrene AA / sequestric acid / sequestrol / tritine acid / trilplex / traxon BW / trilox B (=EDTA) / trilon BS / trilon BW / universne acid / versene acid / versene (=EDTA) / vinkel 100 / warkeelate acid / YD30</td>
<td>(CAS-Nos.) 60-00-4</td>
<td>10 - 50</td>
<td>Eye Irrit. 2, H319</td>
</tr>
</tbody>
</table>
|                             | Skin Corr. 1, H314
|                             | Aquatic Acute 3, H402

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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: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

4.3. Immediate medical attention and special treatment, if necessary
Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media
Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium.

5.2. Specific hazards arising from the chemical
Fire hazard: DIRECT FIRE HAZARD: Most organic solids may burn if strongly heated. INDIRECT FIRE HAZARD:
Explosion hazard: DIRECT EXPLOSION HAZARD: Most organic solids are liable to dust explosion hazard. INDIRECT EXPLOSION HAZARD: Dust cloud can be ignited by a spark.

5.3. Special protective equipment and precautions for fire-fighters
Firefighting instructions: Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.
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
For containment: Contain released product, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.
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. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Wear personal protective equipment.
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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.
Storage temperature : ambient temperature
Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources, ignition sources.
Information on mixed storage : KEEP SUBSTANCE AWAY FROM: combustible materials, oxidizing agents, (strong) acids, metals, organic materials, water/moisture.
Storage area : Store in a dry area. Keep container in a well-ventilated place. Unauthorized persons are not admitted. Meet the legal requirements. Store at ambient temperature.
Special rules on packaging : SPECIAL REQUIREMENTS: hermetical, watertight, corrosion-proof, dry, clean, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials : SUITABLE MATERIAL: stainless steel, nickel. MATERIAL TO AVOID: lead, aluminium, copper, tin, zinc, bronze, textile.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Cu Destaining Solution [10X] USA - ACGIH - Occupational Exposure Limits |
|-----------------------------|------------------|
| ACGIH Ceiling (mg/m³)       | 2 mg/m³          |

| sodium hydroxide (1310-73-2) USA - ACGIH - Occupational Exposure Limits |
|-----------------------------|------------------|
| ACGIH Ceiling (mg/m³)       | 2 mg/m³          |

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

Materials for protective clothing:
GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: natural rubber, neoprene, nitrile rubber. GIVE LESS RESISTANCE: butyl rubber, polyethylene, PVA. GIVE POOR RESISTANCE: natural fibres

Hand protection:
Gloves

Eye protection:
Safety glasses

Skin and body protection:
Corrosion-proof clothing. In case of dust production: head/neck protection

Respiratory protection:
Dust production: dust mask with filter type P3. Self-contained breathing apparatus if conc. in air > 2 mg/m³

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>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>No data available</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>
<tr>
<td>Relative vapor density at 20 °C</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosion limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
Violent exothermic reaction with water (moisture): release of corrosive mist. Reacts exothermically on exposure to water (moisture) with combustible materials: risk of spontaneous ignition. Reacts on exposure to water (moisture) with (some) metals: release of highly flammable gases/vapours (hydrogen). Absorbs the atmospheric CO2. Violent to explosive reaction with (some) acids. Reacts violently with many compounds: heat release resulting in increased fire or explosion risk.

10.2. Chemical stability
Unstable on exposure to moisture. Unstable on exposure to air. Hygroscopic.

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>4500 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>4500 mg/kg body weight</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes severe skin burns and eye damage.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Eye damage, category 1, implicit</td>
</tr>
<tr>
<td>Respiratory or skin sensitization</td>
<td>Not classified</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Not classified</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Category</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – single exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Specific target organ toxicity – repeated exposure</td>
<td>Not classified</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Not classified</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### Symptoms/effects after inhalation


### Symptoms/effects after skin contact

BURNS.

### Symptoms/effects after eye contact

Serious damage to eyes.

### Symptoms/effects after ingestion

BURNS.

### Chronic symptoms

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract. Gastrointestinal complaints.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general: Before neutralisation, the product may represent a danger to aquatic organisms.

<table>
<thead>
<tr>
<th>Compound</th>
<th>Toxicity EC50/Daphnia sp.</th>
<th>LC50 fish 1 (96 h, Salmo gairdneri, Static system, Fresh water, Experimental value, Solution &gt;=50%)</th>
<th>EC50 Daphnia 1 (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
<td>45.4 mg/l</td>
<td></td>
</tr>
<tr>
<td>edetic acid (60-00-4)</td>
<td></td>
<td>159 mg/l</td>
<td>40.4 mg/l (48 h, Ceriodaphnia sp., Experimental value, Nominal concentration)</td>
</tr>
</tbody>
</table>

### 12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>Compound</th>
<th>Persistence and degradability</th>
<th>Biodegradability: not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td></td>
<td>Not applicable (inorganic)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Persistence and degradability</th>
<th>Biodegradability: not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td></td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>edetic acid (60-00-4)</td>
<td></td>
<td>Not readily biodegradable in water.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Biochemical oxygen demand (BOD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
<th>BOD (% of ThOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>0.01 g O₂/g substance</td>
<td>0.85 g O₂/g substance</td>
<td>1.09 g O₂/g substance</td>
<td></td>
<td>0.0091</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>Biochemical oxygen demand (BOD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>Chemical oxygen demand (COD)</th>
<th>ThOD</th>
<th>BOD (% of ThOD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>0.01 g O₂/g substance</td>
<td>0.85 g O₂/g substance</td>
<td>1.09 g O₂/g substance</td>
<td></td>
<td>0.0091</td>
</tr>
</tbody>
</table>

### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Compound</th>
<th>Bioaccumulative potential</th>
<th>Biodegradable: not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>sodium hydroxide (1310-73-2)</td>
<td>Not bioaccumulative.</td>
<td></td>
</tr>
<tr>
<td>edetic acid (60-00-4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compound</th>
<th>BCF fish 1</th>
<th>BCF fish 1 (28 day(s), Lepomis macrochirus, Flow-through system, Fresh water, Read-across, Fresh weight)</th>
<th>Log Pow</th>
<th>Bioaccumulative potential</th>
<th>Low potential for bioaccumulation (BCF &lt; 500).</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCF fish 1</td>
<td>1.1 - 1.8</td>
<td></td>
<td>0.13</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
<td></td>
</tr>
</tbody>
</table>

### 12.4. Mobility in soil

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**SECTION 13: Disposal considerations**

**13.1. Disposal methods**

**Waste treatment methods**

Dissolve or mix with a combustible solvent. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

**Additional information**

LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

**SECTION 14: Transport information**

**Department of Transportation (DOT)**

In accordance with DOT

**Other information**

No supplementary information available.

**Transportation of Dangerous Goods**

**Transport by sea**

**Packing group (IMDG)**

II - substances presenting medium danger

**EmS-No. (1)**

F-A

**EmS-No. (2)**

S-B

**Air transport**

**SECTION 15: Regulatory information**

**15.1. US Federal regulations**

**sodium hydroxide (1310-73-2)**

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 1000 lb

**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

**15.2. International regulations**

**CANADA**

**EU-Regulations**

**National regulations**

No additional information available
15.3. US State regulations

SECTION 16: Other information

Revision date: 05/11/2017

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H290</th>
<th>May be corrosive to metals</th>
</tr>
</thead>
<tbody>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
<tr>
<td>H402</td>
<td>Harmful to aquatic life</td>
</tr>
</tbody>
</table>

NFPA health hazard: 3 - Materials that, under emergency conditions, can cause serious or permanent injury.

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: 1 - Materials that in themselves are normally stable but can become unstable at elevated temperatures and pressures.

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.