Safety Data Sheet

Cat. # 786-889

ProteaseArrest™

Size: For 240ml
EDTA (0.5M)
Safety Data Sheet
according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Date of issue: 04/21/2016  Revision date: 05/11/2017  Version: 7.1

SECTION 1: Identification

1.1. Identification
Product form : Mixture
Product name : EDTA (0.5M)
Product code : 015E

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 - 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
Not classified

2.2. GHS Label elements, including precautionary statements
GHS-US labelling
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 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
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.
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.

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

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
EDTA (0.5M)  
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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Odor threshold</td>
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</tr>
<tr>
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<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>No data available</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
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<td>Flammability (solid, gas)</td>
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</tr>
<tr>
<td>Vapor pressure</td>
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<tr>
<td>Relative vapor density at 20 °C</td>
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</tr>
<tr>
<td>Relative density</td>
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</tr>
<tr>
<td>Solubility</td>
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</tr>
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</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
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<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

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

<table>
<thead>
<tr>
<th>Toxicological effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
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<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Not classified</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Not classified</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>
<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>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Aspiration hazard</th>
<th>Not classified</th>
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</thead>
<tbody>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
</tbody>
</table>

**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.

12.2. **Persistence and degradability**
No additional information available

12.3. **Bioaccumulative potential**
No additional information available

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**

**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
Not regulated

Air transport
Not regulated

**SECTION 15: Regulatory information**

15.1. **US Federal regulations**
No additional information available

15.2. **International regulations**

CANADA
No additional information available

EU-Regulations
No additional information available

National regulations
No additional information available

15.3. **US State regulations**
No additional information available
SECTION 16: Other information

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.
SECTION 1: Identification

1.1. Identification
Product form : Mixture
Product name : PhosphataseArrest™ I [100X]
Product code : 113P

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 - 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
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

<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>Sodium Pyrophosphate dibasic</td>
<td>acid sodiumpyrophosphate / ASPP (=acid sodiumpyrophosphate) / Dinatriumhydrogenpyrophosphat / Dinatriumphosphat / diphasphate disodique / diposphoric acid, disodium salt / disodium acid pyrophosphate / disodium dihydrogenpyrophosphate / disodium dihydropyrophosphate / disodium phosphate / E 450 / E 450i / E450(a) food grade / E450a(I) / pyrophosphate acide de sodium / pyrophosphoric acid disodium salt / SAPP (=sodium acid pyrophosphate) / sel disodique de l'acide diposphorique / sodium acid pyrophosphate / sodium acide pyrophosphate / sodium dihydrogen pyrophosphate / sodium pyrophosphate (=sodium pyrophosphate) / sodium pyrophosphate, acid</td>
<td>(CAS-No.) 7758-16-9</td>
<td>2 - 5</td>
<td>Eye Irrit. 2, H319</td>
</tr>
<tr>
<td>Name</td>
<td>Common Name (Synonyms)</td>
<td>Product identifier</td>
<td>%</td>
<td>GHS-US classification</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>--------------------</td>
<td>-------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>sodium molybdate, dihydrate</td>
<td>sodium molybdate, dihydrate / Dinatriummolybdat, Dihydrat / Dinatriummolybdat-2-hydrat / disodium molybdate, dihydrate / molibdato de disodio, dihidrato / molibdato de disódio, dihidrato / molibdato(VI) de sodio, dihidrato / molibdato(VI) de sódio, dihidrato / molibdato(VI) di sodio, dihidrato / molybdate de disodium, dihydrate / molybdate(VI) de sodium, dihydrate / molybdocy acid, disodium salt, dihydrate / molyhibit 100 / natrummolybdat-2-hydrat / natrummolybdat(VI)dihydrat / natrummolybdat(VI)dihydraatti / natrummolybdat(VI)dihydrat / Natriummolybdat-2-hydrat / sodio molibdato, dihidrato / sodio molibdato-2-hydrato / sodium molybdate(VI) dihydrate / sodium molybdate, dihydrate</td>
<td>(CAS-No.) 10102-40-6</td>
<td>2 - 5</td>
<td>Not classified</td>
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<tr>
<td>Sodium Orthovanadate</td>
<td>Natriumvanadat / trinatriumtetraoxovanadaiti / trinatriumtetraoxovanadat / Trinatriumvanadat / trisodium tetraoxovanadate / vanadate (VO4,3-) / trisodium, (T-4)- / vanadic acid (H3VO4), trisodium salt / vanadic(ii)acid trisdium salt</td>
<td>(CAS-No.) 13721-39-6</td>
<td>0.5 - 2</td>
<td>Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332</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 general


First-aid measures after inhalation

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact

Rinse with 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.

First-aid measures after ingestion

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

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

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

Slight irritation.

Symptoms/effects after eye contact

Irritation of the eye tissue.

Symptoms/effects after ingestion


Chronic symptoms

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

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.

5.2. Specific hazards arising from the chemical

Fire hazard

DIRECT FIRE HAZARD: Non combustible.

Explosion hazard

DIRECT EXPLOSION HAZARD: No direct explosion hazard.

Reactivity

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

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

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


Emergency procedures

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

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.

Methods for cleaning up: Stop dust cloud by humidifying. Scoop solid spill into closing containers. Wash down leftovers with plenty 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.

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.

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: 4 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>ACGIH TWA (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate dihydrate (10102-40-6)</td>
<td>0.5 mg/m³ (Respirable fraction)</td>
</tr>
<tr>
<td>Sodium fluoride (7681-49-4)</td>
<td>2.5 mg/m³</td>
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<tr>
<td>Sodium Orthovanadate (13721-39-6)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sodium Pyrophosphate dibasic (7758-16-9)</td>
<td>Not applicable</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:
Gloves

Eye protection:
Safety glasses. In case of dust production: protective goggles

Skin and body protection:
Protective clothing

Respiratory protection:
Dust production: dust mask with filter type P1

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Physical state</td>
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</table>
PhosphataseArrest™ I [100X]  
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<table>
<thead>
<tr>
<th>Property</th>
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<td>Melting point</td>
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</tr>
<tr>
<td>Freezing point</td>
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<tr>
<td>Boiling point</td>
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<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>
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<td>Relative vapor density at 20 °C</td>
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<tr>
<td>Relative density</td>
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<td>Solubility</td>
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<td>Log Pow</td>
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<td>Auto-ignition temperature</td>
<td>No data available</td>
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<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
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<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
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<tr>
<td>Explosion limits</td>
<td>No data available</td>
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<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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<tr>
<td>Acute toxicity (oral)</td>
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<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
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<tr>
<td>Acute toxicity (inhalation)</td>
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<tr>
<th>Compound</th>
<th>Effect</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>sodium molybdate, dihydrate (10102-40-6)</td>
<td>LD50</td>
<td>4233 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td>LD50</td>
<td>&gt; 2000 mg/kg (Rat)</td>
</tr>
<tr>
<td>sodium fluoride (7681-49-4)</td>
<td>LD50</td>
<td>52 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td>ATE US</td>
<td>100 mg/kg body weight</td>
</tr>
<tr>
<td>Sodium Orthovanadate (13721-39-6)</td>
<td>LD50</td>
<td>330 mg/kg (Rat)</td>
</tr>
<tr>
<td></td>
<td>ATE US</td>
<td>500 mg/kg body weight</td>
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</table>
PhosphataseArrest™ I [100X]
Safety Data Sheet
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<table>
<thead>
<tr>
<th>Sodium Orthovanadate (13721-39-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ATE US (dermal)</td>
<td>1100 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (gases)</td>
<td>4500 ppmV/4h</td>
</tr>
<tr>
<td>ATE US (vapors)</td>
<td>11 mg/l/4h</td>
</tr>
<tr>
<td>ATE US (dust, mist)</td>
<td>1.5 mg/l/4h</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium Pyrophosphate dibasic (7758-16-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50 oral rat</td>
<td>2440 mg/kg body weight (24 h, Rat, Male/female, Read-across)</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>&gt; 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male/female, Experimental value)</td>
</tr>
<tr>
<td>LC50 inhalation rat (mg/l)</td>
<td>&gt; 0.58 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male/female, Experimental value)</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
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: 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: Slight irritation.
Symptoms/effects after eye contact: Irritation of the eye tissue.
Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

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.

<table>
<thead>
<tr>
<th>sodium molybdate, dihydrate (10102-40-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>644.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Semi-static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>130.9 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)</td>
</tr>
<tr>
<td>ErC50 (algae)</td>
<td>289.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>sodium fluoride (7681-49-4)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt; 530 mg/l (96 h, Lepomis macrochirus)</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>98 mg/l (48 h, Daphnia magna)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium Pyrophosphate dibasic (7758-16-9)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>&gt; 1500 mg/l (OECD 203: Fish, Acute Toxicity Test, 48 h, Leuciscus idus)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

<table>
<thead>
<tr>
<th>sodium molybdate, dihydrate (10102-40-6)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Substance</td>
<td>ThOD</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Sodium molybdate, dihydrate (10102-40-6)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sodium fluoride (7681-49-4)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Sodium Orthovanadate (13721-39-6)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability: not applicable.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable (inorganic)</td>
</tr>
<tr>
<td>Sodium Pyrophosphate dibasic (7758-16-9)</td>
<td></td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Biodegradability in water: no data available.</td>
</tr>
<tr>
<td>Biochemical oxygen demand (BOD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>ThOD</td>
<td>Not applicable</td>
</tr>
<tr>
<td>BOD (% of ThOD)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

12.3. **Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Substance</th>
<th>BCF fish 1</th>
<th>Bioaccumulative potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate, dihydrate (10102-40-6)</td>
<td>4.9 (28 day(s), Oncorhynchus tshawytscha, Fresh water, Weight of evidence, Anhydrous form)</td>
<td>Low potential for bioaccumulation (BCF &lt; 500).</td>
</tr>
<tr>
<td>Sodium fluoride (7681-49-4)</td>
<td>2.3 (Salmo gairdneri)</td>
<td>Not bioaccumulative.</td>
</tr>
<tr>
<td>Sodium Orthovanadate (13721-39-6)</td>
<td>Not bioaccumulative.</td>
<td></td>
</tr>
<tr>
<td>Sodium Pyrophosphate dibasic (7758-16-9)</td>
<td>Log Pow -2</td>
<td>Not bioaccumulative.</td>
</tr>
</tbody>
</table>

12.4. **Mobility in soil**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Ecology - soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium molybdate, dihydrate (10102-40-6)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td>Sodium fluoride (7681-49-4)</td>
<td>Toxic to flora.</td>
</tr>
<tr>
<td>Sodium Orthovanadate (13721-39-6)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
<tr>
<td>Sodium Pyrophosphate dibasic (7758-16-9)</td>
<td>No (test)data on mobility of the substance available.</td>
</tr>
</tbody>
</table>

12.5. **Other adverse effects**

No additional information available
### SECTION 13: Disposal considerations

#### 13.1. Disposal methods

<table>
<thead>
<tr>
<th>Regional legislation (waste)</th>
<th>LWCA (the Netherlands): KGA category 05.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste treatment methods</td>
<td>Waste treatment methods.</td>
</tr>
<tr>
<td>Product/Packaging disposal recommendations</td>
<td>Treat using the best available techniques before discharge into drains or the aquatic environment. Contains no organic halogen which may add to the AOX value. 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 authorized dump (Class I). Small quantities can be landfilled with the household waste. Precipitate/make insoluble. May be discharged to wastewater treatment installation.</td>
</tr>
</tbody>
</table>


### 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

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

- **sodium molybdate, dihydrate (10102-40-6)**
  - Not listed on the United States TSCA (Toxic Substances Control Act) inventory

- **sodium fluoride (7681-49-4)**
  - 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: 1000 lb

- **Sodium Orthovanadate (13721-39-6)**
  - Not listed on the United States TSCA (Toxic Substances Control Act) inventory

- **Sodium Pyrophosphate dibasic (7758-16-9)**
  - Not listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

**CANADA**

No additional information available

**EU-Regulations**

No additional information available

**National regulations**

No additional information available

#### 15.3. US State regulations
Component | State or local regulations
---|---
sodium molybdate, dihydrate(10102-40-6) |  
sodium fluoride(7681-49-4) |  
Sodium Orthovanadate(13721-39-6) |  
Sodium Pyrophosphate dibasic(7758-16-9) |  

**SECTION 16: Other information**

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H301</td>
<td>Toxic if swallowed</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H312</td>
<td>Harmful in contact with skin</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>H332</td>
<td>Harmful if inhaled</td>
</tr>
</tbody>
</table>

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.
SECTION 1: Identification

1.1. Identification

Product form: Mixture
Product name: ProteaseArrest™
Product code: 362P

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 - 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
Skin corrosion/irritation
Category 2: H315 - Causes skin irritation
Serious eye damage/eye irritation Category 2: H319 - Causes serious eye 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):
H227 - Combustible liquid
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS-US):
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P351+P338 - If on skin: Wash cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 - Specific treatment (see supplemental first aid instruction on this label)
P332+P337 - If skin irritation persists: 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.
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>alpha-toluene-sulfonyl fluoride</td>
<td>alfa-toluene sulfonyl fluoride / alpha-toluene sulphonyl fluoride / alpha-Toluolsulfonfluorid / alpha-Toluolsulfonsäurefluorid / benzilsulfonyl fluoro / benzenemethanesulfonfluorid / benzylsulfonfluorid / Benzylsulfonfluoride / benzylsulfonylfluorure / benzylsulphonfluoride / DFP- Substitute / fenilmetanosulfonfluorid / phenylmethanesulfonfluorid / phénylméthanesulfonyle florure / Phenylmethansulfonsäurefluorid / Phenylmethansulfonfluoride / phenylmethylsulfonfluoride / PMSF (= phenylmethanesulfonyl fluoride)</td>
<td>(CAS-No.) 329-98-6</td>
<td>0.5 - 2</td>
<td>Skin Corr. 1B, H314</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. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
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 skin contact: Irritation.
Symptoms/effects after eye contact: Eye irritation.

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

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. 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. Avoid contact with skin and eyes. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
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 in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection
8.1. Control parameters

alpha-toluenesulfonyl fluoride (329-98-6)
Not applicable

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
**ProteaseArrest™ Safety Data Sheet**

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>

**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**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (oral)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (dermal)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Acute toxicity (inhalation)</td>
<td>Not classified</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Causes serious eye irritation.</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>
<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>
<tr>
<td>Symptoms/effects after skin contact</td>
<td>Irritation.</td>
</tr>
<tr>
<td>Symptoms/effects after eye contact</td>
<td>Eye irritation.</td>
</tr>
</tbody>
</table>

9.2. **Other information**

No additional information 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.

#### 12.2. Persistence and degradability

No additional information available.

#### 12.3. Bioaccumulative potential

<table>
<thead>
<tr>
<th>Substance</th>
<th>Bioaccumulative Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha-toluenesulfonyl fluoride (329-98-6)</td>
<td>No bioaccumulation data available.</td>
</tr>
</tbody>
</table>

#### 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


### 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**
  - Not regulated

- **Air transport**
  - Not regulated

### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>US Federal regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>alpha-toluenesulfonyl fluoride (329-98-6)</td>
<td>Not listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

#### 15.2. International regulations

- **CANADA**
  - No additional information available

- **EU-Regulations**
  - No additional information available

- **National regulations**
  - No additional information available

#### 15.3. US State regulations
Component                        | State or local regulations
---------------------------------|-----------------------------
alpha-toluene sulfonfyl fluoride(329-98-6) |                             

SECTION 16: Other information

Full text of H-phrases:

<table>
<thead>
<tr>
<th>H-phrases</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H227</td>
<td>Combustible liquid</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H315</td>
<td>Causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
</tr>
</tbody>
</table>

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.