

Kit Summary

Product Code(s) AB206386
Product name TUNEL Assay Kit - HRP-DAB

Proteinase K

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|-----------|---------|----------|---|---------------------------|
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | No data available |

TdT Labeling Reaction Mix

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|--|-----------|-----------|----------|--|---------------------------|
| Cacodylic acid sodium salt trihydrate | - | 6131-99-3 | 15 | Carc. 2 (H351) Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) | |
| Hydrochloric acid | 231-595-7 | 7647-01-0 | 2.1 | STOT SE 3 (H335) Skin Corr. 1B (H314) | - |
| 2'-Deoxycytidine-5'-triphosphate disodium salt (aqueous) | - | 2056-98-6 | 1 | - | |
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | |
| Cobalt Chloride | - | 7791-13-1 | 0.1 | Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Aquatic Chronic 4 (H413) | |

TdT Enzyme

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|-----------|-----------|----------|---|---------------------------|
| Sodium hydroxide | 215-185-5 | 1310-73-2 | 1 | Skin Corr. 1A (H314) | - |
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | No data available |

Stop Buffer

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|-----------|---------|----------|---|---------------------------|
| EDTA | 200-449-4 | 60-00-4 | 15 | Eye Irrit. 2 (H319) | - |
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | |

Blocking Buffer

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-------|--------|----------|---------------------------------|---------------------------|
|---------------|-------|--------|----------|---------------------------------|---------------------------|

| | | | | | |
|-------------------|-----------|---------|-----|---|-------------------|
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | No data available |
|-------------------|-----------|---------|-----|---|-------------------|

25X Conjugate

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|-------------------|-----------|---------|----------|---|---------------------------|
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | |

DAB Solution 1 (DAB Concentrate)

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|------------------------|-------|-------------|----------|---|---------------------------|
| DAB tetrahydrochloride | - | 868272-85-9 | 5 | Eye Irrit. 2 (H319) Muta. 2 (H341) Carc. 1B (H350) Acute Tox. 4 (H302) | No data available |

Methyl Green Counterstain

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------|-----------|-----------|----------|---|---------------------------|
| Methyl Green | 230-415-4 | 7114-03-6 | 0.3 | STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) | - |

TdT Equilibration Buffer

| Chemical Name | EC-No | CAS-No | Weight % | Classification (Reg. 1272/2008) | REACH Registration Number |
|---------------------------------------|-----------|-----------|----------|--|---------------------------|
| Cacodylic acid sodium salt trihydrate | - | 6131-99-3 | 3 | Carc. 2 (H351) Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) | No data available |
| Cobalt Chloride | - | 7791-13-1 | 1 | Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Aquatic Chronic 4 (H413) | No data available |
| 2-Chloroacetamide | 201-174-2 | 79-07-2 | 0.3 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) | No data available |
| Hydrochloric acid | 231-595-7 | 7647-01-0 | 0.2 | STOT SE 3 (H335) Skin Corr. 1B (H314) | - |

GHS / CLP - GHS - Classification



Signal Word

Danger

Hazard statements

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H332 - Harmful if inhaled

H351 - Suspected of causing cancer

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P202 - Do not handle until all safety precautions have been read and understood

P201 - Obtain special instructions before use

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P285 - In case of inadequate ventilation wear respiratory protection

P263 - Avoid contact during pregnancy/ while nursing

P272 - Contaminated work clothing should not be allowed out of the workplace

P363 - Wash contaminated clothing before reuse

P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P308 + P313 - IF exposed or concerned: Get medical advice/ attention

P273 - Avoid release to the environment

P501 - Dispose of contents/ container to an approved waste disposal plant

P405 - Store locked up

P391 - Collect spillage

2.3 Other information

A safety datasheet follows for all potentially hazardous components – all other components are non-hazardous.

TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 10

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Proteinase K

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|--------------------|------------|
| Skin sensitization | Category 1 |
|--------------------|------------|

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statements

H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P363 - Wash contaminated clothing before reuse
P272 - Contaminated work clothing should not be allowed out of the workplace
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|-------------------|---------|----------|---|
| 2-Chloroacetamide | 79-07-2 | 0.1-1 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | When symptoms persist or in all cases of doubt seek medical advice. If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. |
| Ingestion | Rinse mouth. Do not induce vomiting without medical advice. Consult a physician. |
| Notes to physician | Treat symptomatically. May cause sensitization of susceptible persons. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Specific hazards arising from the chemical | Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes May cause sensitization by inhalation and skin contact |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Ensure adequate ventilation. Wear personal protective equipment. |
| Technical measures/Storage conditions | Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

| | |
|----------------------------|--|
| Product Information | Product is toxic by ingestion May cause sensitization of susceptible persons |
| Ingestion | Toxic if swallowed |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|--------------------|-------------|-----------------|
| Tris | 5900 mg/kg (Rat) | | |
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

| | |
|-----------------------------|---|
| Chronic toxicity | Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure |
| Sensitization | As a precaution the product should be treated as a sensitizer. |
| Target Organ Effects | None known. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|--|---|---|---|
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |
| Chemical Name | | | log Pow | |
| 2-Chloroacetamide | | | -0.53 | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H301 - Toxic if swallowed H317 - May cause an allergic skin reaction H361f - Suspected of damaging fertility

Hazard statements

H317 - May cause an allergic skin reaction

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 10

1. PRODUCT AND COMPANY IDENTIFICATION

Product name TdT Labeling Reaction Mix

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|---------------------------------------|------------|
| Acute inhalation toxicity - dust/mist | Category 4 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 2 |
| Chronic aquatic toxicity | Category 2 |

GHS Label elements, including precautionary statements



Signal Word

Warning

Hazard statements

H332 - Harmful if inhaled

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P201 - Obtain special instructions before use

P202 - Do not handle until all safety precautions have been read and understood

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P271 - Use only outdoors or in a well-ventilated area

P363 - Wash contaminated clothing before reuse

P272 - Contaminated work clothing should not be allowed out of the workplace

P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P312 - Call a POISON CENTER or doctor/ physician if you feel unwell

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

P273 - Avoid release to the environment

P391 - Collect spillage

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|--|-----------|----------|--|
| Cacodylic acid sodium salt trihydrate | 6131-99-3 | 10-<20 | Carc. 2 (H351) Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) |
| 2'-Deoxycytidine-5'-triphosphate disodium salt (aqueous) | 2056-98-6 | 1-5 | - |
| Cobalt Chloride | 7791-13-1 | 0.1-1 | Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Aquatic Chronic 4 (H413) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| General advice | If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. If symptoms persist, call a physician. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Keep people away from and upwind of spill/leak. |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal. |
| Methods for cleaning up | Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal. |

7. HANDLING AND STORAGE

| | |
|--|---|
| Advice on safe handling | Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Remove and wash contaminated clothing before re-use. Do not breathe vapors or spray mist. Do not eat, drink or smoke when using this product. |
| Technical measures/Storage conditions | Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------------------|----------------|---|---|
| Hydrochloric acid 7647-01-0 | Ceiling: 2 ppm | (vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³ | IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³ |

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures
Showers
Eyewash stations
Ventilation systems

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles.

Skin and body protection

Long sleeved clothing. Protective gloves.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible products None known based on information supplied.

Conditions to avoid None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Harmful by inhalation

Inhalation Harmful by inhalation

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-------------------|-----------------------|----------------------|
| Hydrochloric acid | 700 mg/kg (Rat) | 5010 mg/kg (Rabbit) | 3124 ppm (Rat) 1 h |
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

IARC: (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Mutagenic effects Possible risks of irreversible effects.

Target Organ Effects Eyes. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|--|---|---|---|
| Hydrochloric acid | | 282: 96 h <i>Gambusia affinis</i> mg/L LC50 static | | |
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

| Chemical Name | CAS-No | Weight % | SARA 313 - Threshold Values % |
|-------------------|-----------|----------|-------------------------------|
| Hydrochloric acid | 7647-01-0 | 2.1 | 1.0 |

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | no |
| Chronic Health Hazard | yes |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Hydrochloric acid | X | X | X | X | X |

International Regulations**WHMIS Note:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H224 - Extremely flammable liquid and vapor H301 - Toxic if swallowed H304 - May be fatal if swallowed and enters airways H314 - Causes severe skin burns and eye damage H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H331 - Toxic if inhaled H332 - Harmful if inhaled H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled H335 - May cause respiratory irritation H351 - Suspected of causing cancer H361f - Suspected of damaging fertility H400 - Very toxic to aquatic life H410 - Very toxic to aquatic life with long lasting effects H411 - Toxic to aquatic life with long lasting effects H413 - May cause long lasting harmful effects to aquatic life

Hazard statements

H332 - Harmful if inhaled

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H411 - Toxic to aquatic life with long lasting effects

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 10

1. PRODUCT AND COMPANY IDENTIFICATION

Product name TdT Enzyme

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|--------------------|------------|
| Skin sensitization | Category 1 |
|--------------------|------------|

GHS Label elements, including precautionary statements



Signal Word

Warning

Hazard statements

H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P272 - Contaminated work clothing should not be allowed out of the workplace
P363 - Wash contaminated clothing before reuse
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|------------------|-----------|----------|---------------------------------|
| Sodium hydroxide | 1310-73-2 | 1-5 | Skin Corr. 1A (H314) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. Dam up. |

7. HANDLING AND STORAGE

Advice on safe handling Ensure adequate ventilation. Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist.

Technical measures/Storage conditions Keep container tightly closed. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|-------------------------------|------------------------------|--|--|
| Sodium hydroxide 1310-73-2 | Ceiling: 2 mg/m ³ | TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³ | IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³ |

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures Showers
Eyewash stations
Ventilation systems

Personal protective equipment

Eye/face protection Tightly fitting safety goggles. Face-shield.

Skin and body protection Long sleeved clothing. Protective gloves.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | No information available |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-----------------|-----------------------|-----------------|
| Sodium hydroxide | | 1350 mg/kg (Rabbit) | |
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

Chronic toxicity Avoid repeated exposure

Target Organ Effects Eyes. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|--|---|---|---|
| Sodium hydroxide | | 45.4: 96 h Oncorhynchus mykiss mg/L LC50 static | | |
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|------------------|-----------------------------------|
| Sodium hydroxide | Toxic Corrosive |

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Sodium hydroxide | 1000 lb | | | X |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

| Chemical Name | Hazardous Substances RQs | Extremely Hazardous Substances RQs | RQ |
|------------------|--------------------------|------------------------------------|--|
| Sodium hydroxide | 1000 lb | | RQ 1000 lb final RQ RQ 454 kg final RQ |

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|------------------|---------------|------------|--------------|----------|--------------|
| Sodium hydroxide | X | X | X | | X |

International Regulations

| Chemical Name | Carcinogen Status | Exposure limits |
|------------------|-------------------|-------------------------------------|
| Sodium hydroxide | | Mexico: Ceiling 2 mg/m ³ |

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H314 - Causes severe skin burns and eye damage H301 - Toxic if swallowed H317 - May cause an allergic skin reaction H361f - Suspected of damaging fertility

Hazard statements

H317 - May cause an allergic skin reaction

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

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End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 9

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Stop Buffer

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-----------------------------------|------------|
| Serious eye damage/eye irritation | Category 2 |
| Skin sensitization | Category 1 |

GHS Label elements, including precautionary statements



Signal Word
Danger

Hazard statements

H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P264 - Wash face, hands and any exposed skin thoroughly after handling

P270 - Do not eat, drink or smoke when using this product

P363 - Wash contaminated clothing before reuse

P272 - Contaminated work clothing should not be allowed out of the workplace

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/ attention

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P405 - Store locked up

P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|-------------------|---------|----------|---|
| 2-Chloroacetamide | 79-07-2 | 0.1-1 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | When symptoms persist or in all cases of doubt seek medical advice. If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. |
| Ingestion | Rinse mouth. Do not induce vomiting without medical advice. Consult a physician. |
| Notes to physician | Treat symptomatically. May cause sensitization of susceptible persons. |

5. FIRE-FIGHTING MEASURES

| | |
|-----------------------------|----------------|
| Flammable properties | Not flammable. |
| Flash point | not determined |

| | |
|--|--|
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Specific hazards arising from the chemical | Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes May cause sensitization by inhalation and skin contact |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Ensure adequate ventilation. Wear personal protective equipment. |
| Technical measures/Storage conditions | Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

| | |
|----------------------------|--|
| Product Information | Product is toxic by ingestion May cause sensitization of susceptible persons |
| Ingestion | Toxic if swallowed |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|--------------------|-------------|-----------------|
| EDTA | 1700 mg/kg (Rat) | | |
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

| | |
|-----------------------------|---|
| Chronic toxicity | Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure |
| Sensitization | As a precaution the product should be treated as a sensitizer. |
| Target Organ Effects | None known. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|---|--|--|--|
| EDTA | 1.01: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50 | 34-62: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 44.2-76.5: 96 h <i>Pimephales promelas</i> mg/L LC50 static | | 113: 48 h <i>Daphnia magna</i> mg/L EC50 Static |
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |
| Chemical Name | | log Pow | | |
| 2-Chloroacetamide | | -0.53 | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

Not dangerous goods

IATA

Not dangerous goods

ADR

Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**International Regulations****WHMIS Note:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H301 - Toxic if swallowed H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H361f - Suspected of damaging fertility

Hazard statements

H317 - May cause an allergic skin reaction

H319 - Causes serious eye irritation

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

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End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 9

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Blocking Buffer

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|--------------------|------------|
| Skin sensitization | Category 1 |
|--------------------|------------|

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statements

H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P363 - Wash contaminated clothing before reuse
P272 - Contaminated work clothing should not be allowed out of the workplace
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|-------------------|---------|----------|---|
| 2-Chloroacetamide | 79-07-2 | 0.1-1 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | When symptoms persist or in all cases of doubt seek medical advice. If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. |
| Ingestion | Rinse mouth. Do not induce vomiting without medical advice. Consult a physician. |
| Notes to physician | Treat symptomatically. May cause sensitization of susceptible persons. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Specific hazards arising from the chemical | Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes May cause sensitization by inhalation and skin contact |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Ensure adequate ventilation. Wear personal protective equipment. |
| Technical measures/Storage conditions | Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

| | |
|----------------------------|--|
| Product Information | Product is toxic by ingestion May cause sensitization of susceptible persons |
| Ingestion | Toxic if swallowed |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-----------------|-------------|-----------------|
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

| | |
|-----------------------------|---|
| Chronic toxicity | Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure |
| Sensitization | As a precaution the product should be treated as a sensitizer. |
| Target Organ Effects | None known. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|--|---|---|---|
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |
| Chemical Name | log Pow | | | |
| 2-Chloroacetamide | -0.53 | | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H301 - Toxic if swallowed H317 - May cause an allergic skin reaction H361f - Suspected of damaging fertility

Hazard statements

H317 - May cause an allergic skin reaction

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 5

1. PRODUCT AND COMPANY IDENTIFICATION

Product name 25X Conjugate

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|--------------------|------------|
| Skin sensitization | Category 1 |
|--------------------|------------|

GHS Label elements, including precautionary statements



Signal Word

Danger

Hazard statements

H317 - May cause an allergic skin reaction

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ eye protection/ face protection
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P363 - Wash contaminated clothing before reuse
P272 - Contaminated work clothing should not be allowed out of the workplace
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician
P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention
P405 - Store locked up
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|-------------------|---------|----------|---|
| 2-Chloroacetamide | 79-07-2 | 0.1-1 | Acute Tox. 3 (H301) Skin Sens. 1 (H317) Repr. 2 (H361f) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | When symptoms persist or in all cases of doubt seek medical advice. If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. |
| Ingestion | Rinse mouth. Do not induce vomiting without medical advice. Consult a physician. |
| Notes to physician | Treat symptomatically. May cause sensitization of susceptible persons. |

5. FIRE-FIGHTING MEASURES

| | |
|--|---|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Specific hazards arising from the chemical | Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation and skin contact. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal precautions | Use personal protective equipment. Avoid contact with the skin and the eyes. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Ensure adequate ventilation. Wear personal protective equipment. |
| Technical measures/Storage conditions | Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

| | |
|----------------------------|--|
| Product Information | Product is toxic by ingestion May cause sensitization of susceptible persons |
| Ingestion | Toxic if swallowed |

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-----------------|-------------|-----------------|
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |

Chronic toxicity

| | |
|-----------------------------|---|
| Chronic toxicity | Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure |
| Sensitization | As a precaution the product should be treated as a sensitizer. |
| Target Organ Effects | None known. |

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|----------------------|--|---|---|---|
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |
| Chemical Name | | log Pow | | |
| 2-Chloroacetamide | | -0.53 | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H301 - Toxic if swallowed H317 - May cause an allergic skin reaction H361f - Suspected of damaging fertility

Hazard statements

H317 - May cause an allergic skin reaction

Revision Date 18-Oct-2019

Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 7

1. PRODUCT AND COMPANY IDENTIFICATION

Product name DAB Solution 1 (DAB Concentrate)

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ protective clothing

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|------------------------|-------------|----------|---|
| DAB tetrahydrochloride | 868272-85-9 | 3-7 | Eye Irrit. 2 (H319) Muta. 2 (H341) Carc. 1B (H350) Acute Tox. 4 (H302) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Handle in accordance with good industrial hygiene and safety practice. |
| Technical measures/Storage conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | Handle in accordance with good industrial hygiene and safety practice. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chronic toxicity

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations**International Regulations****WHMIS Note:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

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

Revision Date

18-Oct-2019

Revision Note

No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 8

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Methyl Green Counterstain
Recommended use For research use only

Supplier Address Abcam Inc
 1 Kendall Square, Ste 341
 Cambridge, MA 02139-1517
 USA
 Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
 Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|-------|----------------|
| Ozone | Not applicable |
|-------|----------------|

GHS Label elements, including precautionary statements

Not dangerous

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/ protective clothing

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------|-----------|----------|---|
| Methyl Green | 7114-03-6 | 0.1-1 | STOT SE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|--|
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. |
| Inhalation | Move to fresh air. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|--|
| Personal precautions | Ensure adequate ventilation. |
| Environmental precautions | Try to prevent the material from entering drains or water courses. |
| Methods for containment | Prevent further leakage or spillage if safe to do so. |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. |

7. HANDLING AND STORAGE

| | |
|--|--|
| Advice on safe handling | Handle in accordance with good industrial hygiene and safety practice. |
| Technical measures/Storage conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering measures | Showers Eyewash stations Ventilation systems |
| Personal protective equipment | |
| Eye/face protection | Tightly fitting safety goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin and body protection | Long sleeved clothing. Protective gloves. |
| Respiratory protection | If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations. |
| Hygiene measures | Handle in accordance with good industrial hygiene and safety practice. |

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | solubility | No information available. |
| Explosion limits | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Specific Gravity | No data available | VOC Content(%) | Not applicable |
| Evaporation rate | No information available | | |
| Vapor density | No data available | | |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chronic toxicity

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

| Chemical Name | California Hazardous Waste Status |
|---------------|-----------------------------------|
| Methyl Green | Toxic |

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|-----------------------------------|----|
| Acute Health Hazard | no |
| Chronic Health Hazard | no |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

| Chemical Name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Methyl Green | | X | | |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|---------------|---------------|------------|--------------|----------|--------------|
| Methyl Green | | | X | | |

International Regulations

WHMIS Note:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

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

Revision Date 18-Oct-2019
Revision Note No information available.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of MSDS

Safety Data Sheet

Issuing date No data available

Revision Date 18-Oct-2019

Version 10

1. PRODUCT AND COMPANY IDENTIFICATION

Product name TdT Equilibration Buffer

Recommended use For research use only

Supplier Address Abcam Inc
1 Kendall Square, Ste 341
Cambridge, MA 02139-1517
USA
Tel: (617)225-2272 or 888-77-ABCAM (22226) (US toll free)
Fax: (866) 739-9884 or (866) 457-9616 (both US toll free)

E-mail address technical@abcam.com

Emergency telephone +1 866 928 0789 (Toll free) /+1 202 464 2554

2. HAZARDS IDENTIFICATION

GHS - Classification

| | |
|---------------------------|------------|
| Respiratory sensitization | Category 1 |
| Skin sensitization | Category 1 |
| Carcinogenicity | Category 2 |
| Chronic aquatic toxicity | Category 2 |

GHS Label elements, including precautionary statements



**Signal Word**

Danger

Hazard statements

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)

P202 - Do not handle until all safety precautions have been read and understood

P201 - Obtain special instructions before use

P280 - Wear protective gloves/ eye protection/ face protection

P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P285 - In case of inadequate ventilation wear respiratory protection

P263 - Avoid contact during pregnancy/ while nursing

P272 - Contaminated work clothing should not be allowed out of the workplace

P363 - Wash contaminated clothing before reuse

P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P308 + P313 - IF exposed or concerned: Get medical advice/ attention

P273 - Avoid release to the environment

P501 - Dispose of contents/ container to an approved waste disposal plant

P405 - Store locked up

P391 - Collect spillage

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

| Chemical Name | CAS-No | Weight % | Classification (Reg. 1272/2008) |
|---------------------------------------|-----------|----------|--|
| Cacodylic acid sodium salt trihydrate | 6131-99-3 | 1-5 | Carc. 2 (H351) Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) |
| Cobalt Chloride | 7791-13-1 | 1-5 | Resp. Sens. 1 (H334) Skin Sens. 1 (H317) Aquatic Chronic 4 (H413) |

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

| | |
|---------------------------|---|
| General advice | If symptoms persist, call a physician. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. |
| Skin contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call a physician. |
| Inhalation | Move to fresh air. Artificial respiration and/or oxygen may be necessary. If symptoms persist, call a physician. |
| Ingestion | Clean mouth with water. Drink plenty of water. |
| Notes to physician | May cause sensitization of susceptible persons. Treat symptomatically. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Flammable properties | Not flammable. |
| Flash point | not determined |
| Suitable extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Explosion Data | |
| Sensitivity to Mechanical Impact | None. |
| Sensitivity to Static Discharge | None. |
| Specific hazards arising from the chemical | Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes May cause sensitization by inhalation and skin contact |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes. |

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions** Use personal protective equipment. Keep people away from and upwind of spill/leak.
- Environmental precautions** Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses.
- Methods for containment** Prevent further leakage or spillage if safe to do so. Cover powder spill with plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.
- Methods for cleaning up** Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Sweep up and shovel into suitable containers for disposal. Soak up with inert absorbent material.

7. HANDLING AND STORAGE

- Advice on safe handling** Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Do not eat, drink or smoke when using this product. Wear personal protective equipment. Do not breathe vapors or spray mist.
- Technical measures/Storage conditions** Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

| Chemical Name | ACGIH TLV | OSHA PEL | NIOSH IDLH |
|--------------------------------|----------------|---|---|
| Hydrochloric acid 7647-01-0 | Ceiling: 2 ppm | (vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³ | IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³ |

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures Showers
Eyewash stations
Ventilation systems

Personal protective equipment

- Eye/face protection** Tightly fitting safety goggles.
- Skin and body protection** Long sleeved clothing. Protective gloves.
- Respiratory protection** If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|---------------------------|------------------------------------|---------------------------|
| Appearance | No information available. | Odor | No information available. |
| Odor Threshold | No information available | Physical State @20°C | No information available |
| pH | No information available | Autoignition temperature | No information available |
| Flash point | No information available | Boiling point/boiling range | No information available |
| Decomposition temperature | No information available | Flammability Limits in Air | No information available |
| Melting point/range | No information available | | |
| Explosion limits | No information available | | |
| Specific Gravity | No data available | solubility | No information available. |
| Evaporation rate | No information available | Vapor Pressure @20°C (kPa) | No information available |
| Vapor density | No data available | VOC Content(%) | Not applicable |

10. STABILITY AND REACTIVITY

| | |
|---|--|
| Stability | Stable under recommended storage conditions. |
| Incompatible products | None known based on information supplied. |
| Conditions to avoid | None known based on information supplied. |
| Hazardous decomposition products | None known based on information supplied. |
| Hazardous polymerization | Hazardous polymerization does not occur. |

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information May cause sensitization of susceptible persons

| Chemical Name | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------------|-------------------|-----------------------|----------------------|
| 2-Chloroacetamide | 138 mg/kg (Rat) | | |
| Hydrochloric acid | 700 mg/kg (Rat) | 5010 mg/kg (Rabbit) | 3124 ppm (Rat) 1 h |

Chronic toxicity

Chronic toxicity Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure

carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans (Group 2B)

IARC: (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to Carcinogenicity in Humans

Sensitization As a precaution the product should be treated as a sensitizer.

Mutagenic effects Possible risks of irreversible effects.

Target Organ Effects None known.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Chemical Name | Toxicity to algae | Toxicity to fish | Toxicity to microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|-------------------|--|---|---|---|
| 2-Chloroacetamide | IC50 <i>Desmodesmus subspicatus</i> (Green algae): 10 mg/l (72 h) | LC50 <i>Leuciscus idus</i> (Golden orfe): 19.8 mg/l (96 h) | EC50 Activated sludge (Bacteria): 1,174 mg/l (3 h) | EC50 <i>Daphnia magna</i> (Water flea): 14 mg/l (48 h) |
| Hydrochloric acid | | 282: 96 h <i>Gambusia affinis</i> mg/L LC50 static | | |

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Dispose of in accordance with local regulations.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

| | |
|--|-----|
| Acute Health Hazard | yes |
| Chronic Health Hazard | yes |
| Fire Hazard | no |
| Sudden Release of Pressure Hazard | no |
| Reactive Hazard | no |

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

| Chemical Name | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|-------------------|---------------|------------|--------------|----------|--------------|
| Hydrochloric acid | X | X | X | X | X |

International Regulations**WHMIS Note:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

16. OTHER INFORMATION**Full text of H-Statements referred to under sections 2 and 3**

H224 - Extremely flammable liquid and vapor H301 - Toxic if swallowed H304 - May be fatal if swallowed and enters airways H314 - Causes severe skin burns and eye damage H317 - May cause an allergic skin reaction H319 - Causes serious eye irritation H331 - Toxic if inhaled H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled H335 - May cause respiratory irritation H351 - Suspected of causing cancer H361 - Suspected of damaging fertility or the unborn child if inhaled H400 - Very toxic to aquatic life H410 - Very toxic to aquatic life with long lasting effects H411 - Toxic to aquatic life with long lasting effects H413 - May cause long lasting harmful effects to aquatic life

Hazard statements

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H317 - May cause an allergic skin reaction

H351 - Suspected of causing cancer

H411 - Toxic to aquatic life with long lasting effects

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End of MSDS