

| Product code  | Description                                   |
|---------------|-----------------------------------------------|
| <b>VA1050</b> | <b>AccuMAP™ Low pH Protein Digestion Maxi</b> |

## Components:

|        |                                         |
|--------|-----------------------------------------|
| VA100  | AccuMap Denaturing Solution             |
| VB100A | TCEP                                    |
| VB101A | Iodoacetamide, 15 mg                    |
| VA102  | AccuMap 100X Oxidation Suppressant      |
| V528C  | AccuMAP™ Modified Trypsin Solution      |
| VA103  | AccuMap Low pH Resistant Lys-C Solution |
| VB102A | NEM, 15 mg                              |
| VA101  | AccuMap 10X Low pH Reaction Buffer      |



**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**1 Identification**

**Product identifier**

**Trade name:** AccuMap Denaturing Solution

**Article number:** VA100

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

**Label elements**

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms** GHS07

**Signal word** Warning

**Hazard-determining components of labeling:**

guanidinium chloride

**Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

**Precautionary statements**

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves / eye protection / face protection.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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**IF ON SKIN:** Wash with plenty of water.

**If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Rinse mouth.

**If skin irritation occurs:** Get medical advice/attention.

**If eye irritation persists:** Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 1

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 1

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):** Irritant

**Primary route(s) of entry:**

Dermal

Oral

**Target Organ(s):**

May affect Nervous system (Neurotoxin)

May affect Bones

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components:**

|         |                      |         |
|---------|----------------------|---------|
| 50-01-1 | guanidinium chloride | 76.424% |
|---------|----------------------|---------|

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

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**After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

**After swallowing:**

Immediately call a doctor.

Seek immediate medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** None

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

**Extinguishing media****Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** No special advice

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Remove persons from danger area.

Wear protective clothing.

**Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals****PAC-1:**

|         |                      |                       |
|---------|----------------------|-----------------------|
| 50-01-1 | guanidinium chloride | 1.4 mg/m <sup>3</sup> |
|---------|----------------------|-----------------------|

**PAC-2:**

|         |                      |                      |
|---------|----------------------|----------------------|
| 50-01-1 | guanidinium chloride | 16 mg/m <sup>3</sup> |
|---------|----------------------|----------------------|

**PAC-3:**

|         |                      |                      |
|---------|----------------------|----------------------|
| 50-01-1 | guanidinium chloride | 94 mg/m <sup>3</sup> |
|---------|----------------------|----------------------|

## 7 Handling and storage

**Handling:****Precautions for safe handling**

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

**Information about protection against explosions and fires:** The product is not flammable.

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**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep receptacle tightly sealed.

**Specific end use(s)** No further relevant information available.

## \* 8 Exposure controls/personal protection

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Clean skin thoroughly immediately after handling the product.

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

**Protection of hands:**

Protective gloves

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Wear butyl rubber, natural rubber, neoprene or nitrile gloves.

**Eye protection:**

Safety glasses

Use equipment for eye protection tested and approved under government NIOSH standards.

## \* 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Solution

**Color:** Colorless

**Odor:** Odorless

**Odor threshold:** Not determined.

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**Change in condition****Melting point/Melting range:** 164-169 °C (327-336 °F)**Boiling point/Boiling range:** Undetermined.**Flash point:** Not applicable.**Flammability (solid, gaseous):** Not applicable.**Ignition temperature:****Decomposition temperature:** Not determined.**Auto igniting:** Product is not selfigniting.**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:****Lower:** Not determined.**Upper:** Not determined.**Vapor pressure:** Not determined.**Density at 20 °C (68 °F):** 1.34 g/cm<sup>3</sup> (11.182 lbs/gal)**Relative density** Not determined.**Vapor density** Not determined.**Evaporation rate** Not determined.**Solubility in / Miscibility with****Water:** Fully miscible.**Partition coefficient (n-octanol/water):** Not determined.**Viscosity:****Dynamic:** Not determined.**Kinematic:** Not determined.**Organic solvents:** 0.0 %**Water:** 23.6 %**Other information** No further relevant information available.

## 10 Stability and reactivity

**Reactivity** No further relevant information available.**Chemical stability****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**Possibility of hazardous reactions** Reacts with strong acids and oxidizing agents.**Conditions to avoid** No further relevant information available.**Incompatible materials:** Oxidizing agents**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:****50-01-1 guanidinium chloride**

Oral LD50 475 mg/kg (Rat)

Irritation of eyes acute 500 mg (Rabbit)

Severe Irritation

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**Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

## \* 12 Ecological information

**Toxicity****Aquatic toxicity:** Not harmful to the aquatic environment**Persistence and degradability** Not available**Behavior in environmental systems:****Bioaccumulative potential** Not known**Mobility in soil** No further relevant information available.**Ecotoxicological effects:****Remark:** Not available**Additional ecological information:****General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

**Waste treatment methods****Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.

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## 14 Transport information

|                                                                                |                                          |
|--------------------------------------------------------------------------------|------------------------------------------|
| <b>UN-Number</b><br>DOT, ADR, ADN, IMDG, IATA                                  | Not hazardous for transportation<br>Void |
| <b>UN proper shipping name</b><br>DOT, ADR, ADN, IMDG, IATA                    | None<br>Void                             |
| <b>Transport hazard class(es)</b><br>DOT, ADR, ADN, IMDG, IATA<br>Class        | None<br>Void                             |
| <b>Packing group</b><br>DOT, ADR, IMDG, IATA                                   | None<br>Void                             |
| <b>Environmental hazards:</b><br><b>Marine pollutant:</b>                      | No                                       |
| <b>Special precautions for user</b>                                            | Not applicable.                          |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                          |
| <b>UN "Model Regulation":</b>                                                  | Void                                     |

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

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### NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

**GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

**Signal word** Warning

**Hazard-determining components of labeling:**

guanidinium chloride

**Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye irritation.

**Precautionary statements**

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Wear protective gloves / eye protection / face protection.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

IF ON SKIN: Wash with plenty of water.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations:**

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:**

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph: (608)274-4330

**Date of preparation / last revision** 07/18/2017 / -

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*Acute Tox. 4: Acute toxicity – Category 4*

*Skin Irrit. 2: Skin corrosion/irritation – Category 2*

*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*

**\* Data compared to the previous version altered.**

-US-

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**1 Identification**

**Product identifier**  
**Trade name:** TCEP

**Article number:** VB100A

**CAS Number:**

51805-45-9

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

**Label elements**

**GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms** GHS05

**Signal word** Danger

**Hazard-determining components of labeling:**

TCEP.HCl

**Hazard statements**

Causes severe skin burns and eye damage.

**Precautionary statements**

Do not breathe dusts or mists.

Wash thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

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**Trade name: TCEP**

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*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Immediately call a POISON CENTER/doctor.*

*Wash contaminated clothing before reuse.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 3

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 3

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):**

Highly Toxic

Corrosive

**Primary route(s) of entry:**

Dermal

Inhalation

Oral

**Target Organ(s):** Not applicable or unknown**Other hazards**

*This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.*

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

### \* 3 Composition/information on ingredients

**Chemical characterization: Substances****CAS No. Description**

51805-45-9 TCEP.HCl

### \* 4 First-aid measures

**Description of first aid measures****General information:**

*Immediately remove any clothing soiled by the product.*

*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*

*Seek medical treatment.*

**After inhalation:** *In case of unconsciousness place patient stably in side position for transportation.*

**After skin contact:**

*Immediately wash with water and soap and rinse thoroughly.*

*If skin irritation continues, consult a doctor.*

**After eye contact:** *Call a doctor immediately.*

**After swallowing:**

*Drink copious amounts of water and provide fresh air. Immediately call a doctor.*

*Seek immediate medical advice.*

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**Trade name: TCEP**

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**Information for doctor:****Most important symptoms and effects, both acute and delayed** None**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## \* 5 Fire-fighting measures

**Extinguishing media****Suitable extinguishing agents:**CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**Special hazards arising from the substance or mixture** None known**Advice for firefighters**

No special advice

In the case of fire, wear respiratory protective equipment and chemical protective suit.

## \* 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Avoid formation of dust.

Wear protective clothing.

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.**Methods and material for containment and cleaning up:**

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Pick up mechanically.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals****PAC-1:**

Substance is not listed.

**PAC-2:**

Substance is not listed.

**PAC-3:**

Substance is not listed.

## \* 7 Handling and storage

**Handling:****Precautions for safe handling**

Thorough dedusting.

Keep receptacles tightly sealed.

Open and handle receptacle with care.

**Information about protection against explosions and fires:** The product is not flammable.

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**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep receptacle tightly sealed.

**Specific end use(s)** No further relevant information available.

## \* 8 Exposure controls/personal protection

**Control parameters**

**Components with limit values that require monitoring at the workplace:** Not required.

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

**Breathing equipment:** Not required.

**Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Eye protection:**

Tightly sealed goggles

Use equipment for eye protection tested and approved under government NIOSH standards.

## \* 9 Physical and chemical properties

**Information on basic physical and chemical properties**

**General Information**

**Appearance:**

**Form:** Crystalline

**Color:** White

**Odor:** Not determined

**Odor threshold:** Not determined.

**pH-value:** Not applicable.

**Change in condition**

**Melting point/Melting range:** 176 °C (349 °F)

**Boiling point/Boiling range:** Undetermined.

**Flash point:** Not applicable.

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|                                                 |                                               |
|-------------------------------------------------|-----------------------------------------------|
| <b>Flammability (solid, gaseous):</b>           | Product is not flammable.                     |
| <b>Ignition temperature:</b>                    |                                               |
| <b>Decomposition temperature:</b>               | Not determined.                               |
| <b>Auto igniting:</b>                           | Not determined.                               |
| <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| <b>Explosion limits:</b>                        |                                               |
| <b>Lower:</b>                                   | Not determined.                               |
| <b>Upper:</b>                                   | Not determined.                               |
| <b>Vapor pressure:</b>                          | Not applicable.                               |
| <b>Density:</b>                                 | Not determined.                               |
| <b>Relative density</b>                         | Not determined.                               |
| <b>Vapor density</b>                            | Not applicable.                               |
| <b>Evaporation rate</b>                         | Not applicable.                               |
| <b>Solubility in / Miscibility with</b>         |                                               |
| <b>Water:</b>                                   | Insoluble.                                    |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined.                               |
| <b>Viscosity:</b>                               |                                               |
| <b>Dynamic:</b>                                 | Not applicable.                               |
| <b>Kinematic:</b>                               | Not applicable.                               |
| <b>Organic solvents:</b>                        | 0.0 %                                         |
| <b>Other information</b>                        | No further relevant information available.    |

## 10 Stability and reactivity

**Reactivity** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

**51805-45-9 TCEP.HCl**

|        |      |                     |
|--------|------|---------------------|
| Oral   | LD50 | 3500 mg/kg (Rat)    |
| Dermal | LD50 | 3000 mg/kg (Rabbit) |

**Primary irritant effect:**

**on the skin:** Caustic effect on skin and mucous membranes.

**on the eye:**

Strong caustic effect.

Irritating effect.

**Sensitization:** No sensitizing effects known.

(Contd. on page 6)



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Trade name: TCEP

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**Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

Substance is not listed.

**NTP (National Toxicology Program)**

Substance is not listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

**Toxicity**

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

**Behavior in environmental systems:**

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

**General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

**Waste treatment methods****Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

**UN-Number**

DOT, ADR, IMDG, IATA

UN3261

**UN proper shipping name**

DOT

Corrosive solid, acidic, organic, n.o.s. (TCEP.HCl)

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

Trade name: TCEP

(Contd. of page 6)

**ADR** 3261 Corrosive solid, acidic, organic, n.o.s. (TCEP.HCl)  
**IMDG, IATA** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (TCEP.HCl)

Transport hazard class(es)

DOT



Class 8 Corrosive substances

ADR, IMDG, IATA



Class 8 Corrosive substances

Packing group

DOT, ADR, IMDG, IATA II

Environmental hazards: Not applicable.

Special precautions for user Warning: Corrosive substances

Segregation groups Acids

Stowage Category B

Transport in bulk according to Annex II of  
MARPOL73/78 and the IBC Code Not applicable.

Transport/Additional information:

ADR

Excepted quantities (EQ) Code: E2  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 500 g

IMDG

Limited quantities (LQ) 1 kg  
 Excepted quantities (EQ) Code: E2  
 Maximum net quantity per inner packaging: 30 g  
 Maximum net quantity per outer packaging: 500 g

UN "Model Regulation": UN 3261 CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.  
(TCEP.HCL), 8, II

## \* 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture  
 Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

(Contd. on page 8)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: TCEP**

(Contd. of page 7)

**TSCA (Toxic Substances Control Act):**

*This product contains a substance not listed on the TSCA inventory. This product may be used for R&D use only.*

**Proposition 65****Chemicals known to cause cancer:**

*Substance is not listed.*

**Chemicals known to cause reproductive toxicity for females:**

*Substance is not listed.*

**Chemicals known to cause reproductive toxicity for males:**

*Substance is not listed.*

**Chemicals known to cause developmental toxicity:**

*Substance is not listed.*

**Carcinogenicity categories****EPA (Environmental Protection Agency)**

*Substance is not listed.*

**TLV (Threshold Limit Value established by ACGIH)**

*Substance is not listed.*

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

*Substance is not listed.*

**GHS label elements**

*The substance is classified and labeled according to the Globally Harmonized System (GHS).*

**Signal word** *Danger*

**Hazard-determining components of labeling:**

*TCEP.HCl*

**Hazard statements**

*Causes severe skin burns and eye damage.*

**Precautionary statements**

*Do not breathe dusts or mists.*

*Wash thoroughly after handling.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*If swallowed: Rinse mouth. Do NOT induce vomiting.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Immediately call a POISON CENTER/doctor.*

*Wash contaminated clothing before reuse.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

**National regulations:**

**Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.*

**Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

(Contd. on page 9)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: TCEP**

(Contd. of page 8)

**Department issuing SDS:**

Promega Corporation  
Environmental Health and Safety Department  
2800 Woods Hollow Road  
Madison, WI  
Ph: (608)274-4330

**Date of preparation / last revision** 07/18/2017 / -**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
DOT: US Department of Transportation  
IATA: International Air Transport Association  
ACGIH: American Conference of Governmental Industrial Hygienists  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Skin Corr. 1B: Skin corrosion/irritation – Category 1B  
**\* Data compared to the previous version altered.**

US

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**1 Identification**

**Product identifier**

**Trade name:** Iodoacetamide, 15 mg

**Article number:** VB101A

**CAS Number:**

144-48-9

**EC number:**

205-630-1

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

**Label elements**

**GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms** GHS06, GHS08

(Contd. on page 2)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 1)

**Signal word** *Danger*

**Hazard-determining components of labeling:**

2-iodoacetamide

**Hazard statements**

*Toxic if swallowed or if inhaled.*

*May cause allergy or asthma symptoms or breathing difficulties if inhaled.*

*May cause an allergic skin reaction.*

**Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapors/spray*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*Contaminated work clothing must not be allowed out of the workplace.*

*Wear protective gloves.*

*[In case of inadequate ventilation] wear respiratory protection.*

*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

*IF ON SKIN: Wash with plenty of water.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*Rinse mouth.*

*If skin irritation or rash occurs: Get medical advice/attention.*

*If experiencing respiratory symptoms: Call a POISON CENTER/doctor.*

*Wash contaminated clothing before reuse.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 4

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = \*3

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):**

*Highly Toxic*

*Irritant*

*Sensitizer*

**Primary route(s) of entry:**

*Dermal*

*Inhalation*

*Oral*

**Target Organ(s):** *Not applicable or unknown*

**Other hazards**

*This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.*

**Results of PBT and vPvB assessment**

**PBT:** *Not applicable.*

**vPvB:** *Not applicable.*

US

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 2)

### 3 Composition/information on ingredients

**Chemical characterization: Substances**

**CAS No. Description**

144-48-9 2-iodoacetamide

**Identification number(s)**

**EC number: 205-630-1**

### 4 First-aid measures

**Description of first aid measures**

**General information:**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing have been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Take affected persons out into the fresh air.

Do not leave affected persons unattended.

Seek medical treatment.

Provide oxygen treatment if affected person has difficulty breathing.

Medical supervision for at least 48 hours.

**After inhalation:**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

Call a doctor immediately.

**After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** Do not induce vomiting; immediately call for medical help.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** Allergic reactions

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters**

No special advice

In the case of fire, wear respiratory protective equipment and chemical protective suit.

**Protective equipment:** Mouth respiratory protective device.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Remove persons from danger area.

Avoid formation of dust.

Keep people at a distance and stay upwind.

Wear protective clothing.

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 3)

**Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to Section 13.

Pick up mechanically.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

Substance is not listed.

**PAC-2:**

Substance is not listed.

**PAC-3:**

Substance is not listed.

## 7 Handling and storage

**Handling:**

**Precautions for safe handling**

Thorough dedusting.

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Work only in fume cabinet.

**Information about protection against explosions and fires:**

Keep respiratory protective device available.

The product is not flammable.

**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep receptacle tightly sealed.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

**Control parameters**

**Components with limit values that require monitoring at the workplace:** Not required.

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Do not eat or drink while working.

Clean skin thoroughly immediately after handling the product.

(Contd. on page 5)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 4)

**Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

**Protection of hands:**

Protective gloves

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Eye protection:**

Safety glasses

Use equipment for eye protection tested and approved under government NIOSH standards.

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Solid           |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

**pH-value:** Not applicable.

**Change in condition**

|                                     |                       |
|-------------------------------------|-----------------------|
| <b>Melting point/Melting range:</b> | 92-95 °C (198-203 °F) |
| <b>Boiling point/Boiling range:</b> | Undetermined.         |
| <b>Flash point:</b>                 | Not applicable.       |

**Flammability (solid, gaseous):** Product is not flammable.

**Ignition temperature:**

**Decomposition temperature:** Not determined.

**Auto igniting:** Not determined.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

|                        |                 |
|------------------------|-----------------|
| <b>Lower:</b>          | Not determined. |
| <b>Upper:</b>          | Not determined. |
| <b>Vapor pressure:</b> | Not applicable. |

**Density at 20 °C (68 °F):** 1 g/cm<sup>3</sup> (8.345 lbs/gal)

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water:** Insoluble.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**Dynamic:** Not applicable.

**Kinematic:** Not applicable.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 5)

|                          |                                            |
|--------------------------|--------------------------------------------|
| <b>Organic solvents:</b> | 0.0 %                                      |
| <b>Solids content:</b>   | 100.0 %                                    |
| <b>Other information</b> | No further relevant information available. |

## 10 Stability and reactivity

**Reactivity** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

**Additional toxicological information:**

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

Substance is not listed.

**NTP (National Toxicology Program)**

Substance is not listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

**Toxicity**

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

**Behavior in environmental systems:**

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

**General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 6)

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

### Waste treatment methods

#### Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

#### Uncleaned packagings:

**Recommendation:** Disposal must be made according to official regulations.

## \* 14 Transport information

### UN-Number

**DOT, ADR, IMDG, IATA**

UN2811

### UN proper shipping name

**DOT**

Toxic solids, organic, n.o.s. (2-iodoacetamide)

**ADR**

2811 Toxic solids, organic, n.o.s. (2-iodoacetamide)

**IMDG, IATA**

TOXIC SOLID, ORGANIC, N.O.S. (2-iodoacetamide)

### Transport hazard class(es)

**DOT**



**Class**

6.1 Toxic substances

**ADR**



**Class**

6.1 (T1) Toxic substances

**Label**

6.1

**IATA**



**Class**

6.1 Toxic substances

### Packing group

**DOT, ADR**

III

(Contd. on page 8)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 7)

|                                                                                |                                                                                                                |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Environmental hazards:</b>                                                  | Not applicable.                                                                                                |
| <b>Special precautions for user</b>                                            | Warning: Toxic substances                                                                                      |
| <b>Danger code (Kemler):</b>                                                   | 60                                                                                                             |
| <b>EMS Number:</b>                                                             | F-A,S-A                                                                                                        |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                                                                                                |
| <b>Transport/Additional information:</b>                                       |                                                                                                                |
| <b>ADR</b>                                                                     |                                                                                                                |
| <b>Excepted quantities (EQ)</b>                                                | Code: E1<br>Maximum net quantity per inner packaging: 30 g<br>Maximum net quantity per outer packaging: 1000 g |
| <b>UN "Model Regulation":</b>                                                  | UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S. (2-IODOACETAMIDE), 6.1, III                                              |

## 15 Regulatory information

*Safety, health and environmental regulations/legislation specific for the substance or mixture*  
Sara

**Section 355 (extremely hazardous substances):**

Substance is not listed.

**Section 313 (Specific toxic chemical listings):**

Substance is not listed.

**TSCA (Toxic Substances Control Act):**

Substance is listed.

**Proposition 65**

**Chemicals known to cause cancer:**

Substance is not listed.

**Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

**Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

**Chemicals known to cause developmental toxicity:**

Substance is not listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

Substance is not listed.

**TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

**GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Signal word** Danger

(Contd. on page 9)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 8)

**Hazard-determining components of labeling:**

2-iodoacetamide

**Hazard statements**

Toxic if swallowed or if inhaled.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

**Precautionary statements**

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

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves.

[In case of inadequate ventilation] wear respiratory protection.

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Rinse mouth.

If skin irritation or rash occurs: Get medical advice/attention.

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Wash contaminated clothing before reuse.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations:**

**Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**Department issuing SDS:**

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph:(608)274-4330

**Date of preparation / last revision** 07/18/2017 / -

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

(Contd. on page 10)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: Iodoacetamide, 15 mg**

(Contd. of page 9)

*OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Acute Tox. 3: Acute toxicity – Category 3**Resp. Sens. 1: Respiratory sensitisation – Category 1**Skin Sens. 1: Skin sensitisation – Category 1***\* Data compared to the previous version altered.**

US

**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 07/18/2017

Reviewed on 07/18/2017

## 1 Identification

**Product identifier**

**Trade name:** AccuMap 100X Oxidation Suppressant

**Article number:** VA102

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

## 2 Hazard(s) identification

**Classification of the substance or mixture**

The product is not classified as hazardous according to the Globally Harmonized System (GHS).

**Label elements**

**GHS label elements** Void

**Hazard pictograms** Void

**Signal word** Void

**Hazard statements** Void

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):** Not applicable

**Target Organ(s):** Not applicable or unknown

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

(Contd. on page 2)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 100X Oxidation Suppressant**

(Contd. of page 1)

**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components:** Void

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**General information:** No special measures required.

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:** Generally the product does not irritate the skin.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If the patient feels unwell or is concerned, obtain medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** None

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** No special advice

**Protective equipment:** No special measures required.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.

**Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

|           |                     |                      |
|-----------|---------------------|----------------------|
| 7772-98-7 | sodium thiosulphate | 38 mg/m <sup>3</sup> |
|-----------|---------------------|----------------------|

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# Safety Data Sheet

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Reviewed on 07/18/2017

**Trade name: AccuMap 100X Oxidation Suppressant**

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**PAC-2:**

7772-98-7 sodium thiosulphate

410 mg/m<sup>3</sup>**PAC-3:**

7772-98-7 sodium thiosulphate

2,500 mg/m<sup>3</sup>

## 7 Handling and storage

**Handling:****Precautions for safe handling** No special measures required.**Information about protection against explosions and fires:** The product is not flammable.**Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** None.**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

**Control parameters****Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.**Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:** Not required.**Protection of hands:** Not required.**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Eye protection:** Not required.

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Fluid           |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <b>Boiling point/Boiling range:</b> | 100 °C (212 °F) |

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 100X Oxidation Suppressant**

(Contd. of page 3)

|                                                 |                                               |
|-------------------------------------------------|-----------------------------------------------|
| <b>Flash point:</b>                             | Not applicable.                               |
| <b>Flammability (solid, gaseous):</b>           | Not applicable.                               |
| <b>Ignition temperature:</b>                    |                                               |
| <b>Decomposition temperature:</b>               | Not determined.                               |
| <b>Auto igniting:</b>                           | Product is not selfigniting.                  |
| <b>Danger of explosion:</b>                     | Product does not present an explosion hazard. |
| <b>Explosion limits:</b>                        |                                               |
| <b>Lower:</b>                                   | Not determined.                               |
| <b>Upper:</b>                                   | Not determined.                               |
| <b>Vapor pressure:</b>                          | Not determined.                               |
| <b>Density at 20 °C (68 °F):</b>                | 1.053 g/cm <sup>3</sup> (8.787 lbs/gal)       |
| <b>Relative density</b>                         | Not determined.                               |
| <b>Vapor density</b>                            | Not determined.                               |
| <b>Evaporation rate</b>                         | Not determined.                               |
| <b>Solubility in / Miscibility with</b>         |                                               |
| <b>Water:</b>                                   | Fully miscible.                               |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined.                               |
| <b>Viscosity:</b>                               |                                               |
| <b>Dynamic:</b>                                 | Not determined.                               |
| <b>Kinematic:</b>                               | Not determined.                               |
| <b>Organic solvents:</b>                        | 0.0 %                                         |
| <b>Water:</b>                                   | 92.1 %                                        |
| <b>Solids content:</b>                          | 7.9 %                                         |
| <b>Other information</b>                        | No further relevant information available.    |

## 10 Stability and reactivity

**Reactivity** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

**Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 100X Oxidation Suppressant**

(Contd. of page 4)

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

### Carcinogenic categories

#### IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

#### NTP (National Toxicology Program)

None of the ingredients are listed.

#### OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

## 12 Ecological information

### Toxicity

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability:** Not available

### Behavior in environmental systems:

**Bioaccumulative potential:** Not known

**Mobility in soil:** No further relevant information available.

### Ecotoxicological effects:

**Remark:** Not available

### Additional ecological information:

#### General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects:** No further relevant information available.

## 13 Disposal considerations

### Waste treatment methods

#### Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

#### Uncleaned packagings:

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>UN-Number</b>                 | Not hazardous for transportation |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |

|                                  |      |
|----------------------------------|------|
| <b>UN proper shipping name</b>   | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void |

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# Safety Data Sheet

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**Trade name: AccuMap 100X Oxidation Suppressant**

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|                                                                                |                 |
|--------------------------------------------------------------------------------|-----------------|
| <b>Transport hazard class(es)</b>                                              | None            |
| <b>DOT, ADR, ADN, IMDG, IATA Class</b>                                         | Void            |
| <b>Packing group</b>                                                           | None            |
| <b>DOT, ADR, IMDG, IATA</b>                                                    | Void            |
| <b>Environmental hazards:</b>                                                  | Not applicable. |
| <b>Special precautions for user</b>                                            | Not applicable. |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>UN "Model Regulation":</b>                                                  | Void            |

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

**GHS label elements** Void

**Signal word** Void

**Hazard statements** Void

**National regulations:**

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 100X Oxidation Suppressant**

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

### **Department issuing SDS:**

Promega Corporation  
 Environmental Health and Safety Department  
 2800 Woods Hollow Road  
 Madison, WI  
 Ph: (608)274-4330

**Date of preparation / last revision** 07/18/2017 / -

### **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 NFPA: National Fire Protection Association (USA)  
 HMIS: Hazardous Materials Identification System (USA)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 NIOSH: National Institute for Occupational Safety  
 OSHA: Occupational Safety & Health  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit

**\* Data compared to the previous version altered.**

**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 07/18/2017

Reviewed on 07/18/2017

**1 Identification****Product identifier****Trade name:** AccuMAP™ Modified Trypsin Solution**Article number:** V528C**Application of the substance / the mixture** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** *SDS author: Regulatory.Affairs@promega.com***Emergency telephone number:**

*For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300*  
*Outside USA and Canada: +1 703-527-3887 (collect calls accepted)*

**2 Hazard(s) identification****Classification of the substance or mixture**

*The product is not classified as hazardous according to the Globally Harmonized System (GHS).*

**Label elements****GHS label elements** Void**Hazard pictograms** Void**Signal word** Void**Hazard statements** Void**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):** Not applicable**Target Organ(s):** Not applicable or unknown**Other hazards**

*This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.*

**Results of PBT and vPvB assessment****PBT:** Not applicable.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

**vPvB:** Not applicable.

(Contd. of page 1)

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components:** Void

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**General information:** No special measures required.

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:** Generally the product does not irritate the skin.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If the patient feels unwell or is concerned, obtain medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** None

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** No special advice

**Protective equipment:** No special measures required.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.

**Environmental precautions:** Dilute with plenty of water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

|         |             |       |
|---------|-------------|-------|
| 64-19-7 | acetic acid | 5 ppm |
|---------|-------------|-------|

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

(Contd. of page 2)

**PAC-2:**

64-19-7 acetic acid

35 ppm

**PAC-3:**

64-19-7 acetic acid

250 ppm

## 7 Handling and storage

**Handling:****Precautions for safe handling** No special measures required.**Information about protection against explosions and fires:** The product is not flammable.**Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** None.**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

**Control parameters****Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.**Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:** Not required.**Protection of hands:** Not required.**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Eye protection:** Not required.

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Liquid          |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

|                                   |   |
|-----------------------------------|---|
| <b>pH-value at 20 °C (68 °F):</b> | 3 |
|-----------------------------------|---|

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US



# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

(Contd. of page 3)

**Change in condition**

**Melting point/Melting range:** 0 °C (32 °F)  
**Boiling point/Boiling range:** 100 °C (212 °F)  
**Flash point:** Not applicable.

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:**

**Decomposition temperature:** Not determined.

**Auto igniting:** Product is not selfigniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

**Vapor pressure:** Not determined.

**Density:** Not determined.

**Relative density:** Not determined.

**Vapor density:** Not determined.

**Evaporation rate:** Not determined.

**Solubility in / Miscibility with**

**Water:** Fully miscible.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**Dynamic:** Not determined.

**Kinematic:** Not determined.

**Organic solvents:** 0.3 %

**Water:** 99.7 %

**VOC content:** 0.3 %

**Other information:** No further relevant information available.

## 10 Stability and reactivity

**Reactivity:** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** Reacts with strong oxidizing agents.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects****Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

(Contd. of page 4)

**Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

## \* 12 Ecological information

**Toxicity**

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

**Behavior in environmental systems:**

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

**General notes:** Generally not hazardous for water.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## \* 13 Disposal considerations

**Waste treatment methods****Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

## \* 14 Transport information

**UN-Number**

Not hazardous for transportation

**DOT, ADR, ADN, IMDG, IATA**

Void

**UN proper shipping name**

None

**DOT, ADR, ADN, IMDG, IATA**

Void

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

(Contd. of page 5)

**Transport hazard class(es)** None

**DOT, ADR, ADN, IMDG, IATA Class**

Void

**Packing group**

None

**DOT, ADR, IMDG, IATA**

Void

**Environmental hazards:**

**Marine pollutant:**

No

**Special precautions for user**

Not applicable.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

**UN "Model Regulation":**

Void

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

**GHS label elements** Void

**Signal word** Void

**Hazard statements** Void

(Contd. on page 7)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMAP™ Modified Trypsin Solution**

(Contd. of page 6)

**National regulations:**

**Water hazard class:** Generally not hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**Department issuing SDS:**

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph: (608)274-4330

**Date of preparation / last revision** 07/18/2017 / -

**Abbreviations and acronyms:**

*RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)*

*ICAO: International Civil Aviation Organization*

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*ELINCS: European List of Notified Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*VOC: Volatile Organic Compounds (USA, EU)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

**\* Data compared to the previous version altered.**

**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 07/18/2017

Reviewed on 07/18/2017

**1 Identification**

**Product identifier**

**Trade name:** AccuMap Low pH Resistant Lys-C Solution

**Article number:** VA103

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

**2 Hazard(s) identification**

**Classification of the substance or mixture**

The product is not classified as hazardous according to the Globally Harmonized System (GHS).

**Label elements**

**GHS label elements** Void

**Hazard pictograms** Void

**Signal word** Void

**Hazard statements** Void

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):** Not applicable

**Target Organ(s):** Not applicable or unknown

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap Low pH Resistant Lys-C Solution**

**vPvB:** Not applicable.

(Contd. of page 1)

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components:** Void

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**General information:** No special measures required.

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:** Generally the product does not irritate the skin.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If the patient feels unwell or is concerned, obtain medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** None

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** No special advice

**Protective equipment:** No special measures required.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.

**Environmental precautions:** No special measures required.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

|          |                                                |                      |
|----------|------------------------------------------------|----------------------|
| 64-19-7  | acetic acid                                    | 5 ppm                |
| 139-33-3 | disodium dihydrogenethylenediaminetetraacetate | 11 mg/m <sup>3</sup> |

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**Trade name: AccuMap Low pH Resistant Lys-C Solution**

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| <b>PAC-2:</b> |                                                |                       |
|---------------|------------------------------------------------|-----------------------|
| 64-19-7       | acetic acid                                    | 35 ppm                |
| 139-33-3      | disodium dihydrogenethylenediaminetetraacetate | 120 mg/m <sup>3</sup> |
| <b>PAC-3:</b> |                                                |                       |
| 64-19-7       | acetic acid                                    | 250 ppm               |
| 139-33-3      | disodium dihydrogenethylenediaminetetraacetate | 730 mg/m <sup>3</sup> |

## 7 Handling and storage

### Handling:

**Precautions for safe handling** No special measures required.

**Information about protection against explosions and fires:** The product is not flammable.

**Conditions for safe storage, including any incompatibilities**

### Storage:

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** None.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

### Control parameters

**Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.

### Exposure controls

**Personal protective equipment:**

**General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:** Not required.

**Protection of hands:** Not required.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Eye protection:** Not required.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Fluid           |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

(Contd. on page 4)

# Safety Data Sheet

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Reviewed on 07/18/2017

**Trade name: AccuMap Low pH Resistant Lys-C Solution**

(Contd. of page 3)

**Change in condition**

**Melting point/Melting range:** Undetermined.  
**Boiling point/Boiling range:** 100 °C (212 °F)  
**Flash point:** Not applicable.

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:**

**Decomposition temperature:** Not determined.

**Auto igniting:** Product is not selfigniting.

**Danger of explosion:** Product does not present an explosion hazard.

**Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

**Vapor pressure:** Not determined.

**Density:** Not determined.

**Relative density:** Not determined.

**Vapor density:** Not determined.

**Evaporation rate:** Not determined.

**Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**Dynamic:** Not determined.

**Kinematic:** Not determined.

**Organic solvents:** 0.8 %

**Water:** 99.2 %

**VOC content:** 0.8 %

**Solids content:** 0.1 %

**Other information:** No further relevant information available.

## 10 Stability and reactivity

**Reactivity:** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects****Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

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**Trade name: AccuMap Low pH Resistant Lys-C Solution**

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**Sensitization:** No sensitizing effects known.

**Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

## \* 12 Ecological information

**Toxicity**

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

**Behavior in environmental systems:**

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

**General notes:** Generally not hazardous for water.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

**Waste treatment methods**

**Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

|                                  |                                  |
|----------------------------------|----------------------------------|
| <b>UN-Number</b>                 | Not hazardous for transportation |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |
| <b>UN proper shipping name</b>   | None                             |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |

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**Trade name: AccuMap Low pH Resistant Lys-C Solution**

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|                                                                                |                 |
|--------------------------------------------------------------------------------|-----------------|
| <b>Transport hazard class(es)</b>                                              | None            |
| <b>DOT, ADR, ADN, IMDG, IATA Class</b>                                         | Void            |
| <b>Packing group</b>                                                           | None            |
| <b>DOT, ADR, IMDG, IATA</b>                                                    | Void            |
| <b>Environmental hazards:</b>                                                  | Not applicable. |
| <b>Special precautions for user</b>                                            | Not applicable. |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>UN "Model Regulation":</b>                                                  | Void            |

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

**GHS label elements** Void

**Signal word** Void

**Hazard statements** Void

**National regulations:**

**Water hazard class:** Generally not hazardous for water.

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**Trade name: AccuMap Low pH Resistant Lys-C Solution**

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

### **Department issuing SDS:**

Promega Corporation  
Environmental Health and Safety Department  
2800 Woods Hollow Road  
Madison, WI  
Ph: (608)274-4330

**Date of preparation / last revision** 07/18/2017 / -

### **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

**\* Data compared to the previous version altered.**

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

## 1 Identification

**Product identifier**

**Trade name:** NEM, 15 mg

**Article number:** VB102A

**CAS Number:**

128-53-0

**EC number:**

204-892-4

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300

Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

## 2 Hazard(s) identification

**Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 2 H300 Fatal if swallowed.



GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

Skin Sens. 1 H317 May cause an allergic skin reaction.

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**Trade name:** NEM, 15 mg

(Contd. of page 1)

**Label elements****GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms** GHS05, GHS06, GHS07

**Signal word** Danger

**Hazard-determining components of labeling:**

*N-ethylmaleimide*

**Hazard statements**

Fatal if swallowed.

Harmful in contact with skin.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

**Precautionary statements**

Do not breathe dusts or mists.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing must not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

**IF SWALLOWED:** Immediately call a POISON CENTER/ doctor.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

**IF INHALED:** Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Call a POISON CENTER/doctor if you feel unwell.

If skin irritation or rash occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 4

Fire = 2

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 3

Fire = 2

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):**

Highly Toxic

Corrosive

Irritant

Sensitizer

Combustible

**Primary route(s) of entry:**

Dermal

Inhalation

Oral

**Target Organ(s):** Not applicable or unknown

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

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**Trade name:** NEM, 15 mg

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### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS No. Description

128-53-0 N-ethylmaleimide

#### Identification number(s)

**EC number:** 204-892-4

## 4 First-aid measures

### Description of first aid measures

#### General information:

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Do not leave affected persons unattended.

Seek medical treatment.

Seek immediate medical advice.

Provide oxygen treatment if affected person has difficulty breathing.

Medical supervision for at least 48 hours.

**After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

#### After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

**After eye contact:** Call a doctor immediately.

#### After swallowing:

Do not induce vomiting; immediately call for medical help.

Drink copious amounts of water and provide fresh air. Immediately call a doctor.

#### Information for doctor:

**Most important symptoms and effects, both acute and delayed** Allergic reactions

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

### Extinguishing media

**Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** In the case of fire, wear respiratory protective equipment and chemical protective suit.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

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**Trade name: NEM, 15 mg**

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Avoid formation of dust.

Wear protective clothing.

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Pick up mechanically.

Ensure adequate ventilation.

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

Substance is not listed.

**PAC-2:**

Substance is not listed.

**PAC-3:**

Substance is not listed.

## 7 Handling and storage

**Handling:**

**Precautions for safe handling**

Thorough dedusting.

Keep receptacles tightly sealed.

Open and handle receptacle with care.

**Information about protection against explosions and fires:** No special measures required.

**Conditions for safe storage, including any incompatibilities**

**Storage:**

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** Keep receptacle tightly sealed.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

**Control parameters**

**Components with limit values that require monitoring at the workplace:** Not required.

**Additional information:** The lists that were valid during the creation were used as basis.

**Exposure controls**

**Personal protective equipment:**

**General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Clean skin thoroughly immediately after handling the product.

**Breathing equipment:** Not required.

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Trade name: NEM, 15 mg

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**Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Eye protection:**

Tightly sealed goggles

Goggles recommended during refilling.

Use equipment for eye protection tested and approved under government NIOSH standards.

## 9 Physical and chemical properties

**Information on basic physical and chemical properties****General Information****Appearance:**

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Crystalline     |
| <b>Color:</b>          | White           |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

|                  |                 |
|------------------|-----------------|
| <b>pH-value:</b> | Not applicable. |
|------------------|-----------------|

**Change in condition**

|                                     |                       |
|-------------------------------------|-----------------------|
| <b>Melting point/Melting range:</b> | 43-45 °C (109-113 °F) |
| <b>Boiling point/Boiling range:</b> | Undetermined.         |
| <b>Flash point:</b>                 | 73 °C (163 °F)        |

|                                       |                           |
|---------------------------------------|---------------------------|
| <b>Flammability (solid, gaseous):</b> | Product is not flammable. |
|---------------------------------------|---------------------------|

**Ignition temperature:**

|                                   |                 |
|-----------------------------------|-----------------|
| <b>Decomposition temperature:</b> | Not determined. |
|-----------------------------------|-----------------|

|                       |                 |
|-----------------------|-----------------|
| <b>Auto igniting:</b> | Not determined. |
|-----------------------|-----------------|

**Danger of explosion:**

|                          |                                               |
|--------------------------|-----------------------------------------------|
| <b>Explosion limits:</b> | Product does not present an explosion hazard. |
|--------------------------|-----------------------------------------------|

|               |                 |
|---------------|-----------------|
| <b>Lower:</b> | Not determined. |
| <b>Upper:</b> | Not determined. |

|                        |                 |
|------------------------|-----------------|
| <b>Vapor pressure:</b> | Not applicable. |
|------------------------|-----------------|

|                                  |                                        |
|----------------------------------|----------------------------------------|
| <b>Density at 20 °C (68 °F):</b> | 0.33 g/cm <sup>3</sup> (2.754 lbs/gal) |
|----------------------------------|----------------------------------------|

|                         |                 |
|-------------------------|-----------------|
| <b>Relative density</b> | Not determined. |
|-------------------------|-----------------|

|                      |                 |
|----------------------|-----------------|
| <b>Vapor density</b> | Not applicable. |
|----------------------|-----------------|

|                         |                 |
|-------------------------|-----------------|
| <b>Evaporation rate</b> | Not applicable. |
|-------------------------|-----------------|

**Solubility in / Miscibility with**

|               |            |
|---------------|------------|
| <b>Water:</b> | Insoluble. |
|---------------|------------|

|                                                 |                 |
|-------------------------------------------------|-----------------|
| <b>Partition coefficient (n-octanol/water):</b> | Not determined. |
|-------------------------------------------------|-----------------|

**Viscosity:**

|                 |                 |
|-----------------|-----------------|
| <b>Dynamic:</b> | Not applicable. |
|-----------------|-----------------|

|                   |                 |
|-------------------|-----------------|
| <b>Kinematic:</b> | Not applicable. |
|-------------------|-----------------|

|                          |       |
|--------------------------|-------|
| <b>Organic solvents:</b> | 0.0 % |
|--------------------------|-------|

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Trade name: NEM, 15 mg

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|                          |                                            |
|--------------------------|--------------------------------------------|
| <b>Solids content:</b>   | 100.0 %                                    |
| <b>Other information</b> | No further relevant information available. |

## 10 Stability and reactivity

**Reactivity** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** No further relevant information available.

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

### Information on toxicological effects

#### Acute toxicity:

**LD/LC50 values that are relevant for classification:** No data available

#### Primary irritant effect:

**on the skin:** Caustic effect on skin and mucous membranes.

#### on the eye:

Strong caustic effect.

Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

#### Additional toxicological information:

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

#### Carcinogenic categories

##### IARC (International Agency for Research on Cancer)

Substance is not listed.

##### NTP (National Toxicology Program)

Substance is not listed.

##### OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

## \* 12 Ecological information

### Toxicity

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

#### Behavior in environmental systems:

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

#### Ecotoxicological effects:

**Remark:** Not available

#### Additional ecological information:

#### General notes:

Water hazard class 3 (Assessment by list): extremely hazardous for water

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Trade name: NEM, 15 mg

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Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

**Waste treatment methods**

**Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

**UN-Number**

DOT, ADR, IMDG, IATA

UN2928

**UN proper shipping name**

DOT

Toxic solids, corrosive, organic, n.o.s. (N-ethylmaleimide)

ADR

2928 Toxic solids, corrosive, organic, n.o.s. (N-ethylmaleimide)

IMDG, IATA

TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S. (N-ethylmaleimide)

**Transport hazard class(es)**

ADR



Class

6.1 (T2) Toxic substances

Label

6.1

**IMDG, IATA**



Class

6.1 Toxic substances

**Packing group**

ADR

II

**Environmental hazards:**

Not applicable.

**Special precautions for user**

Warning: Toxic substances

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US

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Trade name: NEM, 15 mg

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|                                                                                |                                                                                                              |
|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Danger code (Kemler):</b>                                                   | 60                                                                                                           |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                                                                                              |
| <b>Transport/Additional information:</b>                                       |                                                                                                              |
| <b>ADR</b>                                                                     |                                                                                                              |
| <b>Excepted quantities (EQ)</b>                                                | Code: E4<br>Maximum net quantity per inner packaging: 1 g<br>Maximum net quantity per outer packaging: 500 g |
| <b>IMDG</b>                                                                    |                                                                                                              |
| <b>Limited quantities (LQ)</b>                                                 | 500 g                                                                                                        |
| <b>UN "Model Regulation":</b>                                                  | UN 2928 TOXIC SOLIDS, CORROSIVE, ORGANIC, N.O.S. (N-ETHYLMALIMIDE), 6.1, II                                  |

## 15 Regulatory information

*Safety, health and environmental regulations/legislation specific for the substance or mixture*  
Sara

**Section 355 (extremely hazardous substances):**

Substance is not listed.

**Section 313 (Specific toxic chemical listings):**

Substance is not listed.

**TSCA (Toxic Substances Control Act):**

Substance is listed.

**Proposition 65**

**Chemicals known to cause cancer:**

Substance is not listed.

**Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

**Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

**Chemicals known to cause developmental toxicity:**

Substance is not listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

Substance is not listed.

**TLV (Threshold Limit Value established by ACGIH)**

Substance is not listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

Substance is not listed.

**GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

**Signal word** Danger

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: NEM, 15 mg**

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**Hazard-determining components of labeling:**

*N-ethylmaleimide*

**Hazard statements**

*Fatal if swallowed.*

*Harmful in contact with skin.*

*Causes severe skin burns and eye damage.*

*May cause an allergic skin reaction.*

**Precautionary statements**

*Do not breathe dusts or mists.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Contaminated work clothing must not be allowed out of the workplace.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*IF SWALLOWED: Immediately call a POISON CENTER/ doctor.*

*If swallowed: Rinse mouth. Do NOT induce vomiting.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Call a POISON CENTER/doctor if you feel unwell.*

*If skin irritation or rash occurs: Get medical advice/attention.*

*Take off contaminated clothing and wash it before reuse.*

*Wash contaminated clothing before reuse.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

**National regulations:**

**Water hazard class:** *Water hazard class 3 (Assessment by list): extremely hazardous for water.*

**Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**Department issuing SDS:**

*Promega Corporation*

*Environmental Health and Safety Department*

*2800 Woods Hollow Road*

*Madison, WI*

*Ph: (608)274-4330*

**Date of preparation / last revision** *07/18/2017 / -*

**Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

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**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: NEM, 15 mg**

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*NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Acute Tox. 2: Acute toxicity – Category 2**Acute Tox. 4: Acute toxicity – Category 4**Skin Corr. 1B: Skin corrosion/irritation – Category 1B**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**Skin Sens. 1: Skin sensitisation – Category 1***\* Data compared to the previous version altered.**

-US-

**Safety Data Sheet**  
*acc. to OSHA HCS*

Printing date 07/18/2017

Reviewed on 07/18/2017

## 1 Identification

**Product identifier**

**Trade name:** AccuMap 10X Low pH Reaction Buffer

**Article number:** VA101

**Application of the substance / the mixture** Laboratory chemicals

**Details of the supplier of the safety data sheet**

**Manufacturer/Supplier:**

Promega Corporation  
2800 Woods Hollow Road  
Madison, WI 53711  
U.S.A.  
1-800-356-9526 or (608)-274-4330

**Information department:** SDS author: [Regulatory.Affairs@promega.com](mailto:Regulatory.Affairs@promega.com)

**Emergency telephone number:**

For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

## 2 Hazard(s) identification

**Classification of the substance or mixture**

The product is not classified as hazardous according to the Globally Harmonized System (GHS).

**Label elements**

**GHS label elements** Void

**Hazard pictograms** Void

**Signal word** Void

**Hazard statements** Void

**Classification system:**

**NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**HMIS-ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

**OSHA Hazard Overview (Criteria according to 29CFR1910.1200):** Not applicable

**Target Organ(s):** Not applicable or unknown

**Other hazards**

This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

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# Safety Data Sheet

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Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 10X Low pH Reaction Buffer**

vPvB: Not applicable.

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### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances may be withheld as a Promega Corp. trade secret.

**Dangerous components: Void**

**Additional information:** For the wording of the listed risk phrases refer to section 15.

### 4 First-aid measures

**Description of first aid measures**

**General information:** No special measures required.

**After inhalation:** If the patient feels unwell or is concerned, obtain medical advice.

**After skin contact:** Generally the product does not irritate the skin.

**After eye contact:** Rinse opened eye for several minutes under running water.

**After swallowing:** If the patient feels unwell or is concerned, obtain medical advice.

**Information for doctor:**

**Most important symptoms and effects, both acute and delayed** None

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

### 5 Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture** None known

**Advice for firefighters** No special advice

**Protective equipment:** No special measures required.

### 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures** Not required.

**Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**Reference to other sections**

See Section 7 for information on safe handling.

See Section 13 for disposal information.

**Protective Action Criteria for Chemicals**

**PAC-1:**

|            |                  |                       |
|------------|------------------|-----------------------|
| 631-61-8   | ammonium acetate | 3.8 mg/m <sup>3</sup> |
| 10043-52-4 | Calcium chloride | 12 mg/m <sup>3</sup>  |

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**Trade name: AccuMap 10X Low pH Reaction Buffer**

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| <b>PAC-2:</b> |                  |                       |
|---------------|------------------|-----------------------|
| 631-61-8      | ammonium acetate | 42 mg/m <sup>3</sup>  |
| 10043-52-4    | Calcium chloride | 130 mg/m <sup>3</sup> |
| <b>PAC-3:</b> |                  |                       |
| 631-61-8      | ammonium acetate | 250 mg/m <sup>3</sup> |
| 10043-52-4    | Calcium chloride | 790 mg/m <sup>3</sup> |

## 7 Handling and storage

### Handling:

**Precautions for safe handling** No special measures required.

**Information about protection against explosions and fires:** The product is not flammable.

**Conditions for safe storage, including any incompatibilities**

### Storage:

**Requirements to be met by storerooms and receptacles:** No special requirements.

**Information about storage in one common storage facility:** Not required.

**Further information about storage conditions:** None.

**Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

### Control parameters

**Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** The lists that were valid during the creation were used as basis.

### Exposure controls

**Personal protective equipment:**

**General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.

**Breathing equipment:** Not required.

**Protection of hands:** Not required.

### Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

**Eye protection:** Not required.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

|                        |                 |
|------------------------|-----------------|
| <b>Form:</b>           | Fluid           |
| <b>Color:</b>          | Colorless       |
| <b>Odor:</b>           | Not determined  |
| <b>Odor threshold:</b> | Not determined. |

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# Safety Data Sheet

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**Trade name: AccuMap 10X Low pH Reaction Buffer**

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**Change in condition**

**Melting point/Melting range:** Undetermined.  
**Boiling point/Boiling range:** 100 °C (212 °F)  
**Flash point:** Not applicable.

**Flammability (solid, gaseous):** Not applicable.

**Ignition temperature:**

**Decomposition temperature:** Not determined.

**Auto igniting:** Product is not selfigniting.

**Danger of explosion:**

Product does not present an explosion hazard.

**Explosion limits:**

**Lower:** Not determined.

**Upper:** Not determined.

**Vapor pressure:** Not determined.

**Density at 20 °C (68 °F):** 0.92938 g/cm<sup>3</sup> (7.756 lbs/gal)

**Relative density:** Not determined.

**Vapor density:** Not determined.

**Evaporation rate:** Not determined.

**Solubility in / Miscibility with**

**Water:** Not miscible or difficult to mix.

**Partition coefficient (n-octanol/water):** Not determined.

**Viscosity:**

**Dynamic:** Not determined.

**Kinematic:** Not determined.

**Organic solvents:** 0.0 %

**Water:** 76.7 %

**Other information:** No further relevant information available.

## 10 Stability and reactivity

**Reactivity:** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:**

Oxidizing agents

Strong acids

**Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

**Information on toxicological effects****Acute toxicity:**

**LD/LC50 values that are relevant for classification:** No data available

**Primary irritant effect:**

**on the skin:** No irritant effect.

**on the eye:** Irritating effect.

**Sensitization:** No sensitizing effects known.

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Reviewed on 07/18/2017

**Trade name: AccuMap 10X Low pH Reaction Buffer**

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**Additional toxicological information:**

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

**Carcinogenic categories****IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

## \* 12 Ecological information

**Toxicity**

**Aquatic toxicity:** Not harmful to the aquatic environment

**Persistence and degradability** Not available

**Behavior in environmental systems:**

**Bioaccumulative potential** Not known

**Mobility in soil** No further relevant information available.

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

**General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

## 13 Disposal considerations

**Waste treatment methods****Recommendation:**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

**UN-Number**

Not hazardous for transportation

**DOT, ADR, ADN, IMDG, IATA**

Void

**UN proper shipping name**

None

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**Trade name: AccuMap 10X Low pH Reaction Buffer**

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|                                                                                |                 |
|--------------------------------------------------------------------------------|-----------------|
| <b>DOT, ADR, ADN, IMDG, IATA</b>                                               | Void            |
| <b>Transport hazard class(es)</b>                                              | None            |
| <b>DOT, ADR, ADN, IMDG, IATA Class</b>                                         | Void            |
| <b>Packing group</b>                                                           | None            |
| <b>DOT, ADR, IMDG, IATA</b>                                                    | Void            |
| <b>Environmental hazards:</b>                                                  | Not applicable. |
| <b>Special precautions for user</b>                                            | Not applicable. |
| <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
| <b>UN "Model Regulation":</b>                                                  | Void            |

## 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**  
Sara

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

**Proposition 65**

**Chemicals known to cause cancer:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenicity categories**

**EPA (Environmental Protection Agency)**

|          |                  |   |
|----------|------------------|---|
| 631-61-8 | ammonium acetate | D |
|----------|------------------|---|

**TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

**GHS label elements** Void

**Signal word** Void

**Hazard statements** Void

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 07/18/2017

Reviewed on 07/18/2017

**Trade name: AccuMap 10X Low pH Reaction Buffer**

(Contd. of page 6)

**National regulations:**

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

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Promega Corporation

Environmental Health and Safety Department

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Ph: (608)274-4330

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DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

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OSHA: Occupational Safety & Health

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**\* Data compared to the previous version altered.**

US