

05/23/2015

### Kit Components

| Product code    | Description   |
|-----------------|---|
| <b>A9281PR1</b> | <b>SV Gel &amp; PCR Clean-up and PureYield™ Mini promo bundle</b> |

Components:

|       |  |
|-------|--|
| A9282 | Wizard® SV Gel and PCR Clean-Up System 250 preps |
| A1221 | PureYield™ Plasmid Miniprep System, 50 preps     |



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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** Membrane Binding Solution

**Article number:** A930

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture**

Laboratory chemicals

Laboratory chemicals

**1.3 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)

**1.4 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**

**2.1 Classification of the substance or mixture**

Classification according to the Hazard Communication Standard (HCS)



Corrosion

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

Eye Dam. 1      H318 Causes serious eye damage.



Acute Tox. 4      H302 Harmful if swallowed.

Acute Tox. 4      H332 Harmful if inhaled.

Aquatic Chronic 3      H412 Harmful to aquatic life with long lasting effects.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled according to the CLP regulation.

**Hazard pictograms** GHS05, GHS07

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**Signal word** *Danger*

**Hazard-determining components of labeling:**

guanidinium thiocyanate

**Hazard statements**

H302 Harmful if swallowed.

H332 Harmful if inhaled.

H314 Causes severe skin burns and eye damage.

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Additional information:**

EUH032 Contact with acids liberates very toxic gas.

**Classification system:**

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

Health = 2

Fire = 0

Reactivity = 0

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

Health = 2

Fire = 0

Reactivity = 0

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

Toxic

Corrosive

Environmental Hazard

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

Dermal

Inhalation

Oral

**Target Organ(s):**

May affect Nervous system (Neurotoxin)

May cause Kidney damage (Nephrotoxin)

Risk of damage to eyes

Affects Gastrointestinal System

**2.3 Other hazards** Product has been observed to have sensitizing effects.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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**Trade name: Membrane Binding Solution**

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### 3: Composition/information on ingredients

#### 3.2 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 are withheld as a Promega Corp. trade secret.

##### Dangerous components:

|          |  |        |
|----------|--|--------|
| 593-84-0 | guanidinium thiocyanate  | 50-75% |
|          |  Skin Corr. 1B, H314;  Acute Tox. 4, H302; Acute Tox. 4, H332; Aquatic Chronic 3, H412 |        |

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

### 4: First-aid measures

#### 4.1 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:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

Seek medical treatment in case of complaints.

##### 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:

Immediately call a doctor.

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

Seek immediate medical advice.

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

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

No further relevant information available.

### 5: Fire-fighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing agents:

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

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

##### 5.3 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.

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### 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Keep people at a distance and stay upwind.

Wear protective clothing.

#### 6.2 Environmental precautions:

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

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

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

#### 6.3 Methods and material for containment and cleaning up:

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

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

Keep away from water.

#### 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

### 7: Handling and storage

#### 7.1 Precautions for safe handling

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

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

#### 7.2 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:** Do not store together with acids.

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

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

### 8: Exposure controls/personal protection

#### 8.1 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.

#### 8.2 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.

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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:**

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

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. 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:**

Tightly sealed goggles

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

## 9: Physical and chemical properties

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

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

**pH-value at 20 °C (68 °F):** 4.8

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <b>Boiling point/Boiling range:</b> | Undetermined.   |
| <b>Flash point:</b>                 | 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:**

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

**Density:** Not determined.

**Relative density** Not determined.

**Vapour density** Not determined.

**Evaporation rate** Not determined.

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**Trade name: Membrane Binding Solution**

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**Solubility in / Miscibility with**

**Water:** Fully miscible.  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**Dynamic:** Not determined.  
**Kinematic:** Not determined.

|                          |        |
|--------------------------|--------|
| <b>Organic solvents:</b> | 0.0 %  |
| <b>Water:</b>            | 41.9 % |

|                              |  |
|------------------------------|--|
| <b>Solids content:</b>       | 58.1 %                                     |
| <b>9.2 Other information</b> | No further relevant information available. |

## 10: Stability and reactivity

**10.1 Reactivity**
**10.2 Chemical stability**

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

**10.3 Possibility of hazardous reactions**

Reacts with strong oxidizing agents.  
 Reacts with acids.

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

**10.5 Incompatible materials:**

Exposure to strong acid will result in the generation of toxic gases  
 Exposure to bleach may result in the generation of toxic gas

**10.6 Hazardous decomposition products:**

Carbon monoxide and carbon dioxide  
 Nitrogen oxides  
 Sulfuric acid

## 11: Toxicological information

**11.1 Information on toxicological effects**
**Acute toxicity:**
**LD/LC50 values that are relevant for classification:**
**593-84-0 guanidinium thiocyanate**

|        |      |  |
|--------|------|--|
| Oral   | LD50 | 475 mg/kg (Rat)<br>By analogy to guanidine hydrochloride       |
| Dermal | LD50 | >2000 mg/kg (Rabbit)<br>By analogy to Guanidine hydrochloride. |

**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 inhalation.

**Additional toxicological information:**

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

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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)**

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

### 12.1 Toxicity

**Aquatic toxicity:** Harmful to aquatic life with long lasting effects.

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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

### Ecotoxicological effects:

**Remark:** Harmful to fish

### 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.

Harmful to aquatic organisms

### 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

### 13.1 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

### 14.1 UN-Number

DOT, ADR, ADN, IMDG, IATA

Not hazardous for transportation

Void

### 14.2 UN proper shipping name

DOT, ADR, ADN, IMDG, IATA

None

Void

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**Trade name: Membrane Binding Solution**

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**14.3 Transport hazard class(es)** None

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

Void

**14.4 Packing group**

**DOT, ADR, IMDG, IATA**

None

Void

**14.5 Environmental hazards:**

**Marine pollutant:**

No

**14.6 Special precautions for user**

Not applicable.

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

Not applicable.

**UN "Model Regulation":**

-

## 15: Regulatory information

**15.1 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.

**MAK (German Maximum Workplace Concentration)**

None of the ingredients are listed.

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

None of the ingredients are listed.

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**Trade name: Membrane Binding Solution**

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**National regulations:**

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

**15.2 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

**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*

*GHS: Globally Harmonized System of Classification and Labeling of Chemicals*

*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*

*Acute Tox. 4: Acute toxicity, Hazard Category 4*

*Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B*

*Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1*

*Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3*

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

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

Printing date 05/23/2015

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**1: Identification****1.1 Product identifier****Trade name:** Membrane Wash Solution**Article number:** A929**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture****Classification according to the Hazard Communication Standard (HCS)**

The product is not classified as hazardous according to the HCS regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008 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**2.3 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: Membrane Wash Solution**

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### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.2 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 are 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

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

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

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

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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**Trade name: Membrane Wash Solution**

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

### 7.2 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.

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

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

**pH-value at 20 °C (68 °F):** 5

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | 0 °C (32 °F)    |
| <b>Boiling point/Boiling range:</b> | 100 °C (212 °F) |
| <b>Flash point:</b>                 | 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.

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**Trade name: Membrane Wash Solution**

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**Explosion limits:****Lower:** Not determined.**Upper:** Not determined.**Vapor pressure:** Not determined.**Density:** Not determined.**Relative density** Not determined.**Vapour 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:** 99.5 %**Solids content:** 0.5 %**9.2 Other information** No further relevant information available.

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**10.3 Possibility of hazardous reactions** No dangerous reactions known.**10.4 Conditions to avoid** No further relevant information available.**10.5 Incompatible materials:** No further relevant information available.**10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## 11: Toxicological information

**11.1 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:

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.

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**Trade name: Membrane Wash Solution**

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

None of the ingredients are listed.

## 12: Ecological information

### 12.1 Toxicity

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

### 13.1 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

**14.1 UN-Number** Not hazardous for transportation

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

**14.2 UN proper shipping name** None

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

**14.3 Transport hazard class(es)** None

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

**14.4 Packing group** None

**DOT, ADR, IMDG, IATA** Void

**14.5 Environmental hazards:**

**Marine pollutant:** No

**14.6 Special precautions for user** Not applicable.

(Contd. on page 6)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Membrane Wash Solution**

(Contd. of page 5)

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

**UN "Model Regulation":**      -

## 15: Regulatory information

**15.1 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.*

**Carcinogeny categories**

**EPA (Environmental Protection Agency)**

*None of the ingredients are listed.*

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

*None of the ingredients are listed.*

**MAK (German Maximum Workplace Concentration)**

*None of the ingredients are listed.*

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

*None of the ingredients are listed.*

**National regulations:**

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

**15.2 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*

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Membrane Wash Solution**

(Contd. of page 6)

*Madison, WI**Ph: (608)274-4330***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**GHS: Globally Harmonized System of Classification and Labeling of Chemicals**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***\* Data compared to the previous version altered.**

US

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification****1.1 Product identifier****Trade name:** Collection Tubes - Article,**Article number:** A130**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture****Classification according to the Hazard Communication Standard (HCS)**

The substance is not classified as hazardous according to the HCS regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008** 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**2.3 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.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Collection Tubes - Article,**

(Contd. of page 1)

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.1 Chemical characterization: Substances

**CAS No. Description**

Article

## 4: First-aid measures

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

**6.3 Methods and material for containment and cleaning up:** Pick up mechanically.

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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

**7.2 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.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Collection Tubes - Article,

(Contd. of page 2)

**Further information about storage conditions:** None.  
**7.3 Specific end use(s)** No further relevant information available.

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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.

**Eye protection:** Not required.

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

**pH-value:** Not applicable.

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <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:**

**Lower:** Not determined.  
**Upper:** Not determined.

**Vapor pressure:** Not applicable.

**Density:** Not determined.

**Relative density** Not determined.

**Vapour density** Not applicable.

**Evaporation rate** Not applicable.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Collection Tubes - Article,

(Contd. of page 3)

**Solubility in / Miscibility with**

**Water:** Insoluble.  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**Dynamic:** Not applicable.  
**Kinematic:** Not applicable.

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

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

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability**

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

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

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

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

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

## 11: Toxicological information

**11.1 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:**

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.

The substance is not subject to classification.

**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

**12.1 Toxicity**

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Collection Tubes - Article,

(Contd. of page 4)

**12.4 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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>14.1 UN-Number</b>            | Not hazardous for transportation |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |

|                                     |      |
|-------------------------------------|------|
| <b>14.2 UN proper shipping name</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>    | Void |

|  |      |
|--|------|
| <b>14.3 Transport hazard class(es)</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>       |      |
| <b>Class</b>                           | Void |

|                             |      |
|-----------------------------|------|
| <b>14.4 Packing group</b>   | None |
| <b>DOT, ADR, IMDG, IATA</b> | Void |

|                                    |    |
|------------------------------------|----|
| <b>14.5 Environmental hazards:</b> |    |
| <b>Marine pollutant:</b>           | No |

|  |                 |
|--|-----------------|
| <b>14.6 Special precautions for user</b> | Not applicable. |
|--|-----------------|

|   |                 |
|---|-----------------|
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
|---|-----------------|

|                               |   |
|-------------------------------|---|
| <b>UN "Model Regulation":</b> | - |
|-------------------------------|---|

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Collection Tubes - Article,

(Contd. of page 5)

## 15: Regulatory information

### 15.1 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 not 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.

**MAK (German Maximum Workplace Concentration)**

Substance is not listed.

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

Substance is not listed.

**National regulations:**

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

**15.2 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

**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)

(Contd. on page 7)

US



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

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Collection Tubes - Article,**

(Contd. of page 6)

*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**GHS: Globally Harmonized System of Classification and Labeling of Chemicals**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***\* Data compared to the previous version altered.**

US

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** Wizard® SVMinicolumns - Article,

**Article number:** A129

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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

**1.3 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)

**1.4 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**

**2.1 Classification of the substance or mixture**

**Classification according to the Hazard Communication Standard (HCS)**

The substance is not classified as hazardous according to the HCS regulation.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008 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

**2.3 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.

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name:** Wizard® SVMinicolumns - Article,

(Contd. of page 1)

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.1 Chemical characterization: Substances

**CAS No. Description**

Article

## 4: First-aid measures

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

**6.3 Methods and material for containment and cleaning up:** Pick up mechanically.

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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

**7.2 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.

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name:** Wizard® SVMinicolumns - Article,

(Contd. of page 2)

**Further information about storage conditions:** None.  
**7.3 Specific end use(s)** No further relevant information available.

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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.

**Eye protection:** Not required.

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

**pH-value:** Not applicable.

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <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:**

**Lower:** Not determined.

**Upper:** Not determined.

**Vapor pressure:** Not applicable.

**Density:** Not determined.

**Relative density** Not determined.

**Vapour density** Not applicable.

**Evaporation rate** Not applicable.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Wizard® SVMinicolumns - Article,

(Contd. of page 3)

**Solubility in / Miscibility with**

**Water:** Insoluble.  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**Dynamic:** Not applicable.  
**Kinematic:** Not applicable.

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

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

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability**

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

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

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

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

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

## 11: Toxicological information

**11.1 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:**

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.

The substance is not subject to classification.

**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

**12.1 Toxicity**

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name:** Wizard® SVMinicolumns - Article,

(Contd. of page 4)

**12.4 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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>14.1 UN-Number</b>            | Not hazardous for transportation |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |

|                                     |      |
|-------------------------------------|------|
| <b>14.2 UN proper shipping name</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>    | Void |

|  |      |
|--|------|
| <b>14.3 Transport hazard class(es)</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>       |      |
| <b>Class</b>                           | Void |

|                             |      |
|-----------------------------|------|
| <b>14.4 Packing group</b>   | None |
| <b>DOT, ADR, IMDG, IATA</b> | Void |

|                                    |    |
|------------------------------------|----|
| <b>14.5 Environmental hazards:</b> |    |
| <b>Marine pollutant:</b>           | No |

|  |                 |
|--|-----------------|
| <b>14.6 Special precautions for user</b> | Not applicable. |
|--|-----------------|

|   |                 |
|---|-----------------|
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
|---|-----------------|

|                               |   |
|-------------------------------|---|
| <b>UN "Model Regulation":</b> | - |
|-------------------------------|---|

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Wizard® SVMinicolumns - Article,

(Contd. of page 5)

## 15: Regulatory information

### 15.1 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 not 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.

**MAK (German Maximum Workplace Concentration)**

Substance is not listed.

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

Substance is not listed.

**National regulations:**

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

**15.2 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

**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)

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US

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Wizard® SVMinicolumns - Article,**

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*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*

*GHS: Globally Harmonized System of Classification and Labeling of Chemicals*

*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*

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

US



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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** Nuclease-Free Water

**Article number:** P119

**CAS Number:**

7732-18-5

**EC number:**

231-791-2

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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

**1.3 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)

**1.4 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**

**2.1 Classification of the substance or mixture**

**Classification according to the Hazard Communication Standard (HCS)**

The substance is not classified as hazardous according to the HCS regulation.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008** 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

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Nuclease-Free Water**

(Contd. of page 1)

### 2.3 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

### 3.1 Chemical characterization: Substances

#### CAS No. Description

7732-18-5 water

#### Identification number(s)

EC number: 231-791-2

## 4: First-aid measures

### 4.1 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.

### 4.2 Most important symptoms and effects, both acute and delayed None

### 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing agents:

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

### 5.2 Special hazards arising from the substance or mixture None known

### 5.3 Advice for firefighters No special advice

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

## 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures Not required.

### 6.2 Environmental precautions: Dilute with plenty of water.

### 6.3 Methods and material for containment and cleaning up:

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

### 6.4 Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

US  
(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Nuclease-Free Water

(Contd. of page 2)

## 7: Handling and storage

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

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

**7.2 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.

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

## 8: Exposure controls/personal protection

**8.1 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.

**8.2 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.

**Eye protection:** Not required.

## 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

**General Information**

**Appearance:**

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

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | 0 °C (32 °F)    |
| <b>Boiling point/Boiling range:</b> | 100 °C (212 °F) |
| <b>Flash point:</b>                 | Not applicable. |

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

**Ignition temperature:**

**Decomposition temperature:** Not determined.

**Auto igniting:** Not determined.

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

**Explosion limits:**

**Lower:** Not determined.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Nuclease-Free Water

(Contd. of page 3)

|   |  |
|---|--|
| <b>Upper:</b>                                   | Not determined.                            |
| <b>Vapor pressure:</b>                          | Not determined.                            |
| <b>Density at 20 °C (68 °F):</b>                | 1 g/cm <sup>3</sup> (8.345 lbs/gal)        |
| <b>Relative density</b>                         | Not determined.                            |
| <b>Vapour 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 at 20 °C (68 °F):</b>                | .0952 mPas                                 |
| <b>Kinematic:</b>                               | Not determined.                            |
| <b>Organic solvents:</b>                        | 0.0 %                                      |
| <b>Water:</b>                                   | 100.0 %                                    |
| <b>9.2 Other information</b>                    | No further relevant information available. |

## 10: Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability

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

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

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

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

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

## 11: Toxicological information

### 11.1 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:

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.

The substance is not subject to classification.

#### 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.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Nuclease-Free Water

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## 12: Ecological information

### 12.1 Toxicity

*Aquatic toxicity: Not harmful to the aquatic environment*

*12.2 Persistence and degradability Not available*

*12.3 Bioaccumulative potential Not known*

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

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

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

### 12.5 Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

### 13.1 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

**14.1 UN-Number** Not hazardous for transportation

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

**14.2 UN proper shipping name** None

**DOT, ADR, IMDG, IATA** Void

**ADN**

**14.3 Transport hazard class(es)** None

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

**Class**

**14.4 Packing group** None

**DOT, ADR, IMDG, IATA** Void

**14.5 Environmental hazards:**

**Marine pollutant:** No

**14.6 Special precautions for user** Not applicable.

**14.7 Transport in bulk according to Annex II of**

**MARPOL73/78 and the IBC Code** Not applicable.

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Nuclease-Free Water

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UN "Model Regulation": -

## 15: Regulatory information

### 15.1 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.

#### MAK (German Maximum Workplace Concentration)

Substance is not listed.

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

Substance is not listed.

#### National regulations:

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

**15.2 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:**

(Contd. on page 7)

US

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Nuclease-Free Water**

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

**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)*

*DOT: US Department of Transportation*

*GHS: Globally Harmonized System of Classification and Labeling of Chemicals*

*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*

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

US

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

Printing date 05/23/2015

Reviewed on 04/30/2015

**1: Identification****1.1 Product identifier****Trade name:** Column Wash Solution (CWC)**Article number:** A159**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture****Classification according to the Hazard Communication Standard (HCS)**

The product is not classified as hazardous according to the HCS regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008 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**2.3 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.

(Contd. on page 2)



# Safety Data Sheet

## acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Column Wash Solution (CWC)**

(Contd. of page 1)

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.2 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 are 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

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

### 5.3 Advice for firefighters

No special advice

No special advice

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

## 6: Accidental release measures

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

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

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

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

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

US

(Contd. on page 3)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

Trade name: Column Wash Solution (CWC)

(Contd. of page 2)

## 7: Handling and storage

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

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

**7.2 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.

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

## 8: Exposure controls/personal protection

**8.1 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.

**8.2 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

**9.1 Information on basic physical and chemical properties**

**General Information**

**Appearance:**

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

**pH-value at 20 °C (68 °F):** 8.2

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | 0 °C (32 °F)    |
| <b>Boiling point/Boiling range:</b> | 100 °C (212 °F) |
| <b>Flash point:</b>                 | Not applicable. |

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

**Ignition temperature:**

**Decomposition temperature:** Not determined.

(Contd. on page 4)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Column Wash Solution (CWC)**

(Contd. of page 3)

|   |   |
|---|---|
| <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:</b>                                 | Not determined.                               |
| <b>Relative density</b>                         | Not determined.                               |
| <b>Vapour 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>                                   | 98.5 %  |
| <b>9.2 Other information</b>                    | No further relevant information available.    |

## \* 10: Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability

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

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

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

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

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

## \* 11: Toxicological information

### 11.1 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:

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.

(Contd. on page 5)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Column Wash Solution (CWC)**

(Contd. of page 4)

**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

**12.1 Toxicity**

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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

**14.1 UN-Number** Not hazardous for transportation

**14.2 UN proper shipping name** None

**14.3 Transport hazard class(es)** None

**14.4 Packing group** None

**14.5 Environmental hazards:**

**Marine pollutant:** No

**14.6 Special precautions for user** Not applicable.

**14.7 Transport in bulk according to Annex II of**

**MARPOL73/78 and the IBC Code** Not applicable.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

Trade name: Column Wash Solution (CWC)

(Contd. of page 5)

## 15: Regulatory information

### 15.1 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.

##### MAK (German Maximum Workplace Concentration)

None of the ingredients are listed.

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

None of the ingredients are listed.

#### National regulations:

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

**15.2 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

#### 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)

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

(Contd. on page 7)

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

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Column Wash Solution (CWC)**

(Contd. of page 6)

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

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

US

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

Printing date 05/23/2015

Reviewed on 04/30/2015

**1: Identification****1.1 Product identifier****Trade name:** PureYield™ Collection Tubes -**Article number:** A167**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture****Classification according to the Hazard Communication Standard (HCS)**

The substance is not classified as hazardous according to the HCS regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008 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**2.3 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: PureYield™ Collection Tubes -**

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### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.1 Chemical characterization: Substances

**CAS No. Description**

Article

## 4: First-aid measures

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

**6.3 Methods and material for containment and cleaning up:** Pick up mechanically.

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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

**7.2 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.

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**Trade name: PureYield™ Collection Tubes -**

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**Further information about storage conditions:** None.  
**7.3 Specific end use(s)** No further relevant information available.

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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.

**Eye protection:** Not required.

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

**pH-value:** Not applicable.

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <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:**

**Lower:** Not determined.  
**Upper:** Not determined.

**Vapor pressure:** Not applicable.

**Density:** Not determined.

**Relative density** Not determined.

**Vapour density** Not applicable.

**Evaporation rate** Not applicable.

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Trade name: PureYield™ Collection Tubes -

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**Solubility in / Miscibility with**

**Water:** Insoluble.  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**Dynamic:** Not applicable.  
**Kinematic:** Not applicable.

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

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

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability**

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

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

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

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

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

## 11: Toxicological information

**11.1 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:**

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.

The substance is not subject to classification.

**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

**12.1 Toxicity**

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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**12.4 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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>14.1 UN-Number</b>   | Not hazardous for transportation |
| <b>14.2 UN proper shipping name</b>   | None                             |
| <b>14.3 Transport hazard class(es)</b>  | None                             |
| <b>14.4 Packing group</b>   | None                             |
| <b>14.5 Environmental hazards:</b>  |                                  |
| <b>Marine pollutant:</b>  | No                               |
| <b>14.6 Special precautions for user</b>  | Not applicable.                  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                  |

## 15: Regulatory information

**15.1 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 not listed.

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**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.

**MAK (German Maximum Workplace Concentration)**

Substance is not listed.

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

Substance is not listed.

**National regulations:****Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**15.2 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

**Abbreviations and acronyms:**

GHS: Globally Harmonized System of Classification and Labeling of Chemicals

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

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

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification****1.1 Product identifier****Trade name:** Cell Lysis Buffer (CLC)**Article number:** A145**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture**

Classification according to the Hazard Communication Standard (HCS)



Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled according to the CLP regulation.

**Hazard pictograms** GHS05**Signal word** Danger**Hazard-determining components of labeling:**

sodium hydroxide

**Hazard statements**

H314 Causes severe skin burns and eye damage.

H412 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

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**Trade name: Cell Lysis Buffer (CLC)**

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**P303+P361+P353 IF ON SKIN (or hair):** Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P305+P351+P338 If in eyes:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**P310** Immediately call a poison center/doctor.

**P405** Store locked up.

**P501** 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

Environmental Hazard

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

Dermal

Inhalation

Oral

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

**2.3 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

**3.2 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 are withheld as a Promega Corp. trade secret.

**Dangerous components:**

|           |   |        |
|-----------|---|--------|
| 151-21-3  | sodium dodecyl sulphate<br><span style="font-size: small;">⚠ Flam. Sol. 1, H228; ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335</span> | 5-10%  |
| 1310-73-2 | sodium hydroxide<br><span style="font-size: small;">⚠ Skin Corr. 1A, H314</span>  | <2.50% |

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

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Reviewed on 05/22/2015

**Trade name: Cell Lysis Buffer (CLC)**

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## 4: First-aid measures

### 4.1 Description of first aid measures

#### General information:

Immediately remove any clothing soiled by the product.

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:

Rinse out mouth and then drink plenty of water.

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

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing agents:

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

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

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

## 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Wear protective clothing.

### 6.2 Environmental precautions:

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

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

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

### 6.3 Methods and material for containment and cleaning up:

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

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

### 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

### 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

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**Trade name: Cell Lysis Buffer (CLC)**

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Prevent formation of aerosols.

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

### 7.2 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.

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

## 8: Exposure controls/personal protection

### 8.1 Control parameters

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

#### 1310-73-2 sodium hydroxide

PEL Long-term value: 2 mg/m<sup>3</sup>

REL Ceiling limit value: 2 mg/m<sup>3</sup>

TLV Ceiling limit value: 2 mg/m<sup>3</sup>

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

### 8.2 Exposure controls

#### Personal protective equipment:

##### General protective and hygienic measures:

Ensure that washing facilities are available at the work place.

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:

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

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. 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:

Tightly sealed goggles

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

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Trade name: Cell Lysis Buffer (CLC)

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## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

#### Appearance:

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

**pH-value at 20 °C (68 °F):** 13

#### Change in condition

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <b>Boiling point/Boiling range:</b> | Undetermined.   |
| <b>Flash point:</b>                 | 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:

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

**Density:** Not determined.

**Relative density:** Not determined.

**Vapour density:** Not determined.

**Evaporation rate:** Not determined.

#### Solubility in / Miscibility with

|   |                 |
|---|-----------------|
| <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. |

**Organic solvents:** 0.0 %

**Water:** 90.9 %

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

## 10: Stability and reactivity

### 10.1 Reactivity

### 10.2 Chemical stability

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

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

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

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

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

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Trade name: Cell Lysis Buffer (CLC)

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## 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity:

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

##### 151-21-3 sodium dodecyl sulphate

|                    |       |                               |
|--------------------|-------|-------------------------------|
| Oral               | LD50  | 1288 mg/kg (Rat)              |
| Irritation of skin | acute | 50 mg/ 24H (Rabbit)<br>Severe |

##### 1310-73-2 sodium hydroxide

|                    |       |                                |
|--------------------|-------|--------------------------------|
| Oral               | LD50  | 2000 mg/kg (Rat)               |
| Irritation of skin | acute | 500 mg/ 24H (Rabbit)<br>severe |

#### 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.

#### Additional toxicological information:

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

Corrosive

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)

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

### 12.1 Toxicity

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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

#### Ecotoxicological effects:

**Remark:** Harmful to fish

#### 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.

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

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

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**Trade name: Cell Lysis Buffer (CLC)**

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*Harmful to aquatic organisms*

*Rinse off of bigger amounts into drains or the aquatic environment may lead to increased pH-values. A high pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably reduced, so that after the use of the product the aqueous waste, emptied into drains, is only low water-dangerous.*

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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

**14.1 UN-Number**

**DOT, ADR, IMDG, IATA** UN1824

**14.2 UN proper shipping name**

**DOT** *Sodium hydroxide solution*  
**ADR** *1824 Sodium hydroxide solution*  
**IMDG, IATA** *SODIUM HYDROXIDE SOLUTION*

**14.3 Transport hazard class(es)**

**DOT**



**Class** *8 Corrosive substances*

**Label** 8

**ADR**



**Class** *8 (C7) Corrosive substances*

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Trade name: Cell Lysis Buffer (CLC)

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|   |                        |
|---|------------------------|
| <b>Label</b>  | 8                      |
| <b>IMDG, IATA</b>   |                        |
|  |                        |
| <b>Class</b>  | 8 Corrosive substances |
| <b>Label</b>  | 8                      |

|                             |    |
|-----------------------------|----|
| <b>14.4 Packing group</b>   |    |
| <b>DOT, ADR, IMDG, IATA</b> | II |

|                                    |    |
|------------------------------------|----|
| <b>14.5 Environmental hazards:</b> |    |
| <b>Marine pollutant:</b>           | No |

|  |                               |
|--|-------------------------------|
| <b>14.6 Special precautions for user</b> | Warning: Corrosive substances |
| <b>Danger code (Kemler):</b>             | 80                            |
| <b>EMS Number:</b>                       | F-A,S-B                       |
| <b>Segregation groups</b>                | Alkalis                       |

|   |                 |
|---|-----------------|
| <b>14.7 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: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |

|                                 |   |
|---------------------------------|---|
| <b>IMDG</b>                     |   |
| <b>Limited quantities (LQ)</b>  | 1L  |
| <b>Excepted quantities (EQ)</b> | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |

|                               |  |
|-------------------------------|--|
| <b>UN "Model Regulation":</b> | UN1824, Sodium hydroxide solution, 8, II |
|-------------------------------|--|

## 15: Regulatory information

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

|  |
|--|
| <b>Section 355 (extremely hazardous substances):</b> |
|--|

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

|  |
|--|
| <b>Section 313 (Specific toxic chemical listings):</b> |
|--|

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

|   |
|---|
| <b>TSCA (Toxic Substances Control Act):</b> |
|---|

|                             |
|-----------------------------|
| All ingredients are listed. |
|-----------------------------|

**Proposition 65**

|   |
|---|
| <b>Chemicals known to cause cancer:</b> |
|---|

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

(Contd. on page 9)

US

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Cell Lysis Buffer (CLC)**

(Contd. of page 8)

**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.

**MAK (German Maximum Workplace Concentration)**

None of the ingredients are listed.

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

None of the ingredients are listed.

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

**15.2 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

**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

**GHS:** Globally Harmonized System of Classification and Labeling of Chemicals

**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

**Flam. Sol. 1:** Flammable solids, Hazard Category 1

**Acute Tox. 4:** Acute toxicity, Hazard Category 4

**Skin Corr. 1A:** Skin corrosion/irritation, Hazard Category 1A

**Skin Irrit. 2:** Skin corrosion/irritation, Hazard Category 2

**Eye Dam. 1:** Serious eye damage/eye irritation, Hazard Category 1

(Contd. on page 10)

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Cell Lysis Buffer (CLC)**

(Contd. of page 9)

*Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2*

*STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3*

*Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2*

*Aquatic Chronic 3: Hazardous to the aquatic environment - Chronic Hazard, Category 3*

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

US

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** Neutralization Solution (NSC)

**Article number:** A157

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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

**1.3 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)

**1.4 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**

**2.1 Classification of the substance or mixture**

Classification according to the Hazard Communication Standard (HCS)



Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled according to the CLP regulation.

**Hazard pictograms** GHS05, GHS07

**Signal word** Danger

**Hazard-determining components of labeling:**

guanidinium chloride

Trade Secret 002-4036

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Neutralization Solution (NSC)**

(Contd. of page 1)

**Hazard statements**

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

**Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a poison center/doctor.

P321 Specific treatment (see on this label).

P362 Take off contaminated clothing and wash before reuse.

P501 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)**2.3 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

**3.2 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 are withheld as a Promega Corp. trade secret.

**Dangerous components:**

|         |  |          |
|---------|--|----------|
| 50-01-1 | guanidinium chloride<br>⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319                      | 20-25%   |
|         | Trade Secret 001-4036<br>⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335                        | 1.0-5.0% |
|         | Trade Secret 002-4036<br>⚠ Skin Corr. 1A, H314; Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332 | 1.0-5.0% |

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

(Contd. on page 3)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Neutralization Solution (NSC)**

(Contd. of page 2)

## 4: First-aid measures

### 4.1 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.

#### 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.

### 4.2 Most important symptoms and effects, both acute and delayed None

### 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing agents:

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

### 5.2 Special hazards arising from the substance or mixture None known

### 5.3 Advice for firefighters No special advice

## 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective clothing.

### 6.2 Environmental precautions:

Dilute with plenty of water.

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

### 6.3 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.

### 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

### 7.1 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.

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Neutralization Solution (NSC)**

(Contd. of page 3)

### 7.2 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.

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

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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.

#### Eye protection:

Safety glasses

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

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

##### Appearance:

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

|                                   |     |
|-----------------------------------|-----|
| <b>pH-value at 20 °C (68 °F):</b> | 3.8 |
|-----------------------------------|-----|

(Contd. on page 5)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Neutralization Solution (NSC)

(Contd. of page 4)

**Change in condition****Melting point/Melting range:** Undetermined.**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:** Not determined.**Relative density** Not determined.**Vapour 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:** 65.9 %**9.2 Other information** No further relevant information available.

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**10.3 Possibility of hazardous reactions** No dangerous reactions known.**10.4 Conditions to avoid** No further relevant information available.**10.5 Incompatible materials:** No further relevant information available.**10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## 11: Toxicological information

**11.1 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

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Neutralization Solution (NSC)**

(Contd. of page 5)

**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

**12.1 Toxicity****Aquatic toxicity:** Not harmful to the aquatic environment**12.2 Persistence and degradability** Not available**12.3 Bioaccumulative potential** Not known**12.4 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.

**12.5 Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Other adverse effects** No further relevant information available.

## \* 13: Disposal considerations

**13.1 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.

US

(Contd. on page 7)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

Trade name: Neutralization Solution (NSC)

(Contd. of page 6)

## 14: Transport information

|   |                                  |
|---|----------------------------------|
| <b>14.1 UN-Number</b>   | Not hazardous for transportation |
| <b>14.2 UN proper shipping name</b>   | None                             |
| <b>14.3 Transport hazard class(es)</b>  | None                             |
| <b>14.4 Packing group</b>   | None                             |
| <b>14.5 Environmental hazards:</b><br><b>Marine pollutant:</b>                      | No                               |
| <b>14.6 Special precautions for user</b>  | Not applicable.                  |
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable.                  |

## 15: Regulatory information

**15.1 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):**

|           |                        |
|-----------|------------------------|
| 50-01-1   | guanidinium chloride   |
| 7447-40-7 | potassium chloride     |
|           | Phenol Red sodium salt |
| 7732-18-5 | water                  |

**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.

**Carcinogeny categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

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

None of the ingredients are listed.

**MAK (German Maximum Workplace Concentration)**

None of the ingredients are listed.

(Contd. on page 8)

US

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Neutralization Solution (NSC)**

(Contd. of page 7)

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

None of the ingredients are listed.

**National regulations:**

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

**15.2 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

**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)

**GHS:** Globally Harmonized System of Classification and Labeling of Chemicals

**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

**Acute Tox. 4:** Acute toxicity, Hazard Category 4

**Skin Corr. 1A:** Skin corrosion/irritation, Hazard Category 1A

**Skin Irrit. 2:** Skin corrosion/irritation, Hazard Category 2

**Eye Dam. 1:** Serious eye damage/eye irritation, Hazard Category 1

**Eye Irrit. 2:** Serious eye damage/eye irritation, Hazard Category 2

**STOT SE 3:** Specific target organ toxicity - Single exposure, Hazard Category 3

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

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

Printing date 05/23/2015

Reviewed on 05/22/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** Endotoxin Removal Wash (ERB)

**Article number:** A158

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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

**1.3 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)

**1.4 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**

**2.1 Classification of the substance or mixture**

Classification according to the Hazard Communication Standard (HCS)



Flam. Liq. 2 H225 Highly flammable liquid and vapor.



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H336 May cause drowsiness or dizziness.

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labeled according to the CLP regulation.

**Hazard pictograms** GHS02, GHS07

**Signal word** Danger

**Hazard-determining components of labeling:**

guanidinium chloride

(Contd. on page 2)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Endotoxin Removal Wash (ERB)**

(Contd. of page 1)

propan-2-ol

**Hazard statements**

H225 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

**Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1

Fire = 3

Reactivity = 0

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

Health = 1

Fire = 3

Reactivity = 0

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

Irritant

Flammable

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

Dermal

Inhalation

Oral

**Target Organ(s):**

May affect Nervous system (Neurotoxin)

May cause Kidney damage (Nephrotoxin)

May affect Bones

**2.3 Other hazards** Keep away from sources of ignition.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

## 3: Composition/information on ingredients

**3.2 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 are withheld as a Promega Corp. trade secret.

**Dangerous components:**

|         |   |        |
|---------|---|--------|
| 50-01-1 | guanidinium chloride  | 25-50% |
|         | ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319 |        |

(Contd. on page 3)



# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Endotoxin Removal Wash (ERB)**

(Contd. of page 2)

67-63-0 propan-2-ol

25-50%

⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336

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

## 4: First-aid measures

### 4.1 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.

Take affected persons out into the fresh air.

Take affected persons out of danger area and lay down.

#### After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

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

Take affected persons into fresh air and keep quiet.

#### After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

#### After eye contact:

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

**After swallowing:** Seek immediate medical advice.

### 4.2 Most important symptoms and effects, both acute and delayed

Headache

Dizziness

Dizziness

Nausea

### 4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

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

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

### 5.3 Advice for firefighters

No special advice

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

## 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Keep away from ignition sources

Wear protective clothing.

### 6.2 Environmental precautions:

Prevent seepage into sewage system, workpits and cellars.

Dilute with plenty of water.

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

(Contd. on page 4)

US

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 05/22/2015

**Trade name: Endotoxin Removal Wash (ERB)**

(Contd. of page 3)

### 6.3 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.

### 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

### 7.1 Precautions for safe handling

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Use only in well ventilated areas.

### Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Storage:

**Requirements to be met by storerooms and receptacles:** Store in a cool location.

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

#### Further information about storage conditions:

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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

## 8: Exposure controls/personal protection

### 8.1 Control parameters

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

#### 67-63-0 propan-2-ol

PEL Long-term value: 980 mg/m<sup>3</sup>, 400 ppm

REL Short-term value: 1225 mg/m<sup>3</sup>, 500 ppm

Long-term value: 980 mg/m<sup>3</sup>, 400 ppm

TLV Short-term value: 984 mg/m<sup>3</sup>, 400 ppm

Long-term value: 492 mg/m<sup>3</sup>, 200 ppm

BEI

#### Ingredients with biological limit values:

#### 67-63-0 propan-2-ol

BEI 40 mg/L

Medium: urine

Time: end of shift at end of workweek

Parameter: Acetone (background, nonspecific)

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

### 8.2 Exposure controls

#### Personal protective equipment:

#### General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

(Contd. on page 5)

# Safety Data Sheet

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Reviewed on 05/22/2015

**Trade name: Endotoxin Removal Wash (ERB)**

(Contd. of page 4)

*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.*

**Eye protection:**

*Safety glasses*

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

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### General Information

**Appearance:**

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

**pH-value at 20 °C (68 °F):** 5.2

#### Change in condition

|                                     |                   |
|-------------------------------------|-------------------|
| <b>Melting point/Melting range:</b> | Undetermined.     |
| <b>Boiling point/Boiling range:</b> | 82 °C (180 °F)    |
| <b>Flash point:</b>                 | ≤ 21 °C (≤ 70 °F) |

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

**Ignition temperature:** 425 °C (797 °F)

**Decomposition temperature:** Not determined.

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

**Danger of explosion:** Product does not present an explosion hazard.  
Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**Explosion limits:**

|   |                   |
|---|-------------------|
| <b>Lower:</b>                           | 2.0 Vol %         |
| <b>Upper:</b>                           | 12.0 Vol %        |
| <b>Vapor pressure at 20 °C (68 °F):</b> | 43 hPa (32 mm Hg) |

**Density at 20 °C (68 °F):** 1.05055 g/cm<sup>3</sup> (8.767 lbs/gal)

**Relative density** Not determined.

**Vapour density** Not determined.

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# Safety Data Sheet

## acc. to OSHA HCS

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**Trade name: Endotoxin Removal Wash (ERB)**

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**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:** 35.0 %

**Water:** 28.0 %

**VOC content:** 35.0 %

**Solids content:** 37.0 %

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

### 10: Stability and reactivity

**10.1 Reactivity**
**10.2 Chemical stability**
**Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

**10.3 Possibility of hazardous reactions** Reacts with strong acids and oxidizing agents.

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

**10.5 Incompatible materials:** Oxidizing agents

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

### 11: Toxicological information

**11.1 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 |

**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)**

|         |             |   |
|---------|-------------|---|
| 67-63-0 | propan-2-ol | 3 |
|---------|-------------|---|

**NTP (National Toxicology Program)**

None of the ingredients are listed.

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**Trade name: Endotoxin Removal Wash (ERB)**

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

None of the ingredients are listed.

## 12: Ecological information

### 12.1 Toxicity

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

**12.4 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

### 13.1 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

### 14.1 UN-Number

DOT, ADR, IMDG, IATA

UN1219

### 14.2 UN proper shipping name

DOT

Isopropanol (Isopropyl alcohol) solution

ADR

1219 Isopropanol (Isopropyl alcohol) solution

IMDG, IATA

ISOPROPANOL (ISOPROPYL ALCOHOL) solution

### 14.3 Transport hazard class(es)

DOT



Class

3 Flammable liquids

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Trade name: Endotoxin Removal Wash (ERB)

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|              |   |
|--------------|---|
| <b>Label</b> | 3 |
|--------------|---|

|            |  |
|------------|--|
| <b>ADR</b> |  |
|------------|--|



|              |                          |
|--------------|--------------------------|
| <b>Class</b> | 3 (F1) Flammable liquids |
|--------------|--------------------------|

|              |   |
|--------------|---|
| <b>Label</b> | 3 |
|--------------|---|

|                   |  |
|-------------------|--|
| <b>IMDG, IATA</b> |  |
|-------------------|--|



|              |                     |
|--------------|---------------------|
| <b>Class</b> | 3 Flammable liquids |
|--------------|---------------------|

|              |   |
|--------------|---|
| <b>Label</b> | 3 |
|--------------|---|

|  |    |
|--|----|
| <b>14.4 Packing group<br/>DOT, ADR, IMDG, IATA</b> | II |
|--|----|

|  |    |
|--|----|
| <b>14.5 Environmental hazards:<br/>Marine pollutant:</b> | No |
|--|----|

|  |                            |
|--|----------------------------|
| <b>14.6 Special precautions for user</b> | Warning: Flammable liquids |
| <b>Danger code (Kemler):</b>             | 33                         |
| <b>EMS Number:</b>                       | F-E,S-E                    |

|   |                 |
|---|-----------------|
| <b>14.7 Transport in bulk according to Annex II of<br/>MARPOL73/78 and the IBC Code</b> | Not applicable. |
|---|-----------------|

|  |  |
|--|--|
| <b>Transport/Additional information:</b> |  |
|--|--|

|            |  |
|------------|--|
| <b>ADR</b> |  |
|------------|--|

|                                 |   |
|---------------------------------|---|
| <b>Excepted quantities (EQ)</b> | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |
|---------------------------------|---|

|             |  |
|-------------|--|
| <b>IMDG</b> |  |
|-------------|--|

|                                 |   |
|---------------------------------|---|
| <b>Limited quantities (LQ)</b>  | 1L  |
| <b>Excepted quantities (EQ)</b> | Code: E2<br>Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 500 ml |

|                               |   |
|-------------------------------|---|
| <b>UN "Model Regulation":</b> | UN1219, Isopropanol (Isopropyl alcohol) solution, 3, II |
|-------------------------------|---|

## 15: Regulatory information

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

|  |  |
|--|--|
| <b>Section 355 (extremely hazardous substances):</b> |  |
|--|--|

|                                     |
|-------------------------------------|
| None of the ingredients are listed. |
|-------------------------------------|

|  |  |
|--|--|
| <b>Section 313 (Specific toxic chemical listings):</b> |  |
|--|--|

|         |             |
|---------|-------------|
| 67-63-0 | propan-2-ol |
|---------|-------------|

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US

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acc. to OSHA HCS

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**Trade name: Endotoxin Removal Wash (ERB)**

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**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)**

67-63-0 | propan-2-ol

A4

**MAK (German Maximum Workplace Concentration)**

None of the ingredients are listed.

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

None of the ingredients are listed.

**National regulations:****Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**15.2 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

**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  
GHS: Globally Harmonized System of Classification and Labeling of Chemicals  
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)

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**Safety Data Sheet**  
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Reviewed on 05/22/2015

**Trade name: Endotoxin Removal Wash (ERB)**

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VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Flam. Liq. 2: Flammable liquids, Hazard Category 2

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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

US



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

Printing date 05/23/2015

Reviewed on 04/30/2015

**1: Identification**

**1.1 Product identifier**

**Trade name:** *Elution Buffer (EBB)*

**Article number:** A160

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

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

**1.3 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*

**1.4 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**

**2.1 Classification of the substance or mixture**

**Classification according to the Hazard Communication Standard (HCS)**

*The product is not classified as hazardous according to the HCS regulation.*

**2.2 Label elements**

**Labelling according to Regulation (EC) No 1272/2008 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*

**2.3 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.*

(Contd. on page 2)

# Safety Data Sheet

## acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Elution Buffer (EBB)**

(Contd. of page 1)

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.2 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 are 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

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

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

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

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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Reviewed on 04/30/2015

**Trade name: Elution Buffer (EBB)**

(Contd. of page 2)

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

### 7.2 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.

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

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

|                                   |     |
|-----------------------------------|-----|
| <b>pH-value at 20 °C (68 °F):</b> | 8.5 |
|-----------------------------------|-----|

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | 0 °C (32 °F)    |
| <b>Boiling point/Boiling range:</b> | Undetermined.   |
| <b>Flash point:</b>                 | Not applicable. |

|                                       |                 |
|---------------------------------------|-----------------|
| <b>Flammability (solid, gaseous):</b> | Not applicable. |
|---------------------------------------|-----------------|

**Ignition temperature:**

|                                   |                 |
|-----------------------------------|-----------------|
| <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. |
|-----------------------------|---|

(Contd. on page 4)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

Trade name: **Elution Buffer (EBB)**

(Contd. of page 3)

**Explosion limits:**

**Lower:** Not determined.  
**Upper:** Not determined.  
**Vapor pressure:** Not determined.

**Density:** Not determined.  
**Relative density** Not determined.  
**Vapour 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:** 99.9 %

**Solids content:** 0.2 %  
**9.2 Other information** No further relevant information available.

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability**

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

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

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

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

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

## 11: Toxicological information

**11.1 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:

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.

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# Safety Data Sheet

acc. to OSHA HCS

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Reviewed on 04/30/2015

**Trade name: Elution Buffer (EBB)**

(Contd. of page 4)

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

None of the ingredients are listed.

## 12: Ecological information

### 12.1 Toxicity

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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

**Ecotoxicological effects:**

**Remark:** Not available

**Additional ecological information:**

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

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

### 13.1 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

**14.1 UN-Number** Not hazardous for transportation

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

**14.2 UN proper shipping name** None

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

**14.3 Transport hazard class(es)** None

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

**Class** Void

**14.4 Packing group** None

**DOT, ADR, IMDG, IATA** Void

**14.5 Environmental hazards:**

**Marine pollutant:** No

**14.6 Special precautions for user** Not applicable.

(Contd. on page 6)

# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

Trade name: **Elution Buffer (EBB)**

(Contd. of page 5)

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

**UN "Model Regulation":** -

## 15: Regulatory information

**15.1 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.

**Carcinogen categories**

**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

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

None of the ingredients are listed.

**MAK (German Maximum Workplace Concentration)**

None of the ingredients are listed.

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

None of the ingredients are listed.

**National regulations:**

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

**15.2 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

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# Safety Data Sheet

acc. to OSHA HCS

Printing date 05/23/2015

Reviewed on 04/30/2015

**Trade name: Elution Buffer (EBB)**

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*Madison, WI**Ph: (608)274-4330***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**GHS: Globally Harmonized System of Classification and Labeling of Chemicals**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***\* Data compared to the previous version altered.**

US

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

Printing date 05/23/2015

Reviewed on 04/30/2015

**1: Identification****1.1 Product identifier****Trade name:** PureYield™ Minicolumns -**Article number:** A166**1.2 Relevant identified uses of the substance or mixture and uses advised against**

No further relevant information available.

**Application of the substance / the mixture** Laboratory chemicals**1.3 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)**1.4 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****2.1 Classification of the substance or mixture****Classification according to the Hazard Communication Standard (HCS)**

The substance is not classified as hazardous according to the HCS regulation.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008 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**2.3 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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### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3: Composition/information on ingredients

### 3.1 Chemical characterization: Substances

**CAS No. Description**

Article

## 4: First-aid measures

### 4.1 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.

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

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

No further relevant information available.

## 5: Fire-fighting measures

### 5.1 Extinguishing media

**Suitable extinguishing agents:**

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

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

**5.3 Advice for firefighters** No special advice

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

## 6: Accidental release measures

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

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

**6.3 Methods and material for containment and cleaning up:** Pick up mechanically.

**6.4 Reference to other sections**

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

## 7: Handling and storage

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

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

**7.2 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.

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**Further information about storage conditions:** None.  
**7.3 Specific end use(s)** No further relevant information available.

## 8: Exposure controls/personal protection

### 8.1 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.

### 8.2 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.

**Eye protection:** Not required.

## 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

**General Information**

**Appearance:**

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

**pH-value:** Not applicable.

**Change in condition**

|                                     |                 |
|-------------------------------------|-----------------|
| <b>Melting point/Melting range:</b> | Undetermined.   |
| <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:**

**Lower:** Not determined.

**Upper:** Not determined.

**Vapor pressure:** Not applicable.

**Density:** Not determined.

**Relative density** Not determined.

**Vapour density** Not applicable.

**Evaporation rate** Not applicable.

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**Solubility in / Miscibility with**

**Water:** Insoluble.  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
**Dynamic:** Not applicable.  
**Kinematic:** Not applicable.

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

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

## 10: Stability and reactivity

**10.1 Reactivity****10.2 Chemical stability**

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

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

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

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

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

## 11: Toxicological information

**11.1 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:**

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.

The substance is not subject to classification.

**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

**12.1 Toxicity**

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

**12.2 Persistence and degradability** Not available

**12.3 Bioaccumulative potential** Not known

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**12.4 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.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

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

## 13: Disposal considerations

**13.1 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>14.1 UN-Number</b>            | Not hazardous for transportation |
| <b>DOT, ADR, ADN, IMDG, IATA</b> | Void                             |

|                                     |      |
|-------------------------------------|------|
| <b>14.2 UN proper shipping name</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>    | Void |

|  |      |
|--|------|
| <b>14.3 Transport hazard class(es)</b> | None |
| <b>DOT, ADR, ADN, IMDG, IATA</b>       |      |
| <b>Class</b>                           | Void |

|                             |      |
|-----------------------------|------|
| <b>14.4 Packing group</b>   | None |
| <b>DOT, ADR, IMDG, IATA</b> | Void |

|                                    |    |
|------------------------------------|----|
| <b>14.5 Environmental hazards:</b> |    |
| <b>Marine pollutant:</b>           | No |

|  |                 |
|--|-----------------|
| <b>14.6 Special precautions for user</b> | Not applicable. |
|--|-----------------|

|   |                 |
|---|-----------------|
| <b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b> | Not applicable. |
|---|-----------------|

|                               |   |
|-------------------------------|---|
| <b>UN "Model Regulation":</b> | - |
|-------------------------------|---|

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## 15: Regulatory information

### 15.1 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 not 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.

**MAK (German Maximum Workplace Concentration)**

Substance is not listed.

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

Substance is not listed.

**National regulations:**

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

**15.2 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

**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)

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*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**GHS: Globally Harmonized System of Classification and Labeling of Chemicals**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***\* Data compared to the previous version altered.**

US