

| Product code | Description |
|--------------|--|
| A2351 | ReliaPrep™ FFPE gDNA Miniprep System, 10 rxns |

Components:

| | |
|-------|---|
| A797 | RNase A Solution |
| A828 | Elution Buffer |
| Z101 | Lysis Buffer (LBA) |
| A247A | ReliaPrep™ FFPE Binding Columns Article |
| Z103A | BL Buffer |
| A505A | Proteinase K (PK) Solution |
| A244 | Mineral Oil |
| Z104A | Wash Solution |
| MC122 | Blue Dye |

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

1 Identification**Product identifier****Trade name:** RNase A Solution**Article number:** A797**Application of the substance / the mixture** For research use only**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: ChemicalRegulatory@promega.com**Emergency telephone number:**

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

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

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

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable**Target Organ(s):** Not applicable or unknown**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: No special measures required.

Methods and material for containment and cleaning up:

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

Reference to other sections

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 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

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

Eye protection: Not required.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.2

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

(Contd. of page 3)

| | |
|---|---|
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |
| Density at 20 °C (68 °F): | 1 g/cm ³ (8.345 lbs/gal) |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |
| Solubility in / Miscibility with | |
| Water: | Not miscible or difficult to mix. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic at 20 °C (68 °F): | 0.0952 mPas |
| Kinematic: | Not determined. |
| Organic solvents: | 0.0 % |
| Water: | 99.3 % |
| VOC content: | 0.00 % |
| Solids content: | 0.4 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

Reactivity No further relevant information available.

Chemical stability

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

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

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

Primary irritant effect:

on the skin: No irritant effect.

on the eye: No 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:

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

(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

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes:

Not available.

Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

* 13 Disposal considerations

Waste treatment methods

Recommendation:

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

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

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

* 14 Transport information

UN-Number

Not hazardous for transportation

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

None

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

None

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

(Contd. of page 5)

| | |
|--|----------------|
| DOT, ADR, ADN, IMDG, IATA Class | Not applicable |
|--|----------------|

| | |
|---|------------------------|
| Packing group DOT, ADR, IMDG, IATA | None Not applicable |
|---|------------------------|

| | |
|---|----|
| Environmental hazards: Marine pollutant: | No |
|---|----|

| | |
|-------------------------------------|-----------------|
| Special precautions for user | Not applicable. |
|-------------------------------------|-----------------|

| | |
|---|-----------------|
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
|---|-----------------|

| | |
|-------------------------------|----------------|
| UN "Model Regulation": | Not applicable |
|-------------------------------|----------------|

15 Regulatory information

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

| |
|--|
| Section 355 (extremely hazardous substances): |
|--|

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

| |
|--|
| Section 313 (Specific toxic chemical listings): |
|--|

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

| |
|---------------------------------|
| Hazardous Air Pollutants |
|---------------------------------|

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

Proposition 65

| |
|---|
| Chemicals known to cause cancer: |
|---|

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

| |
|--|
| Chemicals known to cause reproductive toxicity for females: |
|--|

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

| |
|--|
| Chemicals known to cause reproductive toxicity for males: |
|--|

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

| |
|---|
| Chemicals known to cause developmental toxicity: |
|---|

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

Carcinogenicity categories

| |
|--|
| EPA (Environmental Protection Agency) |
|--|

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

| |
|---|
| TLV (Threshold Limit Value established by ACGIH) |
|---|

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

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

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

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

Water hazard class: Generally not hazardous for water.

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/11/2019

Trade name: RNase A Solution

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

(Contd. of page 6)

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

1 Identification**Product identifier****Trade name:** Elution Buffer**Article number:** A828**Application of the substance / the mixture** For research use only**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: ChemicalRegulatory@promega.com**Emergency telephone number:**

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

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

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

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable**Target Organ(s):** Not applicable or unknown**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Elution Buffer

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: Dilute with plenty of water.

Methods and material for containment and cleaning up:

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

Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: *Elution Buffer*

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

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

Eye protection: Not required.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 8

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: *Elution Buffer*

(Contd. of page 3)

| | |
|---|--|
| Auto igniting: | <i>Product is not selfigniting.</i> |
| Danger of explosion: | <i>Product does not present an explosion hazard.</i> |
| Explosion limits: | |
| Lower: | <i>Not determined.</i> |
| Upper: | <i>Not determined.</i> |
| Vapor pressure: | <i>Not determined.</i> |
| Density at 20 °C (68 °F): | <i>0.99929 g/cm³ (8.33908 lbs/gal)</i> |
| Relative density | <i>Not determined.</i> |
| Vapor density | <i>Not determined.</i> |
| Evaporation rate | <i>Not determined.</i> |
| Solubility in / Miscibility with | |
| Water: | <i>Fully miscible.</i> |
| Partition coefficient (n-octanol/water): | <i>Not determined.</i> |
| Viscosity: | |
| Dynamic at 20 °C (68 °F): | <i>0.0952 mPas</i> |
| Kinematic: | <i>Not determined.</i> |
| Water: | <i>99.8 %</i> |
| VOC content: | <i>0.00 %</i> |
| Solids content: | <i>0.2 %</i> |
| Other information | <i>No further relevant information available.</i> |

10 Stability and reactivity

Reactivity *No further relevant information available.*

Chemical stability

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

Possibility of hazardous reactions *No dangerous reactions known.*

Conditions to avoid *No further relevant information available.*

Incompatible materials: *No further relevant information available.*

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

11 Toxicological information

Information on toxicological effects

Acute toxicity:

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

Primary irritant effect:

on the skin: *No irritant effect.*

on the eye: *No 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:

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 11/12/2019

Reviewed on 10/15/2019

Trade name: Elution Buffer

(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

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes:

Not available.

Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

* 13 Disposal considerations

Waste treatment methods

Recommendation:

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

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

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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

* 14 Transport information

UN-Number

Not hazardous for transportation

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

None

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

None

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: *Elution Buffer*

(Contd. of page 5)

DOT, ADR, ADN, IMDG, IATAClass *Not applicable***Packing group**DOT, ADR, IMDG, IATA *None*
*Not applicable***Environmental hazards:****Marine pollutant:** *No***Special precautions for user** *Not applicable.***Transport in bulk according to Annex II of
MARPOL 73/78 and the IBC Code** *Not applicable.***UN "Model Regulation":** *Not applicable***15 Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture**
Sara**Section 355 (extremely hazardous substances):***None of the ingredients are listed.***Section 313 (Specific toxic chemical listings):***None of the ingredients are listed.***TSCA (Toxic Substances Control Act) Inventory:***All ingredients are listed.***Hazardous Air Pollutants***None of the ingredients are listed.***Proposition 65****Chemicals known to cause cancer:***None of the ingredients are listed.***Chemicals known to cause reproductive toxicity for females:***None of the ingredients are listed.***Chemicals known to cause reproductive toxicity for males:***None of the ingredients are listed.***Chemicals known to cause developmental toxicity:***None of the ingredients are listed.***Carcinogenicity categories****EPA (Environmental Protection Agency)***None of the ingredients are listed.***TLV (Threshold Limit Value established by ACGIH)***None of the ingredients are listed.***NIOSH-Ca (National Institute for Occupational Safety and Health)***None of the ingredients are listed.***GHS label elements** *Not applicable***Signal word** *Not applicable***Hazard statements** *Not applicable*

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Elution Buffer

(Contd. of page 6)

Water hazard class: Generally not hazardous for water.

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

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

1 Identification**Product identifier****Trade name:** Lysis Buffer (LBA)**Article number:** Z101**Application of the substance / the mixture** For research use only**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: ChemicalRegulatory@promega.com**Emergency telephone number:**

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

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

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

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable**Target Organ(s):** Not applicable or unknown**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Lysis Buffer (LBA)

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:

| | | |
|-----------|----------|------|
| 1185-53-1 | Tris HCl | 1-5% |
|-----------|----------|------|

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions:

Dilute with plenty of water.

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

Methods and material for containment and cleaning up:

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

Reference to other sections

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 11/12/2019

Reviewed on 10/15/2019

Trade name: Lysis Buffer (LBA)

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

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

Eye protection: Not required.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.3

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: **Lysis Buffer (LBA)**

(Contd. of page 3)

| | |
|---|---|
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |
| Density at 20 °C (68 °F): | 0.995 g/cm ³ (8.30328 lbs/gal) |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |
| Solubility in / Miscibility with | |
| Water: | Fully miscible. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| Water: | 94.4 % |
| VOC content: | 0.00 % |
| Solids content: | 5.2 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No 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:

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 11/12/2019

Reviewed on 10/15/2019

Trade name: **Lysis Buffer (LBA)**

(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****Toxicity****Aquatic toxicity:**

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.**Ecotoxicological effects:****Remark:** Not available**Additional ecological information:****General notes:** Not known to be hazardous to water.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.* **13 Disposal considerations****Waste treatment methods****Recommendation:**

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

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

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.* **14 Transport information****UN-Number**

Not hazardous for transportation

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

None

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

None

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

Not applicable

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: **Lysis Buffer (LBA)**

(Contd. of page 5)

| | |
|-----------------------------|----------------|
| Packing group | None |
| DOT, ADR, IMDG, IATA | Not applicable |

| | |
|-------------------------------|----|
| Environmental hazards: | |
| Marine pollutant: | No |

| | |
|-------------------------------------|-----------------|
| Special precautions for user | Not applicable. |
|-------------------------------------|-----------------|

| | |
|---|-----------------|
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
|---|-----------------|

| | |
|-------------------------------|----------------|
| UN "Model Regulation": | Not applicable |
|-------------------------------|----------------|

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Carcinogenicity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

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

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Lysis Buffer (LBA)

(Contd. of page 6)

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

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

* **1 Identification**

Product identifier

Trade name: ReliaPrep™ FFPE Binding Columns

Article number: A247A

Application of the substance / the mixture For research use only

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: ChemicalRegulatory@promega.com

Emergency telephone number:

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

* **2 Hazard(s) identification**

Classification of the substance or mixture

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

Label elements

GHS label elements Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

Classification system:

NFPA ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

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

Target Organ(s): Not applicable or unknown

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Substances

CAS No. Description

Article

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

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

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

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

Handling:

Precautions for safe handling No special measures required.

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

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 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.

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

* 8 Exposure controls/personal protection

Control parameters

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

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

Information on basic physical and chemical properties

General Information

Appearance:

Form: Solid material

Color: Colorless

Odor: Not determined

Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: Undetermined.

Flash point: Not applicable.

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

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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 3)

| | |
|---|--|
| Vapor density | Not applicable. |
| Evaporation rate | Not applicable. |
| Solubility in / Miscibility with | |
| Water: | Insoluble. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic: | Not applicable. |
| Kinematic: | Not applicable. |
| VOC content: | 0.00 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information: 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

Toxicity
Aquatic toxicity:
 Not available
 No further relevant information available.
Persistence and degradability
 Not available
 No further relevant information available.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 4)

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.**Ecotoxicological effects:****Remark:** Not available**Additional ecological information:****General notes:** Not known to be hazardous to water.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.

* 13 Disposal considerations

Waste treatment methods**Recommendation:**

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

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

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

* 14 Transport information

| | |
|---|----------------------------------|
| UN-Number | Not hazardous for transportation |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |
| UN proper shipping name | None |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |
| Transport hazard class(es) | None |
| DOT, ADR, ADN, IMDG, IATA | |
| Class | Not applicable |
| Packing group | None |
| DOT, ADR, IMDG, IATA | Not applicable |
| Environmental hazards: | |
| Marine pollutant: | No |
| Special precautions for user | Not applicable. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
| UN "Model Regulation": | Not applicable |

US

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 5)

15 Regulatory information

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

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act) Inventory:

Substance is not listed.

Hazardous Air Pollutants

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.

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

Substance is not listed.

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

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

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

16 Other information

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

Department issuing SDS:

Promega Corporation

Environmental Health and Safety Department

2800 Woods Hollow Road

Madison, WI

Ph: (608)274-4330

Date of preparation / last revision 11/12/2019 / -

(Contd. on page 7)

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: ReliaPrep™ FFPE Binding Columns

(Contd. of page 6)

Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

1 Identification

Product identifier

Trade name: BL Buffer

Article number: Z103A

Application of the substance / the mixture For research use only

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: ChemicalRegulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture



GHS05 Corrosion

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

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Label elements

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

Hazard pictograms GHS05, GHS07

Signal word Danger

Hazard-determining components of labeling:

guanidinium thiocyanate

Hazard statements

Harmful if swallowed, in contact with skin or if inhaled.

Causes severe skin burns and eye damage.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 1)

Precautionary statements*Do not breathe dusts or mists.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**If swallowed: Rinse mouth. Do NOT induce vomiting.**Immediately call a poison center/doctor.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Take off contaminated clothing and wash it before reuse.**Wash contaminated clothing before reuse.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.***Classification system:****NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 2

Fire = 0

Reactivity = 0

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

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

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

* 3 Composition/information on ingredients

Chemical characterization: Mixtures**Description:**

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:

593-84-0 guanidinium thiocyanate

25-50%

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 2)

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

4 First-aid measures

Description of first aid measures

General information:

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:

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

Seek immediate medical advice.

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

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

Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

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.

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.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: BL Buffer

(Contd. of page 3)

Dilute with plenty of water.

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

Methods and material for containment and cleaning up:

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

Use neutralizing agent.

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

Keep away from water.

Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

* 7 Handling and storage

Handling:

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.*

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.*

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

* 8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

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.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 4)

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

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.5

Change in condition

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

| | |
|---------------------------------------|-----------------|
| Flammability (solid, gaseous): | Not applicable. |
| Decomposition temperature: | Not determined. |

Auto igniting: Product is not selfigniting.

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

| | |
|--------------------------|-----------------|
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |

| | |
|-------------------------|-----------------|
| Density: | Not determined. |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |

Solubility in / Miscibility with

| | |
|---|-----------------|
| Water: | Fully miscible. |
| Partition coefficient (n-octanol/water): | Not determined. |

Viscosity:

| | |
|---------------------|-----------------|
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| Water: | 52.6 % |
| VOC content: | 0.00 % |

Solids content: 48.0 %

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 5)

Other information

No further relevant information available.

10 Stability and reactivity

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

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

Exposure to bleach may result in the generation of toxic gas

Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

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

| | | |
|--------|------|---|
| Oral | LD50 | 475 mg/kg (Rat) By analogy to guanidine hydrochloride |
| Dermal | LD50 | >2,000 mg/kg (Rabbit) By analogy to Guanidine hydrochloride. |

Primary irritant effect:**on the skin:** Caustic effect on skin and mucous membranes.**on the eye:** Strong caustic 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

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

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

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 6)

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

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.

Harmful to aquatic organisms

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.* **13 Disposal considerations****Waste treatment methods****Recommendation:**

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

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

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.* **14 Transport information****UN-Number****DOT, ADR, IMDG, IATA**

UN1760

UN proper shipping name**DOT****ADR****IMDG, IATA**

None

Corrosive liquid, n.o.s. solution

1760 CORROSIVE LIQUID, N.O.S. solution

CORROSIVE LIQUID, N.O.S. solution

Transport hazard class(es)**DOT**

None

**Class**

8 Corrosive substances

(Contd. on page 8)

Safety Data Sheet


acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 7)

| | |
|---|-----------------------------|
| Label | 8 |
| <hr style="border-top: 1px dashed #000;"/> | |
| ADR | |
|  | |
| Class | 8 (C9) Corrosive substances |
| Label | 8 |

IMDG, IATA

| | |
|--------------|------------------------|
| Class | 8 Corrosive substances |
| Label | 8 |

| | |
|-----------------------------|------|
| Packing group | None |
| DOT, ADR, IMDG, IATA | II |

| | |
|-------------------------------|----|
| Environmental hazards: | |
| Marine pollutant: | No |

| | |
|-------------------------------------|-------------------------------|
| Special precautions for user | Warning: Corrosive substances |
| Danger code (Kemler): | 80 |
| EMS Number: | F-A,S-B |
| Stowage Category | B |
| Stowage Code | SW2 Clear of living quarters. |

| | |
|---|-----------------|
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
|---|-----------------|

Transport/Additional information:

| | |
|---------------------------------|---|
| ADR | |
| Excepted quantities (EQ) | Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml |

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

| | |
|-------------------------------|--|
| UN "Model Regulation": | UN 1760 CORROSIVE LIQUID, N.O.S. SOLUTION, 8, II |
|-------------------------------|--|

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

(Contd. on page 9)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 8)

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

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

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

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

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).**Signal word** Danger**Hazard-determining components of labeling:**

guanidinium thiocyanate

Hazard statements

Harmful if swallowed, in contact with skin or if inhaled.

Causes severe skin burns and eye damage.

Precautionary statements

Do not breathe dusts or mists.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

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

If swallowed: Call a poison center/doctor if you feel unwell.

If swallowed: Rinse mouth. Do NOT induce vomiting.

Immediately call a poison center/doctor.

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

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

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

Continue rinsing.

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

Store locked up.

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

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

(Contd. on page 10)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 11/05/2019

Trade name: **BL Buffer**

(Contd. of page 9)

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

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

ICAO: International Civil Aviation Organization

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

* **1 Identification**

Product identifier

Trade name: Proteinase K (PK) Solution

Article number: A505A

Application of the substance / the mixture For research use only

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: ChemicalRegulatory@promega.com

Emergency telephone number:

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

* **2 Hazard(s) identification**

Classification of the substance or mixture



GHS08 Health hazard

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

Label elements

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

Hazard pictograms GHS08

Signal word Danger

Hazard-determining components of labeling:

Proteinase, *Tritirachium album* serine

Hazard statements

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

Precautionary statements

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

[In case of inadequate ventilation] wear respiratory protection.

If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

If experiencing respiratory symptoms: Call a poison center/doctor.

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

Classification system:

NFPA ratings (scale 0 - 4)

Health = 0

Fire = 1

Reactivity = 0

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 1)

HMIS-ratings (scale 0 - 4)

Health = *1

Fire = 1

Reactivity = 0

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

Irritant

Sensitizer

Primary route(s) of entry: Inhalation**Target Organ(s):** May cause Kidney damage (Nephrotoxin)**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures**Description:**

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:

| | | |
|------------|---------------------------------------|--------|
| 56-81-5 | glycerol | 25-50% |
| 39450-01-6 | Proteinase, Tritirachium album serine | 1-5% |

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

4 First-aid measures

Description of first aid measures**After inhalation:**

Supply fresh air and to be sure call for a doctor.

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

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

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

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

Information for doctor:

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

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media**Suitable extinguishing agents:**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 2)

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective clothing.

Environmental precautions:

Dilute with plenty of water.

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

Methods and material for containment and cleaning up:

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

Dispose contaminated material as waste according to Section 13.

Ensure adequate ventilation.

Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling

Keep receptacles tightly sealed.

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Work only in fume cabinet.

Information about protection against explosions and fires: Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

56-81-5 glycerol

| | |
|-----|---|
| PEL | Long-term value: 15* 5** mg/m ³ mist; *total dust **respirable fraction |
|-----|---|

| | |
|-----|---|
| TLV | TLV withdrawn-insufficient data human occup. exp. |
|-----|---|

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 3)

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

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

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.2

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Ignition temperature: 400 °C (752 °F)

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

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

Explosion limits:

| | |
|---|-----------|
| Lower: | 0.9 Vol % |
| Upper: | 0.0 Vol % |
| Vapor pressure at 20 °C (68 °F): | <0.1 hPa |

Density at 20 °C (68 °F): 1.13146 g/cm³ (9.44203 lbs/gal)

Relative density Not determined.

Vapor density Not determined.

Evaporation rate Not determined.

Solubility in / Miscibility with

Water: Fully miscible.

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

Viscosity:

Dynamic: Not determined.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 4)

| | |
|--------------------------|--|
| Kinematic: | Not determined. |
| Organic solvents: | 50.0 % |
| Water: | 47.8 % |
| VOC content: | 0.00 % |
| Solids content: | 2.2 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

Reactivity No further relevant information available.

Chemical stability

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

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

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

Primary irritant effect:

on the skin: No data available.

on the eye: No data available.

Sensitization: Sensitization possible through inhalation.

Additional toxicological information:

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

Harmful

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 5)

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.**Ecotoxicological effects:****Remark:** Not available**Additional ecological information:****General notes:** No data available.**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.

* 13 Disposal considerations

Waste treatment methods**Recommendation:**

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

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

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

* 14 Transport information

| | |
|----------------------------------|----------------------------------|
| UN-Number | Not hazardous for transportation |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |

| | |
|----------------------------------|----------------|
| UN proper shipping name | None |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |

| | |
|-----------------------------------|----------------|
| Transport hazard class(es) | None |
| DOT, ADR, ADN, IMDG, IATA | |
| Class | Not applicable |

| | |
|-----------------------------|----------------|
| Packing group | None |
| DOT, ADR, IMDG, IATA | Not applicable |

| | |
|-------------------------------|----|
| Environmental hazards: | |
| Marine pollutant: | No |

| | |
|-------------------------------------|-----------------|
| Special precautions for user | Not applicable. |
|-------------------------------------|-----------------|

| | |
|---|-----------------|
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
|---|-----------------|

| | |
|-------------------------------|----------------|
| UN "Model Regulation": | Not applicable |
|-------------------------------|----------------|

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: **Proteinase K (PK) Solution**

(Contd. of page 6)

15 Regulatory information

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

Sara

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

56-81-5 glycerol

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Carcinogenicity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

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

None of the ingredients are listed.

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

Signal word Danger

Hazard-determining components of labeling:

Proteinase, Tritirachium album serine

Hazard statements

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

Precautionary statements

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

[In case of inadequate ventilation] wear respiratory protection.

If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

If experiencing respiratory symptoms: Call a poison center/doctor.

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

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

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

US

(Contd. on page 8)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Proteinase K (PK) Solution

(Contd. of page 7)

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Resp. Sens. 1: Respiratory sensitisation – Category 1

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

1 Identification**Product identifier****Trade name:** Mineral Oil**Article number:** A244**CAS Number:**

8042-47-5

EC number:

232-455-8

Application of the substance / the mixture For research use only**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: ChemicalRegulatory@promega.com**Emergency telephone number:**

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

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

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

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

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Classification system:****NFPA ratings (scale 0 - 4)**

Health = 0

Fire = 1

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 1

Reactivity = 0

OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable**Target Organ(s):** Not applicable or unknown**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.

(Contd. on page 2)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

vPvB: Not applicable.

(Contd. of page 1)

* 3 Composition/information on ingredients

Chemical characterization: Substances

CAS No. Description

8042-47-5 White mineral oil, petroleum

Identification number(s)

EC number: 232-455-8

* 4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* 5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

* 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: No special measures required.

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

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 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

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

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Viscous |
| Color: | Colorless |
| Odor: | Light |
| Odor threshold: | Not determined. |

pH-value: Not applicable.

Change in condition

| | |
|-------------------------------------|---------------------|
| Melting point/Melting range: | 160 °C (320 °F) |
| Boiling point/Boiling range: | 260 °C (500 °F) |
| Flash point: | >112 °C (>233.6 °F) |

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

Decomposition temperature: Not determined.

Auto igniting: Not determined.

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

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

(Contd. of page 3)

Explosion limits:**Lower:** Not determined.**Upper:** Not determined.**Vapor pressure:** Not applicable.**Density at 20 °C (68 °F):** 0.88 g/cm³ (7.3436 lbs/gal)**Relative density** Not determined.**Vapor density** Not applicable.**Evaporation rate** Not applicable.**Solubility in / Miscibility with****Water:** Insoluble.**Partition coefficient (n-octanol/water):** Not determined.**Viscosity:****Dynamic:** Not applicable.**Kinematic:** Not applicable.**VOC content:** 0.00 %**Solids content:** 100.0 %**Other information** No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects**Acute toxicity:****LD/LC50 values that are relevant for classification:** No data available**Primary irritant effect:****on the skin:** No irritant effect.**on the eye:** No irritating effect.**Sensitization:** No sensitizing effects known.**Additional toxicological information:** 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.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

(Contd. of page 4)

12 Ecological information

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil

 No further relevant information available.

Ecotoxicological effects:

Remark:

 Not available

Additional ecological information:

General notes:

Not available.

Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT:

 Not applicable.

vPvB:

 Not applicable.

Other adverse effects

 No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

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

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

Uncleaned packagings:

Recommendation:

 Disposal must be made according to official regulations.

14 Transport information

| | |
|-----------------------------------|----------------------------------|
| UN-Number | Not hazardous for transportation |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |
| UN proper shipping name | None |
| DOT, ADR, ADN, IMDG, IATA | Not applicable |
| Transport hazard class(es) | None |
| DOT, ADR, ADN, IMDG, IATA | |
| Class | Not applicable |
| Packing group | None |
| DOT, ADR, IMDG, IATA | Not applicable |
| Environmental hazards: | |
| Marine pollutant: | No |

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

(Contd. of page 5)

| | |
|-------------------------------------|-----------------|
| Special precautions for user | Not applicable. |
|-------------------------------------|-----------------|

| | |
|---|-----------------|
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |
|---|-----------------|

| | |
|-------------------------------|----------------|
| UN "Model Regulation": | Not applicable |
|-------------------------------|----------------|

15 Regulatory information

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

Sara

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act) Inventory:

Substance is listed.

Hazardous Air Pollutants

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.

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

Substance is not listed.

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

Water hazard class: Generally not hazardous for water.

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

16 Other information

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

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Mineral Oil

(Contd. of page 6)

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -**Abbreviations and acronyms:**

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

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

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

* **1 Identification**

Product identifier

Trade name: Wash Solution

Article number: Z104A

Application of the substance / the mixture For research use only

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: ChemicalRegulatory@promega.com

Emergency telephone number:

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

* **2 Hazard(s) identification**

Classification of the substance or mixture

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

Label elements

GHS label elements Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

Classification system:

NFPA ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

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

Target Organ(s): Not applicable or unknown

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: Dilute with plenty of water.

Methods and material for containment and cleaning up:

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

Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

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

Eye protection: Not required.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.5

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(Contd. of page 3)

| | |
|---|---|
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |
| Density at 20 °C (68 °F): | 0.99169 g/cm ³ (8.27565 lbs/gal) |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |
| Solubility in / Miscibility with | |
| Water: | Fully miscible. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic at 20 °C (68 °F): | 0.0952 mPas |
| Kinematic: | Not determined. |
| Water: | 98.0 % |
| VOC content: | 0.00 % |
| Solids content: | 2.0 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No 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:

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 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(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

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes:

Not available.

Not known to be hazardous to water.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

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

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

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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

14 Transport information

UN-Number

Not hazardous for transportation

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

None

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

None

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(Contd. of page 5)

DOT, ADR, ADN, IMDG, IATA

Class Not applicable

Packing group

None

DOT, ADR, IMDG, IATA

Not applicable

Environmental hazards:**Marine pollutant:**

No

Special precautions for user

Not applicable.

Transport in bulk according to Annex II of**MARPOL 73/78 and the IBC Code**

Not applicable.

UN "Model Regulation":

Not applicable

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture**Sara****Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

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

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

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

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements Not applicable**Signal word** Not applicable**Hazard statements** Not applicable

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Wash Solution

(Contd. of page 6)

Water hazard class: Generally not hazardous for water.

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

* 16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

* **1 Identification**

Product identifier

Trade name: Blue Dye

Article number: MC122

Application of the substance / the mixture For research use only

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: ChemicalRegulatory@promega.com

Emergency telephone number:

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

* **2 Hazard(s) identification**

Classification of the substance or mixture

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

Label elements

GHS label elements Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

Classification system:

NFPA ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 0

Fire = 0

Reactivity = 0

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

Target Organ(s): Not applicable or unknown

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Blue Dye

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

The product is made up of a mixture of non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions: Dilute with plenty of water.

Methods and material for containment and cleaning up:

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

Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

US

(Contd. on page 3)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Blue Dye

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required.

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

Conditions for safe storage, including any incompatibilities

Storage:

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

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

Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

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

Eye protection: Not required.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

| | |
|------------------------|-----------------|
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |

pH-value at 20 °C (68 °F): 7.5

Change in condition

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

Flammability (solid, gaseous): Not applicable.

Decomposition temperature: Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Blue Dye

(Contd. of page 3)

| | |
|---|---|
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |
| Density: | Not determined. |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |
| Solubility in / Miscibility with | |
| Water: | Fully miscible. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic at 20 °C (68 °F): | 0.0952 mPas |
| Kinematic: | Not determined. |
| Water: | 100.0 % |
| VOC content: | 0.00 % |
| Solids content: | 0.0 % |
| Other information | No further relevant information available. |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No 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:

Carcinogenic categories

IARC (International Agency for Research on Cancer)

Brilliant blue FCF

3

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: **Blue Dye**

(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

Toxicity**Aquatic toxicity:**

Not available

No further relevant information available.

Persistence and degradability

Not available

No further relevant information available.

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil No further relevant information available.**Ecotoxicological effects:****Remark:** Not available**Additional ecological information:****General notes:**

Not available.

Not known to be hazardous to water.

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

13 Disposal considerations

Waste treatment methods**Recommendation:**

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

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

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

14 Transport information

UN-Number

Not hazardous for transportation

DOT, ADR, ADN, IMDG, IATA

Not applicable

UN proper shipping name

None

DOT, ADR, ADN, IMDG, IATA

Not applicable

Transport hazard class(es)

None

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: **Blue Dye**

(Contd. of page 5)

DOT, ADR, ADN, IMDG, IATA

| | |
|--------------|----------------|
| Class | Not applicable |
|--------------|----------------|

Packing group

| |
|------|
| None |
|------|

DOT, ADR, IMDG, IATA

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

Environmental hazards:

| | |
|--------------------------|----|
| Marine pollutant: | No |
|--------------------------|----|

Special precautions for user

| |
|-----------------|
| Not applicable. |
|-----------------|

Transport in bulk according to Annex II of

| | |
|--------------------------------------|-----------------|
| MARPOL 73/78 and the IBC Code | Not applicable. |
|--------------------------------------|-----------------|

UN "Model Regulation":

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

15 Regulatory information

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

Section 355 (extremely hazardous substances):

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

Section 313 (Specific toxic chemical listings):

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

TSCA (Toxic Substances Control Act) Inventory:

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

Hazardous Air Pollutants

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

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

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

Chemicals known to cause reproductive toxicity for females:

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

Chemicals known to cause reproductive toxicity for males:

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

Chemicals known to cause developmental toxicity:

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

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

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

TLV (Threshold Limit Value established by ACGIH)

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

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

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

GHS label elements Not applicable**Signal word** Not applicable**Hazard statements** Not applicable

(Contd. on page 7)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/12/2019

Reviewed on 10/15/2019

Trade name: Blue Dye

(Contd. of page 6)

Water hazard class: Generally not hazardous for water.

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

16 Other information

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

Department issuing SDS:

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

Date of preparation / last revision 11/12/2019 / -

Abbreviations and acronyms:

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

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