

Product code	Description
Z3740	PureYield™ RNA Midiprep System 10X

Components:

P119	Nuclease-Free Water
A246	PureYield™ Clearing Columns Article
A245	PureYield™ Binding Columns article
Z305	RNA Lysis Buffer (RLA)
Z559A	Beta-Mercaptoethanol, (97.4%)
Z372	RNA Dilution Buffer (RDB)
Z373	Clearing Agent
Z309	RNA Wash Solution (RWA)

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

1 Identification**Product identifier****Trade name:** Nuclease-Free Water**Article number:** P119**CAS Number:**

7732-18-5

EC number:

231-791-2

Application of the substance / the preparation: Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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

SDS author: Regulatory.Affairs@promega.com**Further information obtainable from:**

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
Fax: (44) 23 8076 7014
Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

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

This product contains a CRM (carcinogen, reproductive hazard or mutagen) at a level below 1% and greater than 0.1%. Although CRMs at this level are below notification under the CLP, our labels reflect the pictogram and hazard statement to communicate this hazard to our customers. Please use caution when working with this material.

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable

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Hazard statements Not applicable

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

* 3 Composition/information on ingredients

Chemical characterisation: Substances

CAS No. Description:

7732-18-5 water

Identification number(s):

EC number: 231-791-2

* 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, 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

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See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling No special measures required.

Information about fire - and explosion protection: 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

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

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

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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:	Fluid
Colour:	Colourless
Odour:	Odourless
Odour threshold:	Not determined.

Change in condition

Melting point/freezing point:	0 °C (32 °F)
Initial boiling point and boiling range:	100 °C (212 °F)
Flash point:	Not applicable

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

Auto-ignition temperature:	Not determined.
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Explosive properties:	Product does not present an explosion hazard.
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Trade name: *Nuclease-Free Water*

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Explosion limits:**Lower:** *Not determined.***Upper:** *Not determined.***Vapour pressure:** *Not determined.***Density at 20 °C (68 °F):** *1 g/cm³ (8.345 lbs/gal)***Relative density** *Not determined.***Vapour density** *Not determined.***Evaporation rate** *Not determined.***Solubility in / Miscibility with****Water:** *Fully miscible***Partition coefficient: n-octanol/water:** *Not determined.***Viscosity:****dynamic at 20 °C (68 °F):** *0.0952 mPas***kinematic:** *Not determined.***Water:** *100.0 %***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 relevant for classification:** *No data available***Primary irritant effect:****Skin corrosion/irritation** *No irritant effect.***Serious eye damage/irritation** *No irritating effect.***Respiratory or skin sensitisation** *No sensitising effects known.***Additional toxicological information:***The substance is not subject to classification according to the latest version of the EU lists.** **12 Ecological information****Toxicity****Aquatic toxicity:***Not available**No further relevant information available.***Persistence and degradability:***Not available**No further relevant information available.*

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Behaviour in environmental systems:**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:**

Generally not hazardous for water.

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

14 Transport information

UN-Number ADR, ADN, IMDG, IATA	Not hazardous for transportation Not applicable
UN proper shipping name ADR, IMDG, IATA ADN	None Not applicable
Transport hazard class(es) ADR, ADN, IMDG, IATA	None
Class	Not applicable
Packing group 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 and the IBC Code	Not applicable.

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Trade name: Nuclease-Free Water

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UN "Model Regulation":

Not applicable

15 Regulatory information

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

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

Directive 2012/18/EU

Named dangerous substances - ANNEX I

Substance is not listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -

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

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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 11/13/2019

Revision: 11/13/2019

1 Identification**Product identifier****Trade name:** PureYield™ Clearing Columns**Article number:** A246**Application of the substance / the preparation:** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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

SDS author: Regulatory.Affairs@promega.com**Further information obtainable from:**

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
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Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

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

This product contains a CRM (carcinogen, reproductive hazard or mutagen) at a level below 1% and greater than 0.1%. Although CRMs at this level are below notification under the CLP, our labels reflect the pictogram and hazard statement to communicate this hazard to our customers. Please use caution when working with this material.

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Clearing Columns

vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterisation: 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, 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.

* 7 Handling and storage

Handling

Precautions for safe handling No special measures required.

Information about fire - and explosion protection: The product is not flammable

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acc. to OSHA HCS

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Revision: 11/13/2019

Trade name: PureYield™ Clearing 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

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

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

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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.
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

pH-value: Not applicable.

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	undetermined
Flash point:	Not applicable

Flammability (solid, gaseous) Product is not flammable.

Decomposition temperature: Not determined.

Auto-ignition temperature: Not determined.

Explosive properties: Product does not present an explosion hazard.

Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapour pressure: Not applicable.

Density: Not determined

Relative density Not determined.

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acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Clearing Columns

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Vapour 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.
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 relevant for classification: No data available
Primary irritant effect:
Skin corrosion/irritation No irritant effect.
Serious eye damage/irritation No irritating effect.
Respiratory or skin sensitisation No sensitising effects known.
Additional toxicological information:
The substance is not subject to classification according to the latest version of the EU lists.

12 Ecological information

Toxicity
Aquatic toxicity:
Not available
No further relevant information available.
Persistence and degradability:
Not available
No further relevant information available.
Behaviour in environmental systems:
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available

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US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Clearing Columns

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Additional ecological information:**General notes:**

Generally not hazardous for water.
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 packaging:**Recommendation:** Disposal must be made according to official regulations.

* 14 Transport information

UN-Number ADR, ADN, IMDG, IATA	Not hazardous for transportation Not applicable
UN proper shipping name ADR, ADN, IMDG, IATA	None Not applicable
Transport hazard class(es) ADR, ADN, IMDG, IATA	None
Class	Not applicable
Packing group 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 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

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

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acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Clearing Columns

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Directive 2012/18/EU**Named dangerous substances - ANNEX I**

Substance is not listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -

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 Organisation

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

IATA: International Air Transport Association

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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 11/13/2019

Revision: 11/13/2019

1 Identification**Product identifier****Trade name:** PureYield™ Binding Columns**Article number:** A245**Application of the substance / the preparation:** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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

SDS author: Regulatory.Affairs@promega.com**Further information obtainable from:**

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
Fax: (44) 23 8076 7014
Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

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

This product contains a CRM (carcinogen, reproductive hazard or mutagen) at a level below 1% and greater than 0.1%. Although CRMs at this level are below notification under the CLP, our labels reflect the pictogram and hazard statement to communicate this hazard to our customers. Please use caution when working with this material.

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Binding Columns

vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterisation: Substances

CAS No. Description:
membrane

* 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, 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.

* 7 Handling and storage

Handling

Precautions for safe handling No special measures required.

Information about fire - and explosion protection: The product is not flammable

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Safety Data Sheet

acc. to OSHA HCS

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Trade name: PureYield™ Binding Columns

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Conditions for safe storage, including any incompatibilities

Storage

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

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

Further information about storage conditions: None.

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

* 8 Exposure controls/personal protection

Control parameters

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

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

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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.
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

pH-value: Not applicable.

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	undetermined
Flash point:	Not applicable

Flammability (solid, gaseous) Product is not flammable.

Decomposition temperature: Not determined.

Auto-ignition temperature: Not determined.

Explosive properties: Product does not present an explosion hazard.

Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapour pressure: Not applicable.

Density: Not determined

Relative density Not determined.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Binding Columns

(Contd. of page 3)

Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Soluble
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
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 relevant for classification: No data available
Primary irritant effect:
Skin corrosion/irritation No irritant effect.
Serious eye damage/irritation No irritating effect.
Respiratory or skin sensitisation No sensitising effects known.
Additional toxicological information:
The substance is not subject to classification according to the latest version of the EU lists.

12 Ecological information

Toxicity
Aquatic toxicity:
Not available
No further relevant information available.
Persistence and degradability:
Not available
No further relevant information available.
Behaviour in environmental systems:
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available

(Contd. on page 5)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Binding Columns

(Contd. of page 4)

Additional ecological information:**General notes:**

Generally not hazardous for water.
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 packaging:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agents:** Water, if necessary together with cleansing agents.

* 14 Transport information

UN-Number ADR, ADN, IMDG, IATA	Not hazardous for transportation Not applicable
UN proper shipping name ADR, ADN, IMDG, IATA	None Not applicable
Transport hazard class(es) ADR, ADN, IMDG, IATA	None
Class	Not applicable
Packing group 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 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

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

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: PureYield™ Binding Columns

(Contd. of page 5)

Directive 2012/18/EU**Named dangerous substances - ANNEX I**

Substance is not listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -

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 Organisation

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

IATA: International Air Transport Association

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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 11/13/2019

Revision: 11/13/2019

1 Identification**Product identifier****Trade name:** RNA Lysis Buffer (RLA)**Article number:** Z305**Application of the substance / the preparation:** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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

SDS author: Regulatory.Affairs@promega.com**Further information obtainable from:**

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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). Within UK +(44)-870-8200418.

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 H332 Harmful if inhaled.

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Label elements

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

Hazard pictograms GHS05, GHS07

Signal word Danger

Hazard-determining components of labelling:

guanidinium thiocyanate

Hazard statements

Harmful if swallowed 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.

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Store locked up.

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

Other hazards**Results of PBT and vPvB assessment**

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterisation: Mixtures**Description:**

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances.

Components:

593-84-0	guanidinium thiocyanate	25-50%
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Additional information: For the wording of the listed hazard 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.

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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 soap, water and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact: *Call a doctor immediately.*

After swallowing:

Drink plenty of water and provide fresh air. Call for a doctor immediately.

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, 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: *Mount 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 on the windward side.

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.

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 neutralising 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.

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Trade name: RNA Lysis Buffer (RLA)

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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 fire - and explosion protection: 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

Ingredients 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 valid during the making 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.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:

Protective gloves.

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

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

The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it or AS/NZS 2161.

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.

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Use equipment for eye protection tested and approved under government standard EN 166(EU) or AS/NZS 1336, 1137 and 1138.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Fluid
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

pH-value at 20 °C (68 °F): 7.5

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	100 °C (212 °F)
Flash point:	Not applicable

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

Auto-ignition temperature: Product is not selfigniting.

Explosive properties: Product does not present an explosion hazard.

Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapour pressure:	Not determined.

Density:	Not determined
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

Solubility in / Miscibility with

Water:	Fully miscible
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Water:	52.7 %

Solids content:	47.3 %
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity No further relevant information available.

Chemical stability

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

Possibility of hazardous reactions 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

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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 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:

Skin corrosion/irritation Caustic effect on skin and mucous membranes.

Serious eye damage/irritation Strong caustic effect.

Respiratory or skin sensitisation Sensitization possible through inhalation.

Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

Harmful

Corrosive

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

12 Ecological information

Toxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects

Persistence and degradability:

Not available

No further relevant information available.

Behaviour in environmental systems:

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 (German Regulation) (Self-assessment): hazardous for water.

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

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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.

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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 packaging:

Recommendation: Disposal must be made according to official regulations.

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

14 Transport information

UN-Number

ADR, IMDG, IATA

UN1760

UN proper shipping name

ADR

1760 CORROSIVE LIQUID, N.O.S. (guanidinium thiocyanate)

IMDG, IATA

CORROSIVE LIQUID, N.O.S. (guanidinium thiocyanate)

Transport hazard class(es)

ADR



Class

8 (C9) Corrosive substances.

Label

8

IMDG, IATA



Class

8 Corrosive substances.

Label

8

Packing group

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

A

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Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
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
Transport category	2
Tunnel restriction code	E
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. (GUANIDINIUM THIOCYANATE), 8, II

15 Regulatory information

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

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

Signal word Danger

Hazard-determining components of labelling:

guanidinium thiocyanate

Hazard statements

Harmful if swallowed 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.

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

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

Wash contaminated clothing before reuse.

Store locked up.

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

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Directive 2012/18/EU**Named dangerous substances - ANNEX I**

None of the ingredients is listed. This product is for research and development use only.

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

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

16 Other information

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

Department issuing SDS:

Promega Corporation

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -

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 Organisation

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

IATA: International Air Transport Association

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

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Revision: 11/13/2019

1 Identification

Product identifier

Trade name: Beta-Mercaptoethanol, (97.4%)

Article number: Z559A

CAS Number:

60-24-2

EC number:

200-464-6

Application of the substance / the preparation: Laboratory chemicals

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

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

SDS author: Regulatory.Affairs@promega.com

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Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

2 Hazard(s) identification

Classification of the substance or mixture



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 2 H310 Fatal in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.

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GHS08 health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

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

Flam. Liq. 4 H227 Combustible liquid.

Label elements

GHS label elements

The substance is classified and labelled according to the Globally Harmonised System (GHS).

Hazard pictograms GHS05, GHS06, GHS07, GHS08

Signal word Danger

Hazard-determining components of labelling:

2-mercaptoethanol

Hazard statements

Combustible liquid.

Toxic if swallowed or if inhaled.

Fatal in contact with skin.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Keep away from flames and hot surfaces. – No smoking.

Do not breathe dust/fume/gas/mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

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

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

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER/doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Get medical advice/attention if you feel unwell.

Take off immediately all contaminated clothing and wash it before reuse.

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Trade name: Beta-Mercaptoethanol, (97.4%)

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If skin irritation or rash occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

* 3 Composition/information on ingredients

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

60-24-2 2-mercaptoethanol

Identification number(s):**EC number:** 200-464-6

* 4 First-aid measures

Description of first aid measures**General information:***Immediately remove any clothing soiled by the product.**Remove breathing equipment only after contaminated clothing have been completely removed.**In case of irregular breathing or respiratory arrest provide artificial respiration.**Take affected persons out into the fresh air.**Do not leave affected persons unattended.**Seek medical treatment.**Provide oxygen treatment if affected person has difficulty breathing.**Medical supervision for at least 48 hours.***After inhalation:***Supply fresh air or oxygen; call for doctor.**In case of unconsciousness place patient stably in side position for transportation.**Call a doctor immediately.***After skin contact:***Immediately wash with soap, water and rinse thoroughly.**Call a doctor immediately.**If skin irritation continues, consult a doctor.***After eye contact:** *Call a doctor immediately.***After swallowing:***Do not induce vomiting; call for medical help immediately.**Drink plenty of water and provide fresh air. Call for a doctor immediately.***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.*

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Trade name: Beta-Mercaptoethanol, (97.4%)

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5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

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: Mount respiratory protective device.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Keep people at a distance and stay on the windward side.

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.

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 neutralising agent.

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.

Open and handle receptacle with care.

Work only in fume cupboard.

Information about fire - and explosion protection: 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: Keep receptacle tightly sealed.

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

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acc. to OSHA HCS

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Trade name: **Beta-Mercaptoethanol, (97.4%)**

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8 Exposure controls/personal protection

Control parameters

Ingredients with limit values that require monitoring at the workplace:

60-24-2 2-mercaptoethanol

<i>WEEL</i>	Long-term value: 0.2 ppm
	Skin

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

Exposure controls

Personal protective equipment

General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Clean skin thoroughly immediately after handling the product.

Respiratory protection:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

Protection of hands:

Protective gloves.

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

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

The selected protective gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it or AS/NZS 2161.

Material of gloves:

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

Eye protection:

Tightly sealed goggles.

Use equipment for eye protection tested and approved under government standard EN 166(EU) or AS/NZS 1336, 1137 and 1138.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form:	Liquid
Colour:	Clear
Odour:	Unpleasant
Odour threshold:	Not determined.

pH-value:	20
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Change in condition

Melting point/freezing point: <-50 °C (<-122 °F)

Initial boiling point and boiling range: 157 °C (314.6 °F)

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Trade name: **Beta-Mercaptoethanol, (97.4%)**

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Flash point:	≤93 °C (≤199.4 °F)
Flammability (solid, gaseous)	Not applicable.
Decomposition temperature:	Not determined.
Auto-ignition temperature:	Not determined.
Explosive properties:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapour pressure at 20 °C (68 °F):	3.6 hPa (2.7 mm Hg)
Density at 20 °C (68 °F):	1.1143 g/cm ³ (9.29883 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Organic solvents:	100.0 %
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: Oxidizing agents

Hazardous decomposition products: No dangerous decomposition products known

11 Toxicological information

Information on toxicological effects

Acute toxicity

LD/LC50 values relevant for classification:

60-24-2 2-mercaptoethanol

Oral	LD50	244 mg/kg (Rat)
Dermal	LD50	150 mg/kg (Rabbit)
Irritation of eyes	acute	2 mg (Rabbit) Severe

Primary irritant effect:

Skin corrosion/irritation

Caustic effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

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Trade name: Beta-Mercaptoethanol, (97.4%)

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Serious eye damage/irritation

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

Respiratory or skin sensitisation *No sensitising effects known.*

Additional toxicological information:

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

* 12 Ecological information

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability: *Not readily biodegradable*

Behaviour in environmental systems:

Bioaccumulative potential

Not known

No further relevant information available.

Mobility in soil *No further relevant information available.*

Ecotoxicological effects:

Remark: *Very toxic for fish*

Additional ecological information:

General notes:

Water danger class 3 (German Regulation) (Assessment by list): extremely hazardous for water.

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

Must not reach sewage water or drainage ditch undiluted or unneutralised.

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

Also poisonous for fish and plankton in water bodies.

Very toxic for 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 packaging:

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

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

US

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Safety Data Sheet

acc. to OSHA HCS



Printing date 11/13/2019

Revision: 11/13/2019

Trade name: **Beta-Mercaptoethanol, (97.4%)**

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14 Transport information

UN-Number	UN2966
ADR, IMDG, IATA	
UN proper shipping name	2966 THIOGLYCOL, ENVIRONMENTALLY HAZARDOUS
ADR	THIOGLYCOL
IMDG, IATA	
Transport hazard class(es)	
ADR	
	
Class	6.1 (T1) Toxic substances.
Label	6.1
IMDG, IATA	
	
Class	6.1 Toxic substances.
Label	6.1
Packing group	II
ADR, IMDG, IATA	
Environmental hazards:	
Marine pollutant:	No
Special marking (ADR):	Symbol (fish and tree)
Special precautions for user	Warning: Toxic substances.
Danger code (Kemler):	60
EMS Number:	F-A,S-A
Stowage Category	A
Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	100 ml
Excepted quantities (EQ)	Code: E4
	Maximum net quantity per inner packaging: 1 ml
	Maximum net quantity per outer packaging: 500 ml
Transport category	2
Tunnel restriction code	D/E
IMDG	
Limited quantities (LQ)	100 ml

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: Beta-Mercaptoethanol, (97.4%)

(Contd. of page 8)

Exempted quantities (EQ)

Code: E4

Maximum net quantity per inner packaging: 1 ml

Maximum net quantity per outer packaging: 500 ml

UN "Model Regulation":UN 2966 THIOGLYCOL, 6.1, II, ENVIRONMENTALLY
HAZARDOUS

15 Regulatory information

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

GHS label elements

The substance is classified and labelled according to the Globally Harmonised System (GHS).

Signal word Danger

Hazard-determining components of labelling:

2-mercaptoethanol

Hazard statements

Combustible liquid.

Toxic if swallowed or if inhaled.

Fatal in contact with skin.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Keep away from flames and hot surfaces. – No smoking.

Do not breathe dust/fume/gas/mist/vapours/spray.

Do not get in eyes, on skin, or on clothing.

Wash thoroughly after handling.

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

Use only outdoors or in a well-ventilated area.

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

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

IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Specific treatment (see on this label).

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER/doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Get medical advice/attention if you feel unwell.

Take off immediately all contaminated clothing and wash it before reuse.

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

In case of fire: Use for extinction: CO₂, powder or water spray.

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

Store in a well-ventilated place. Keep cool.

Store locked up.

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

Directive 2012/18/EU

Named dangerous substances - ANNEX I

Substance is not listed. This product is for research and development use only.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: Beta-Mercaptoethanol, (97.4%)

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Seveso category

H2 ACUTE TOXIC

E1 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t**Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t****Waterhazard class: Water danger class 3 (Assessment by list): extremely hazardous for water.****Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

16 Other information

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

Department issuing SDS:

Promega Corporation

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -**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

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 4: Flammable liquids – Category 4

Acute Tox. 3: Acute toxicity – Category 3

Acute Tox. 2: Acute toxicity – Category 2

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

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

Skin Sens. 1: Skin sensitisation – Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

1 Identification**Product identifier****Trade name:** RNA Dilution Buffer (RDB)**Article number:** Z372**Application of the substance / the preparation:** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

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

SDS author: Regulatory.Affairs@promega.com**Further information obtainable from:**

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
Fax: (44) 23 8076 7014
Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

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

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

Label elements**GHS label elements** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: RNA Dilution Buffer (RDB)

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterisation: Mixtures

Description:

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances.

Components: Not applicable

Additional information: For the wording of the listed hazard 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, 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

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 11/13/2019

Revision: 11/13/2019

Trade name: RNA Dilution Buffer (RDB)

(Contd. of page 2)

7 Handling and storage

Handling

Precautions for safe handling No special measures required.

Information about fire - and explosion protection: 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

Ingredients 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 valid during the making were used as basis.

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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:	Liquid
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

pH-value at 20 °C (68 °F): 4

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	100 °C (212 °F)
Flash point:	Not applicable

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

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: RNA Dilution Buffer (RDB)

(Contd. of page 3)

Auto-ignition temperature:	Product is not selfigniting.
Explosive properties:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapour pressure:	Not determined.
Density:	Not determined
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Water:	73.2 %
Solids content:	28.6 %
Other information	No further relevant information available.

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Possibility of hazardous reactions 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 relevant for classification: No data available
Primary irritant effect:
Skin corrosion/irritation No irritant effect.
Serious eye damage/irritation No irritating effect.
Respiratory or skin sensitisation No sensitising effects known.
Additional toxicological information:
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: RNA Dilution Buffer (RDB)

(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.

Behaviour in environmental systems:
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 packaging:
Recommendation: Disposal must be made according to official regulations.

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

14 Transport information

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

(Contd. on page 6)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: RNA Dilution Buffer (RDB)

(Contd. of page 5)

Special precautions for user *Not applicable.*

Transport in bulk according to Annex II of Marpol 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

GHS label elements *Not applicable*

Signal word *Not applicable*

Hazard statements *Not applicable*

Directive 2012/18/EU

Named dangerous substances - ANNEX I

None of the ingredients is listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision *11/13/2019 / -*

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

IATA: International Air Transport Association

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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 11/13/2019

Revision: 11/13/2019

1 Identification

Product identifier

Trade name: Clearing Agent

Article number: Z373

Application of the substance / the preparation: Laboratory chemicals

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

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

SDS author: Regulatory.Affairs@promega.com

Further information obtainable from:

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
Fax: (44) 23 8076 7014
Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements

GHS label elements Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: **Clearing Agent**

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterisation: Mixtures

Description:

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances.

Components: Not applicable

Additional information: For the wording of the listed hazard 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, 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 11/13/2019

Revision: 11/13/2019

Trade name: Clearing Agent

(Contd. of page 2)

7 Handling and storage

Handling

Precautions for safe handling No special measures required.

Information about fire - and explosion protection: 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

Ingredients 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 valid during the making were used as basis.

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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:	Liquid
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

Change in condition

Melting point/freezing point:	undetermined
Initial boiling point and boiling range:	100 °C (212 °F)
Flash point:	Not applicable

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

Auto-ignition temperature: Product is not selfigniting.

Explosive properties: Product does not present an explosion hazard.

(Contd. on page 4)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: Clearing Agent

(Contd. of page 3)

Explosion limits:**Lower:** Not determined.**Upper:** Not determined.**Vapour pressure:** Not determined.**Density:** Not determined**Relative density** Not determined.**Vapour density** Not determined.**Evaporation rate** Not determined.**Solubility in / Miscibility with****Water:** Fully miscible**Partition coefficient: n-octanol/water:** Not determined.**Viscosity:****dynamic:** Not determined.**kinematic:** Not determined.**Water:** 41.3 %**Solids content:** 11.7 %**Other information** No further relevant information available.

10 Stability and reactivity

Reactivity No further relevant information available.**Chemical stability****Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.**Possibility of hazardous reactions** No dangerous reactions known**Conditions to avoid** No further relevant information available.**Incompatible materials:** 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 relevant for classification:** No data available**Primary irritant effect:****Skin corrosion/irritation** No irritant effect.**Serious eye damage/irritation** No irritating effect.**Respiratory or skin sensitisation** No sensitising effects known.**Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

12 Ecological information

Toxicity**Aquatic toxicity:**

Not available

No further relevant information available.

(Contd. on page 5)

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: Clearing Agent

(Contd. of page 4)

Persistence and degradability:*Not available**No further relevant information available.***Behaviour in environmental systems:****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 packaging:****Recommendation:** *Disposal must be made according to official regulations.***Recommended cleansing agents:** *Water, if necessary together with cleansing agents.*

14 Transport information

UN-Number*Not hazardous for transportation***ADR, ADN, IMDG, IATA***Not applicable***UN proper shipping name***None***ADR, ADN, IMDG, IATA***Not applicable***Transport hazard class(es)***None***ADR, ADN, IMDG, IATA****Class***Not applicable***Packing group***None***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 and the IBC Code***Not applicable.*

(Contd. on page 6)

US

Safety Data Sheet

acc. to OSHA HCS

Printing date 11/13/2019

Revision: 11/13/2019

Trade name: Clearing Agent

(Contd. of page 5)

UN "Model Regulation":

Not applicable

15 Regulatory information

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

GHS label elements *Not applicable*

Signal word *Not applicable*

Hazard statements *Not applicable*

Directive 2012/18/EU

Named dangerous substances - ANNEX I

None of the ingredients is listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision *11/13/2019 / -*

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

IATA: International Air Transport Association

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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 11/13/2019

Revision: 11/13/2019

1 Identification

Product identifier

Trade name: RNA Wash Solution (RWA)

Article number: Z309

Application of the substance / the preparation: Laboratory chemicals

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

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

SDS author: Regulatory.Affairs@promega.com

Further information obtainable from:

Promega UK
Delta House
Southampton Science Park
Southampton SO16 7NS
United Kingdom
Tel: (44) 23 8076 0225
Fax: (44) 23 8076 7014
Freephone: 0800 378994
E-mail Address: ukcustserve@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). Within UK +(44)-870-8200418.

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements

GHS label elements Not applicable

Hazard pictograms Not applicable

Signal word Not applicable

Hazard statements Not applicable

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterisation: Mixtures

Description:

The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances.

Components: Not applicable

Additional information: For the wording of the listed hazard 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, 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.

7 Handling and storage

Handling

Precautions for safe handling No special measures required.

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Information about fire - and explosion protection: 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

Ingredients 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 valid during the making were used as basis.

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures are to be adhered to when handling chemicals.

Respiratory protection: 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
Colour:	Colourless
Odour:	Not determined
Odour threshold:	Not determined.

pH-value at 20 °C (68 °F):	7.5
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Change in condition

Melting point/freezing point:	0 °C (32 °F)
Initial boiling point and boiling range:	100 °C (212 °F)
Flash point:	Not applicable

Flammability (solid, gaseous)	Not applicable.
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Decomposition temperature:	Not determined.
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Auto-ignition temperature:	Product is not selfigniting.
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Explosive properties:	Product does not present an explosion hazard.
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Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

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Vapour pressure:	Not determined.
Density:	Not determined
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.
Water:	98.0 %
Solids content:	10.0 %
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 relevant for classification: No data available

Primary irritant effect:

Skin corrosion/irritation No irritant effect.

Serious eye damage/irritation No irritating effect.

Respiratory or skin sensitisation No sensitising effects known.

Additional toxicological information:

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

12 Ecological information

Toxicity

Aquatic toxicity:

Not available

No further relevant information available.

Persistence and degradability:

Not available

No further relevant information available.

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Behaviour in environmental systems:**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:**

Generally not hazardous for water.

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

14 Transport information

UN-Number ADR, ADN, IMDG, IATA	Not hazardous for transportation Not applicable
UN proper shipping name ADR, ADN, IMDG, IATA	None Not applicable
Transport hazard class(es) ADR, ADN, IMDG, IATA	None
Class	Not applicable
Packing group 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 and the IBC Code	Not applicable.
UN "Model Regulation":	Not applicable

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15 Regulatory information

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

GHS label elements Not applicable

Signal word Not applicable

Hazard statements Not applicable

Directive 2012/18/EU

Named dangerous substances - ANNEX I

None of the ingredients is listed. This product is for research and development use only.

Waterhazard 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

Safety Department

2800 Woods Hollow Road

Madison, WI 53711

U.S.A.

Date of preparation / last revision 11/13/2019 / -

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 Organisation

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

IATA: International Air Transport Association

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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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