| 05/24/2022 | Kit Components |
|--------------|---|
| Product code | Description |
| AS1220 | Maxwell [®] 16 Tissue LEV Total RNA Purification Kit |
| Components: | |
| P119C | Nuclease-Free Water |
| Z305 | RNA Lysis Buffer (RLA) |
| Z559A | Beta-Mercaptoethanol |
| Z373D | Clearing Agent (CAA) |
| K412 | Maxwell® LEV RNA Resin |
| Z377 | Yellow Core Wash Solution |
| Z376 | RNA Wash B |
| Z372A | RNA Dilution Buffer (RDB) |



Printing date 05/24/2022

Reviewed on 05/18/2022

1 Identification

Product identifier Trade name: <u>Nuclease-Free Water</u> Article number: P119C CAS Number: 7732-18-5 EC number: 231-791-2 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

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

Label elements

GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable Classification system: NFPA ratings (scale 0 - 4) Health = 0Fire = 0*Reactivity* = 0HMIS-ratings (scale 0 - 4) *Health* = 0Fire = 0*Reactivity* = 0OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable Target Organ(s): Not applicable or unknown **Other hazards** Results of PBT and vPvB assessment **PBT:** Not applicable.

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Printing date 05/24/2022

Reviewed on 05/18/2022

Trade name: Nuclease-Free Water

vPvB: Not applicable.

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Substances CAS No. Description 7732-18-5 water 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, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.
Environmental precautions: Dilute with plenty of water.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

(Contd. on page 3)

Printing date 05/24/2022

Reviewed on 05/18/2022

Trade name: Nuclease-Free Water

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required. **Information about protection against explosions and fires:** The product is not flammable.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. **Information about storage in one common storage facility:** Not required. **Further information about storage conditions:** None. **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace: Not required. Additional information: The lists that were valid during the creation were used as basis.

Exposure controls Personal protective equipment: General protective and hygienic measures: The usual precautionary measures for handling chemicals should be followed. Breathing equipment: Not required. Protection of hands: Select the glove material considering penetration time, rate of diffusion and degradation time. Material of gloves Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves

with care to avoid skin contamination.

Eye protection: Not required.

| Information on basic physical and General Information | chemical properties | |
|---|---------------------|--|
| Appearance: | | |
| Form: | Fluid | |
| Color: | Colorless | |
| Odor: | Odorless | |
| Odor threshold: | Not determined. | |
| Change in condition | | |
| Melting point/Melting range: | 0 °C (32 °F) | |
| Boiling point/Boiling range: | 100 °C (212 °F) | |
| Flash point: | Not applicable. | |
| Flammability (solid, gaseous): | Not applicable. | |
| Decomposition temperature: | Not determined. | |
| Auto igniting: | Not determined. | |

Printing date 05/24/2022

Reviewed on 05/18/2022

Trade name: Nuclease-Free Water

| | | (Contd. of page |
|-------------------------------------|---|-----------------|
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits: | | |
| Lower: | Not determined. | |
| Upper: | Not determined. | |
| Vapor pressure: | Not determined. | |
| Density at 20 °C (68 °F): | 1 g/cm ³ (8.345 lbs/gal) | |
| Relative density | Not determined. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/we | nter): Not determined. | |
| Viscosity: | , , | |
| Dynamic at 20 °C (68 °F): | 0.0952 mPas | |
| Kinematic: | Not determined. | |
| Water: | 100.0 % | |
| VOC content: | 0.00 % | |
| Solids content: | 0.0 % | |
| Other information | No further relevant information available. | |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects Acute toxicity: LD/LC50 values that are relevant for classification: No data available Primary irritant effect: on the skin: No irritant effect. on the eye: No irritating effect. Sensitization: In case of skin contact: not sensitising In case of inhalation: not sensitising Additional toxicological information: The substance is not subject to classification.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

Substance is not listed.

NTP (National Toxicology Program)

Substance is not listed.

(Contd. on page 5)

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Printing date 05/24/2022

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Trade name: Nuclease-Free Water

(Contd. of page 4)

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability *Not available* No further relevant information available. **Bioaccumulative potential** Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: *Not available.* Not known to be hazardous to water. Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

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

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

Printing date 05/24/2022

Reviewed on 05/18/2022

Trade name: Nuclease-Free Water

| | | (Contd. of page 5) |
|---|------------------------------------|--------------------|
| DOT, ADR, IMDG, IATA | Not applicable | |
| Environmental hazards: Marine pollutant: | No | |
| Special precautions for user | Not applicable. | |
| Transport in bulk according to Anno MARPOL73/78 and the IBC Code | ex II of Not applicable. | |
| UN "Model Regulation": | Not applicable | |

15 Regulatory information

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

Section 355 (extremely hazardous substances):

Substance is not listed.

Section 313 (Specific toxic chemical listings):

Substance is not listed.

TSCA (Toxic Substances Control Act) Inventory:

Substance is listed.

Hazardous Air Pollutants

Substance is not listed.

Proposition 65

Chemicals known to cause cancer:

Substance is not listed.

Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

Chemicals known to cause developmental toxicity:

Substance is not listed.

New Jersey Right-to-Know List:

Substance is not listed.

Pennsylvania Right-to-Know List:

Substance is not listed. Cancerogenity categories

EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value)

Substance is not listed.

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

Substance is not listed.

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

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Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/18/2022

Trade name: Nuclease-Free Water

Chemical safety assessment

Water hazard class: Generally not hazardous for water. *Chemical safety assessment:* A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 6.0 Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit



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Reviewed on 05/17/2022

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1 Identification

Product identifier Trade name: <u>RNA Lysis Buffer (RLA)</u> Article number: Z305 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

B GHS05 Corrosion

| Skin Corrosion 1B | |
|-------------------|--|
| Eye Damage 1 | |

GHS07

Acute Toxicity - Oral 4H302 Harmful if swallowed.Acute Toxicity - Inhalation 4H332 Harmful if inhaled.

Label elements

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

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.



Signal word Danger

Hazard-determining components of labeling: guanidinium thiocyanate

(Contd. on page 2)

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

| | (Contd. of page 1) |
|---|------------------------|
| 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): Take off immediately all contaminated clothing. Rinse skin with water/show | er |
| <i>IF INHALED: Remove person to fresh air and keep comfortable for breathing.</i> | |
| If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if preser | nt and easy to do |
| Continue rinsing. | in unité eussy to tiot |
| Immediately call a poison center/doctor. | |
| Wash contaminated clothing before reuse. | |
| Store locked up. | |
| Dispose of contents/container in accordance with local/regional/national/international regulation | ons |
| Classification system: | Jus. |
| NFPA ratings (scale 0 - 4) | |
| Health = 3 | |
| Fire = 0 | |
| | |
| Reactivity = 0 | |
| HMIS-ratings (scale 0 - 4) Health = 3 | |
| Fire = 0 | |
| | |
| Reactivity = 0 OSH 4 Hazard Quantian (Critaria according to 20CEP 1010 1200); | |
| OSHA Hazard Overview (Criteria according to 29CFR1910.1200): | |
| Toxic Uiahh Tania | |
| Highly Toxic Corrosive | |
| | |
| Environmental Hazard | |
| Primary route(s) of entry: Dermal | |
| | |
| Inhalation Oral | |
| Oral | |
| Target Organ(s): | |
| May affect Nervous system (Neurotoxin) | |
| May cause Kidney damage (Nephrotoxin) | |
| Risk of damage to eyes | |
| Affects Gastrointestinal System | |
| Other hazards | |
| Results of PBT and vPvB assessment | |
| PBT: Not applicable. | |
| vPvB: Not applicable. | |
| | |
| | |

3 Composition/information on ingredients

Chemical characterization: Mixtures Description:

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

(Contd. on page 3)

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Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

(Contd. of page 2)

25-50%

Dangerous components:

593-84-0 guanidinium thiocyanate

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

4 First-aid measures

Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

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

Seek medical treatment.

After inhalation:

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

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

Seek medical treatment in case of complaints.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact: Call a doctor immediately.

After swallowing:

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

Seek immediate medical advice.

Information for doctor:

Most important symptoms and effects, both acute and delayed

None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture

None known

No further relevant information available.

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

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Keep people at a distance and stay upwind.

Wear protective clothing.

(Contd. on page 4)

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Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

| | (Contd. of page 3) |
|--|--------------------|
| 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 neutralizing agent. | |
| Dispose contaminated material as waste according to Section 13. | |
| Ensure adequate ventilation. | |
| Keep away from water. | |
| Reference to other sections | |
| See Section 7 for information on safe handling. | |
| See Section 13 for disposal information. | |

7 Handling and storage

Handling:

Precautions for safe handlingKeep receptacles tightly sealed.Ensure good ventilation/exhaustion at the workplace.Open and handle receptacle with care.Prevent formation of aerosols.Information about protection against explosions and fires: The product is not flammable.

Conditions for safe storage, including any incompatibilities Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. **Information about storage in one common storage facility:** Do not store together with acids. **Further information about storage conditions:** Keep receptacle tightly sealed. **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

Control parameters

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes. Avoid contact with the eyes and skin. Do not eat or drink while working. Clean skin thoroughly immediately after handling the product. Breathing equipment: In case of brief exposure or low pollution use respiratory filter

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

(Contd. on page 5)

US

(Contd. of page 4)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

Protection of hands:

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

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

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. **Eve protection:**

Tightly sealed goggles

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

9 Physical and chemical properties

| Information on basic physical and che | mical properties |
|--|---|
| General Information | |
| Appearance: | |
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Not determined |
| Odor threshold: | Not determined. |
| <i>pH-value at 20 °C (68 °F):</i> | 7.5 |
| Change in condition | |
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 100 °C (212 °F) |
| Flash point: | Not applicable. |
| Flammability (solid, gaseous): | Not applicable. |
| Decomposition temperature: | Not determined. |
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| Explosion limits: | |
| Lower: | Not determined. |
| Upper: | Not determined. |
| Vapor pressure: | Not determined. |
| Density at 20 °C (68 °F): | 1.102 g/cm³ (9.19619 lbs/gal) |
| Relative density | Not determined. |
| Vapor density | Not determined. |
| Evaporation rate | Not determined. |
| Solubility in / Miscibility with | |
| Water: | Fully miscible. |
| Partition coefficient (n-octanol/water): | Not determined. |
| Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| Solvent separation test | |
| Water: | 52.7 % |
| | (Contd. on page 6) |

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Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

| | | (Contd. of page 5) |
|-------------------|--|--------------------|
| VOC content: | 0.00 % | |
| 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

Exposure to bleach may result in the generation of toxic gas

Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

593-84-0 guanidinium thiocyanate

Oral LD50 475 mg/kg (Rat)

By analogy to guanidine hydrochloride Dermal LD50 >2,000 mg/kg (*Rabbit*)

By analogy to Guanidine hydrochloride.

Primary irritant effect:

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

on the eye: Strong caustic effect.

Sensitization: Sensitization possible through inhalation.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: OECD test guideline 471, Ames test.

Harmful

Corrosive

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

(Contd. on page 7)

(Contd. of page 6)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

12 Ecological information

Toxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects. Persistence and degradability *Not available* No further relevant information available. **Bioaccumulative potential** Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Harmful to fish Additional ecological information: General notes: Water hazard class 2 (Self-assessment): hazardous for water Do not allow product to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground. Harmful to aquatic organisms Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

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

| UN-Number | | |
|-------------------------|--|--|
| DOT, ADR, IMDG, IATA | UN1760 | |
| UN proper shipping name | | |
| DOT | Corrosive liquid, n.o.s. solution | |
| ADR | 1760 CORROSIVE LIQUID, N.O.S. solution | |
| IMDG, IATA | CORROSIVE LIQUID, N.O.S. solution | |

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Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

| | (Contd. of pag |
|--|--|
| Transport hazard class(es) | |
| DOT | |
| | |
| CORROSIVE | |
| 8 | |
| Class | 8 Corrosive substances |
| Label | 8 |
| ADR | |
| \sim | |
| | |
| 8 | |
| ~ | |
| Class | 8 (C9) Corrosive substances |
| Label | 8 |
| IMDG, IATA | |
| | |
| | |
| 8 | |
| Class | 8 Corrosive substances |
| Label | 8 |
| Packing group | |
| DOT, ADR, IMDG, IATA | II |
| Environmental hazards: | |
| Marine pollutant: | No |
| Special precautions for user | Warning: Corrosive substances |
| Hazard identification number (Kemler code). EMS Number: | : 80 F-A,S-B |
| Emis Number. Stowage Category | В |
| Stowage Code | SW2 Clear of living quarters. |
| Transport in bulk according to Annex II of | |
| MARPOL73/78 and the IBC Code | Not applicable. |
| Transport/Additional information: | |
| ADR | |
| Excepted quantities (EQ) | Code: E2 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 500 ml |
| IMDG Limited quantities (LO) | 11 |
| Limited quantities (LQ) Excepted quantities (EQ) | 1L Code: E2 |
| Excepted quantances (EQ) | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per unter packaging: 50 ml |

(Contd. of page 8)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

UN "Model Regulation":

UN 1760 CORROSIVE LIQUID, N.O.S. SOLUTION, 8, II

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

New Jersey Right-to-Know List:

None of the ingredients are listed.

Pennsylvania Right-to-Know List:

None of the ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

None of the ingredients are listed.

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

None of the ingredients are listed.

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

Hazard-determining components of labeling: guanidinium thiocyanate Hazard statements Harmful if swallowed or if inhaled. Causes severe skin burns and eye damage. Precautionary statements Do not breathe dusts or mists. Wash thoroughly after handling.

(Contd. on page 10)

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: RNA Lysis Buffer (RLA)

(Contd. of page 9) 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): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. **Chemical safety assessment**

Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: **Date of preparation / last revision** 05/24/2022 / 9.0 Abbreviations and acronvms: RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: Internation Civil Aviation Organization ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety **OSHA:** Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Acute Toxicity - Oral 4: Acute toxicity - Category 4 Skin Corrosion 1B: Skin corrosion/irritation - Category 1B Eye Damage 1: Serious eye damage/eye irritation - Category 1



Printing date 05/24/2022

Reviewed on 04/16/2022

1 Identification

Product identifier Trade name: Beta-Mercaptoethanol Article number: Z559A CAS Number: 60-24-2 EC number: 200-464-6 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A.1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

GHS06 Skull and crossbones

Acute Toxicity - Oral 3 Acute Toxicity - Dermal 2 Acute Toxicity - Inhalation 3 H301 Toxic if swallowed. H310 Fatal in contact with skin. H331 Toxic if inhaled.

GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure 2 H373 May cause damage to organs through prolonged or repeated exposure.

GHS05 Corrosion

Eye Damage 1

H318 Causes serious eye damage.

(Contd. on page 2)

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 1) GHS07 Skin Irrititation 2 H315 Causes skin irritation. Sensitization - Skin 1 H317 May cause an allergic skin reaction. Flammable Liquids 4 H227 Combustible liquid. Label elements **GHS** label elements The substance is classified and labeled according to the Globally Harmonized System (GHS). Hazard pictograms GHS05 GHS06 GHS07 GHS08 Signal word Danger Hazard-determining components of labeling: 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/vapors/spray. Do not get in eves, 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 must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep 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 CO2, powder or water spray to extinguish. 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. (Contd. on page 3)

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(Contd. of page 2)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

| Classification system: |
|--|
| NFPA ratings (scale 0 - 4) |
| Health = 3 |
| Fire = 1 |
| Reactivity = 0 |
| HMIS-ratings (scale 0 - 4) |
| <i>Health</i> $=$ *3 |
| Fire = 1 |
| Reactivity = 0 |
| OSHA Hazard Overview (Criteria according to 29CFR1910.1200): |
| Toxic |
| Highly Toxic |
| Corrosive |
| Irritant |
| Sensitizer |
| Combustible |
| Environmental Toxin |
| Environmental Hazard |
| Primary route(s) of entry: |
| Dermal |
| Inhalation |
| Oral |
| Target Organ(s): |
| Affects Pulmonary system (Lungs) |
| Affects Gastrointestinal System |
| May cause behavioral changes |
| Other hazards |
| Results of PBT and vPvB assessment |
| PBT: Not applicable. |
| vPvB: Not applicable. |
| 1 A |

3 Composition/information on ingredients

Chemical characterization: Substances CAS No. Description 60-24-2 2-mercaptoethanol 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 apparatus only after contaminated clothing have been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration. Take affected persons out into the fresh air. Do not leave affected persons unattended. Seek medical treatment. Provide oxygen treatment if affected person has difficulty breathing. Medical supervision for at least 48 hours. After inhalation: Supply fresh air or oxygen; call for doctor.

(Contd. on page 4)

US

(Contd. of page 3)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

In case of unconsciousness place patient stably in side position for transportation. Call a doctor immediately. After skin contact: Immediately wash with water and soap and rinse thoroughly. Call a doctor immediately. If skin irritation continues, consult a doctor. After eye contact: Call a doctor immediately. After swallowing: Do not induce vomiting; immediately call for medical help. Drink copious amounts of water and provide fresh air. Immediately call a doctor. Information for doctor: Most important symptoms and effects, both acute and delayed Allergic reactions Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment. Special hazards arising from the substance or mixture

None known

No further relevant information available.

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

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Remove persons from danger area. Wear protective equipment. Keep unprotected persons away. Keep people at a distance and stay upwind. Wear protective clothing. **Environmental precautions:** Do not allow product to reach sewage system or any water course. Inform respective authorities in case of seepage into water course or sewage system. Dilute with plenty of water. Do not allow to enter sewers/ surface or ground water. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent. Dispose contaminated material as waste according to Section 13. Ensure adequate ventilation. 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.

(Contd. on page 5)

US

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 4)

Ensure good ventilation/exhaustion at the workplace. Open and handle receptacle with care. Work only in fume cabinet. Information about protection against explosions and fires: Keep respiratory protective device available.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. Information about storage in one common storage facility: Not required. Further information about storage conditions: Keep receptacle tightly sealed. Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

60-24-2 2-mercaptoethanol

WEEL Long-term value: 0.2 ppm Skin

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

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.

Breathing equipment:

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

Protection of hands:

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

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

Eye protection:

Tightly sealed goggles

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

(Contd. on page 6)

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 5)

| Information on basic physical and c | hemical properties | |
|---------------------------------------|---|--|
| General Information | | |
| Appearance: | | |
| Form: | Liquid | |
| Color: | Clear | |
| Odor: | Unpleasant | |
| Odor threshold: | Not determined. | |
| pH-value: | 4.5-6 | |
| Change in condition | | |
| Melting point/Melting range: | <-50 °C (<-58 °F) | |
| Boiling point/Boiling range: | 157 °C (314.6 °F) | |
| Flash point: | ≤93 °C (≤199.4 °F) | |
| Flammability (solid, gaseous): | Not applicable. | |
| Decomposition temperature: | Not determined. | |
| Auto igniting: | Not determined. | |
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits: | | |
| Lower: | Not determined. | |
| Upper: | 18 Vol % | |
| Vapor 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. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/wate | r): Not determined. | |
| Viscosity: | | |
| Dynamic: | Not determined. | |
| Kinematic: | Not determined. | |
| Organic solvents: | 100.0 % | |
| VOC content: | 0.00 % | |
| Solids content: | 0.0 % | |
| Other information | No further relevant information available. | |

10 Stability and reactivity

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

(Contd. on page 7)

US

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 6)

| Information on t Acute toxicity: | oxicolo | ogical effects |
|--|--|---|
| | that ar | re relevant for classification: |
| 60-24-2 2-merca | | |
| Oral | | 244 mg/kg (Rat) |
| Dermal | | 150 mg/kg (Rabbit) |
| Irritation of eyes | | |
| Irritant to skin an on the eye: Strong caustic eff Causes serious eff Causes serious eff Sensitization: In case of skin co In case of inhalar Additional toxico Swallowing will the and stomach. Carcinogenic can IARC (Internatio | skin ar od muco fect. ve dam ntact: n ion: no logica ead to fegorie mal Ag | age. not sensitising ot sensitising I information: a strong caustic effect on mouth and throat and to the danger of perforation of esophag |
| Substance is not | | D ecomposition |
| NTP (National T Substance is not | | ygy rrogrum) |
| | | |
| | - | al Safety & Health Administration) |
| Substance is not | isted. | |
| Ecological inf | orma | tion |
| | legrad | armful to the aquatic environment ability Not readily biodegradable tial |

Additional ecological information:

General notes:

Water hazard class 3 (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 bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even extremely small quantities leak into the ground. Also poisonous for fish and plankton in water bodies.

(Contd. on page 8)

⁻ US

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 7)

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 packagings:

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

| UN-Number | |
|----------------------------|--|
| DOT, ADR, IMDG, IATA | UN2966 |
| UN proper shipping name | |
| DOT | Thioglycol |
| ADR | 2966 THIOGLYCOL, ENVIRONMENTALLY HAZARDOUS |
| IMDG, IATA | THIOGLYCOL |
| Transport hazard class(es) | |
| DOT | |
| TOXIC 6 | |
| Class | 6.1 Toxic substances |
| Label | 6.1 |
| ADR | |
| | |
| Class | 6.1 Toxic substances |
| Label | 6.1 |
| IMDG, IATA | |
| | |
| Class | 6.1 Toxic substances |

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

| | (Contd. of page |
|---|--|
| Label | 6.1 |
| Packing group | |
| DOT, ADR, IMDG, IATA | II |
| Environmental hazards: | |
| Marine pollutant: | No |
| Special marking (ADR): | Symbol (fish and tree) |
| Special precautions for user | Warning: Toxic substances |
| Hazard identification number (Kemler code): | : 60 |
| EMS Number: | F-A,S-A |
| Stowage Category | A |
| Transport in bulk according to Annex II of | |
| MARPOL73/78 and the IBC Code | Not applicable. |
| Transport/Additional information: | |
| ADR | |
| Excepted quantities (EQ) | Code: E4 |
| | Maximum net quantity per inner packaging: 1 ml |
| | Maximum net quantity per outer packaging: 500 ml |
| IMDG | |
| 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 |
| UN "Model Regulation": | UN 2966 THIOGLYCOL, 6.1, II, ENVIRONMENTALL |
| | HAZARDOUS |

15 Regulatory information

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

| Section 355 (extremely hazardous substances): | |
|---|-------------------|
| Substance is not listed. | |
| Section 313 (Specific toxic chemical listings): | |
| Substance is not listed. | |
| TSCA (Toxic Substances Control Act) Inventory: | |
| Substance is listed. | |
| Hazardous Air Pollutants | |
| Substance is not listed. | |
| Proposition 65 | |
| Chemicals known to cause cancer: | |
| Substance is not listed. | |
| Chemicals known to cause reproductive toxicity for females: | |
| Substance is not listed. | |
| Chemicals known to cause reproductive toxicity for males: | |
| Substance is not listed. | |
| | (Contd. on page 1 |

Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

(Contd. of page 9)

Chemicals known to cause developmental toxicity:

New Jersey Right-to-Know List:

Substance is listed.

Substance is not listed.

Pennsylvania Right-to-Know List:

Substance is listed.

Cancerogenity categories

EPA (Environmental Protection Agency)

Substance is not listed.

TLV (Threshold Limit Value)

Substance is not listed.

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

Substance is not listed.

GHS label elements

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

Hazard-determining components of labeling:

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/vapors/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 must not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. IF INHALED: Remove person to fresh air and keep 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 CO2, powder or water spray to extinguish. 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. (Contd. on page 11)

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Printing date 05/24/2022

Reviewed on 04/16/2022

Trade name: Beta-Mercaptoethanol

Chemical safety assessment

Water hazard class: Water hazard class 3 (Assessment by list): extremely hazardous for water. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 6.0 Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Flammable Liquids 4: Flammable liquids – Category 4 Acute Toxicity - Oral 3: Acute toxicity - Category 3 Acute Toxicity - Dermal 2: Acute toxicity - Category 2 Skin Irrititation 2: Skin corrosion/irritation – Category 2 Eye Damage 1: Serious eye damage/eye irritation – Category 1 Sensitization - Skin 1: Skin sensitisation - Category 1 Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) - Category 2

(Contd. of page 10)



Printing date 05/24/2022

Reviewed on 04/21/2022

1 Identification

Product identifier Trade name: <u>Clearing Agent (CAA)</u> Article number: Z373D Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable Classification system: NFPA ratings (scale 0 - 4) Health = 0Fire = 0*Reactivity* = 0HMIS-ratings (scale 0 - 4) *Health* = 0Fire = 0Reactivity = 0OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable Target Organ(s): Not applicable or unknown **Other hazards** Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable.

(Contd. on page 2)

Page 1/7

Printing date 05/24/2022

Reviewed on 04/21/2022

Trade name: Clearing Agent (CAA)

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

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

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions:

Dilute with plenty of water.

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.

(Contd. on page 3)

Printing date 05/24/2022

Reviewed on 04/21/2022

Trade name: Clearing Agent (CAA)

(Contd. of page 2)

7 Handling and storage

Handling:

Precautions for safe handling No special measures required. **Information about protection against explosions and fires:** The product is not flammable.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. Information about storage in one common storage facility: Not required. Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

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.

| Information on basic physical and General Information | chemical properties | |
|---|---------------------|--|
| Appearance: | | |
| Form: | Liquid | |
| Color: | Colorless | |
| Odor: | Not determined | |
| Odor threshold: | Not determined. | |
| Change in condition | | |
| Melting point/Melting range: | Undetermined. | |
| Boiling point/Boiling range: | 100 °C (212 °F) | |
| Flash point: | Not applicable. | |

Printing date 05/24/2022

Reviewed on 04/21/2022

Trade name: Clearing Agent (CAA)

| | | (Contd. of page |
|--------------------------------------|---|-----------------|
| Flammability (solid, gaseous): | Not applicable. | |
| Decomposition temperature: | Not determined. | |
| Auto igniting: | Product is not selfigniting. | |
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits: | · · | |
| Lower: | Not determined. | |
| Upper: | Not determined. | |
| Vapor pressure: | Not determined. | |
| Density: | Not determined. | |
| Relative density | Not determined. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/wat | ter): Not determined. | |
| Viscosity: | | |
| Dynamic: | Not determined. | |
| Kinematic: | Not determined. | |
| Solvent separation test | | |
| Water: | 41.3 % | |
| VOC content: | 0.00 % | |
| 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 that are relevant for classification: No data available Primary irritant effect: on the skin: No irritant effect. on the eye: No irritating effect. Sensitization: In case of skin contact: not sensitising In case of inhalation: not sensitising

(Contd. on page 5)

US

Printing date 05/24/2022

Reviewed on 04/21/2022

(Contd. of page 4)

Trade name: Clearing Agent (CAA)

Additional toxicological information:

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability *Not available* No further relevant information available. Bioaccumulative potential Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: Not known to be hazardous to water. Results of PBT and vPvB assessment *PBT:* Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

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

| UN-Number | Not hazardous for transportation | |
|---------------------------|----------------------------------|--|
| DOT, ADR, ADN, IMDG, IATA | Not applicable | |
| UN proper shipping name | None | |

US

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 04/21/2022

Trade name: Clearing Agent (CAA)

| | | (Contd. of page |
|--|---------------------------------|-----------------|
| DOT, ADR, ADN, IMDG, IATA | Not applicable | |
| Transport hazard class(es) | None | |
| DOT, ADR, ADN, IMDG, IATA Class | Not applicable | |
| Packing group DOT, ADR, IMDG, IATA | None Not applicable | |
| Environmental hazards: Marine pollutant: | No | |
| Special precautions for user | Not applicable. | |
| Transport in bulk according to Annex MARPOL73/78 and the IBC Code | II of Not applicable. | |
| UN "Model Regulation": | Not applicable | |

15 Regulatory information

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

Section 355 (extremely hazardous substances): None of the ingredients are listed. Section 313 (Specific toxic chemical listings): None of the ingredients are listed. TSCA (Toxic Substances Control Act) Inventory: All ingredients are listed. Hazardous Air Pollutants None of the ingredients are listed. **Proposition 65** Chemicals known to cause cancer: None of the ingredients are listed. Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed. Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed. Chemicals known to cause developmental toxicity: None of the ingredients are listed. New Jersey Right-to-Know List: None of the ingredients are listed. Pennsylvania Right-to-Know List: None of the ingredients are listed. **Cancerogenity categories** EPA (Environmental Protection Agency) None of the ingredients are listed. (Contd. on page 7)

Printing date 05/24/2022

Reviewed on 04/21/2022

Trade name: Clearing Agent (CAA)

(Contd. of page 6)

TLV (Threshold Limit Value)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements Not applicable Signal word Not applicable Hazard statements Not applicable Chemical safety assessment

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 2.0 Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit



Printing date 05/24/2022

Reviewed on 05/17/2022

1 Identification

Product identifier Trade name: <u>Maxwell® LEV RNA Resin</u> Article number: K412 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable Classification system: NFPA ratings (scale 0 - 4) Health = 0Fire = 0*Reactivity* = 0HMIS-ratings (scale 0 - 4) *Health* = 0Fire = 0Reactivity = 0OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable Target Organ(s): Not applicable or unknown **Other hazards** Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable.

(Contd. on page 2)

Printing date 05/24/2022

Reviewed on 05/17/2022

(Contd. of page 1)

3 Composition/information on ingredients

Chemical characterization: Mixtures

Trade name: Maxwell® LEV RNA Resin

Description:

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

Dangerous components: Not applicable

4 First-aid measures

Description of first aid measures

General information: No special measures required. After inhalation: If the patient feels unwell or is concerned, obtain medical advice. After skin contact: Generally the product does not irritate the skin. After eye contact: Rinse opened eye for several minutes under running water. After swallowing: If the patient feels unwell or is concerned, obtain medical advice. Information for doctor: Most important symptoms and effects, both acute and delayed None No further relevant information available. Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

 Extinguishing media

 Suitable extinguishing agents:

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

 Special hazards arising from the substance or mixture

 None known

 No further relevant information available.

 Advice for firefighters No special advice

 Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required. Environmental precautions: Dilute with plenty of water. Methods and material for containment and cleaning up: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Reference to other sections See Section 7 for information on safe handling. See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling No special measures required. **Information about protection against explosions and fires:** The product is not flammable.

(Contd. on page 3)

US

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Maxwell® LEV RNA Resin

(Contd. of page 2)

Conditions for safe storage, including any incompatibilities Storage: Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. Information about storage in one common storage facility: Not required. Further information about storage conditions: None. Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

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.

| Information on basic physical and General Information | chemical properties | |
|--|------------------------------|--|
| Appearance: | | |
| Form: | Fluid | |
| Color: | Colorless | |
| Odor: | Odorless | |
| Odor threshold: | Not determined. | |
| pH-value at 20 °C (68 °F): | 3-10 | |
| Change in condition | | |
| Melting point/Melting range: | 0 °C (32 °F) | |
| Boiling point/Boiling range: | 100 °C (212 °F) | |
| Flash point: | Not applicable. | |
| Flammability (solid, gaseous): | Not applicable. | |
| Decomposition temperature: | Not determined. | |
| Auto igniting: | Product is not selfigniting. | |

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Maxwell® LEV RNA Resin

| | | (Contd. of page |
|-------------------------------------|---|-----------------|
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits: | 1 1 | |
| Lower: | Not determined. | |
| Upper: | Not determined. | |
| Vapor pressure: | Not determined. | |
| Density at 20 °C (68 °F): | 1.006 g/cm³ (8.39507 lbs/gal) | |
| Relative density | Not determined. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/wo | uter): Not determined. | |
| Viscosity: | , | |
| Dynamic at 20 °C (68 °F): | 0.0952 mPas | |
| Kinematic: | Not determined. | |
| Solvent separation test | | |
| Water: | 98.1 % | |
| VOC content: | 0.00 % | |
| Solids content: | 1.8 % | |
| Other information | No further relevant information available. | |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects Acute toxicity: LD/LC50 values that are relevant for classification: No data available Primary irritant effect: on the skin: No irritant effect. on the eye: No irritating effect. Sensitization: In case of skin contact: not sensitising In case of inhalation: not sensitising Additional toxicological information: The product is not subject to classification according to internally approved calculation methods for preparations:

(Contd. on page 5)

US

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Maxwell® LEV RNA Resin

(Contd. of page 4)

3

3

Carcinogenic categories

IARC (International Agency for Research on Cancer)

7631-86-9 silicon dioxide

1309-37-1 iron trioxide

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability Not available No further relevant information available. **Bioaccumulative potential** Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: Not available. Not known to be hazardous to water. Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

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

| UN-Number DOT, ADR, ADN, IMDG, IATA | Not hazardous for transportation Not applicable | |
|--|--|--|
| UN proper shipping name | None | |

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Maxwell® LEV RNA Resin

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

15 Regulatory information

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

New Jersey Right-to-Know List:

1309-37-1 iron trioxide

10377-60-3 MAGNESIUM (II) NITRATE

3251-23-8 Nitric acid, copper(2+) salt (2:1)

Pennsylvania Right-to-Know List:

7631-86-9 silicon dioxide

1309-37-1 iron trioxide

10377-60-3 MAGNESIUM (II) NITRATE

(Contd. on page 7)

⁻ US

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Maxwell® LEV RNA Resin

(Contd. of page 6)

A4

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

1309-37-1 iron trioxide

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

None of the ingredients are listed.

GHS label elements Not applicable Signal word Not applicable Hazard statements Not applicable Chemical safety assessment

Water hazard class: Generally not hazardous for water. *Chemical safety assessment:* A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 6.0 Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit



Printing date 05/24/2022

Reviewed on 05/17/2022

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1 Identification

Product identifier Trade name: <u>Yellow Core Wash Solution</u> Article number: Z377 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

GHS02 Flame

Flammable Liquids 3 H226 Flammable liquid and vapor.



Skin Corrosion 1BH314 Causes severe skin burns and eye damage.Eye Damage 1H318 Causes serious eye damage.

Label elements

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



Signal word Danger

Hazard-determining components of labeling: guanidinium thiocyanate

(Contd. on page 2)

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Yellow Core Wash Solution

| Flammable liquid and vapor. Causes severe skin burns and eye damage. Precautionary statements Keep container and receiving equipment. Use explosion proof electrical/ventilating/lighting/equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use explosion-ended electrical/ventilating/lighting/equipment. Use explosion-ended electrical/ventilating/lighting/equipment. If NULLED: Remove genson to fresh air and keep comfortable for breathing. If on skin (or hair): Take of all contaminated clothing. Rinse skin with water/shower. If NULLED: Remove person to fresh air and keep comfortable for breathing. If on eskin (or hair): Take of all contaminated clothing. Rinse skin with water/shower. If NULLED: Remove person to fresh air and keep confortable for breathing. If mediately call a poison center/doctor. Wask contaminated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents:container in accordance with local/regional/national/international regulations. Classification system: NFPA rating scale 0 - 4) HullSharatings (scale 0 - 4) HullSharatings (scale 0 - 4) HullSharatings (scale 0 - 4) HullSharatings (scale 0 - 4) Hull Sharatings (scale 0 - 4) Hull Sharatings (scale 0 - 4) Hull Sharating (Sharating Norea) Corrosive Primary route(s) of entry: Dermal Inhalation May cause Liver damage (Hepatotoxin | | (Contd. of page 1) |
|---|--|-------------------------------|
| Causes sever's skin burn's and eye damage. Precautionary statements Keep away from heat/sparks/open flames/hot surfaces No smoking. Keep container tightly closed. Ground/hond container and recetiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use explosion-proof electrical/ventilig/lighting/equipment. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If INHALED: Remove person to fesh ari and keep comfortable for breakhing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If on skin (or hair): Take off immediately all container and keep confortable for breakhing. If in eyes: Close COL, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NFPA rating (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 NFPA rating (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 NFPA rating (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 NFPA rating (scale 0 - 4) Health = 3 Fire or an accordance with lo | Hazard statements | |
| Precutionary statements Keep anvay from heat/sparks/open flames/hot surfaces No smoking. Keep container tighty closed. Groundbond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. If in explosion-proof electrical/ventilating/lighting/equipment. If in explosion-proof electrical/ventilating/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/equipment. If in explosion-proof electrical/ventiling/lighting/equipment. If wear protective slows/prove/electrical/ventiling. If wear protective slows/prove/electrical/ventiling/lighting/ | 1 1 | |
| <pre>Keep away from heat/sparks/open flames/hot surfaces No smoking: Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dusts or miss. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Rinse mouth. Do NOI induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If NHALED: Remove person to fresh air and keep confortable for breathing. If in eyes: Rinse cautionally with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NFP4 ratings (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Toxic Corrosive Primary note(s) of entry: Dermal May adgeet Nerview (Criteria according to 29CFR1910.1200): Toxic Primary note(s) of entry: Dermal May adgeet Nerview (Nephrotoxin) May adgeet Iver damage (Hepatotoxin) May adgeet Iver damage (Hepatotoxin) May adgeet Iver damage (Hepatotoxin) May adgeet to rey admage (Nephrotoxin) May admage to eyes Affects Gastrointestinal System Other hazards Results of PBT and vPyB assessment PBT: Nor applicable.</pre> | | |
| Keep container tighty'closed Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dusts or mists. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Ruse mouth. Do NOT induce vomiting. If on skin (or hair): Take of finmediately all contaminated clothing. Ruse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Ruse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash containinated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store in a well-ventilated place. Keep cool. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NPEP A ratings (scale 0 - 4) Health = ³ Fire = 3 Reactivity = 0 DMIS-ratings (scale 0 - 4) Health = ^{*3} Fire = 3 Reactivity = 0 DMIS-ratings (scale 0 - 4) Health = ^{*3} Fire = 3 Reactivity = 0 DMIS-ratings (scale 0 - 4) Health = ^{*3} Reactivity = 0 DMIS-ratings (scale 0 - 4) Health | | |
| Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dusts or mists. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If wallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If NikLED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 MMS-ratings (scale 0 - 4) Health = 4 Fire = -3 Reactivity = 0 OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Taxic Primary route(s) of entry: Dermal Inhalation Target Organ(s): May cause Liver damage (Hepatotoxin) May aglect Nervous system (Neurotxin) May aglect Nervous system (Neurotxin) Misk of damage to eyes Affects Gastrointestinal System Other hazards | | |
| Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dusts or mists. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 DMSH Hazard Overview (Criteria according to 29CFR1910.1200): Toxic Highly Toxic Corrosive Primary route(s) of entry: Dermal Inhalation Target Organ(s): May cause Liver damage (Hepatotxin) May affect Nervous system (Neurotxin) May affect Nervous system (Neurotxin) May affect Nervous system (Neurotxin) May affect Nervous system (Neurotxin) Risk of damage to eyes Affects Gastrointestinal System Outer harands Results of PBT and vPVB assessment PBT: Not applicable. | | |
| Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dusts or mists. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or harr): Take off immediately all contaminated clothing. Rinse skin with water/shower. If IF INHALED. Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Wash contaminated clothing before reuse. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. Classification system: NFPA ratings (scale 0 - 4) Health = 3 Fire = 3 Reactivity = 0 HMIS-ratings (scale 0 - 4) Health - *3 Fire = 3 Reactivity = 0 CSILA Hazard Overview (Criteria according to 29CFR1910.1200): Toxic Highly Toxic Corrosive Primary route(s) of entry: Dermal Inhalation Taged Organ(s): May cause Liver damage (Hepatotoxin) May affect Nervous system (Neurotoxin) May affect Nervous system (Neurotoxin) May affect Nervous system (Neurotoxin) Results of DBT and vPtB assessment PBT: Not applicable. | | |
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| | | |
| | | US |

(Contd. on page 3)

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Yellow Core Wash Solution

(Contd. of page 2)

25-50%

15-20%

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

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

| Dangerous | components: |
|-----------|-------------|
|-----------|-------------|

64-17-5 ethanol

593-84-0 guanidinium thiocyanate

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

4 First-aid measures

Description of first aid measures

General information:

Immediately remove any clothing soiled by the product.

Seek medical treatment.

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

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact: Call a doctor immediately.

After swallowing: Drink copious amounts of water and provide fresh air. Immediately call a doctor. *Information for doctor:*

Most important symptoms and effects, both acute and delayed

Headache

Dizziness

Nausea

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 *Fire-fighting measures*

Extinguishing media

Suitable extinguishing agents: Use fire fighting measures that suit the environment. Special hazards arising from the substance or mixture None known

None known

No further relevant information available.

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

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Mount respiratory protective device. Remove persons from danger area. Wear protective equipment. Keep unprotected persons away. Keep people at a distance and stay upwind. Keep away from ignition sources Wear protective clothing.

(Contd. on page 4)

US

(Contd. of page 3)

Safety Data Sheet acc. to OSHA HCS

Printing date 05/24/2022

Reviewed on 05/17/2022

Trade name: Yellow Core Wash Solution

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). Use neutralizing agent. Dispose contaminated material as waste according to Section 13. Ensure adequate ventilation. Keep away from water. **Reference to other sections** See Section 7 for information on safe handling. See Section 13 for disposal information.

7 Handling and storage

Handling:

Precautions for safe handling Ensure good ventilation/exhaustion at the workplace. Open and handle receptacle with care. Prevent formation of aerosols. Use only in well ventilated areas. **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke. Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. **Information about storage in one common storage facility:** Do not store together with acids. **Further information about storage conditions:** Keep receptacle tightly sealed. **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

64-17-5 ethanol

PEL Long-term value: 1900 mg/m³, 1000 ppm

REL Long-term value: 1900 mg/m³, 1000 ppm

TLV Short-term value: 1000 ppm

A3

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work.

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Avoid contact with the eyes. Avoid contact with the eyes and skin. Do not eat or drink while working.

Breathing equipment:

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

Protection of hands:

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

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

Material of gloves

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

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

Tightly sealed goggles

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

|) PI | hvsica | l and | l chem | ical | prot | perties |
|------|--------|-------|--------|------|------|---------|
| | | | | | r | |

| Information on basic physical and c General Information | hemical properties |
|--|--|
| Appearance: | |
| Form: | Fluid |
| Color: | Colorless |
| Odor: | Alcohol-like |
| Odor threshold: | Not determined. |
| pH-value at 20 °C (68 °F): | 7.5 |
| Change in condition | |
| Melting point/Melting range: | Undetermined. |
| Boiling point/Boiling range: | 78 °C (172.4 °F) |
| Flash point: | 30 °C (86 °F) (EPA 1010) |
| Flammability (solid, gaseous): | Not applicable. |
| Ignition temperature: | 425 °C (797 °F) |
| Decomposition temperature: | Not determined. |
| Auto igniting: | Product is not selfigniting. |
| Danger of explosion: | Product does not present an explosion hazard. |
| | Product is not explosive. However, formation of explosive air/vapor mixtures are possible. |
| Explosion limits: | |
| Lower: | 3.5 Vol % |
| Upper: | 15 Vol % |
| Vapor pressure at 20 °C (68 °F): | 59 hPa (44.3 mm Hg) |
| Density: | Not determined. |
| Relative density | Not determined. |
| | (Contd. on page 6) |

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| | | (Contd. of page |
|----------------------------------|--|-----------------|
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octano) | Vwater): Not determined. | |
| Viscosity: | | |
| Dynamic: | Not determined. | |
| Kinematic: | Not determined. | |
| Solvent separation test | | |
| Organic solvents: | 40.0 % | |
| Water: | 42.3 % | |
| VOC content: | 40.00 % | |
| Solids content: | 17.7 % | |
| Other information | No further relevant information available. | |

10 Stability and reactivity

Reactivity No further relevant information available. Chemical stability Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications. Possibility of hazardous reactions No dangerous reactions known. Conditions to avoid No further relevant information available. Incompatible materials: Oxidizing agents Exposure to strong acid may result in the generation of toxic gases Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

593-84-0 guanidinium thiocyanate

Oral LD50 475 mg/kg (Rat)

By analogy to guanidine hydrochlorideDermalLD50>2,000 mg/kg (Rabbit)

By analogy to Guanidine hydrochloride.

Primary irritant effect:

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

on the eye: Strong caustic effect.

Sensitization:

In case of skin contact: not sensitising

In case of inhalation: not sensitising

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: OECD test guideline 471, Ames test.

Corrosive

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(Contd. of page 6) Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

64-17-5 ethanol

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability *Not available* No further relevant information available. **Bioaccumulative potential** Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: Water hazard class 2 (Self-assessment): hazardous for water Do not allow product to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or unneutralized. Danger to drinking water if even small quantities leak into the ground. Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

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

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| UN-Number | |
|--|--|
| DOT, ADR, IMDG, IATA | UN1170 |
| UN proper shipping name | |
| DOT | Ethanol solutions |
| ADR | 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| IMDG | ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| IATA | ETHANOL SOLUTION |
| Transport hazard class(es) | |
| DOT | |
| | |
| PLANMAGE LIQUO | |
| | |
| Class | 3 Flammable liquids |
| Label | 3 |
| ADR | |
| | |
| | |
| 2 | |
| Class | 3 (F1) Flammable liquids |
| Label | 3 |
| IMDG, IATA | |
| | |
| | |
| | |
| | |
| Class | 3 Flammable liquids |
| Label | 3 |
| Packing group DOT, ADR, IMDG, IATA | III |
| | 111 |
| Environmental hazards: Marine pollutant: | No |
| | |
| Special precautions for user | Warning: Flammable liquids |
| Hazard identification number (Kemler code). EMS Number: | F-E,S-D |
| Stowage Category | A |
| Transport in bulk according to Annex II of | |
| MARPOL73/78 and the IBC Code | Not applicable. |

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| | (Contd. of page |
|-----------------------------------|---|
| Transport/Additional information: | |
| ADR | |
| Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |
| IMDG | |
| Limited quantities (LQ) | 5L |
| Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |
| UN "Model Regulation": | UN 1170 ETHANOL SOLUTION (ETHYL ALCOHO Solution), 3, III |

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

64-17-5 ethanol

New Jersey Right-to-Know List:

64-17-5 ethanol

Pennsylvania Right-to-Know List:

64-17-5 ethanol

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

64-17-5 ethanol

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| (Contd. of page 9) |) |
|---|---|
| NIOSH-Ca (National Institute for Occupational Safety and Health) |] |
| None of the ingredients are listed. | |
| <i>GHS label elements</i> The product is classified and labeled according to the Globally Harmonized System (GHS). <i>Signal word</i> Danger | |
| Hazard-determining components of labeling: | |
| guanidinium thiocyanate | |
| Hazard statements | |
| Flammable liquid and vapor. | |
| Causes severe skin burns and eye damage. | |
| Precautionary statements | |
| Keep away from heat/sparks/open flames/hot surfaces No smoking. | |
| Keep container tightly closed. | |
| Ground/bond container and receiving equipment. | |
| Use explosion-proof electrical/ventilating/lighting/equipment. | |
| Use only non-sparking tools. | |
| Take precautionary measures against static discharge. | |
| Do not breathe dusts or mists. | |
| Wash thoroughly after handling. | |
| Wear protective gloves/protective clothing/eye protection/face protection. | |
| If swallowed: Rinse mouth. Do NOT induce vomiting. | |
| If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. | |
| If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. | |
| Continue rinsing. | |
| Immediately call a poison center/doctor. | |
| Wash contaminated clothing before reuse. | |
| In case of fire: Use CO2, powder or water spray to extinguish. | |
| Store in a well-ventilated place. Keep cool. | |
| Store locked up. | |
| Dispose of contents/container in accordance with local/regional/national/international regulations. Chemical safety assessment | |
| Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water. | |
| | |

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

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 7.0 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: Internation Civil Aviation Organization ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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| IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation 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) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) | (Contd. of page 10) |
|---|---------------------|
| LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic | |
| vPvB: very Persistent and very Bioaccumulative | |
| NIOSH: National Institute for Occupational Safety | |
| OSHA: Occupational Safety & Health | |
| TLV: Threshold Limit Value | |
| PEL: Permissible Exposure Limit | |
| REL: Recommended Exposure Limit | |
| Flammable Liquids 3: Flammable liquids – Category 3 | |
| Skin Corrosion 1B: Skin corrosion/irritation – Category 1B | |
| Eye Damage 1: Serious eye damage/eye irritation – Category 1 | |
| | US |



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1 Identification

Product identifier Trade name: <u>RNA Wash B</u> Article number: Z376 Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture



Flammable Liquids 2 H225 Highly flammable liquid and vapor.

Label elements

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



Signal word Danger Hazard statements Highly flammable liquid and vapor. Precautionary statements Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eve protection/face protection.

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| | (Contd. of page 1) |
|---|--------------------|
| If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. | |
| In case of fire: Use CO2, powder or water spray to extinguish. | |
| Store in a well-ventilated place. Keep cool. | |
| Dispose of contents/container in accordance with local/regional/national/international regulations | |
| Classification system: | |
| NFPA ratings (scale 0 - 4) | |
| Health = 0 | |
| Fire = 3 | |
| Reactivity = 0 | |
| HMIS-ratings (scale 0 - 4) | |
| Health = 0 | |
| Fire = 3 | |
| Reactivity = 0 | |
| OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable | |
| Target Organ(s): | |
| May cause Liver damage (Hepatotoxin) | |
| May affect Nervous system (Neurotoxin) | |
| Other hazards | |
| Results of PBT and vPvB assessment | |
| PBT: Not applicable. | |
| vPvB: Not applicable. | |
| ** | |

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

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

Dangerous components:

64-17-5 ethanol

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

4 First-aid measures

Description of first aid measures

General information: Immediately remove any clothing soiled by the product. 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 Headache Dizziness Nausea Indication of any immediate medical attention and special treatment needed No further relevant information available.

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50-75%

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5 Fire-fighting measures

Extinguishing media Suitable extinguishing agents: Use fire fighting measures that suit the environment. Special hazards arising from the substance or mixture None known No further relevant information available. Advice for firefighters No special advice

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
Wear protective clothing.
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).
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 Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols. Use only in well ventilated areas. **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke. Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities Storage: Paguingments to be met by storageous and recentralize Do not

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. Information about storage in one common storage facility: Not required. Further information about storage conditions: Keep receptacle tightly sealed. Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

64-17-5 ethanol

PEL Long-term value: 1900 mg/m³, 1000 ppm

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Danger of explosion:

Explosion limits: Lower:

| Personal protective equipment: General protective and hygienic measures: Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Breathing equipment: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air. Protection of hands: Select the glove material considering penetration time, rate of diffusion and degradation time. Material of gloves Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitication effects. Conside specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove glove with care to avoid skin contamination. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality an varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistant of the glove material can not be calculated in advance and has therefore to be checked prior to the application. Eye protection: Use equipment for eye protection tested and approved under government NIOSH standards. Physical and chemical properties General Information Appearance: Form: Fluid Color: Colorless Odor: Not determined. Did tetermined. Did tetermined. Ph-value at 20°C (68 °F): 7.5 Change in condition Melting point/Bolting range: Undetermined. Bolting point/Bolting range: Co (80 · C) (27 · F) Flash point: 26 · C (79 · F) Flash point: 25 · C (797 · F) Becomposition temperature: Not determined. | | (Contd. of page 2 |
|--|--|---|
| Additional information: The lists that were valid during the creation were used as basis. Exposure controls Personal protective equipment: General protective and hygienic measures: Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Breathing equipment: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure userspiratory protective device that is independent of circulating air. Protection of hands: Select the glove material considering penetration time, rate of diffusion and degradation time. Material of gloves Please observe the instructions regarding permeability and breakthrough time which are provided by th manufacturers/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to chemical compatibility, desterity, operational conditions, user susceptibility, e.g., sensitization effects. Consid specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove glow with care to avoid skin contamination. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality a varier form 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. Exposure Information on basic physical and chemical properties General Information | | 1000 ppm |
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| Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Breathing equipment: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure us respiratory protective device that is independent of circulating air. Protection of hands: Select the glove material considering penetration time, rate of diffusion and degradation time. Material of gloves Please observe the instructions regarding permeability and breakthrough time which are provided by th manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited t chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consid- specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove glow with care to avoid skin contamination. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality an varies from manufacturer. As the product is a preparation of several substances, the resistant of the glove material can not be calculated in advance and has therefore to be checked prior to the application. Eye protection: Use equipment for eye protection tested and approved under government NIOSH standards. Physical and chemical properties General Information Appearance: Fluid Color: Coloriess Odor: Not determined. pH-value at 20 °C (68 °F): 7.5 Change in condition Meting point/Beiling range: 78 °C (172.4 °F) Flush point: Boiling point/Beiling range: 78 °C (172.4 °F) Flush point: Boiling point/Beiling range: 78 °C (172.4 °F) Flush point: 26.7 °C (80.1 °F) (EPA 1010) Flammability (solid, gaseous): Not applicable. Ignition temperature: Not determined. Solid etermined. Solid etermined. Solid etermined. Solid etermined. Solid etermined. Solid etermined. Solid point/Beiling range: 78 °C (172.4 °F) Flush point: Solid etermined. So | | |
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| Auto igniting: Product is not selfigniting. | The selection of the suitable gloves a varies from manufacturer to manufa of the glove material can not be calc Eye protection: Use equipment for e Physical and chemical proper Information on basic physical and a General Information Appearance: Form: Color: Odor: Odor threshold: pH-value at 20 °C (68 °F): Change in condition Melting point/Melting range: Boiling point/Boiling range: Flash point: | loes not only depend on the material, but also on further marks of quality an acturer. As the product is a preparation of several substances, the resistance ulated in advance and has therefore to be checked prior to the application. ye protection tested and approved under government NIOSH standards. ties chemical properties Fluid Colorless Not determined Not determined. 7.5 Undetermined. 7.5 Undetermined. 7.6 (172.4 °F) 26.7 °C (80.1 °F) (EPA 1010) Not applicable. 425 °C (797 °F) |

mixtures are possible.

3.5 Vol %

Product does not present an explosion hazard. Product is not explosive. However, formation of explosive air/vapor

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| | | (Contd. of page |
|---|--|-----------------|
| Upper: | 15 Vol % | |
| Vapor pressure at 20 °C (68 °F): | 59 hPa (44.3 mm Hg) | |
| Density at 20 °C (68 °F): | 0.8627 g/cm ³ (7.19923 lbs/gal) | |
| Relative density | Not determined. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/water, | : Not determined. | |
| Viscosity: | | |
| Dynamic: | Not determined. | |
| Kinematic: | Not determined. | |
| Solvent separation test | | |
| Organic solvents: | 63.0 % | |
| Water: | 36.6 % | |
| VOC content: | 63.00 % | |
| Solids content: | 0.4 % | |
| Other information | No further relevant information available. | |

10 Stability and reactivity

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

11 Toxicological information

Information on toxicological effects Acute toxicity: LD/LC50 values that are relevant for classification: No data available Primary irritant effect: on the skin: Causes skin irritation. on the eye: No data available. Sensitization: In case of skin contact: not sensitising In case of inhalation: not sensitising Additional toxicological information: When used and handled according to empirications, the product does not have

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

64-17-5 ethanol

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NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability *Not available* No further relevant information available. **Bioaccumulative potential** Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: No data available. Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

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

| UN-Number | |
|-------------------------|--|
| DOT, ADR, IMDG, IATA | UN1170 |
| UN proper shipping name | |
| DOT | Ethanol solutions |
| ADR | 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| IMDG | ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION) |
| IATA | ETHANOL SOLUTION |

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| (Contd. of page 6) | |

| Transport hazard class(es) | |
|--|--|
| | |
| DOT | |
| | |
| FLAMMARE LIQUD | |
| 3 | |
| Class | 3 Flammable liquids |
| Label | 3 |
| ADR | |
| | |
| | |
| | |
| | |
| Class | 2 (F1) Elammabla liquida |
| | 3 (F1) Flammable liquids |
| Label | 3 |
| IMDG, IATA | |
| | |
| | |
| 3 | |
| | |
| Class Label | 3 Flammable liquids 3 |
| | 5 |
| Packing group DOT, ADR, IMDG, IATA | 111 |
| | 111 |
| Environmental hazards: | N7 |
| Marine pollutant: | No |
| Special precautions for user | Warning: Flammable liquids |
| Hazard identification number (Kemler code) | |
| EMS Number: Stowage Category | F-E,S-D A |
| | 21 |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable |
| | Not applicable. |
| Transport/Additional information: | |
| ADR | |
| Excepted quantities (EQ) | Code: El |
| | Maximum net quantity per inner packaging: 30 ml |
| | Maximum net quantity per outer packaging: 1000 ml |
| IMDG | |
| Limited quantities (LQ) | 5L |
| Excepted quantities (EQ) | Code: E1 |
| | Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml |
| | |
| | (Contd. on page |

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UN "Model Regulation":

UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, III

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

All ingredients are listed.

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

64-17-5 ethanol

New Jersey Right-to-Know List:

64-17-5 ethanol

64-19-7 acetic acid

Pennsylvania Right-to-Know List:

64-17-5 ethanol

64-19-7 acetic acid

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

64-17-5 ethanol

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

None of the ingredients are listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS). Signal word Danger Hazard statements Highly flammable liquid and vapor. Precautionary statements Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed.

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AЗ

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Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. In case of fire: Use CO2, powder or water spray to extinguish. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations. **Chemical safety assessment**

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: **Date of preparation / last revision** 05/24/2022 / 9.0 Abbreviations and acronvms: RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: Internation Civil Aviation Organization ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit Flammable Liquids 2: Flammable liquids – Category 2



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1 Identification

Product identifier Trade name: <u>RNA Dilution Buffer (RDB)</u> Article number: Z372A Application of the substance / the mixture For Laboratory Use

Details of the supplier of the safety data sheet Manufacturer/Supplier: Promega Corporation 2800 Woods Hollow Road Madison, WI 53711 U.S.A. 1-800-356-9526 or (608)-274-4330

Information department: SDS author: chemicalregulatory@promega.com

Emergency telephone number:

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

2 Hazard(s) identification

Classification of the substance or mixture

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

Label elements GHS label elements Not applicable Hazard pictograms Not applicable Signal word Not applicable Hazard statements Not applicable Classification system: NFPA ratings (scale 0 - 4) Health = 0Fire = 0*Reactivity* = 0HMIS-ratings (scale 0 - 4) *Health* = 0Fire = 0Reactivity = 0OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable Target Organ(s): Not applicable or unknown **Other hazards** Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable.

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3 Composition/information on ingredients

Chemical characterization: Mixtures

Description:

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

Dangerous components: Not applicable

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

4 First-aid measures

Description of first aid measures

General information: No special measures required.

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

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

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

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

Information for doctor:

Most important symptoms and effects, both acute and delayed None

No further relevant information available.

Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:

CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Special hazards arising from the substance or mixture

None known

No further relevant information available.

Advice for firefighters No special advice

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures Not required.

Environmental precautions:

Dilute with plenty of water.

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.

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7 Handling and storage

Handling:

Precautions for safe handling No special measures required. **Information about protection against explosions and fires:** The product is not flammable.

Conditions for safe storage, including any incompatibilities

Storage:

Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light. Information about storage in one common storage facility: Not required. Further information about storage conditions: None.

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

8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:

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

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

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

Breathing equipment: Not required.

Protection of hands: Not required.

Material of gloves

Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.

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.

| Information on basic physical and General Information | chemical properties | |
|---|---------------------|--|
| Appearance: | | |
| Form: | Liquid | |
| Color: | Colorless | |
| Odor: | Not determined | |
| Odor threshold: | Not determined. | |
| pH-value at 20 °C (68 °F): | 4 | |
| Change in condition | | |
| Melting point/Melting range: | Undetermined. | |
| Boiling point/Boiling range: | 100 °C (212 °F) | |

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|------------------------------------|---|-----------------|
| Flash point: | Not applicable. | |
| Flammability (solid, gaseous): | Not applicable. | |
| Decomposition temperature: | Not determined. | |
| Auto igniting: | Product is not selfigniting. | |
| Danger of explosion: | Product does not present an explosion hazard. | |
| Explosion limits: | | |
| Lower: | Not determined. | |
| Upper: | Not determined. | |
| Vapor pressure: | Not determined. | |
| Density: | Not determined. | |
| Relative density | Not determined. | |
| Vapor density | Not determined. | |
| Evaporation rate | Not determined. | |
| Solubility in / Miscibility with | | |
| Water: | Fully miscible. | |
| Partition coefficient (n-octanol/w | pater): Not determined. | |
| Viscosity: | | |
| Dynamic: | Not determined. | |
| Kinematic: | Not determined. | |
| Solvent separation test | | |
| Water: | 73.2 % | |
| VOC content: | 0.00 % | |
| 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 that are relevant for classification: No data available Primary irritant effect: on the skin: No irritant effect. on the eye: No irritating effect. Sensitization: In case of skin contact: not sensitising In case of inhalation: not sensitising

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Additional toxicological information:

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

Carcinogenic categories

IARC (International Agency for Research on Cancer)

Brilliant blue FCF

NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

Toxicity

Aquatic toxicity: Not harmful to the aquatic environment Persistence and degradability *Not available* No further relevant information available. Bioaccumulative potential Not known No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: **Remark:** Not available Additional ecological information: General notes: Not known to be hazardous to water. Results of PBT and vPvB assessment **PBT:** Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

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

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

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

15 Regulatory information

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

Section 355 (extremely hazardous substances): None of the ingredients are listed. Section 313 (Specific toxic chemical listings): None of the ingredients are listed. TSCA (Toxic Substances Control Act) Inventory: All ingredients are listed. Hazardous Air Pollutants None of the ingredients are listed. **Proposition 65** Chemicals known to cause cancer: None of the ingredients are listed. Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed. Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed. Chemicals known to cause developmental toxicity: None of the ingredients are listed. New Jersey Right-to-Know List: None of the ingredients are listed. Pennsylvania Right-to-Know List: None of the ingredients are listed. **Cancerogenity categories** EPA (Environmental Protection Agency) None of the ingredients are listed. (Contd. on page 7) US

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TLV (Threshold Limit Value)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements Not applicable Signal word Not applicable Hazard statements Not applicable Chemical safety assessment

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water. Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

Department issuing SDS:

Promega Corporation Chemical Regulatory Department 2800 Woods Hollow Road Madison, WI Ph:(608)274-4330 chemicalregulatory@promega.com Contact: Date of preparation / last revision 05/24/2022 / 3.0 Abbreviations and acronyms: ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative NIOSH: National Institute for Occupational Safety OSHA: Occupational Safety & Health TLV: Threshold Limit Value PEL: Permissible Exposure Limit REL: Recommended Exposure Limit