



ZYMO RESEARCH

The Beauty of Science is to Make Things Simple

04/23/2018

Kit Components

Product code	Description
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R1034 & R1035	Quick-RNA Viral Kit
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Components:

R1100-50	DNA/RNA Shield - 50 ml, 250 ml & sample; DNA/RNA Shield (2X Concentrate) - 25 ml & 125 ml; DNA/RNA...
R1034-1-50 & R1034-1-100	Viral RNA Buffer
R1034-2-6	Viral Wash Buffer (Concentrate)
W1001-1, W1001-4, W1001-6	DNase/RNase Free Water



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 05/06/2016

1 Identification

- **Product identifier**
- **Trade name:** DNA/RNA Shield - 50 ml, 250 ml & sample; DNA/RNA Shield (2X Concentrate) - 25 ml & 125 ml; DNA/RNA Shield Blood Collection Tube, DNA/RNA Shield Fecal Collection Tube, DNA/RNA Shield Collection Tube, DNA/RNA Shield Lysis Tube (Microbe), DNA/RNA Shield Lysis Tube w/ Swab (Microbe), DNA/RNA Shield Lysis Tube (Tissue); DNA/RNA Shield Collection Tube w/ Swab
- **Article number:**
R1100-50, R1100-250, R1100-8-S, R1200-25, R1200-125, R1150, R1101, R1102, R1103, R1104, R1105, R1106, R1107, R1108, R1109
- **Application of the substance / the mixture** Laboratory Reagent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

2 Hazard(s) identification

- **Classification of the substance or mixture**



Acute Tox. 4 H302 Harmful if swallowed.
 Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2B H320 Causes eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS07
- **Signal word** Warning
- **Hazard statements**
Harmful if swallowed.
Causes skin and eye irritation.
- **Precautionary statements**
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves.
If swallowed: Call a poison center/doctor if you feel unwell.

(Contd. on page 2)



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Trade name: DNA/RNA Shield - 50 ml, 250 ml & sample; DNA/RNA Shield (2X Concentrate) - 25 ml & 125 ml; DNA/RNA Shield Blood Collection Tube, DNA/RNA Shield Fecal Collection Tube, DNA/RNA Shield Collection Tube, DNA/RNA Shield Lysis Tube (Microbe), DNA/RNA Shield Lysis Tube w/ Swab (Microbe), DNA/RNA Shield Lysis Tube (Tissue); DNA/RNA Shield Collection Tube w/ Swab

(Contd. of page 1)

If on skin: Wash with plenty of water.

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

Continue rinsing.

Specific treatment (see on this label).

Rinse mouth.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

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

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** This product is a proprietary solution.

· **Dangerous components:** Void

4 First-aid measures

· **Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

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

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

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

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

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

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Not considered a fire hazard. Use extinguishing media appropriate surrounding fire conditions. Use fire fighting measures that suit the environment.
- **Advice for firefighters**
- **Protective equipment:** Wear protective clothing.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** Laboratory reagent

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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- Control parameters
Components with limit values that require monitoring at the workplace:
Additional information:
Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Breathing equipment:
Protection of hands:
Penetration time of glove material:
Eye protection:
Body protection:

9 Physical and chemical properties

- Information on basic physical and chemical properties
General Information
Appearance:
Form: Liquid
Color: Colorless
Odor: No information available
Odor threshold: Not determined.
pH-value: 5.0-7.0
Change in condition
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.
Flash point: Not applicable.
Flammability (solid, gaseous): Not applicable.
Ignition temperature:
Decomposition temperature: Not determined.
Auto igniting: Product is not selfigniting.
Danger of explosion: Product does not present an explosion hazard.

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Table with 2 columns: Property and Value. Rows include Explosion limits, Vapor pressure, Density, Solubility in Water, Partition coefficient, Viscosity, Solvent content, and Other information.

10 Stability and reactivity

- Reactivity Strong oxidizing agents and acids.
Possibility of hazardous reactions Strong oxidizing agents and acids.
Conditions to avoid Strong oxidizing agents and acids.
Incompatible materials: Strong oxidizing agents and acids.

11 Toxicological information

- Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the eye: Irritating to eyes.
Additional toxicological information:
Carcinogenic categories
IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

(Contd. on page 6)



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· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- Toxicity
· Aquatic toxicity: No further relevant information available.
· Persistence and degradability No further relevant information available.
· Behavior in environmental systems:
· Bioaccumulative potential No further relevant information available.
· Mobility in soil No further relevant information 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: Dispose of contents in accordance with local/regional/national, and international recommendations.
· Uncleaned packagings:
· Recommendation: Dispose of container in accordance with local/regional/national and international recommendations.

14 Transport information

- UN-Number Not dangerous goods. not regulated
· DOT, ADN, IMDG, IATA
· UN proper shipping name Not dangerous goods. not regulated
· DOT, ADN, IMDG, IATA
· Transport hazard class(es) Not dangerous goods.
· DOT, ADN, IMDG, IATA
· Class not regulated
· Packing group Not dangerous goods.

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Table with 2 columns: Hazard/Regulation and Status. Rows include DOT, IMDG, IATA; Environmental hazards; Special precautions for user; Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code; UN "Model Regulation".

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 is listed.

Section 313 (Specific toxic chemical listings):
None of the ingredients is listed.

TSCA (Toxic Substances Control Act):
None of the ingredients is listed.

Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.

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

Chemicals known to cause reproductive toxicity for males:
None of the ingredients is listed.

Chemicals known to cause developmental toxicity:
None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)
None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)
None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

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

Hazard pictograms GHS07

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- **Signal word** Warning
- **Hazard statements**
Harmful if swallowed.
Causes skin and eye irritation.
- **Precautionary statements**
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves.
If swallowed: Call a poison center/doctor if you feel unwell.
If on skin: Wash with plenty of water.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Specific treatment (see on this label).
Rinse mouth.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **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:**
Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
- **Contact:** sds@zymoresearch.com
- **Date of preparation / last revision** 04/23/2018 / -
- **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
TLV: Threshold Limit Value

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PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B

US



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 03/24/2017

1 Identification

- **Product identifier**
- **Trade name:** Viral RNA Buffer
- **Article number:** R1034-1-50 & R1034-1-100
- **Application of the substance / the mixture** Laboratory Reagent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Skin Corr. 1C H314 Causes severe skin burns and eye damage.
 Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
 Acute Tox. 4 H312 Harmful in contact with skin.
 Acute Tox. 4 H332 Harmful if inhaled.

.....

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

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS05, GHS07
- **Signal word** Danger
- **Hazard-determining components of labeling:**
guanidinium thiocyanate
- **Hazard statements**
Harmful if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
Harmful to aquatic life with long lasting effects.

(Contd. on page 2)



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Trade name: Viral RNA Buffer

(Contd. of page 1)

Precautionary statements

- Do not breathe dusts or mists.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
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.
Specific treatment (see on this label).
Take off contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Classification system:

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)



Other hazards

Results of PBT and vPvB assessment

- PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

Table with 2 columns: CAS number and percentage. Rows include CAS: 593-84-0 (guanidinium thiocyanate, 70%) and CAS: 7681-82-5 (sodium iodide, 60%).



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Trade name: Viral RNA Buffer

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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.
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration if trained to do so. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Rinse mouth
DO NOT induce vomiting.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** 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.
Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
Products of thermal decomposition of this material would include hydrogen cyanide, ammonia, and oxides of carbon, nitrogen and sulfur.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus for fighting fires involving this material

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear self-contained breathing apparatus for responding to non-incident release of this material in which there is the potential for inhalation of vapors, mists or sprays
Wear protective equipment. Keep unprotected persons away.
- **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 item 13.

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Trade name: Viral RNA Buffer

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- Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Protective Action Criteria for Chemicals

PAC-1:

Table with 3 columns: CAS number, chemical name, and concentration. Rows include guanidinium thiocyanate (0.98 mg/m³) and sodium iodide (13 mg/m³).

PAC-2:

Table with 3 columns: CAS number, chemical name, and concentration. Rows include guanidinium thiocyanate (11 mg/m³) and sodium iodide (140 mg/m³).

PAC-3:

Table with 3 columns: CAS number, chemical name, and concentration. Rows include guanidinium thiocyanate (65 mg/m³) and sodium iodide (860 mg/m³).

7 Handling and storage

- Handling:
Precautions for safe handling
Information about protection against explosions and fires: No special measures required.
Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Do not store together with acids or strong oxidizers.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) Laboratory reagent

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
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.

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Trade name: Viral RNA Buffer

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CAS: 7681-82-5 sodium iodide

TLV Long-term value: 0.01* ppm
*as inhalable fraction and vapor

- Additional information: The lists that were valid during the creation were used as basis.
Exposure controls: The appropriate protective equipment under anticipated circumstances of use include lab-coat, safety glasses with side-shields and gloves.
Personal protective equipment:
General protective and hygienic measures: Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.
Breathing equipment: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

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

Form: Liquid

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Trade name: Viral RNA Buffer

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Table with 2 columns: Property and Value. Rows include Color, Odor, pH-value, Melting point, Boiling point, Flash point, Flammability, Ignition temperature, Decomposition temperature, Auto igniting, Danger of explosion, Explosion limits, Vapor pressure, Density, Solubility in Water, Partition coefficient, Viscosity, Solvent content, and Solids content.

10 Stability and reactivity

- Reactivity No further relevant information available.
Chemical stability This product is normally stable under anticipated circumstances of use and storage.

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Trade name: Viral RNA Buffer

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- Thermal decomposition / conditions to be avoided: Products of thermal decomposition of this material would include hydrogen cyanide, ammonia, and oxides of carbon nitrogen and sulfur.
Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid Avoid exposing product to extreme temperatures or incompatible chemicals
Incompatible materials: Acids and strong oxidizers
Hazardous decomposition products: Product will not undergo self-decomposition, so no such products will be generated.

11 Toxicological information

- Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:

CAS: 593-84-0 guanidinium thiocyanate

Oral LD50 593 mg/kg (rat)

- Primary irritant effect:
on the skin: Caustic effect on skin and mucous membranes.
on the eye: Strong caustic effect.
Sensitization: No sensitizing effects known.
Additional toxicological information: The product shows the following dangers according to internally approved calculation methods for preparations: Harmful Corrosive Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

Toxicity

Aquatic toxicity:

CAS: 593-84-0 guanidinium thiocyanate

EC50 42.4 mg/kg (daphnia)

Persistence and degradability No further relevant information available.

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Trade name: Viral RNA Buffer

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- Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information 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:
Dispose of contents in accordance with local/regional/national, and international recommendations.
Uncleaned packagings:
Recommendation:
Dispose of container in accordance with local/regional/national and international recommendations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
DOT, IMDG, IATA UN1760
UN proper shipping name
DOT Corrosive liquids, n.o.s. (guanidinium thiocyanate)
IMDG, IATA CORROSIVE LIQUID, N.O.S. (guanidinium thiocyanate)
Transport hazard class(es)
DOT
CORROSIVE 8
Class 8 Corrosive substances

(Contd. on page 9)



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Printing date 04/23/2018

Reviewed on 03/24/2017

Trade name: Viral RNA Buffer

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Table with 2 columns: Property and Value. Rows include Label (8), IMDG, IATA (with hazard diamond), Class (8 Corrosive substances), Label (8), Packing group (III), DOT, IMDG, IATA (III), Environmental hazards (Not applicable), Special precautions for user (Warning: Corrosive substances), Danger code (Kemler) (80), EMS Number (F-A,S-B), Stowage Category (A), 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 (DOT, Quantity limitations), IMDG (Limited quantities (LQ), Excepted quantities (EQ)), and UN Model Regulation (UN 1760 CORROSIVE LIQUIDS, N.O.S. (GUANIDINIUM THIOCYANATE), 8, 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 is listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

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Trade name: Viral RNA Buffer

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· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

· **Hazard pictograms** GHS05, GHS07

· **Signal word** Danger

· **Hazard-determining components of labeling:**

guanidinium thiocyanate

· **Hazard statements**

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

Causes severe skin burns and eye damage.

Harmful to aquatic life with long lasting effects.

· **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.

Avoid release to the environment.

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.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

Wash contaminated clothing before reuse.

Store locked up.

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Trade name: Viral RNA Buffer

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

· **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:**

Zymo Research Corp.
Safety Department
17062 Murphy Ave.
Irvine, CA 92614
USA

Phone: 1-949-679-1190 or 1-888-882-9682

· **Contact:** sds@zymoresearch.com

· **Date of preparation / last revision** 04/23/2018 / -

· **Abbreviations and acronyms:**

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

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

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

Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

US



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 04/19/2016

1 Identification

- **Product identifier**
- **Trade name:** Viral Wash Buffer
- **Article number:** R1034-2-6, R1034-2-24, R1034-2-48
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).

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



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



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

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

(Contd. on page 2)



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Trade name: Viral Wash Buffer

(Contd. of page 1)

Dangerous components: Void

4 First-aid measures

- Description of first aid measures
General information: No special measures required.
After inhalation: Supply fresh air; consult doctor in case of complaints.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing: Do not induce vomiting; immediately call for medical help.
Information for doctor:
Most important symptoms and effects, both acute and delayed 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.
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Advice for firefighters
Protective equipment: Wear protective clothing.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Wear protective clothing.
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 8 for information on personal protection equipment.
See Section 13 for disposal information.
Protective Action Criteria for Chemicals

PAC-1:

Table with 3 columns: CAS number, chemical name, and concentration (mg/m3). Rows include CAS: 1185-53-1 for 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride and CAS: 6381-92-6 for Edetate Disodium, Dihydrate.

PAC-2:

Table with 3 columns: CAS number, chemical name, and concentration (mg/m3). Rows include CAS: 1185-53-1 for 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride and CAS: 6381-92-6 for Edetate Disodium, Dihydrate.

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Trade name: Viral Wash Buffer

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Table with 3 columns: Component Name, CAS Number, and Concentration. Rows include PAC-3, 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride, and Edetate Disodium, Dihydrate.

7 Handling and storage

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

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
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:
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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Trade name: Viral Wash Buffer

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Eye protection: Goggles recommended during refilling.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid
Color: Clear
Odor: Odorless
Odor threshold: Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.

Flash point: Not applicable.

Flammability (solid, gaseous): Not applicable.

Ignition temperature:

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

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

Explosion limits:

Lower: Not Applicable
Upper: Not Applicable

Vapor pressure: Not determined.

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

Solubility in / Miscibility with

Water: Fully miscible.

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

Viscosity:

Dynamic: Not determined.
Kinematic: Not determined.

Solvent content:

Organic solvents: 0.0 %
VOC content: 0.0 g/l / 0.00 lb/gl

(Contd. on page 5)



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Trade name: Viral Wash Buffer

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Solids content: 2.0 %
Other information: No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

- Information on toxicological effects
Acute toxicity:
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

NTP (National Toxicology Program)

None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

12 Ecological information

- Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.

(Contd. on page 6)



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Reviewed on 04/19/2016

Trade name: Viral Wash Buffer

(Contd. of page 5)

- Additional ecological information:
General notes: Generally not hazardous for water
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

- Waste treatment methods
Recommendation: Smaller quantities can be disposed of with household waste.
Uncleaned packagings:
Recommendation: Dispose of container in accordance with local/regional/national and international recommendations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

Table with 2 columns: Regulatory information and Status. Rows include UN-Number, DOT, ADN, IMDG, IATA; UN proper shipping name; Transport hazard class(es); Packing group; Environmental hazards; Special precautions for user; Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code; UN Model Regulation.

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 is listed.

(Contd. on page 7)



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Printing date 04/23/2018

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Trade name: Viral Wash Buffer

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Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

TSCA (Toxic Substances Control Act):

CAS: 1185-53-1 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride

Proposition 65

Chemicals known to cause cancer:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

Carcinogenic categories

EPA (Environmental Protection Agency)

None of the ingredients is listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

GHS label elements Void

Hazard pictograms Void

Signal word Void

Hazard statements Void

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:

Zymo Research Corp.

Safety Department

17062 Murphy Ave.

Irvine, CA 92614

USA

Phone: 1-949-679-1190 or 1-888-882-9682

Contact: sds@zymoresearch.com

Date of preparation / last revision 04/23/2018 / -

Abbreviations and acronyms:

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

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Trade name: Viral Wash Buffer

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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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

US



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 12/16/2016

1 Identification

- **Product identifier**
- **Trade name:** DNase/RNase Free Water
- **Article number:** W1001-1, W1001-4, W1001-6, W1001-10, W1001-30, W1001-100, W1001-200
- **CAS Number:**
7732-18-5
- **EC number:**
231-791-2
- **Application of the substance / the mixture** Laboratory Reagent
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Zymo Research Corp.
17062 Murphy Ave.
Irvine, CA 92614
USA
Phone: 1-949-679-1190 or 1-888-882-9682
sds@zymoresearch.com
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal business hours (8 am to 5 pm Pacific Standard Time): +1 (949) 679 1190

2 Hazard(s) identification

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

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



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



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

(Contd. on page 2)



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Trade name: DNase/RNase Free Water

· **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
7732-18-5 water, distilled, conductivity or of similar purity
- **Identification number(s)**
- **EC number:** 231-791-2

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Do not induce vomiting; immediately call for medical help.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** 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.
Use fire fighting measures that suit the environment.
- **Advice for firefighters**
- **Protective equipment:** Wear protective clothing.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **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 8 for information on personal protection equipment.
See Section 13 for disposal information.

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acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 12/16/2016

Trade name: DNase/RNase Free Water

(Contd. of page 2)

Protective Action Criteria for Chemicals

PAC-1:

Substance is not listed.

PAC-2:

Substance is not listed.

PAC-3:

Substance is not listed.

7 Handling and storage

Handling:

- Precautions for safe handling: No special measures required.
Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities

- Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
Specific end use(s): Laboratory reagent

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

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:

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

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

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

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

(Contd. on page 4)



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acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 12/16/2016

Trade name: DNase/RNase Free Water

(Contd. of page 3)

Eye protection: Goggles recommended during refilling.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Liquid
Color: Clear
Odor: Odorless
Odor threshold: Not determined.

pH-value: 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.

Ignition temperature:

Decomposition temperature: Not determined.

Auto igniting: Not determined.

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

Explosion limits:

Lower: Not Applicable
Upper: Not Applicable

Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

Density at 20 °C (68 °F): 1 g/cm³ (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/water): Not determined.

Viscosity:

Dynamic at 20 °C (68 °F): 0.952 mPas

Kinematic: Not determined.

Water: 100.0 %

VOC content: 0.00 %

0.0 g/l / 0.00 lb/gl

Solids content: 0.0 %

(Contd. on page 5)



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acc. to OSHA HCS

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Trade name: DNase/RNase Free Water

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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:
Primary irritant effect:
on the skin: No irritant effect.
on the eye: No irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
The substance is not subject to classification.

Carcinogenic categories

IARC (International Agency for Research on Cancer)

Substance is not listed.

NTP (National Toxicology Program)

Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

12 Ecological information

- Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Behavior in environmental systems:
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Additional ecological information:
General notes: Generally not hazardous for water

(Contd. on page 6)



Safety Data Sheet acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 12/16/2016

Trade name: DNase/RNase Free Water

(Contd. of page 5)

- 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: Smaller quantities can be disposed of with household waste.
Uncleaned packagings:
Recommendation: Dispose of container in accordance with local/regional/national and international recommendations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

Table with 2 columns: Description and Regulation status. Rows include UN-Number, DOT, ADN, IMDG, IATA; UN proper shipping name; Transport hazard class(es); Packing group; Environmental hazards; Special precautions for user; Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code; UN Model Regulation.

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.

(Contd. on page 7)



Safety Data Sheet
acc. to OSHA HCS

Printing date 04/23/2018

Reviewed on 12/16/2016

Trade name: DNase/RNase Free Water

(Contd. of page 6)

· Section 313 (Specific toxic chemical listings):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

Substance is listed.

· Proposition 65

· Chemicals known to cause cancer:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

· Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

· Chemicals known to cause developmental toxicity:

Substance is not listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

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

Substance is not listed.

· GHS label elements Void

· Hazard pictograms Void

· Signal word Void

· Hazard statements Void

· 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:

Zymo Research Corp.

Safety Department

17062 Murphy Ave.

Irvine, CA 92614

USA

Phone: 1-949-679-1190 or 1-888-882-9682

· Contact: sds@zymoresearch.com

· Date of preparation / last revision 04/23/2018 / -

· Abbreviations and acronyms:

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

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The Beauty of Science is to Make Things Simple

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Safety Data Sheet
acc. to OSHA HCS

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Trade name: DNase/RNase Free Water

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IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
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

US