



Trade name: RseI

**#ER2001**

**#ER2002**

**Supplied with:**

10x Buffer R

10x Buffer Tango™

**MATERIAL SAFETY DATA SHEET**  
*Prepared in accordance with ISO 11014-1 Standard*

Printed: 01/17/2007

Revised: 01/17/2007

**1 Product and company identification**

- **Product details**
- **Trade name:** *RseI*
- **Application of the substance / the preparation:** *Laboratory chemicals*
- **Manufacturer/Supplier:**  
*Fermentas UAB*  
*V.Graiciuno 8*  
*LT-02241 Vilnius*  
*Lithuania*  
*Tel.: +370 5 2602131*  
*Fax.: +370 5 2602142*
- **Further information obtainable from:**  
*Please visit our site: <http://www.fermentas.com/>*  
*Contact us: [info@fermentas.com](mailto:info@fermentas.com)*  
*Or contact Fermentas distributor in your country.*
- **Emergency information:**  
*For Chemical Emergency (Spill, Leak, Fire, Exposure or Accident),*  
*Call CHEMTREC Day or Night*  
*Domestic North America: 1-800-424-9300*  
*International: 1-703-527-3887 (collect calls accepted)*

**2 Composition/Information on ingredients**

- **Chemical characterization**
- **Description:** *Solution, consisting of the following components.*

· **Components:**

|           |          |        |
|-----------|----------|--------|
| 56-81-5   | glycerol | >50%   |
| 7732-18-5 | water    | 25-50% |

- **Other components:**  
*Components not listed here are not hazardous or their concentrations do not exceed the limits specified in the OSHA Hazard Communication Standard 29 CFR 1910.1200.*

**3 Hazards identification**

- **Hazard description:** *Not applicable.*
- **Information pertaining to particular dangers for man and environment:**  
*The product does not have to be labelled due to the calculation procedure of international guidelines.*
- **Classification system:**  
*The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.*

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*Prepared in accordance with ISO 11014-1 Standard*

Printed: 01/17/2007

Revised: 01/17/2007

Trade name: *RseI*

(Contd. of page 1)

· **NFPA ratings (scale 0 - 4)**

Health = 0  
 Fire = 0  
 Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH 0 Health = 0  
 FIRE 0 Fire = 0  
 REACTIVITY 0 Reactivity = 0

## 4 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.
- **After swallowing:** If symptoms persist consult doctor.

## 5 Fire fighting measures

- **Suitable extinguishing agents:**  
 CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:**  
 Dilute with plenty of water.  
 Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
 Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

## 7 Handling and storage

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

USA

(Contd. on page 3)

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 01/17/2007

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Trade name: *RseI*

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## 8 Exposure controls and personal protection

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

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

### 56-81-5 glycerol

|     |  |
|-----|--|
| PEL | 15* 5** mg/m <sup>3</sup><br>*total dust **respirable fraction |
| TLV | 10 ppm   |

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

· **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.

· **Eye protection:** Goggles recommended during refilling.

## 9 Physical and chemical properties

· **General Information**

|               |                 |
|---------------|-----------------|
| <b>Form:</b>  | Solution        |
| <b>Color:</b> | Colorless       |
| <b>Odor:</b>  | Nearly odorless |

· **Change in condition**

**Melting point/Melting range:** Undetermined.

**Boiling point/Boiling range:** Undetermined.

· **Flash point:** Not applicable.

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

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

· **Density at 20°C (68°F):** 1.16 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible.

· **pH-value at 25°C (77°F):** 7.4

USA

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# MATERIAL SAFETY DATA SHEET

*Prepared in accordance with ISO 11014-1 Standard*

Printed: 01/17/2007

Revised: 01/17/2007

Trade name: *RseI*

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## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Dangerous reactions:** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

- **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.

## 12 Ecological information

- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- **Product:**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

USA

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# MATERIAL SAFETY DATA SHEET

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Trade name: *RseI*

(Contd. of page 4)

## 15 Regulations

- **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.

- **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.

- **Carcinogen categories**

- **EPA (Environmental Protection Agency)**

- None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

- None of the ingredients is listed.

- **NTP (National Toxicology Program)**

- 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.

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

- None of the ingredients is listed.

- **Product related hazard information:**

- Observe the general safety regulations when handling chemicals.

- The product is not subject to identification regulations according to directives on hazardous materials.

## 16 Other information

*This information is based on our present knowledge and shall be used only as a guide. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Fermentas is not held liable for any damage resulting from handling or from contact with the above mentioned products.*

*MSDS has been prepared in accordance with ISO 11014-1 Standard and OSHA Hazard Communication Standard 29 CFR 1910.1200.*

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*Prepared in accordance with ISO 11014-1 Standard*

Printed: 01/17/2007

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**1 Product and company identification**

- **Product details**
- **Trade name:** 10x Buffer R
- **Application of the substance / the preparation:** *Laboratory chemicals*
- **Manufacturer/Supplier:**  
*Fermentas UAB  
 V.Graiciuno 8  
 LT-02241 Vilnius  
 Lithuania  
 Tel.: +370 5 2602131  
 Fax.: +370 5 2602142*
- **Further information obtainable from:**  
*Please visit our site: <http://www.fermentas.com/>  
 Contact us: [info@fermentas.com](mailto:info@fermentas.com)  
 Or contact Fermentas distributor in your country.*
- **Emergency information:**  
*For Chemical Emergency (Spill, Leak, Fire, Exposure or Accident),  
 Call CHEMTREC Day or Night  
 Domestic North America: 1-800-424-9300  
 International: 1-703-527-3887 (collect calls accepted)*

**2 Composition/Information on ingredients**

- **Chemical characterization**
- **Description:** *Solution, consisting of the following components.*

· **Components:**

|           |  |         |
|-----------|--|---------|
| 7732-18-5 | water  | >50%    |
| 7447-40-7 | potassium chloride                                     | 2.5-10% |
| 1185-53-1 | 2-amino-2-(hydroxymethyl)propane-1,3-diolhydrochloride | 1-2.5%  |

· **Other components:**

*Components not listed here are not hazardous or their concentrations do not exceed the limits specified in the OSHA Hazard Communication Standard 29 CFR 1910.1200.*

**3 Hazards identification**

- **Hazard description:** *Not applicable.*
- **Information pertaining to particular dangers for man and environment:**  
*The product does not have to be labelled due to the calculation procedure of international guidelines.*
- **Classification system:**  
*The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.*

(Contd. on page 2)

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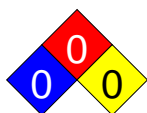
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Trade name: 10x Buffer R

(Contd. of page 1)

· **NFPA ratings (scale 0 - 4)**

Health = 0  
Fire = 0  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 0  
Fire = 0  
Reactivity = 0

## 4 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.
- **After swallowing:** If symptoms persist consult doctor.

## 5 Fire fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

## 7 Handling and storage

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

USA

(Contd. on page 3)

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Trade name: 10x Buffer R

(Contd. of page 2)

## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
- **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.
- **Eye protection:** Goggles recommended during refilling.

## 9 Physical and chemical properties

### · General Information

|               |           |
|---------------|-----------|
| <b>Form:</b>  | Solution  |
| <b>Color:</b> | Colorless |
| <b>Odor:</b>  | Odorless  |

### · Change in condition

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

· **Flash point:** Not applicable.

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

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

· **Density at 20°C (68°F):** 1.06 g/cm<sup>3</sup>

### · Solubility in / Miscibility with

**Water:** Fully miscible.

· **pH-value at 37°C (99°F):** 8.5

USA

(Contd. on page 4)

# MATERIAL SAFETY DATA SHEET

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Printed: 01/17/2007

Revised: 01/17/2007

Trade name: 10x Buffer R

(Contd. of page 3)

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Dangerous reactions:** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

- **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.

## 12 Ecological information

- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- **Product:**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

USA

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Trade name: 10x Buffer R

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## 15 Regulations

- **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.

- **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.

- **Carcinogenity categories**

- **EPA (Environmental Protection Agency)**

- None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

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- **NTP (National Toxicology Program)**

- None of the ingredients is listed.

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- **Product related hazard information:**

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## 16 Other information

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**1 Product and company identification**

- **Product details**
- **Trade name:** 10x Buffer Tango™
- **Application of the substance / the preparation:** Laboratory chemicals
- **Manufacturer/Supplier:**  
Fermentas UAB  
V.Graiciuno 8  
LT-02241 Vilnius  
Lithuania  
Tel.: +370 5 2602131  
Fax.: +370 5 2602142
- **Further information obtainable from:**  
Please visit our site: <http://www.fermentas.com/>  
Contact us: [info@fermentas.com](mailto:info@fermentas.com)  
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**2 Composition/Information on ingredients**

- **Chemical characterization**
- **Description:** Solution, consisting of the following components.

· **Components:**

|           |   |         |
|-----------|---|---------|
| 7732-18-5 | water   | >50%    |
| 127-08-2  | potassium acetate                                       | 2.5-10% |
| 6850-28-8 | [2-hydroxy-1,1-bis(hydroxymethyl)ethyl]ammonium acetate | 2.5-10% |
| 142-72-3  | magnesium di(acetate)                                   | 1-2.5%  |

- **Other components:**  
Components not listed here are not hazardous or their concentrations do not exceed the limits specified in the OSHA Hazard Communication Standard 29 CFR 1910.1200.

**3 Hazards identification**

- **Hazard description:** Not applicable.
- **Information pertaining to particular dangers for man and environment:**  
The product does not have to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**  
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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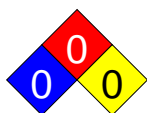
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· **NFPA ratings (scale 0 - 4)**

Health = 0  
Fire = 0  
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

HEALTH 0 Health = 0  
FIRE 0 Fire = 0  
REACTIVITY 0 Reactivity = 0

## 4 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.
- **After swallowing:** If symptoms persist consult doctor.

## 5 Fire fighting measures

- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

## 6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

## 7 Handling and storage

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

USA

(Contd. on page 3)

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## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **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.
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- **Breathing equipment:** Not required.
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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
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- **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:** Goggles recommended during refilling.

## 9 Physical and chemical properties

### · General Information

|               |           |
|---------------|-----------|
| <b>Form:</b>  | Solution  |
| <b>Color:</b> | Colorless |
| <b>Odor:</b>  | Odorless  |

### · Change in condition

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

· **Flash point:** Not applicable.

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

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

· **Density at 20°C (68°F):** 1.05 g/cm<sup>3</sup>

· **Solubility in / Miscibility with Water:** Fully miscible.

· **pH-value at 37°C (99°F):** 7.9

USA

(Contd. on page 4)

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## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **Dangerous reactions:** No dangerous reactions known.
- **Dangerous products of decomposition:** No dangerous decomposition products known.

## 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
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## 12 Ecological information

- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water.  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## 13 Disposal considerations

- **Product:**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border):**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

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Trade name: 10x Buffer Tango™

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## 15 Regulations

- **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.

- **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.

- **Carcinogenity categories**

- **EPA (Environmental Protection Agency)**

- None of the ingredients is listed.

- **IARC (International Agency for Research on Cancer)**

- None of the ingredients is listed.

- **NTP (National Toxicology Program)**

- 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.

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

- None of the ingredients is listed.

- **Product related hazard information:**

- Observe the general safety regulations when handling chemicals.

- The product is not subject to identification regulations according to directives on hazardous materials.

## 16 Other information

*This information is based on our present knowledge and shall be used only as a guide. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Fermentas is not held liable for any damage resulting from handling or from contact with the above mentioned products.*

*MSDS has been prepared in accordance with ISO 11014-1 Standard and OSHA Hazard Communication Standard 29 CFR 1910.1200.*