



Trade name:

MassRuler™ Express DNA Ladder, HR Forward, ready-to-use

#SM1243

**Supplied with:** 6x MassRuler™ Loading Dye Solution

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

Printed: 12/08/2006

Revised: 12/08/2006

**1 Product and company identification**

· **Product details**

- **Trade name:** *MassRuler™ Express DNA Ladder, HR Forward, ready-to-use*
- **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%
56-81-5	glycerol	10-25%

· **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)

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/08/2006

**Trade name: MassRuler™ Express DNA Ladder, HR Forward, ready-to-use**

(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: 12/08/2006

Revised: 12/08/2006

**Trade name: MassRuler™ Express DNA Ladder, HR Forward, ready-to-use**

(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:**

### 56-81-5 glycerol

PEL	15* 5** mg/m <sup>3</sup> *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>	Blue
<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):** 1.03 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible.

(Contd. on page 4)

USA

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/08/2006

Trade name: MassRuler™ Express DNA Ladder, HR Forward, ready-to-use

(Contd. of page 3)

· **pH-value at 20°C (68°F):** 7.6

## 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

(Contd. on page 5)

USA

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/08/2006

**Trade name: MassRuler™ Express DNA Ladder, HR Forward, ready-to-use**

(Contd. of page 4)

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

## 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.

- **Carcinogenicity 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.

USA

(Contd. on page 6)

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

Printed: 12/08/2006

Revised: 12/08/2006

**Trade name: MassRuler™ Express DNA Ladder, HR Forward, ready-to-use**

(Contd. of page 5)

**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.*

USA

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

Printed: 12/08/2006

Revised: 12/06/2006

**1 Product and company identification**

- **Product details**
- **Trade name:** 6x MassRuler™ Loading Dye Solution
- **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%
139-33-3	disodium dihydrogenethylenediaminetetraacetate	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)

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/06/2006

Trade name: 6x MassRuler™ Loading Dye Solution

(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: 12/08/2006

Revised: 12/06/2006

Trade name: 6x MassRuler™ Loading Dye Solution

(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:**

### 56-81-5 glycerol

PEL	15* 5** mg/m <sup>3</sup> *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>	Blue
<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):** 1.18 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

**Water:** Fully miscible.

(Contd. on page 4)

USA

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/06/2006

Trade name: 6x MassRuler™ Loading Dye Solution

(Contd. of page 3)

· **pH-value at 20°C (68°F):** 7.6

## 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

(Contd. on page 5)

# MATERIAL SAFETY DATA SHEET

Prepared in accordance with ISO 11014-1 Standard

Printed: 12/08/2006

Revised: 12/06/2006

**Trade name: 6x MassRuler™ Loading Dye Solution**

(Contd. of page 4)

- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

## 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.

- **Carcinogenicity 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.

USA

(Contd. on page 6)

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

Printed: 12/08/2006

Revised: 12/06/2006

**Trade name: 6x MassRuler™ Loading Dye Solution**

(Contd. of page 5)

**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.*

USA