SAFETY DATA SHEET

DNA Ladder, 1 kb Plus

Section 1. Identification

GHS product identifier: DNA Ladder, 1 kb Plus
Code: 76714
Other means of identification: Not available.
Supplier/Manufacturer: 3420 Central Expressway, Santa Clara CA 95051
In case of emergency:
Chemtrec: 1 800 424 9300
Outside USA & Canada: +1 703 527 3887

Section 2. Hazards identification

OSHA/HCS status: DNA Ladder, 1 kb Plus
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

6X DNA Loading Buffer
While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture:
DNA Ladder, 1 kb Plus
Not classified.
6X DNA Loading Buffer
Not classified.

Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 78%

GHS label elements
Signal word:
DNA Ladder, 1 kb Plus
No signal word.
6X DNA Loading Buffer
No signal word.

Hazard statements:
DNA Ladder, 1 kb Plus
No known significant effects or critical hazards.
6X DNA Loading Buffer
No known significant effects or critical hazards.

Precautionary statements
General:
DNA Ladder, 1 kb Plus
Not applicable.
6X DNA Loading Buffer
Not applicable.

Prevention:
DNA Ladder, 1 kb Plus
Not applicable.
6X DNA Loading Buffer
Not applicable.

Response:
DNA Ladder, 1 kb Plus
Not applicable.
6X DNA Loading Buffer
Not applicable.

Storage:
DNA Ladder, 1 kb Plus
Not applicable.
6X DNA Loading Buffer
Not applicable.

Disposal:
DNA Ladder, 1 kb Plus
Not applicable.
6X DNA Loading Buffer
Not applicable.

Supplemental label elements:
DNA Ladder, 1 kb Plus
None known.
6X DNA Loading Buffer
None known.

Hazard not otherwise classified:
DNA Ladder, 1 kb Plus
None known.
6X DNA Loading Buffer
None known.
Section 3. Composition/information on ingredients

**Substance/mixture**: Mixture

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

**Description of necessary first aid measures**

**Eye contact**: DNA Ladder, 1 kb Plus

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

6X DNA Loading Buffer

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation**: DNA Ladder, 1 kb Plus

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

6X DNA Loading Buffer

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact**: DNA Ladder, 1 kb Plus

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

6X DNA Loading Buffer

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion**: DNA Ladder, 1 kb Plus

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

6X DNA Loading Buffer

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

**Most important symptoms/effects, acute and delayed**

**Potential acute health effects**

**Eye contact**: DNA Ladder, 1 kb Plus

No known significant effects or critical hazards.

6X DNA Loading Buffer

No known significant effects or critical hazards.

**Inhalation**: DNA Ladder, 1 kb Plus

No known significant effects or critical hazards.

6X DNA Loading Buffer

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Section 4. First aid measures

| Skin contact   | DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | No known significant effects or critical hazards. |
| Ingestion      | DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| Eye contact   | DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | No specific data. |
| Ingestion      | DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | No specific data. |
| Skin contact   | DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | No specific data. |

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments: No specific treatment.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

| DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | Use an extinguishing agent suitable for the surrounding fire. |

Unsuitable extinguishing media

| DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | None known. |

Specific hazards arising from the chemical

| DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | In a fire or if heated, a pressure increase will occur and the container may burst. |

Hazardous thermal decomposition products

| DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, sulfur oxides, halogenated compounds, metal oxide/oxides |

Special protective actions for fire-fighters

| DNA Ladder, 1 kb Plus | 6X DNA Loading Buffer | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
### Section 5. Fire-fighting measures

**Special protective equipment for fire-fighters:**
- DNA Ladder, 1 kb Plus

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**6X DNA Loading Buffer**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel:**
- No action shall be taken involving any personal risk or without suitable training.
- Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

**For emergency responders:**
- If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions:**
- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and materials for containment and cleaning up**

**Small spill:**
- Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill:**
- Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

### Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures:**
- DNA Ladder, 1 kb Plus
  - Put on appropriate personal protective equipment (see Section 8).
- 6X DNA Loading Buffer
  - Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene:**
- DNA Ladder, 1 kb Plus
  - Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- 6X DNA Loading Buffer
  - Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
## Section 7. Handling and storage

| Conditions for safe storage, including any incompatibilities | DNA Ladder, 1 kb Plus | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. |
| 6X DNA Loading Buffer | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. |

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

None.

### Appropriate engineering controls

#### Environmental exposure controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

#### Skin protection

##### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

##### Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Section 8. Exposure controls/personal protection

Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>DNA Ladder, 1 kb Plus</th>
<th>6X DNA Loading Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
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<td>Liquid.</td>
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<td>Relative density</td>
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<tr>
<td>Vapor pressure</td>
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<tr>
<td>Vapor density</td>
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<tr>
<td>properties comments</td>
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</table>
Section 10. Stability and reactivity

**Reactivity**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  The product is stable.

**Possibility of hazardous reactions**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  No specific data.

**Incompatible materials**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  No specific data.

**Hazardous decomposition products**

: DNA Ladder, 1 kb Plus
  6X DNA Loading Buffer
  Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**

Not available.

**Irritation/Corrosion**

Not available.

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Not available.

**Aspiration hazard**

Not available.
DNA Ladder, 1 kb Plus

Section 11. Toxicological information

Not available.

Information on the likely routes of exposure

Potential acute health effects

Eye contact : Not available.
Inhalation : Not available.
Skin contact : Not available.
Ingestion : Not available.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Not available.
Inhalation : Not available.
Skin contact : Not available.
Ingestion : Not available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Not available.
Carcinogenicity : Not available.
Mutagenicity : Not available.
Teratogenicity : Not available.
Developmental effects : Not available.
Fertility effects : Not available.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Interactive effects : Not available.

Other information : Not available.
**Section 12. Ecological information**

**Toxicity**
Not available.

**Persistence and degradability**
Not available.

**Bioaccumulative potential**
Not available.

**Mobility in soil**

<table>
<thead>
<tr>
<th>Soil/water partition coefficient (K&lt;sub&gt;OC&lt;/sub&gt;)</th>
<th>DNA Ladder, 1 kb Plus</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mobility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other adverse effects**
No known significant effects or critical hazards.

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**Section 13. Disposal considerations**

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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**Section 14. Transport information**

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
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</thead>
<tbody>
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<tr>
<td>Transport hazard class(es)</td>
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<td>Packing group</td>
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<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 14. Transport information

**Special precautions for user:** Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not available.

Section 15. Regulatory information

**U.S. Federal regulations:**
- TSCA 8(a) CDR Exempt/Partial exemption: Not determined
- United States inventory (TSCA 8b): Not determined

- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed
- Clean Air Act Section 602 Class I Substances: Not listed
- Clean Air Act Section 602 Class II Substances: Not listed
- DEA List I Chemicals (Precursor Chemicals): Not listed
- DEA List II Chemicals (Essential Chemicals): Not listed

**SARA 302/304**
- Composition/information on ingredients: No products were found.
- SARA 304 RQ: Not applicable.
- SARA 311/312 Classification: Not applicable.

**State regulations**
- Massachusetts: None of the components are listed.
- New York: None of the components are listed.
- New Jersey: None of the components are listed.
- Pennsylvania: None of the components are listed.

**International regulations**
Section 15. Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Canada

WHMIS (Canada) : DNA Ladder, 1 kb Plus Not controlled under WHMIS (Canada).
6X DNA Loading Buffer Not controlled under WHMIS (Canada).

Canadian lists

Canadian NPRI : None of the components are listed.
CEPA Toxic substances : None of the components are listed.
Canada inventory : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

- Flammability: 0
- Health: 0
- Instability/Reactivity: 0
- Special: 0

History

Date of issue/Date of revision : 06/20/2016.
Date of previous issue : No previous validation.
Version : 1

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

 Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.