Section 1. Identification

1.1 Product identifier

**Product name**: Markers and Ladders - Group A


**Validation date**: 10/9/2018

1.2 Relevant identified uses of the substance or mixture and uses advised against

**Material uses**: Analytical reagent.

- DNF-362-0003 Small Fragment Diluent Marker, 2.4mL
- DNF-363-U100 Small Fragment DNA Ladder, 100uL
- DNF-371-0003 HS Small Fragment Diluent Marker, 2.4mL
- DNF-372-U100 HS Small Fragment DNA Ladder, 100uL
- DNF-373-0003 HS NGS Diluent Marker (1-6000bp), 2.4mL
- DNF-373-0001X HS NGS Diluent Marker (1-6000bp), 1.2mL
- DNF-374-0003 NGS Diluent Marker (1-6000bp), 2.4mL
- DNF-375-0003 HS Genomic DNA Diluent Marker, 2.4mL
- DNF-375-0120 HS Genomic DNA Diluent Marker, 120mL
- DNF-375-0001X HS Genomic DNA Diluent Marker, 1.2mL
- DNF-376-0003 Genomic DNA Diluent Marker, 2.4mL
- DNF-377-U100 HS Genomic DNA Ladder, 100uL
- DNF-378-U100 Large Fragment DNA Ladder, 100uL
- DNF-379-U100 HS Large Fragment DNA Ladder, 100uL
- DNF-393-U100 Genomic DNA Ladder, 100uL
- DNF-394-0003 HS NGS Diluent Marker (35-6000bp), 2.4mL
- DNF-396-U100 HS NGS DNA Ladder, 100uL
- DNF-398-0003 NGS Diluent Marker, 2.4mL
- DNF-399-U100 NGS DNA Ladder, 100uL

1.3 Details of the supplier of the safety data sheet

**Supplier/Manufacturer**: Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

1.4 Emergency telephone number

**In case of emergency**: CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

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

**Classification of the substance or mixture**: Not classified.

2.2 GHS label elements
Section 2. Hazards identification

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

Precautionary statements
Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

2.3 Other hazards
Hazards not otherwise classified : 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

4.1 Description of necessary first aid measures
Eye contact : 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 : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

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

Ingestion : 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects
Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms
Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

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

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Date of issue : 10/09/2018
Section 4. First aid measures

**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

5.1 Extinguishing media

- **Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.
- **Unsuitable extinguishing media**: None known.

5.2 Special hazards arising from the substance or mixture

- **Specific hazards arising from the chemical**: In a fire or if heated, a pressure increase will occur and the container may burst.
- **Hazardous thermal decomposition products**: No specific data.

5.3 Advice for firefighters

- **Special protective actions for firefighters**: 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.
- **Special protective equipment for fire-fighters**: 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

6.1 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 specialized 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".

6.2 Environmental precautions

- **Methods and materials for containment and cleaning up**
  - **Methods for cleaning up**: 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.
Section 7. Handling and storage

7.1 Precautions for safe handling

**Protective measures**
- Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**
- 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.

7.2 Conditions for safe storage, including any incompatibilities
- 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. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

**Recommendations**
- Industrial applications, Professional applications.

**Industrial sector specific solutions**
- Not applicable.

Section 8. Exposure controls/personal protection

8.1 Control parameters

**Occupational exposure limits**

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>None.</td>
<td>None.</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

**Appropriate engineering controls**
- Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**Environmental exposure controls**
- Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**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.
**Section 8. Exposure controls/personal protection**

- **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.

- **Respiratory protection**: Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

**Section 9. Physical and chemical properties**

1. **Information on basic physical and chemical properties**

   **Appearance**
   - Physical state: Liquid.
   - Color: Not available.
   - Odor: Not available.
   - Odor threshold: Not available.
   - pH: 8
   - Melting point: 0°C (32°F)
   - Boiling point: 100°C (212°F)
   - Flash point: Not available.
   - Evaporation rate: Not available.
   - Flammability (solid, gas): Not applicable.
   - Lower and upper explosive (flammable) limits: Not available.
   - Vapor pressure: Not available.
   - Vapor density: Not available.
   - Relative density: Not available.
   - Solubility: Easily soluble in the following materials: cold water and hot water.
   - Partition coefficient: n-octanol/water: Not available.
   - Auto-ignition temperature: Not available.
   - Decomposition temperature: Not available.
   - Viscosity: Not available.

**Section 10. Stability and reactivity**

1. **Reactivity**: No specific test data related to reactivity available for this product or its ingredients.

2. **Chemical stability**: The product is stable.

3. **Possibility of hazardous reactions**: Under normal conditions of storage and use, hazardous reactions will not occur.

4. **Conditions to avoid**: No specific data.

5. **Incompatible materials**: May react or be incompatible with oxidizing materials.

**Date of issue**: 10/09/2018
Section 10. Stability and reactivity

10.6 Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not available.

Irritation/Corrosion
Not available.

Sensitization
Not available.

Mutagenicity
Conclusion/Summary: Not available.

Carcinogenicity
Conclusion/Summary: Not available.

Reproductive toxicity
Conclusion/Summary: Not available.

Teratogenicity
Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure: Not available.

Potential acute health effects

Eye contact: No known significant effects or critical hazards.
Inhalation: No known significant effects or critical hazards.
Skin contact: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: No specific data.
Inhalation: No specific data.
Skin contact: No specific data.
Ingestion: No specific data.

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

Short term exposure
Potential immediate effects: Not available.

Date of issue: 10/09/2018
**Section 11. Toxicological information**

- **Potential delayed effects**: Not available.
- **Long term exposure**
  - **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.
- **Potential chronic health effects**
  - **General**: No known significant effects or critical hazards.
  - **Carcinogenicity**: No known significant effects or critical hazards.
  - **Mutagenicity**: No known significant effects or critical hazards.
  - **Teratogenicity**: No known significant effects or critical hazards.
  - **Developmental effects**: No known significant effects or critical hazards.
  - **Fertility effects**: No known significant effects or critical hazards.

**Numerical measures of toxicity**

- **Acute toxicity estimates**: Not available.

**Section 12. Ecological information**

- **12.1 Toxicity**: Not available.
- **12.2 Persistence and degradability**: Not available.
- **12.3 Bioaccumulative potential**: Not available.
- **12.4 Mobility in soil**
  - **Soil/water partition coefficient (K_{OC})**: Not available.
- **12.5 Other adverse effects**: No known significant effects or critical hazards.

**Section 13. Disposal considerations**

- **13.1 Waste treatment methods**
  - **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.
Section 13. Disposal considerations

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT / TDG / Mexico / IMDG / IATA</th>
<th>Not regulated.</th>
</tr>
</thead>
</table>

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 and the IBC Code: Not available.

Section 15. Regulatory information

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

- **U.S. Federal regulations**
  - TSCA 8(a) CDR Exempt/Partial exemption: Not determined
  - Clean Water Act (CWA) 311: Edetic acid

- **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.
  - Composition/information on ingredients: No products were found.

Date of issue: 10/09/2018
Section 15. Regulatory information

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

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

Australia: All components are listed or exempted.
Canada: All components are listed or exempted.
China: All components are listed or exempted.
Europe: All components are listed or exempted.
Japan: Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): Not determined.
Malaysia: Not determined.
New Zealand: All components are listed or exempted.
Philippines: All components are listed or exempted.
Republic of Korea: All components are listed or exempted.
Taiwan: All components are listed or exempted.
Thailand: Not determined.
Turkey: All components are listed or exempted.
United States: All components are listed or exempted.
Viet Nam: Not determined.

Section 16. Other information

History

Date of issue: 10/09/2018
Date of previous issue: No previous validation
Version: 1

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not classified.</td>
<td></td>
</tr>
</tbody>
</table>

Indicates information that has changed from previously issued version.
Section 16. Other information

Notice to reader

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.