SAFETY DATA SHEET
Agilent DNA 12000 Reagents, Part Number 5067-1509

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier
Product name: Agilent DNA 12000 Reagents, Part Number 5067-1509
Part No. (Kit): 5067-1509
Part No.: Reagents DNA 12000 G2938-80022
DNA 12000 Gel Matrix: Not available.
DNA Dye Concentrate: Not available.
DNA 12000 Marker: Not available.
DNA 12000 Ladder: Not available.

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

<table>
<thead>
<tr>
<th>Identified uses</th>
<th>Part No. (Kit)</th>
</tr>
</thead>
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<tr>
<td>Analytical chemistry.</td>
<td>5067-1509</td>
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<tr>
<td>Research and Development.</td>
<td></td>
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<tr>
<td>DNA 12000 Gel Matrix</td>
<td>3 x 0.5 ml</td>
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<tr>
<td>DNA Dye Concentrate</td>
<td>1 x 0.09 ml</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>2 x 1.2 ml</td>
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<tr>
<td>DNA 12000 Ladder</td>
<td>1 x 0.035 ml</td>
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</table>

1.3 Details of the supplier of the safety data sheet
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000
e-mail address of person responsible for this SDS: pdl-msds_author@agilent.com

1.4 Emergency telephone number
Emergency telephone number (with hours of operation): CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Product definition:
DNA 12000 Gel Matrix: Mixture
DNA Dye Concentrate: Mixture
DNA 12000 Marker: Mixture
DNA 12000 Ladder: Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Not classified.

Ingredients of unknown toxicity:
DNA 12000 Gel Matrix: Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%
DNA 12000 Marker: Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%

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SECTION 2: Hazards identification

Ingredients of unknown ecotoxicity:
- DNA 12000 Gel Matrix
- DNA 12000 Marker

See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Signal word: DNA 12000 Gel Matrix - No signal word.
- DNA Dye Concentrate - No signal word.
- DNA 12000 Marker - No signal word.
- DNA 12000 Ladder - No signal word.

Hazard statements:
- DNA 12000 Gel Matrix - No known significant effects or critical hazards.
- DNA Dye Concentrate - No known significant effects or critical hazards.
- DNA 12000 Marker - No known significant effects or critical hazards.
- DNA 12000 Ladder - No known significant effects or critical hazards.

Precautionary statements

Prevention:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

Response:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

Storage:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

Disposal:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

Supplemental label elements:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market, and use of certain dangerous substances, mixtures and articles

Special packaging requirements:

Tactile warning of danger:
- DNA 12000 Gel Matrix - Not applicable.
- DNA Dye Concentrate - Not applicable.
- DNA 12000 Marker - Not applicable.
- DNA 12000 Ladder - Not applicable.

2.3 Other hazards

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SECTION 2: Hazards identification

Other hazards which do not result in classification:

- DNA 12000 Gel Matrix: None known.
- DNA Dye Concentrate: None known.
- DNA 12000 Marker: None known.
- DNA 12000 Ladder: None known.

SECTION 3: Composition/information on ingredients

3.1 Substances:

| DNA 12000 Gel Matrix | Mixture |
| DNA Dye Concentrate  | Mixture |
| DNA 12000 Marker     | Mixture |
| DNA 12000 Ladder     | Mixture |

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type:

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [5] Substance of equivalent concern
- [6] Additional disclosure due to company policy

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact:

DNA 12000 Gel Matrix: 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.

DNA Dye Concentrate: 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.

DNA 12000 Marker: 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.

DNA 12000 Ladder: 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 12000 Gel Matrix: 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.

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

DNA 12000 Marker: 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.

DNA 12000 Ladder: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.
SECTION 4: First aid measures

Skin contact:
- **DNA 12000 Gel Matrix**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **DNA Dye Concentrate**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **DNA 12000 Marker**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **DNA 12000 Ladder**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Ingestion:
- **DNA 12000 Gel Matrix**: 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.
- **DNA Dye Concentrate**: 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.
- **DNA 12000 Marker**: 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.
- **DNA 12000 Ladder**: 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.

Protection of first-aiders:
- **DNA 12000 Gel Matrix**: No action shall be taken involving any personal risk or without suitable training.
- **DNA Dye Concentrate**: No action shall be taken involving any personal risk or without suitable training.
- **DNA 12000 Marker**: No action shall be taken involving any personal risk or without suitable training.
- **DNA 12000 Ladder**: No action shall be taken involving any personal risk or without suitable training.

4.2 Most important symptoms and effects, both acute and delayed

**Potential acute health effects**

- **Eye contact**:
  - **DNA 12000 Gel Matrix**: No known significant effects or critical hazards.
  - **DNA Dye Concentrate**: No known significant effects or critical hazards.
  - **DNA 12000 Marker**: No known significant effects or critical hazards.
  - **DNA 12000 Ladder**: No known significant effects or critical hazards.

- **Inhalation**:
  - **DNA 12000 Gel Matrix**: No known significant effects or critical hazards.
  - **DNA Dye Concentrate**: No known significant effects or critical hazards.
  - **DNA 12000 Marker**: No known significant effects or critical hazards.
  - **DNA 12000 Ladder**: No known significant effects or critical hazards.

- **Skin contact**:
  - **DNA 12000 Gel Matrix**: No known significant effects or critical hazards.
  - **DNA Dye Concentrate**: No known significant effects or critical hazards.
  - **DNA 12000 Marker**: No known significant effects or critical hazards.
  - **DNA 12000 Ladder**: No known significant effects or critical hazards.
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SECTION 4: First aid measures

Ingestion:
- DNA 12000 Gel Matrix: No known significant effects or critical hazards.
- DNA Dye Concentrate: No known significant effects or critical hazards.
- DNA 12000 Marker: No known significant effects or critical hazards.
- DNA 12000 Ladder: No known significant effects or critical hazards.

Over-exposure signs/symptoms:

Eye contact:
- DNA 12000 Gel Matrix: No specific data.
- DNA Dye Concentrate: No specific data.
- DNA 12000 Marker: No specific data.
- DNA 12000 Ladder: No specific data.

Inhalation:
- DNA 12000 Gel Matrix: No specific data.
- DNA Dye Concentrate: No specific data.
- DNA 12000 Marker: No specific data.
- DNA 12000 Ladder: No specific data.

Skin contact:
- DNA 12000 Gel Matrix: No specific data.
- DNA Dye Concentrate: No specific data.
- DNA 12000 Marker: No specific data.
- DNA 12000 Ladder: No specific data.

Ingestion:
- DNA 12000 Gel Matrix: No specific data.
- DNA Dye Concentrate: No specific data.
- DNA 12000 Marker: No specific data.
- DNA 12000 Ladder: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician:
- DNA 12000 Gel Matrix: 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.
- DNA Dye Concentrate: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- DNA 12000 Marker: 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.
- DNA 12000 Ladder: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments:
- DNA 12000 Gel Matrix: No specific treatment.
- DNA 12000 Marker: No specific treatment.
- DNA 12000 Ladder: No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media:
- DNA 12000 Gel Matrix: Use an extinguishing agent suitable for the surrounding fire.
- DNA Dye Concentrate: Use an extinguishing agent suitable for the surrounding fire.
- DNA 12000 Marker: Use an extinguishing agent suitable for the surrounding fire.
- DNA 12000 Ladder: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media:
- DNA 12000 Gel Matrix: None known.
- DNA Dye Concentrate: None known.
- DNA 12000 Marker: None known.
- DNA 12000 Ladder: None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture:
- DNA 12000 Gel Matrix: In a fire or if heated, a pressure increase will occur and the container may burst.
- DNA Dye Concentrate: In a fire or if heated, a pressure increase will occur and the container may burst.
- DNA 12000 Marker: In a fire or if heated, a pressure increase will occur and the container may burst.
- DNA 12000 Ladder: In a fire or if heated, a pressure increase will occur and the
SECTION 5: Firefighting measures

### Hazardous combustion products

**DNA 12000 Gel Matrix**
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides

**DNA Dye Concentrate**
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- sulfur oxides

**DNA 12000 Marker**
Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- sulfur oxides

**DNA 12000 Ladder**
No specific data.

### 5.3 Advice for firefighters

**Special precautions for fire-fighters**

**DNA 12000 Gel Matrix**
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.

**DNA Dye Concentrate**
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.

**DNA 12000 Marker**
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.

**DNA 12000 Ladder**
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**

**DNA 12000 Gel Matrix**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**DNA Dye Concentrate**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**DNA 12000 Marker**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**DNA 12000 Ladder**
Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:
- **DNA 12000 Gel Matrix**: 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 spilt material. Put on appropriate personal protective equipment.
- **DNA Dye Concentrate**: 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 spilt material. Put on appropriate personal protective equipment.
- **DNA 12000 Marker**: 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 spilt material. Put on appropriate personal protective equipment.
- **DNA 12000 Ladder**: 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 spilt material. Put on appropriate personal protective equipment.

For emergency responders:
- **DNA 12000 Gel Matrix**: 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".
- **DNA Dye Concentrate**: 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".
- **DNA 12000 Marker**: 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".
- **DNA 12000 Ladder**: 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".

6.2 Environmental precautions:
- **DNA 12000 Gel Matrix**: Avoid dispersal of spilt 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).
- **DNA Dye Concentrate**: Avoid dispersal of spilt 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).
- **DNA 12000 Marker**: Avoid dispersal of spilt 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).
- **DNA 12000 Ladder**: Avoid dispersal of spilt 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).

6.3 Methods and material for containment and cleaning up
SECTION 6: Accidental release measures

Methods for cleaning up:

DNA 12000 Gel Matrix: 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.

DNA Dye Concentrate: 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.

DNA 12000 Marker: 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.

DNA 12000 Ladder: 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.

6.4 Reference to other sections:

See Section 1 for emergency contact information. See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures:

DNA 12000 Gel Matrix: Put on appropriate personal protective equipment (see Section 8).

DNA Dye Concentrate: Put on appropriate personal protective equipment (see Section 8).

DNA 12000 Marker: Put on appropriate personal protective equipment (see Section 8).

DNA 12000 Ladder: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene:

DNA 12000 Gel Matrix: 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.

DNA Dye Concentrate: 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.

DNA 12000 Marker: 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.

DNA 12000 Ladder: 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.

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SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

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<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
<th>DNA 12000 Marker</th>
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<tbody>
<tr>
<td>Storage temperature:</td>
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<td>Storage temperature:</td>
<td>4°C (39.2°F)</td>
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<td></td>
<td>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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.</td>
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<td>Industrial applications, Professional applications.</td>
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7.3 Specific end use(s)

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<th>DNA Dye Concentrate</th>
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<td>DNA 12000 Ladder</td>
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<td>DNA Dye Concentrate</td>
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</table>

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

Recommended monitoring procedures

No exposure limit value known.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering 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.

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.

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.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
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</thead>
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</tr>
<tr>
<td><strong>Odour threshold</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>Not available.</td>
<td>18.5°C</td>
<td>0°C</td>
<td>0°C</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>Not available.</td>
<td>189°C</td>
<td>100°C</td>
<td>100°C</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Closed cup: 87°C</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Upper/lower flammability or explosive limits</strong></td>
<td>Not available.</td>
<td>Lower: 2.6%</td>
<td>Upper: 42%</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapour density</strong></td>
<td>Not available.</td>
<td>2.7 [Air = 1]</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
### SECTION 9: Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
<th>DNA 12000 Marker</th>
<th>DNA 12000 Ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility(ies)</td>
<td>DNA 12000 Gel Matrix</td>
<td>Soluble in the following materials: cold water and hot water.</td>
<td>DNA Dye Concentrate</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>DNA 12000 Ladder</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>DNA 12000 Gel Matrix</td>
<td>Not available.</td>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td></td>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

#### 9.2 Other information
No additional information.

### SECTION 10: Stability and reactivity

<table>
<thead>
<tr>
<th>Section</th>
<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
<th>DNA 12000 Marker</th>
<th>DNA 12000 Ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1 Reactivity</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>10.2 Chemical stability</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

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SECTION 10: Stability and reactivity

10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA 12000 Gel Matrix</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>DNA Dye Concentrate</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>DNA 12000 Ladder</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

10.4 Conditions to avoid

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA 12000 Gel Matrix</td>
<td>No specific data.</td>
</tr>
<tr>
<td>DNA Dye Concentrate</td>
<td>No specific data.</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>No specific data.</td>
</tr>
<tr>
<td>DNA 12000 Ladder</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

10.5 Incompatible materials

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA 12000 Gel Matrix</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
<tr>
<td>DNA Dye Concentrate</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
<tr>
<td>DNA 12000 Ladder</td>
<td>May react or be incompatible with oxidising materials.</td>
</tr>
</tbody>
</table>

10.6 Hazardous decomposition products

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA 12000 Gel Matrix</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td>DNA Dye Concentrate</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
<tr>
<td>DNA 12000 Ladder</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
</tr>
</tbody>
</table>

SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
Not available.

**Acute toxicity estimates**
Not available.

**Irritation/Corrosion**

<table>
<thead>
<tr>
<th>Conclusion/Summary</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

**Sensitiser**

<table>
<thead>
<tr>
<th>Conclusion/Summary</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**
Not available.

**Aspiration hazard**
Not available.

**Information on likely routes of exposure**

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DNA 12000 Gel Matrix</td>
<td>Not available. Routes of entry anticipated: Oral, Dermal, Inhalation.</td>
</tr>
<tr>
<td>DNA Dye Concentrate</td>
<td>Not available.</td>
</tr>
<tr>
<td>DNA 12000 Marker</td>
<td>Not available.</td>
</tr>
<tr>
<td>DNA 12000 Ladder</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Potential acute health effects**

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## SECTION 11: Toxicological information

### Potential chronic health effects

<table>
<thead>
<tr>
<th>Substance Type</th>
<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
<th>DNA 12000 Marker</th>
<th>DNA 12000 Ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Symptoms related to the physical, chemical and toxicological characteristics

<table>
<thead>
<tr>
<th>Substance Type</th>
<th>DNA 12000 Gel Matrix</th>
<th>DNA Dye Concentrate</th>
<th>DNA 12000 Marker</th>
<th>DNA 12000 Ladder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

### Delayed and immediate effects as well as 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

#### General

- **DNA 12000 Gel Matrix**: No known significant effects or critical hazards.
- **DNA Dye Concentrate**: No known significant effects or critical hazards.
- **DNA 12000 Marker**: No known significant effects or critical hazards.
- **DNA 12000 Ladder**: No known significant effects or critical hazards.

#### Carcinogenicity

- **DNA 12000 Gel Matrix**: No known significant effects or critical hazards.
- **DNA Dye Concentrate**: No known significant effects or critical hazards.
- **DNA 12000 Marker**: No known significant effects or critical hazards.
- **DNA 12000 Ladder**: No known significant effects or critical hazards.

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SECTION 11: Toxicological information

**Mutagenicity**
- DNA 12000 Gel Matrix: No known significant effects or critical hazards.
- DNA Dye Concentrate: No known significant effects or critical hazards.
- DNA 12000 Marker: No known significant effects or critical hazards.
- DNA 12000 Ladder: No known significant effects or critical hazards.

**Teratogenicity**
- DNA 12000 Gel Matrix: No known significant effects or critical hazards.
- DNA Dye Concentrate: No known significant effects or critical hazards.
- DNA 12000 Marker: No known significant effects or critical hazards.
- DNA 12000 Ladder: No known significant effects or critical hazards.

**Developmental effects**
- DNA 12000 Gel Matrix: No known significant effects or critical hazards.
- DNA Dye Concentrate: No known significant effects or critical hazards.
- DNA 12000 Marker: No known significant effects or critical hazards.
- DNA 12000 Ladder: No known significant effects or critical hazards.

**Fertility effects**
- DNA 12000 Gel Matrix: No known significant effects or critical hazards.
- DNA Dye Concentrate: No known significant effects or critical hazards.
- DNA 12000 Marker: No known significant effects or critical hazards.
- DNA 12000 Ladder: No known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

**Conclusion/Summary**: 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<sub>OC</sub>)**: Not available.
- **Mobility**: Not available.

12.5 Results of PBT and vPvB assessment

- **PBT**: Not applicable.
- **vPvB**: Not applicable.

12.6 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**

- **Methods of disposal**: The generation of waste should be avoided or minimised 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.

**Hazardous waste**: Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 2008/98/EC.

**Packaging**

- **Methods of disposal**: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
Agilent DNA 12000 Reagents, Part Number 5067-1509

SECTION 13: Disposal considerations

Special precautions: 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 spill material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

ADR/RID / IMDG / IATA: Not regulated.

14.6 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.

14.7 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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

DNA 12000 Gel Matrix: Not applicable.

DNA Dye Concentrate: Not applicable.

DNA 12000 Marker: Not applicable.

DNA 12000 Ladder: Not applicable.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

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.

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SECTION 15: Regulatory information

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list
- Australia: Not determined.
- Canada: Not determined.
- China: Not determined.
- Europe: Not determined.
- Japan:
  - Japan inventory (ENCS): Not determined.
  - Japan inventory (ISHL): Not determined.
- Malaysia: Not determined.
- New Zealand: Not determined.
- Philippines: Not determined.
- Republic of Korea: Not determined.
- Taiwan: Not determined.
- Thailand: Not determined.
- Turkey: Not determined.
- United States: Not determined.
- Viet Nam: Not determined.

15.2 Chemical safety assessment: This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms:
- ATE = Acute Toxicity Estimate
- CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
- DNEL = Derived No Effect Level
- EUH statement = CLP-specific Hazard statement
- PNEC = Predicted No Effect Concentration
- RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 (CLP/GHS)

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

Full text of abbreviated H statements
Not applicable.

Full text of classifications (CLP/GHS)
Not applicable.

Date of issue/Date of revision: 27/10/2017
Date of previous issue: No previous validation.
Version: 1

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