## Section 1. Identification

### 1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>Brilliant II QPCR Master Mix, Part Number 600804</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No. (Chemical Kit)</td>
<td>600804</td>
</tr>
</tbody>
</table>
| Part No. | 2X Brilliant II QPCR Master Mix 600804-51  
Reference Dye 600530-53 |
| Validation date | 12/20/2017 |

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

#### Material uses

- **2X Brilliant II QPCR Master Mix**
  - 2 x 2.5 ml
- **Reference Dye**
  - 0.1 ml (100 µl 1 mM)

### 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 | 2X Brilliant II QPCR Master Mix  
Reference Dye |
|-----------------|--------------------------------------------------|

#### This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). 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

**2X Brilliant II QPCR Master Mix**

- **H320**
  - EYE IRRITATION - Category 2B

| Ingredients of unknown toxicity | 2X Brilliant II QPCR Master Mix  
Reference Dye |
|--------------------------------|--------------------------------------------------|

#### Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 10 - 30%

#### Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 1 - 10%

#### Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 1 - 10%

### 2.2 GHS label elements

| Signal word | 2X Brilliant II QPCR Master Mix  
Reference Dye |
|-------------|--------------------------------------------------|

#### Warning

- No signal word.
Section 2. Hazards identification

Hazard statements

2X Brilliant II QPCR Master Mix
Reference Dye

H320 - Causes eye irritation.

No known significant effects or critical hazards.

Precautionary statements

Prevention

2X Brilliant II QPCR Master Mix
Reference Dye

P264 - Wash hands thoroughly after handling.

Not applicable.

Response

2X Brilliant II QPCR Master Mix
Reference Dye

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical attention.

Not applicable.

Storage

2X Brilliant II QPCR Master Mix
Reference Dye

Not applicable.

Disposal

2X Brilliant II QPCR Master Mix
Reference Dye

Not applicable.

Supplemental label elements

2X Brilliant II QPCR Master Mix
Reference Dye

None known.

2.3 Other hazards

Hazards not otherwise classified

2X Brilliant II QPCR Master Mix
Reference Dye

None known.

Section 3. Composition/information on ingredients

Ingredient name | % | CAS number
--- | --- | ---
Glycerol | ≥10 - ≤25 | 56-81-5
Reference Dye

2X Brilliant II QPCR Master Mix

Carbon dioxide

≤5 | 7447-40-7

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

There are no additional 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

2X Brilliant II QPCR Master Mix
Reference Dye

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses.

Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.

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.

Date of issue : 12/20/2017
## Section 4. First aid measures

### Inhalation

2X Brilliant II QPCR Master Mix

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Reference Dye

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

2X Brilliant II QPCR Master Mix

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Reference Dye

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

### Ingestion

2X Brilliant II QPCR Master Mix

Wash out mouth with water. Remove dentures if any. 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. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Reference Dye

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

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Causes eye irritation.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference Dye</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>2X Brilliant II QPCR Master Mix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference Dye</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

Date of issue: 12/20/2017
Section 4. First aid measures

Skin contact : 2X Brilliant II QPCR Master Mix Reference Dye
No known significant effects or critical hazards.

Ingestion : 2X Brilliant II QPCR Master Mix Reference Dye
No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : 2X Brilliant II QPCR Master Mix Reference Dye
Adverse symptoms may include the following:
irritation
watering
redness
No specific data.

Inhalation : 2X Brilliant II QPCR Master Mix Reference Dye
No specific data.

Skin contact : 2X Brilliant II QPCR Master Mix Reference Dye
No specific data.

Ingestion : 2X Brilliant II QPCR Master Mix Reference Dye
No specific data.

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

Notes to physician : 2X Brilliant II QPCR Master Mix Reference Dye
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
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 : 2X Brilliant II QPCR Master Mix Reference Dye
No specific treatment.

Protection of first-aiders : 2X Brilliant II QPCR Master Mix Reference Dye
No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : 2X Brilliant II QPCR Master Mix Reference Dye
Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : 2X Brilliant II QPCR Master Mix Reference Dye
None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical : 2X Brilliant II QPCR Master Mix Reference Dye
In a fire or if heated, a pressure increase will occur and the container may burst.

Date of issue : 12/20/2017
Section 5. Fire-fighting measures

| Hazardous thermal decomposition products | 2X Brilliant II QPCR Master Mix | Decomposition products may include the following materials: carbon dioxide, carbon monoxide, Reference Dye Decomposition products may include the following materials: carbon dioxide, carbon monoxide, nitrogen oxides, halogenated compounds, metal oxide/oxides |

5.3 Advice for firefighters

| Special protective actions for fire-fighters | 2X Brilliant II QPCR Master Mix | 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. Reference Dye 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 | 2X Brilliant II QPCR Master Mix | Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Reference Dye 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 | 2X Brilliant II QPCR Master Mix | 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. Reference Dye 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 | 2X Brilliant II QPCR Master Mix | 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". Reference Dye 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". |
Section 6. Accidental release measures

6.2 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).

Reference Dye

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).

6.3 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.

Reference Dye

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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Reference Dye

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.

Reference Dye

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

7.2 Conditions for safe storage, including any incompatibilities

2X Brilliant II QPCR Master Mix
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.

Reference Dye
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 sector specific solutions
- 2X Brilliant II QPCR Master Mix
Industrial applications, Professional applications.
- Reference Dye
Industrial applications, Professional applications.

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>Glycerol</td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td>Reference Dye</td>
<td>OSHA PEL (United States, 6/2016).</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>TWA: 5 mg/m³ 8 hours. Form: Respirable fraction</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>TWA: 10 mg/m³ 8 hours. Form: Total dust</td>
</tr>
<tr>
<td></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.

Date of issue: 12/20/2017
Section 8. Exposure controls/personal protection

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.

Section 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance


Color: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Odor: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Odor threshold: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

pH: Brilliant II QPCR Master Mix 8

Melting point: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Boiling point: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Flash point: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Evaporation rate: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.

Flammability (solid, gas): Brilliant II QPCR Master Mix Not applicable. Reference Dye Not applicable.

Lower and upper explosive (flammable) limits: Brilliant II QPCR Master Mix Not available. Reference Dye Not available.
## Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

### 2X Brilliant II QPCR Master Mix

Easily soluble in the following materials: cold water and hot water.

### Reference Dye

Easily soluble in the following materials: cold water and hot water.

## Section 10. Stability and reactivity

### 10.1 Reactivity

<table>
<thead>
<tr>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<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>
</tbody>
</table>

### 10.2 Chemical stability

<table>
<thead>
<tr>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

### 10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</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>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific data.</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

### 10.5 Incompatible materials

<table>
<thead>
<tr>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>May react or be incompatible with oxidizing materials.</td>
<td>May react or be incompatible with oxidizing materials.</td>
</tr>
</tbody>
</table>

### 10.6 Hazardous decomposition products

<table>
<thead>
<tr>
<th>2X Brilliant II QPCR Master Mix</th>
<th>Reference Dye</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</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

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>12600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference Dye</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>2600 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Glycerol</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Reference Dye</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Dye</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure**

2X Brilliant II QPCR Master Mix: Routes of entry anticipated: Oral, Dermal, Inhalation.

Reference Dye: Routes of entry anticipated: Oral, Dermal, Inhalation.

**Date of issue:** 12/20/2017
Section 11. Toxicological information

Potential acute health effects

Eye contact  : 2X Brilliant II QPCR Master Mix  
              Reference Dye
                   Causes eye irritation.

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  : 2X Brilliant II QPCR Master Mix  
              Reference Dye
                   Adverse symptoms may include the following:
                   irritation
                   watering
                   redness

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.

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
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Dye</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>70270.3 mg/kg</td>
</tr>
</tbody>
</table>

Section 12. Ecological information

12.1 Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix Glycerol</td>
<td>Acute LC50 54000 mg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td>Reference Dye Potassium chloride</td>
<td>Acute EC50 1337000 µg/l Fresh water</td>
<td>Algae - Navicula seminulum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 9.24 g/L Fresh water</td>
<td>Algae - Desmodesmus subspicatus</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 141460 µg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 12.92 mg/l Fresh water</td>
<td>Crustaceans - Pseudosida ramosa- Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 880 mg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Test</th>
<th>Result</th>
<th>Dose</th>
<th>Inoculum</th>
</tr>
</thead>
<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix Glycerol</td>
<td>301D Ready Biodegradability - Closed Bottle Test</td>
<td>93 % - 30 days</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference Dye Potassium chloride</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix Glycerol</td>
<td>-1.76</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Reference Dye Potassium chloride</td>
<td>-0.46</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Date of issue : 12/20/2017
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.

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

DOT / TDG / Mexico / IMDG / IATA: Not regulated.

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) PAIR: Polyoxyethylene octyl phenyl ether
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

Date of issue: 12/20/2017
Section 15. Regulatory information

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ
: Not applicable.

SARA 311/312
Classification
: 2X Brilliant II QPCR Master Mix
Reference Dye

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
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<tbody>
<tr>
<td>2X Brilliant II QPCR Master Mix</td>
<td>≥10 - ≤25</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>Glycerol</td>
<td>≤10</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>Reference Dye</td>
<td>≤5</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>Potassium chloride</td>
<td>≤3</td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol</td>
<td>≤2</td>
<td>SKIN IRRITATION - Category 2</td>
</tr>
<tr>
<td>hydrochloride</td>
<td>≤1</td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
</tr>
</tbody>
</table>

State regulations
Massachusetts : The following components are listed: GLYCERINE MIST
New York : None of the components are listed.
New Jersey : The following components are listed: GLYCERIN; 1,2,3-PROPNETRIOL
Pennsylvania : The following components are listed: 1,2,3-PROPNETRIOL

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 : Not determined.
Canada : Not determined.
China : All components are listed or exempted.
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.

Date of issue : 12/20/2017
Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Country</th>
<th>Status</th>
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<tbody>
<tr>
<td>Taiwan</td>
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<tr>
<td>Thailand</td>
<td>Not determined.</td>
</tr>
<tr>
<td>Turkey</td>
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<tr>
<td>United States</td>
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<td>Viet Nam</td>
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Section 16. Other information

**History**

<table>
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<tr>
<th>Date of issue</th>
<th>12/20/2017</th>
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<tr>
<td>Date of previous issue</td>
<td>10/15/2015</td>
</tr>
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<td>Version</td>
<td>5</td>
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</table>

*Indicates information that has changed from previously issued version.*

**Notice to reader**

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