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

### 1.1 Product identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>I9111 Fluoride combination ISE, Part Number 5190-4002</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No. (Kit)</td>
<td>5190-4002</td>
</tr>
<tr>
<td>Part No.</td>
<td>* I9111 ISE</td>
</tr>
<tr>
<td>Reference solution</td>
<td>I9111 ISE</td>
</tr>
<tr>
<td></td>
<td>5190-0545-1</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Identified uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analytical chemistry.</td>
</tr>
<tr>
<td>* I9111 ISE</td>
</tr>
<tr>
<td>Reference solution</td>
</tr>
<tr>
<td>Electrodes. (1 x 4 ml)</td>
</tr>
<tr>
<td>1 x 30 ml</td>
</tr>
</tbody>
</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

**Note**: This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Product definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>* I9111 ISE</td>
</tr>
<tr>
<td>Reference solution</td>
</tr>
<tr>
<td>Mixture (encapsulated in article)</td>
</tr>
<tr>
<td>Mixture</td>
</tr>
</tbody>
</table>

**Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

<table>
<thead>
<tr>
<th>Reference solution</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>H400</td>
<td>ACUTE AQUATIC HAZARD - Category 1</td>
</tr>
<tr>
<td>H410</td>
<td>LONG-TERM AQUATIC HAZARD - Category 1</td>
</tr>
</tbody>
</table>

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
SECTION 2: Hazards identification

Hazard pictograms:

Signal word: * I9111 ISE
No signal word.
Reference solution: Warning

Hazard statements: * I9111 ISE
No known significant effects or critical hazards.
Reference solution: GHS09 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention: * I9111 ISE
Not applicable.
Reference solution: P273 - Avoid release to the environment.

Response: * I9111 ISE
Not applicable.
Reference solution: P391 - Collect spillage.

Storage: * I9111 ISE
Not applicable.
Reference solution: Not applicable.

Disposal: * I9111 ISE
Not applicable.
Reference solution: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3 Other hazards

Other hazards which do not result in classification: * I9111 ISE
None known.
Reference solution: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures: * I9111 ISE
Mixture (encapsulated in article) Mixtures

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Identifiers</th>
<th>%</th>
<th>Classification</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>* I9111 ISE Ethanediol</td>
<td>EC: 203-473-3 CAS: 107-21-1 Index: 603-027-00-1</td>
<td>≤3</td>
<td>Acute Tox. 4, H302</td>
<td>[1][2]</td>
</tr>
<tr>
<td>Reference solution Silver chloride</td>
<td>EC: 232-033-3 CAS: 7783-90-6</td>
<td>≤1</td>
<td>Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)</td>
<td>[1][2]</td>
</tr>
</tbody>
</table>

Date of issue/Date of revision: 26/07/2016 2/15
SECTION 3: Composition/information on ingredients

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.

Type
[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[5] Substance of equivalent concern

SECTION 4: First aid measures

4.1 Description of first aid measures

**Eye contact**
- * I9111 ISE

Reference solution
- * I9111 ISE

Inhalation

Ingestion

Skin contact

**Inhalation**
- * I9111 ISE

Reference solution
- * I9111 ISE

**Eye contact**
- * I9111 ISE

Reference solution
- * I9111 ISE

**Skin contact**
- * I9111 ISE

Reference solution
- * I9111 ISE

**Ingestion**
- * I9111 ISE

Reference solution
- * I9111 ISE

Date of issue/Date of revision: 26/07/2016
SECTION 4: First aid measures

Protection of first-aiders: * I9111 ISE
No action shall be taken involving any personal risk or without suitable training.
Reference solution: 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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: * I9111 ISE
No known significant effects or critical hazards.
Reference solution: No known significant effects or critical hazards.

Inhalation: * I9111 ISE
No known significant effects or critical hazards.
Reference solution: No known significant effects or critical hazards.

Skin contact: * I9111 ISE
No known significant effects or critical hazards.
Reference solution: No known significant effects or critical hazards.

Ingestion: * I9111 ISE
No known significant effects or critical hazards.
Reference solution: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: * I9111 ISE
No specific data.
Reference solution: No specific data.

Inhalation: * I9111 ISE
No specific data.
Reference solution: No specific data.

Skin contact: * I9111 ISE
No specific data.
Reference solution: No specific data.

Ingestion: * I9111 ISE
No specific data.
Reference solution: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: * I9111 ISE
Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Reference solution: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: * I9111 ISE
No specific treatment.
Reference solution: No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: * I9111 ISE
Use an extinguishing agent suitable for the surrounding fire.
Reference solution: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: * I9111 ISE
None known.
Reference solution: None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture: * I9111 ISE
In a fire or if heated, a pressure increase will occur and the container may burst.
Reference solution: In a fire or if heated, a pressure increase will occur and the container may burst. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
### SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Hazardous combustion products</th>
<th>Decomposition products may include the following materials: carbon dioxide, carbon monoxide, halogenated compounds, metal oxide/oxides</th>
</tr>
</thead>
</table>

**Reference solution**

Decomposition products may include the following materials: halogenated compounds, metal oxide/oxides.

### 5.3 Advice for firefighters

**Special precautions for fire-fighters**

* I9111 ISE

Reference solution

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**

* I9111 ISE

Reference solution

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**

* I9111 ISE

Reference solution

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**

* I9111 ISE

Reference solution

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. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**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".**

**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

* I9111 ISE

Reference solution

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).

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). Water polluting material. May be harmful to the environment if released in large quantities.
SECTION 6: Accidental release measures

6.3 Methods and material for containment and cleaning up

Methods for cleaning up: * I9111 ISE

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 solution

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: * I9111 ISE

Put on appropriate personal protective equipment (see Section 8).

Reference solution

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. 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.

Advice on general occupational hygiene: * I9111 ISE

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 solution

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: * I9111 ISE

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.

Reference solution

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.

Date of issue/Date of revision: 26/07/2016
SECTION 7: Handling and storage

**Danger criteria**

<table>
<thead>
<tr>
<th>Category</th>
<th>Notification and MAPP threshold</th>
<th>Safety report threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

7.3 Specific end use(s)

**Recommendations**

- *I9111 ISE* Industrial applications, Professional applications.
- Reference solution Not applicable.

**Industrial sector specific solutions**

- *I9111 ISE* Industrial applications, Professional applications.
- Reference solution Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

### Occupational exposure limits

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>I9111 ISE Ethanediol</em></td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. TWA: 10 mg/m³ 8 hours. Form: Particulate STEL: 104 mg/m³ 15 minutes. Form: Vapour TWA: 52 mg/m³ 8 hours. Form: Vapour STEL: 40 ppm 15 minutes. Form: Vapour TWA: 20 ppm 8 hours. Form: Vapour</td>
</tr>
<tr>
<td><strong>Sodium fluoride</strong></td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 2.5 mg/m³, (as F) 8 hours.</td>
</tr>
<tr>
<td><strong>Reference solution Silver chloride</strong></td>
<td>EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 0.01 mg/m³, (as Ag) 8 hours.</td>
</tr>
</tbody>
</table>

**Recommended monitoring procedures**: 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.

**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**
**SECTION 8: Exposure controls/personal protection**

**Hand protection**
- Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Ensure that respirators should be fit-tested before use and used in accordance with a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**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**
- 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.
- 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.

**SECTION 9: Physical and chemical properties**

### 9.1 Information on basic physical and chemical properties

#### Appearance

<table>
<thead>
<tr>
<th>Property</th>
<th><em>I9111 ISE</em></th>
<th>Reference solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Not available</td>
<td>White.</td>
</tr>
<tr>
<td>Odour</td>
<td>Not available</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td><em>I9111 ISE</em></td>
<td>-25°C</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td><em>I9111 ISE</em></td>
<td>0°C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td><em>I9111 ISE</em></td>
<td>Not available.</td>
</tr>
</tbody>
</table>
SECTION 9: Physical and chemical properties

Vapour pressure: * I9111 ISE Not available. Reference solution Not available.

Vapour density: * I9111 ISE Not available. Reference solution Not available.

Relative density: * I9111 ISE 1.1 Reference solution 1

Solubility(ies): * I9111 ISE Soluble in the following materials: cold water and hot water. Reference solution Easily soluble in the following materials: cold water and hot water.


Auto-ignition temperature: * I9111 ISE Not available. Reference solution Not available.

Decomposition temperature: * I9111 ISE Not available. Reference solution Not available.

Viscosity: * I9111 ISE Not available. Reference solution Not available.

Explosive properties: * I9111 ISE Not available. Reference solution Not available.

Oxidising properties: * I9111 ISE Not available. Reference solution Not available.

9.2 Other information
No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity: * I9111 ISE No specific test data related to reactivity available for this product or its ingredients. Reference solution No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability: * I9111 ISE The product is stable. Reference solution The product is stable.

10.3 Possibility of hazardous reactions
Under normal conditions of storage and use, hazardous reactions will not occur. Reference solution Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid: * I9111 ISE No specific data. Reference solution No specific data.

10.5 Incompatible materials: * I9111 ISE May react or be incompatible with oxidising materials. Reference solution May react or be incompatible with oxidising materials.

10.6 Hazardous decomposition products: * I9111 ISE Under normal conditions of storage and use, hazardous decomposition products should not be produced. Reference solution 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

<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>* I9111 ISE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanediol</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4700 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>31 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>Reference solution</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>3333.3 mg/kg</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>* I9111 ISE</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Ethanediol</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>1 hours 100 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>6 hours 1440 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>555 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24 hours 20 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

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>Route of entry anticipated: Oral, Dermal, Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference solution</td>
</tr>
</tbody>
</table>

Potential acute health effects

Inhalation : * I9111 ISE No known significant effects or critical hazards.

Ingestion : * I9111 ISE No known significant effects or critical hazards.

Skin contact : * I9111 ISE No known significant effects or critical hazards.

Eye contact : * I9111 ISE No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : * I9111 ISE No specific data.

Reference solution No specific data.

Date of issue/Date of revision : 26/07/2016
SECTION 11: Toxicological information

**Ingestion**: 
- *I9111 ISE*  
  No specific data.  
  Reference solution No specific data.  

**Skin contact**: 
- *I9111 ISE*  
  No specific data.  
  Reference solution No specific data.  

**Eye contact**: 
- *I9111 ISE*  
  No specific data.  
  Reference solution No specific data.  

**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**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  
- **Carcinogenicity**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  
- **Mutagenicity**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  
- **Teratogenicity**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  
- **Developmental effects**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  
- **Fertility effects**: 
  - *I9111 ISE*  
    No known significant effects or critical hazards.  
    Reference solution No known significant effects or critical hazards.  

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><strong>I9111 ISE</strong> Ethanol</td>
<td>Acute LC50 10000000 μg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 41000000 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Sodium fluoride</td>
<td>Acute LC50 8050000 μg/l Fresh water</td>
<td>Fish - Pimephales promelas</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 181000 μg/l Marine water</td>
<td>Algae - Skeletonema costatum</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 850000 μg/l Fresh water</td>
<td>Algae - Scenedesmus subsipicatus - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 179.4 mg/l Fresh water</td>
<td>Crustaceans - Cypris subglobosa</td>
<td>48 hours</td>
</tr>
<tr>
<td>Reference solution</td>
<td>Acute EC50 98000 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td>Silver chloride</td>
<td>Acute LC50 107500 μg/l Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 14000 μg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>21 days</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 3.1 mg/l Fresh water</td>
<td>Fish - Acipenser baerii - Juvenile (Fledgling, Hatchling, Weaning)</td>
<td>90 days</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 5.3 μg/l Fresh water</td>
<td>Fish - Lepidocephalichthys guntea</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

**Date of issue/Date of revision**: 26/07/2016
SECTION 12: Ecological information

12.2 Persistence and degradability
Not available.

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td>* I9111 ISE Ethanediol</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>* I9111 ISE Ethanediol</td>
<td>-1.36</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>Reference solution:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanediol</td>
<td></td>
<td>70</td>
<td>low</td>
</tr>
</tbody>
</table>

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 : The classification of the product may meet the criteria for a hazardous waste.

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.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory 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.

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SECTION 14: Transport information

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

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

*: I9111 ISE Reference solution Not applicable.

Not applicable.

National regulations

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 Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists

National inventory

Australia: All components are listed or exempted.

Canada: All components are listed or exempted.

China: All components are listed or exempted.

Japan: Japan inventory (ENCS): All components are listed or exempted.

Japan inventory (ISHL): All components are listed or exempted.

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SECTION 15: Regulatory information

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.
Turkey : Not determined.
United States : All components are listed or exempted.

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>Reference solution</th>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aquatic Acute 1, H400</td>
<td>* I9111 ISE</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 1, H410</td>
<td></td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Full text of abbreviated H statements :
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Reference solution:
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] :
Acute Tox. 3, H301 ACUTE TOXICITY (oral) - Category 3
Acute Tox. 4, H302 ACUTE TOXICITY (oral) - Category 4
EUH032 Contact with acids liberates very toxic gas.
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2

Reference solution:
Aquatic Acute 1, H400 ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1

Date of issue/ Date of revision : 26/07/2016
Date of previous issue : No previous validation.
Version : 1

Note * : * This product is considered an article. This Safety Data Sheet is written based on the encapsulated substance or mixture in this article. This article, when used under reasonable conditions and in accordance with the directions for use, should not present a health hazard. The substance or mixture is encapsulated in the article. Only if released due to use or processing of the article in a manner not in accordance with the product’s directions for use it may present potential health and safety hazards.
SECTION 16: Other information

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.