Section 1. Identification

**Product name**: Agilent RNA Spike-In Kit

**Part No. (Chemical Kit)**: 5188-5279

**Part No.**
- Spike B Mix 5972-3565
- Spike A Mix 5972-3564
- Dilution Buffer 5972-3562

**Validation date**: 09/20/2013.

**Material uses**: Analytical reagent.
- Spike B Mix 0.01 ml
- Spike A Mix 0.01 ml
- Dilution Buffer 1.2 ml

**Supplier/Manufacturer**: Agilent Technologies, Inc.
Logistics Center - Americas
500 Ships Landing Way
New Castle, Delaware 19720
800-227-9770

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

Section 2. Hazards identification

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

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

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

**Classification of the substance or mixture**: Not classified.
- Spike B Mix
- Spike A Mix
- Dilution Buffer

**Ingredients of unknown toxicity**: Not applicable.
- Spike B Mix
- Spike A Mix
- Dilution Buffer

**Date of issue**: 09/20/2013
Section 2. Hazards identification

GHS label elements

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No signal word.</td>
<td>No signal word.</td>
<td>No signal word.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard statements</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td></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>

Precautionary statements

<table>
<thead>
<tr>
<th>Prevention</th>
<th>Not applicable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Storage</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Disposal</td>
<td>Not applicable.</td>
</tr>
</tbody>
</table>

Supplemental label elements

<table>
<thead>
<tr>
<th>Spike B Mix</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spike A Mix</td>
<td>None known.</td>
</tr>
<tr>
<td>Dilution Buffer</td>
<td>None known.</td>
</tr>
</tbody>
</table>

Hazards not otherwise classified

<table>
<thead>
<tr>
<th>Spike B Mix</th>
<th>None known.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spike A Mix</td>
<td>None known.</td>
</tr>
<tr>
<td>Dilution Buffer</td>
<td>None known.</td>
</tr>
</tbody>
</table>

Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mixture</td>
<td>Mixture</td>
<td>Mixture</td>
</tr>
</tbody>
</table>

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

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

Section 4. First aid measures

Description of necessary first aid measures

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>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.</td>
<td>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.</td>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.</td>
</tr>
</tbody>
</table>
Section 4. First aid measures

**Skin contact**
- **Spike B Mix**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **Spike A Mix**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
- **Dilution Buffer**: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

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

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

**Potential acute health effects**

**Eye contact**
- **Spike B Mix**: No known significant effects or critical hazards.
- **Spike A Mix**: No known significant effects or critical hazards.
- **Dilution Buffer**: No known significant effects or critical hazards.

**Inhalation**
- **Spike B Mix**: No known significant effects or critical hazards.
- **Spike A Mix**: No known significant effects or critical hazards.
- **Dilution Buffer**: No specific data.

**Skin contact**
- **Spike B Mix**: No known significant effects or critical hazards.
- **Spike A Mix**: No known significant effects or critical hazards.
- **Dilution Buffer**: No specific data.

**Ingestion**
- **Spike B Mix**: No known significant effects or critical hazards.
- **Spike A Mix**: No known significant effects or critical hazards.
- **Dilution Buffer**: No specific data.

**Over-exposure signs/symptoms**

**Eye contact**
- **Spike B Mix**: No specific data.
- **Spike A Mix**: No specific data.
- **Dilution Buffer**: No specific data.

**Inhalation**
- **Spike B Mix**: No specific data.
- **Spike A Mix**: No specific data.
- **Dilution Buffer**: No specific data.

**Skin contact**
- **Spike B Mix**: No specific data.
- **Spike A Mix**: No specific data.
- **Dilution Buffer**: No specific data.

Date of issue: 09/20/2013
Section 4. First aid measures

**Ingestion**
- Spike B Mix: No specific data.
- Spike A Mix: No specific data.
- Dilution Buffer: No specific data.

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

**Notes to physician**
- Spike B Mix: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Spike A Mix: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Dilution Buffer: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**
- Spike B Mix: No specific treatment.
- Spike A Mix: No specific treatment.
- Dilution Buffer: No specific treatment.

**Protection of first-aiders**
- Spike B Mix: No action shall be taken involving any personal risk or without suitable training.
- Spike A Mix: No action shall be taken involving any personal risk or without suitable training.
- Dilution Buffer: No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**
- Spike B Mix: Use an extinguishing agent suitable for the surrounding fire.
- Spike A Mix: Use an extinguishing agent suitable for the surrounding fire.
- Dilution Buffer: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**
- Spike B Mix: None known.
- Spike A Mix: None known.
- Dilution Buffer: None known.

**Specific hazards arising from the chemical**
- Spike B Mix: In a fire or if heated, a pressure increase will occur and the container may burst.
- Spike A Mix: In a fire or if heated, a pressure increase will occur and the container may burst.
- Dilution Buffer: In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**
- No specific data.

**Special protective actions for fire-fighters**
- Spike B 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.
- Spike A 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.
### Section 5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Special protective equipment for fire-fighters</th>
<th>Dilution Buffer</th>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spike B Mix</td>
<td></td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>Spike A Mix</td>
<td></td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
<tr>
<td>Dilution Buffer</td>
<td></td>
<td>Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.</td>
</tr>
</tbody>
</table>

### Section 6. Accidental release measures

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

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

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

**Environmental precautions**

<table>
<thead>
<tr>
<th>Environmental precautions</th>
<th>Spike B Mix</th>
<th>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).</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>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).</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>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).</td>
</tr>
</tbody>
</table>

#### Methods and materials for containment and cleaning up

**Spike B Mix**

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.

**Spike A Mix**

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.

**Dilution Buffer**

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

Precautions for safe handling

**Protective measures**
- Spike B Mix: Put on appropriate personal protective equipment (see Section 8).
- Spike A Mix: Put on appropriate personal protective equipment (see Section 8).
- Dilution Buffer: 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.

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

Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**
- None.
Section 8. Exposure controls/personal protection

**Appropriate engineering controls**

- No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Environmental exposure controls**

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

**Individual protection measures**

**Hygiene measures**

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

**Eye/face protection**

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

**Skin protection**

**Hand protection**

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

**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**

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

Section 9. Physical and chemical properties

**Appearance**

**Physical state**

- Spike B Mix: Liquid.
- Spike A Mix: Liquid.
- Dilution Buffer: Liquid.

**Color**

- Spike B Mix: Not available.
- Spike A Mix: Not available.
- Dilution Buffer: Not available.

**Odor**

- Spike B Mix: Not available.
- Spike A Mix: Not available.
- Dilution Buffer: Not available.

**Odor threshold**

- Spike B Mix: Not available.
- Spike A Mix: Not available.
- Dilution Buffer: Not available.

**pH**

- Spike B Mix: 6.4
- Spike A Mix: 6.4
- Dilution Buffer: 7

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### Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point</strong></td>
<td>1°C (33.8°F)</td>
<td>0°C (32°F)</td>
<td>0°C (32°F)</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
<td>100°C (212°F)</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>[Product does not sustain combustion.]</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>(flammable) limits</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
<td>Easily soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Solubility in water</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

**Date of issue:** 09/20/2013
# Section 10. Stability and reactivity

## Reactivity

<table>
<thead>
<tr>
<th>Component</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</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>Chemical stability</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

## Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Component</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</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>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
<td></td>
</tr>
</tbody>
</table>

## Conditions to avoid

<table>
<thead>
<tr>
<th>Component</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

## Incompatible materials

<table>
<thead>
<tr>
<th>Component</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</th>
</tr>
</thead>
<tbody>
<tr>
<td>No specific data.</td>
<td>No specific data.</td>
<td>No specific data.</td>
<td></td>
</tr>
</tbody>
</table>

## Hazardous decomposition products

<table>
<thead>
<tr>
<th>Component</th>
<th>Spike B Mix</th>
<th>Spike A Mix</th>
<th>Dilution Buffer</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>
<td>Under normal conditions of storage and use, hazardous decomposition products should not be produced.</td>
<td></td>
</tr>
</tbody>
</table>

# Section 11. Toxicological information

## Information on toxicological effects

### Acute toxicity

Not available.

### Irritation/Corrosion

Not available.

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

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Section 11. Toxicological information

Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on the likely routes of exposure

: Not available.

Potential acute health effects

Eye contact
: Spike B Mix  No known significant effects or critical hazards.
Spike A Mix  No known significant effects or critical hazards.
Dilution Buffer  No known significant effects or critical hazards.

Inhalation
: Spike B Mix  No known significant effects or critical hazards.
Spike A Mix  No known significant effects or critical hazards.
Dilution Buffer  No known significant effects or critical hazards.

Skin contact
: Spike B Mix  No known significant effects or critical hazards.
Spike A Mix  No known significant effects or critical hazards.
Dilution Buffer  No known significant effects or critical hazards.

Ingestion
: Spike B Mix  No known significant effects or critical hazards.
Spike A Mix  No known significant effects or critical hazards.
Dilution Buffer  No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact
: Spike B Mix  No specific data.
Spike A Mix  No specific data.
Dilution Buffer  No specific data.

Inhalation
: Spike B Mix  No specific data.
Spike A Mix  No specific data.
Dilution Buffer  No specific data.

Skin contact
: Spike B Mix  No specific data.
Spike A Mix  No specific data.
Dilution Buffer  No specific data.

Ingestion
: Spike B Mix  No specific data.
Spike A Mix  No specific data.
Dilution Buffer  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.

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## Section 11. Toxicological information

### Potential chronic health effects

<table>
<thead>
<tr>
<th>General</th>
<th>Spike B Mix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Carcinogenicity</th>
<th>Spike B Mix</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
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</table>

<table>
<thead>
<tr>
<th>Mutagenicity</th>
<th>Spike B Mix</th>
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<tbody>
<tr>
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<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teratogenicity</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Developmental effects</th>
<th>Spike B Mix</th>
<th>No known significant effects or critical hazards.</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fertility effects</th>
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<tbody>
<tr>
<td></td>
<td>Spike A Mix</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td></td>
<td>Dilution Buffer</td>
<td>No known significant effects or critical hazards.</td>
</tr>
</tbody>
</table>

### Numerical measures of toxicity

#### Acute toxicity estimates

<table>
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<tr>
<th>General</th>
<th>Not available.</th>
</tr>
</thead>
</table>

### Other information

<table>
<thead>
<tr>
<th>General</th>
<th>Not available.</th>
</tr>
</thead>
</table>

## Section 12. Ecological information

### Toxicity

<table>
<thead>
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<th>General</th>
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</thead>
</table>

### Persistence and degradability

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<thead>
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</thead>
</table>

### Bioaccumulative potential

<table>
<thead>
<tr>
<th>General</th>
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</tr>
</thead>
</table>

### Mobility in soil

<table>
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<tr>
<th>Soil/water partition coefficient ($K_{OC}$)</th>
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</thead>
</table>

### Other adverse effects

<table>
<thead>
<tr>
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</thead>
</table>

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**Date of issue:** 09/20/2013
Section 13. Disposal considerations

Disposal methods

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

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

Regulatory information

DOT / IMDG / IATA /

: Not regulated.

Section 15. Regulatory information

U.S. Federal regulations

: United States inventory (TSCA 8b): All components are listed or exempted.
  Clean Water Act (CWA) 311: Edetic acid

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)

: Not listed

Clean Air Act Section 602 Class I Substances

: Not listed

Clean Air Act Section 602 Class II Substances

: Not listed

DEA List I Chemicals (Precursor Chemicals)

: Not listed

DEA List II Chemicals (Essential Chemicals)

: Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ

: Not applicable.

SARA 311/312

Classification

: Not applicable.

Composition/information on ingredients

No products were found.

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Section 15. Regulatory information

State regulations

Massachusetts : None of the components are listed.
New York : None of the components are listed.
New Jersey : None of the components are listed.
Pennsylvania : None of the components are listed.

California Prop. 65

No products were found.

Canada inventory : All components are listed or exempted.

International regulations

International lists : Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule
I Chemicals : Not listed

Chemical Weapons Convention List Schedule
II Chemicals : Not listed

Chemical Weapons Convention List Schedule
III Chemicals : Not listed

Section 16. Other information

History

Date of issue : 09/20/2013.
Date of previous issue : 06/27/2011.
Version : 4

Indicates information that has changed from previously issued version.

Notice to reader

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