## Section 1. Identification

### 1.1 Product identifier

**Product name**: ISH Pepsin Kit, Part Number G9411A

**Part no. (chemical kit)**: G9411A

**Part no.**
- Pepsin 5190-7748
- Pepsin Diluent (10X) 5190-7749

**Validation date**: 3/7/2018

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

**Material uses**: Analytical reagent.

- Pepsin 48 ml (2 mg/ml)
- Pepsin Diluent (10X) 48 ml

### 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

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## Section 2. Hazards identification

### 2.1 Classification of the substance or mixture

**OSHA/HCS status**
- **Pepsin**: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- **Pepsin Diluent (10X)**: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture**

- **Pepsin**
  - H226: FLAMMABLE LIQUIDS - Category 3
  - H334: RESPIRATORY SENSITIZATION - Category 1
  - H317: SKIN SENSITIZATION - Category 1
  - H373: SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

- **Pepsin Diluent (10X)**
  - H225: FLAMMABLE LIQUIDS - Category 2
  - H315: SKIN IRRITATION - Category 2
  - H319: EYE IRRITATION - Category 2A
  - H317: SKIN SENSITIZATION - Category 1
  - H336: SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
  - H373: SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2

**Ingredients of unknown toxicity**

- **Pepsin Diluent (10X)**: Percentage of the mixture consisting of ingredient (s) of unknown dermal toxicity: 1 - 10%
- Percentage of the mixture consisting of ingredient (s) of unknown inhalation toxicity: 1 - 10%
- Percentage of the mixture consisting of ingredient (s) of unknown oral toxicity: 1 - 10%
Section 2. Hazards identification

2.2 GHS label elements

Hazard pictograms:
- Pepsin
- Pepsin Diluent (10X)

Signal word:
- Pepsin: Danger
- Pepsin Diluent (10X): Danger

Hazard statements:
- Pepsin:
  - H226: Flammable liquid and vapor.
  - H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H317: May cause an allergic skin reaction.
  - H373: May cause damage to organs through prolonged or repeated exposure. (liver)

- Pepsin Diluent (10X):
  - H225: Highly flammable liquid and vapor.
  - H319: Causes serious eye irritation.
  - H315: Causes skin irritation.
  - H317: May cause an allergic skin reaction.
  - H336: May cause drowsiness or dizziness.
  - H373: May cause damage to organs through prolonged or repeated exposure. (liver)

Precautionary statements

Prevention:
- Pepsin:
  - P280: Wear protective gloves. Wear eye or face protection.
  - P284: Wear respiratory protection.
  - P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P241: Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
  - P242: Use only non-sparking tools.
  - P243: Take precautionary measures against static discharge.
  - P233: Keep container tightly closed.
  - P260: Do not breathe vapor.
  - P272 (OSHA): Contaminated work clothing must not be allowed out of the workplace.

- Pepsin Diluent (10X):
  - P280: Wear protective gloves. Wear eye or face protection.
  - P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - P241: Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
  - P242: Use only non-sparking tools.
  - P243: Take precautionary measures against static discharge.
  - P233: Keep container tightly closed.
  - P271: Use only outdoors or in a well-ventilated area.
  - P260: Do not breathe vapor.
### Section 2. Hazards identification

**Response**: Pepsin

- **P264** - Wash hands thoroughly after handling.
- **P272 (OSHA)** - Contaminated work clothing must not be allowed out of the workplace.
- **P314** - Get medical attention if you feel unwell.
- **P304 + P341 (OSHA)** - IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- **P342 + P311** - If experiencing respiratory symptoms: Call a POISON CENTER or physician.
- **P303 + P361 + P353** - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- **P302 + P352 + P363** - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- **P333 + P313** - If skin irritation or rash occurs: Get medical attention.

**Pepsin Diluent (10X)**

- **P264** - Wash hands thoroughly after handling.
- **P314** - Get medical attention if you feel unwell.
- **P304 + P340 + P312** - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
- **P303 + P361 + P353** - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- **P302 + P352 + P363** - IF ON SKIN: Wash with plenty of soap and water. Wash contaminated clothing before reuse.
- **P333 + P313** - If skin irritation or rash occurs: Get medical attention.
- **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.

**Storage**: Pepsin

- **P403** - Store in a well-ventilated place.
- **P235** - Keep cool.

**Pepsin Diluent (10X)**

- **P403** - Store in a well-ventilated place.
- **P235** - Keep cool.

**Disposal**: Pepsin

- **P501** - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Pepsin Diluent (10X)**

- **P501** - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Supplemental label elements**: None known.

**2.3 Other hazards**

**Hazards not otherwise classified**: None known.
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>Pepsin</th>
<th>Mixture</th>
<th>Pepsin Diluent (10X)</th>
<th>Mixture</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>≤10</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>≤0.3</td>
<td>9001-75-6</td>
</tr>
<tr>
<td>pepsin A</td>
<td>≤0.1</td>
<td>55965-84-9</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>≥50 - ≤75</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>≤10</td>
<td>1185-53-1</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>&lt;1</td>
<td>55965-84-9</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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: Pepsin

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. Get medical attention following exposure or if feeling unwell.

Pepsin Diluent (10X)

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. Get medical attention.

Eye contact: Pepsin Diluent (10X)

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. Get medical attention.

Inhalation: Pepsin

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 unconscious, call a poison center or physician. 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. In the event of any complaints or symptoms, avoid further exposure.

Inhalation: Pepsin Diluent (10X)

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if
Section 4. First aid measures

Skin contact : Pepsin

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Pepsin Diluent (10X)

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Pepsin

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 following exposure or if feeling unwell. 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.

Pepsin Diluent (10X)

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 necessary, call a poison center or physician. 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. 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.

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 necessary, call a poison center or physician. 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. 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.
Section 4. First aid measures

medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Pepsin</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>Causes serious eye irritation.</td>
</tr>
</tbody>
</table>

Inhalation

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Pepsin</th>
<th>May cause allergy or asthma symptoms or breathing difficulties if inhaled.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.</td>
</tr>
</tbody>
</table>

Skin contact

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Pepsin</th>
<th>May cause an allergic skin reaction.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>Causes skin irritation. May cause an allergic skin reaction.</td>
</tr>
</tbody>
</table>

Ingestion

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>Pepsin</th>
<th>No known significant effects or critical hazards.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>Can cause central nervous system (CNS) depression.</td>
</tr>
</tbody>
</table>

Over-exposure signs/symptoms

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Pepsin</th>
<th>Adverse symptoms may include the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>pain or irritation</td>
</tr>
</tbody>
</table>

Inhalation

<table>
<thead>
<tr>
<th>Inhalation</th>
<th>Pepsin</th>
<th>Adverse symptoms may include the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>wheezing and breathing difficulties</td>
</tr>
</tbody>
</table>

Skin contact

<table>
<thead>
<tr>
<th>Skin contact</th>
<th>Pepsin</th>
<th>Adverse symptoms may include the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>irritation</td>
</tr>
</tbody>
</table>

Ingestion

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>Pepsin</th>
<th>No specific data.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>

Potential acute health effects

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

Notes to physician

<table>
<thead>
<tr>
<th>Notes to physician</th>
<th>Pepsin</th>
<th>Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>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.</td>
</tr>
</tbody>
</table>

Specific treatments

<table>
<thead>
<tr>
<th>Specific treatments</th>
<th>Pepsin</th>
<th>No specific treatment.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pepsin Diluent (10X)</td>
<td>No specific treatment.</td>
</tr>
</tbody>
</table>

Date of issue: 03/07/2018
**Section 4. First aid measures**

**Protection of first-aiders**: Pepsin

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

**Pepsin Diluent (10X)**

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

**Section 5. Fire-fighting measures**

5.1 **Extinguishing media**

**Suitable extinguishing media**: Pepsin

Use dry chemical, CO₂, water spray (fog) or foam.

**Pepsin Diluent (10X)**

Use dry chemical, CO₂, water spray (fog) or foam.

**Unsuitable extinguishing media**: Pepsin

Do not use water jet.

**Pepsin Diluent (10X)**

Do not use water jet.

5.2 **Special hazards arising from the substance or mixture**

**Specific hazards arising from the chemical**: Pepsin

Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.

**Hazardous thermal decomposition products**: Pepsin

Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide

**Pepsin Diluent (10X)**

Decomposition products may include the following materials:
- carbon dioxide
- carbon monoxide
- nitrogen oxides
- halogenated compounds

5.3 **Advice for firefighters**

**Date of issue**: 03/07/2018
### Section 5. Fire-fighting measures

**Special protective actions for fire-fighters**  
- Pepsin  
  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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Pepsin Diluent (10X)  
  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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters**  
- Pepsin  
  Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

- Pepsin Diluent (10X)  
  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**  
- Pepsin  
  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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

- Pepsin Diluent (10X)  
  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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**  
- Pepsin  
  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".

- Pepsin Diluent (10X)  
  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

<table>
<thead>
<tr>
<th>Material</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</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>Pepsin Diluent (10X)</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>

6.3 Methods and materials for containment and cleaning up

<table>
<thead>
<tr>
<th>Material</th>
<th>Methods for cleaning up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor.</td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor.</td>
</tr>
</tbody>
</table>

Section 7. Handling and storage

7.1 Precautions for safe handling

<table>
<thead>
<tr>
<th>Material</th>
<th>Protective measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container.</td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated.</td>
</tr>
</tbody>
</table>
Section 7. Handling and storage

Advice on general occupational hygiene

**Pepsin**

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.

Pepsin Diluent (10X)

Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from alkalis. Separate from oxidizing materials. 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.

7.2 Conditions for safe storage, including any incompatibilities

**Pepsin**

Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from alkalis. Separate from oxidizing materials. Store locked up. Eliminate all ignition sources. Separate from alkalis. Separate from oxidizing materials. 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.

Pepsin Diluent (10X)

7.3 Specific end use(s)
**Section 7. Handling and storage**

**Recommendations**
- Pepsin
- Pepsin Diluent (10X)

**Industrial sector specific solutions**
- Pepsin
- Pepsin Diluent (10X)

**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><strong>Pepsin</strong></td>
<td>ACGIH TLV (United States, 3/2017). &lt;br&gt; TWA: 200 ppm 8 hours. &lt;br&gt; STEL: 400 ppm 15 minutes. &lt;br&gt; OSHA PEL 1989 (United States, 3/1989). &lt;br&gt; TWA: 400 ppm 8 hours. &lt;br&gt; TWA: 980 mg/m³ 8 hours. &lt;br&gt; STEL: 500 ppm 15 minutes. &lt;br&gt; STEL: 1225 mg/m³ 15 minutes. &lt;br&gt; NIOSH REL (United States, 10/2016). &lt;br&gt; TWA: 400 ppm 10 hours. &lt;br&gt; TWA: 980 mg/m³ 10 hours. &lt;br&gt; STEL: 500 ppm 15 minutes. &lt;br&gt; STEL: 1225 mg/m³ 15 minutes. &lt;br&gt; OSHA PEL (United States, 6/2016). &lt;br&gt; TWA: 400 ppm 8 hours. &lt;br&gt; TWA: 980 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>ACGIH TLV (United States, 3/2017). &lt;br&gt; TWA: 200 ppm 8 hours. &lt;br&gt; STEL: 400 ppm 15 minutes. &lt;br&gt; OSHA PEL 1989 (United States, 3/1989). &lt;br&gt; TWA: 400 ppm 8 hours. &lt;br&gt; TWA: 980 mg/m³ 8 hours. &lt;br&gt; STEL: 500 ppm 15 minutes. &lt;br&gt; STEL: 1225 mg/m³ 15 minutes. &lt;br&gt; NIOSH REL (United States, 10/2016). &lt;br&gt; TWA: 400 ppm 10 hours. &lt;br&gt; TWA: 980 mg/m³ 10 hours. &lt;br&gt; STEL: 500 ppm 15 minutes. &lt;br&gt; STEL: 1225 mg/m³ 15 minutes. &lt;br&gt; OSHA PEL (United States, 6/2016). &lt;br&gt; TWA: 400 ppm 8 hours. &lt;br&gt; TWA: 980 mg/m³ 8 hours.</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong></td>
<td>None.</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>None.</td>
</tr>
<tr>
<td><strong>pepsin A</strong></td>
<td>None.</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td>None.</td>
</tr>
<tr>
<td><strong>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</strong></td>
<td>None.</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td>None.</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls
Section 8. Exposure controls/personal protection

**Appropriate engineering controls**
- Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**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. Contaminated work clothing should not be allowed out of the workplace. 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: chemical splash goggles.

**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. 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.

**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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**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**

**Physical state**
- Pepsin: Liquid.
- Pepsin Diluent (10X): Liquid.

**Color**
- Pepsin: Not available.
- Pepsin Diluent (10X): Not available.

**Odor**
- Pepsin: Not available.
- Pepsin Diluent (10X): Not available.

**Odor threshold**
- Pepsin: Not available.
- Pepsin Diluent (10X): Not available.

**pH**
- :
Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Melting point</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Boiling point</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Closed cup: 37.8 to 61°C (100 to 141.8°F)</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Closed cup: -18 to 23°C (-0.4 to 73.4°F)</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Lower and upper explosive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(flammable) limits</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Vapor density</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Solubility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>octanol/water</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

10.1 Reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>No specific test data related to reactivity available for this product or its ingredients.</td>
</tr>
<tr>
<td>:</td>
<td></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>Property</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>The product is stable.</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>The product is stable.</td>
</tr>
</tbody>
</table>

10.3 Possibility of hazardous reactions

<table>
<thead>
<tr>
<th>Property</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>:</td>
<td></td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
</tbody>
</table>

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Section 10. Stability and reactivity

10.4 Conditions to avoid : Pepsin
Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Pepsin Diluent (10X)
Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

10.5 Incompatible materials : Pepsin
Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.
Reactive or incompatible with the following materials:
alcalis
oxidizing materials

Pepsin Diluent (10X)
Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.
Reactive or incompatible with the following materials:
alcalis
oxidizing materials

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

Pepsin Diluent (10X)
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>Pepsin</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>66100 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>12800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>53 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>66100 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>12800 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>53 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Irritation/Corrosion

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Section 11. Toxicological information

<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>Pepsin</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td>-</td>
</tr>
</tbody>
</table>

**Sensitization**
Not available.

**Conclusion/Summary**

- **Respiratory**: Pepsin: May cause sensitization by inhalation.

**Mutagenicity**

- **Conclusion/Summary**: Not available.

**Carcinogenicity**

- **Conclusion/Summary**: Not available.

**Classification**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reproductive toxicity**

- **Conclusion/Summary**: Not available.

**Teratogenicity**

- **Conclusion/Summary**: 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>Pepsin</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Category 3</td>
<td></td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>pepsin A</td>
<td>Category 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Category 3</td>
<td></td>
<td>Respiratory tract irritation</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td></td>
</tr>
</tbody>
</table>

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

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Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Name</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>Category 2</td>
<td>Not determined</td>
<td>liver</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>Category 2</td>
<td>Not determined</td>
<td>liver</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Aspiration hazard**
Not available.

**Information on the likely routes of exposure**

- **Pepsin**
  - Routes of entry anticipated: Oral, Dermal, Inhalation.
- **Pepsin Diluent (10X)**
  - Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

- **Eye contact**
  - **Pepsin**
    - No known significant effects or critical hazards.
    - Causes serious eye irritation.
  - **Pepsin Diluent (10X)**
    - May cause an allergic skin reaction.
    - Causes skin irritation. May cause an allergic skin reaction.

- **Inhalation**
  - **Pepsin**
    - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
    - Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
  - **Pepsin Diluent (10X)**
    - May cause an allergic skin reaction.
    - Causes skin irritation. May cause an allergic skin reaction.

- **Skin contact**
  - **Pepsin**
    - No known significant effects or critical hazards.
    - Can cause central nervous system (CNS) depression.
  - **Pepsin Diluent (10X)**
    - No specific data.

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

- **Eye contact**
  - **Pepsin**
    - No specific data.
    - Adverse symptoms may include the following:
      - pain or irritation
      - watering
      - redness
  - **Pepsin Diluent (10X)**
    - Adverse symptoms may include the following:
      - wheezing and breathing difficulties
      - asthma

- **Inhalation**
  - **Pepsin**
    - Adverse symptoms may include the following:
      - nausea or vomiting
      - headache
      - drowsiness/fatigue
      - dizziness/vertigo
      - unconsciousness
  - **Pepsin Diluent (10X)**
    - Adverse symptoms may include the following:
      - irritation
      - redness

- **Skin contact**
  - **Pepsin**
    - Adverse symptoms may include the following:
      - irritation
      - redness
  - **Pepsin Diluent (10X)**
    - Adverse symptoms may include the following:
      - irritation
      - redness

- **Ingestion**
  - **Pepsin**
    - No specific data.
  - **Pepsin Diluent (10X)**
    - No specific data.

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

**Date of issue**: 03/07/2018
Section 11. Toxicological information

Short term exposure

Potential immediate effects

Potential delayed effects

Long term exposure

Potential immediate effects

Potential delayed effects

Potential chronic health effects

General

Pepsin

Pepsin Diluent (10X)

May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity

Mutagenicity

Teratogenicity

Developmental effects

Fertility effects

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>83333.3 mg/kg</td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td>8333.3 mg/kg</td>
</tr>
</tbody>
</table>

Other information

Adverse symptoms may include the following:

Repeated exposure may cause skin dryness or cracking. May cause sensitization by inhalation.

Adverse symptoms may include the following:

Repeated exposure may cause skin dryness or cracking.

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### 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>Pepsin</strong> Propan-2-ol</td>
<td>Acute EC50 10100 mg/l Fresh water</td>
<td>Daphnia - <em>Daphnia magna</em></td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 1400000 µg/l Marine water</td>
<td>Crustaceans - <em>Crangon crangon</em></td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Fish - <em>Rasbora heteromorpha</em></td>
<td>96 hours</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong> Propan-2-ol</td>
<td>Acute EC50 10100 mg/l Fresh water</td>
<td>Daphnia - <em>Daphnia magna</em></td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1400000 µg/l Marine water</td>
<td>Crustaceans - <em>Crangon crangon</em></td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Fish - <em>Rasbora heteromorpha</em></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><strong>Pepsin</strong> Propan-2-ol</td>
<td>301E Ready Biodegradability - Modified OECD Screening Test</td>
<td>95% - 21 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong> Propan-2-ol</td>
<td>301E Ready Biodegradability - Modified OECD Screening Test</td>
<td>95% - 21 days</td>
<td>-</td>
<td>-</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>
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<tbody>
<tr>
<td><strong>Pepsin</strong> Propan-2-ol</td>
<td>0.05</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong> Propan-2-ol</td>
<td>0.05</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.

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### 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. 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. 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

<table>
<thead>
<tr>
<th></th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>IMDG</th>
<th>IATA</th>
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<tr>
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<td>EQUIPO QUIMICO</td>
<td>CHEMICAL KIT</td>
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<td>Packing group</td>
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</tbody>
</table>

**Additional information**

**DOT Classification:**
- Limited quantity: Yes.
- Quantity limitation: Passenger aircraft/rail: 10 kg. Cargo aircraft: 10 kg.
- Special provisions: 15

**TDG Classification:**
- Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).
- Explosive Limit and Limited Quantity Index: 0
- Passenger Carrying Road or Rail Index: 10
- Special provisions: 65

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Section 14. Transport information

**Mexico Classification** : Special provisions 251, 340

**IMDG** : Emergency schedules F-A, S-P


**Special provisions** 44, 163

**Special precautions for user** : Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL and the IBC Code** : Not available.

Section 15. Regulatory information

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

**U.S. Federal regulations**

- **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 Classification** : Not applicable.
- **SARA 304 RQ** : Pepsin
- **SARA 311/312 Classification** : Pepsin

**Composition/information on ingredients**

- Pepsin Diluent (10X)

**FLAMMABLE LIQUIDS - Category 3**

**REPOSITORY SENSITIZATION - Category 1**

**SKIN SENSITIZATION - Category 1**

**SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2**

**FLAMMABLE LIQUIDS - Category 2**

**SKIN IRRITATION - Category 2**

**EYE IRRITATION - Category 2A**

**SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE)(Narcotic effects) - Category 3**

**SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2**

Date of issue : 03/07/2018
### Section 15. Regulatory information

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pepsin</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>≤10</td>
<td>FLAMMABLE LIQUIDS - Category 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HNOC - Defatting irritant</td>
</tr>
<tr>
<td>pepsin A</td>
<td>≤0.3</td>
<td>SKIN IRRITATION - Category 2</td>
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<tr>
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<td></td>
<td>EYE IRRITATION - Category 2A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RESPIRATORY SENSITIZATION - Category 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3</td>
</tr>
<tr>
<td>reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)</td>
<td>≤0.1</td>
<td>ACUTE TOXICITY (oral) - Category 3</td>
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<tr>
<td></td>
<td></td>
<td>ACUTE TOXICITY (dermal) - Category 3</td>
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<tr>
<td></td>
<td></td>
<td>ACUTE TOXICITY (inhalation) - Category 3</td>
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<td></td>
<td></td>
<td>SKIN CORROSION - Category 1B</td>
</tr>
<tr>
<td></td>
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<td>SERIOUS EYE DAMAGE - Category 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SKIN SENSITIZATION - Category 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HNOC - Corrosive to digestive tract</td>
</tr>
</tbody>
</table>

| **Pepsin Diluent (10X)**                   |        |                                                                                 |
| Propan-2-ol                               | ≥50 - ≤75 | FLAMMABLE LIQUIDS - Category 2                                                |
|                                           |        | EYE IRRITATION - Category 2A                                                   |
|                                           |        | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
|                                           |        | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2       |
|                                           |        | HNOC - Defatting irritant                                                       |
| 2-Amino-2-(hydroxymethyl) propane-1,3-diol hydrochloride | ≤10    | SKIN IRRITATION - Category 2                                                    |
|                                           |        | EYE IRRITATION - Category 2A                                                   |
|                                           |        | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |
| reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1) | <1    | ACUTE TOXICITY (oral) - Category 3                                               |
|                                           |        | ACUTE TOXICITY (dermal) - Category 3                                            |
|                                           |        | ACUTE TOXICITY (inhalation) - Category 3                                         |
|                                           |        | SKIN CORROSION - Category 3B                                                   |
|                                           |        | SERIOUS EYE DAMAGE - Category 1                                                 |
|                                           |        | SKIN SENSITIZATION - Category 1                                                 |
|                                           |        | HNOC - Corrosive to digestive tract                                             |

#### State regulations

- **Massachusetts**: The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL
- **New York**: None of the components are listed.
- **New Jersey**: The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL
- **Pennsylvania**: The following components are listed: 2-PROPANOL

#### International regulations

- **Chemical Weapon Convention List Schedules I, II & III Chemicals**: Not listed.
- **Stockholm Convention on Persistent Organic Pollutants**: Not listed.
- **UNECE Aarhus Protocol on POPs and Heavy Metals**: Not listed.

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Section 15. Regulatory information

Inventory list
Australia : Not determined.
Canada : All components are listed or exempted.
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 : All components are listed or exempted.
Philippines : All components are listed or exempted.
Republic of Korea : All components are listed or exempted.
Taiwan : All components are listed or exempted.
Thailand : Not determined.
Turkey : Not determined.
United States : Not determined.
Viet Nam : Not determined.

Section 16. Other information

History
Date of issue : 03/07/2018
Date of previous issue : 08/30/2016
Version : 3

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FLAMMABLE LIQUIDS - Category 3</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>RESPIRATORY SENSITIZATION - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SKIN SENSITIZATION - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td></td>
</tr>
<tr>
<td>FLAMMABLE LIQUIDS - Category 2</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>SKIN IRRITATION - Category 2</td>
<td>Expert judgment</td>
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<tr>
<td>EYE IRRITATION - Category 2A</td>
<td>Expert judgment</td>
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<td>SKIN SENSITIZATION - Category 1</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3</td>
<td>Calculation method</td>
</tr>
<tr>
<td>SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

Indicates information that has changed from previously issued version.

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