Section 1. Identification

Product identifier : ISH Pepsin Kit, Part Number G9411A
Part no. (chemical kit) : G9411A
Part no. : Pepsin 5190-7748
Pepsin Diluent (10X) 5190-7749

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

Supplier/Manufacturer : Agilent Technologies Australia Pty Ltd
679 Springvale Road
Mulgrave
Victoria 3170, Australia
1800 802 402

Emergency telephone number (with hours of operation) : CHEMTREC®: +(61)-290372994

Section 2. Hazard(s) identification

Classification of the substance or mixture

Pepsin
H226 FLAMMABLE LIQUIDS - Category 3

Pepsin Diluent (10X)
H225 FLAMMABLE LIQUIDS - Category 2
H315 SKIN CORROSION/IRRITATION - Category 2
H319 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
H336 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3
H402 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 3
H412 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3

GHS label elements

Hazard pictograms : Pepsin

Pepsin Diluent (10X)

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Date of previous issue : 30/08/2016
Version : 3
Section 2. Hazard(s) identification

Signal word:
- Pepsin: WARNING
- Pepsin Diluent (10X): DANGER

Hazard statements:
- Pepsin
  - H226 - Flammable liquid and vapour.
- Pepsin Diluent (10X)
  - H225 - Highly flammable liquid and vapour.
  - H319 - Causes serious eye irritation.
  - H315 - Causes skin irritation.
  - H336 - May cause drowsiness or dizziness.
  - H412 - Harmful to aquatic life with long lasting effects.

Precautionary statements:

Prevention:
- Pepsin
  - 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.
- 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.
  - P261 - Avoid breathing vapour.
  - P264 - Wash hands thoroughly after handling.

Response:
- Pepsin
  - P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
  - P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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 + P362 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing.
  - P332 + P313 - If skin irritation 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.
- Pepsin Diluent (10X)
  - P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position 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 + P362 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing.
  - P332 + P313 - If skin irritation 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)
  - P405 - Store locked up.
  - P403 - Store in a well-ventilated place.
  - P235 - Keep cool.

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Section 2. Hazard(s) identification

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:

Additional warning phrases:
Pepsin
Not applicable.
Pepsin Diluent (10X)
Not applicable.

Other hazards which do not result in classification:
Pepsin
None known.
Pepsin Diluent (10X)
None known.

Section 3. Composition and ingredient information

Substance/mixture:
Pepsin Mixture
Pepsin Diluent (10X) Mixture

CAS number/other identifiers:

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>% (w/w)</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin Propan-2-ol</td>
<td>≤10</td>
<td>67-63-0</td>
</tr>
<tr>
<td>Pepsin Diluent (10X) Propan-2-ol</td>
<td>≥60 - ≤75</td>
<td>67-63-0</td>
</tr>
<tr>
<td>2-Amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride</td>
<td>≤10</td>
<td>1185-53-1</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>&lt;1</td>
<td>55965-84-9</td>
</tr>
</tbody>
</table>

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

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 if irritation occurs.

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

Pepsin Diluent (10X)
Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected

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Section 4. First aid measures

when 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 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.

Skin contact

**Pepsin**

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

**Pepsin Diluent (10X)**

- Wash contaminated skin with soap and water.
- Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. 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 if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**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.

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

**Potential acute health effects**

**Eye contact**

**Pepsin**

- No known significant effects or critical hazards.

**Pepsin Diluent (10X)**

- Causes serious eye irritation.
Section 4. First aid measures

<table>
<thead>
<tr>
<th>Ingestion</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin contact</td>
<td>Pepsin</td>
<td>Pepsin Diluent (10X)</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Pepsin</td>
<td>Pepsin Diluent (10X)</td>
</tr>
</tbody>
</table>

**Over-exposure signs/symptoms**

<table>
<thead>
<tr>
<th>Eye contact</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation</td>
<td>Pepsin</td>
<td>Pepsin Diluent (10X)</td>
</tr>
</tbody>
</table>

**Protection of first-aiders**

- Pepsin: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- Pepsin Diluent (10X): Causes skin irritation.

**Notes to physician**

- Pepsin: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Pepsin Diluent (10X): In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments**

- Pepsin: No specific treatment.

**Protection of first-aiders**

- Pepsin: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
- 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.

See toxicological information (Section 11)

**Section 5. Firefighting measures**

**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.
Section 5. Firefighting measures

**Specific hazards arising from the chemical**

- **Pepsin**: Flammable liquid and vapour. 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.

- **Pepsin Diluent (10X)**: Highly flammable liquid and vapour. 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. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**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

**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.

**Hazchem code**

- **Pepsin** •2YE
- **Pepsin Diluent (10X)** •2YE

Section 6. Accidental release measures

**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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour 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 spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
Section 6. Accidental release measures

For emergency responders: Pepsin

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".

Pepsin Diluent (10X)

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: Pepsin

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Pepsin Diluent (10X)

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and material for containment and cleaning up

Methods for cleaning up: Pepsin

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.

Pepsin Diluent (10X)

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.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Pepsin

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. 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.
**Section 7. Handling and storage**

**Pepsin Diluent (10X)**

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

**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.

**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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**Conditions for safe storage, including any incompatibilities**

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. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin Propan-2-ol</td>
<td>Safe Work Australia (Australia, 1/2014). STEL: 1230 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 983 mg/m³ 8 hours. TWA: 400 ppm 8 hours.</td>
</tr>
<tr>
<td>Pepsin Diluent (10X) Propan-2-ol</td>
<td>Safe Work Australia (Australia, 1/2014). STEL: 1230 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 983 mg/m³ 8 hours. TWA: 400 ppm 8 hours.</td>
</tr>
</tbody>
</table>

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, vapour 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. 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.
Section 8. Exposure controls and personal protection

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

Appearance

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Pepsin</th>
<th>Pepsin Diluent (10X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Pepsin</td>
<td>2</td>
</tr>
<tr>
<td>Melting point</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Boiling point</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Pepsin</td>
<td>Closed cup: 37.8 to 61°C (100 to 141.8°F)</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Pepsin</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Lower and upper explosive (flammable) limits</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapour density</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Pepsin</td>
<td>Soluble in the following materials: cold water and hot water.</td>
</tr>
</tbody>
</table>

Partition coefficient: n-octanol/water

<table>
<thead>
<tr>
<th>Partition coefficient: n-octanol/water</th>
<th>Pepsin</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-ignition temperature</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Pepsin</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Section 10. Stability and reactivity

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Pepsin Diluent (10X): No specific test data related to reactivity available for this product or its ingredients.

Chemical stability: The product is stable.

Pepsin Diluent (10X): The product is stable.
Section 10. Stability and reactivity

### Possibility of hazardous reactions
- **Pepsin**: Under normal conditions of storage and use, hazardous reactions will not occur.
- **Pepsin Diluent (10X)**: Under normal conditions of storage and use, hazardous reactions will not occur.

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

### 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: alkalis, 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: alkalis, oxidizing materials

### 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

#### 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><strong>Propan-2-ol</strong></td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>66100 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></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><strong>Pepsin Diluent (10X)</strong></td>
<td>LC50 Inhalation Vapour</td>
<td>Rat</td>
<td>66100 mg/m³</td>
<td>4 hours</td>
</tr>
<tr>
<td></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>
</tbody>
</table>

#### Irritation/Corrosion
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 Propan-2-ol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 millingram</td>
<td>-</td>
</tr>
<tr>
<td></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 millingram</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>

Sensitisation
Not available.

Conclusion/Summary
Respiratory : Pepsin: May cause sensitisation by inhalation.

Mutagenicity
Conclusion/Summary : Not available.

Carcinogenicity
Conclusion/Summary : Not available.

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

Specific target organ toxicity (repeated exposure)
Not available.

Aspiration hazard
Not available.

Information on likely routes of exposure : Pepsin Pepsin Diluent (10X)
Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Pepsin Pepsin Diluent (10X)
No known significant effects or critical hazards. Causes serious eye irritation.

Inhalation : Pepsin Pepsin Diluent (10X)
No known significant effects or critical hazards. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : Pepsin Pepsin Diluent (10X)
No known significant effects or critical hazards. Causes skin irritation.

Date of issue/Date of revision : 07/03/2018
Date of previous issue : 30/08/2016
Version : 3
12/17
Section 11. Toxicological information

Ingestion

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

Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact**

- **Pepsin**: No specific data.
- **Pepsin Diluent (10X)**: Adverse symptoms may include the following:
  - pain or irritation
  - watering
  - redness

**Inhalation**

- **Pepsin**: No specific data.
- **Pepsin Diluent (10X)**: Adverse symptoms may include the following:
  - nausea or vomiting
  - headache
  - drowsiness/fatigue
  - dizziness/vertigo
  - unconsciousness

**Skin contact**

- **Pepsin**: No specific data.
- **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 as well as chronic effects from short and long-term exposure

**Short term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Long term exposure**

- **Potential immediate effects**: Not available.
- **Potential delayed effects**: Not available.

**Potential chronic health effects**

- **General**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

- **Carcinogenicity**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

- **Mutagenicity**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

- **Teratogenicity**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

- **Developmental effects**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

- **Fertility effects**
  - **Pepsin**: No known significant effects or critical hazards.
  - **Pepsin Diluent (10X)**: No known significant effects or critical hazards.

Numerical measures of toxicity

**Acute toxicity estimates**

Not available.
Section 11. Toxicological information

Other information:

Pepsin
Adverse symptoms may include the following:
Repeated exposure may cause skin dryness or cracking. May cause sensitisation by inhalation.

Pepsin Diluent (10X)
Adverse symptoms may include the following:
Repeated exposure may cause skin dryness or cracking.

Section 12. Ecological information

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></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Acute EC50 10100 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1400000 μg/l Marine water</td>
<td>Crustaceans - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Fish - Rasbora heteromorpha</td>
<td>96 hours</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>Acute EC50 10100 mg/l Fresh water</td>
<td>Daphnia - Daphnia magna</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Fish - Rasbora heteromorpha</td>
<td>96 hours</td>
</tr>
</tbody>
</table>

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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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>

Aquatic half-life

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Aquatic half-life</th>
<th>Photolysis</th>
<th>Biodegradability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pepsin</strong></td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong></td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>-</td>
<td>-</td>
<td>Readily</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP&lt;sub&gt;ow&lt;/sub&gt;</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pepsin</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>0.05</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td><strong>Pepsin Diluent (10X)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propan-2-ol</td>
<td>0.05</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

Mobility in soil

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

Other adverse effects: No known significant effects or critical hazards.
Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th></th>
<th>ADG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN3316</td>
<td>UN3316</td>
<td>UN3316</td>
</tr>
<tr>
<td>UN proper shipping name</td>
<td>CHEMICAL KIT</td>
<td>CHEMICAL KIT</td>
<td>Chemical kit</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Packing group</td>
<td>II</td>
<td>II</td>
<td>II</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Additional information

ADG
- Hazchem code: 2Z
- Special provisions: 251, 340

IMDG
- Emergency schedules: F-A, _S-P_
- Special provisions: 251, 340

IATA
- Special provisions: A44, A163

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

Standard Uniform Schedule of Medicine and Poisons
Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances
No listed substance

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals
Not listed.

Montreal Protocol (Annexes A, B, C, E)
Not listed.

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Inventory list

Australia: Not determined.
Canada: 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. Any other relevant information

History

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

Key to abbreviations:
ADG = Australian Dangerous Goods
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
NOHSC = National Occupational Health and Safety Commission
Section 16. Any other relevant information

SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pepsin</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Flam. Liq. 3, H226</td>
<td></td>
</tr>
<tr>
<td>Pepsin Diluent (10X)</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Skin Irrit. 2, H315</td>
<td>Expert judgment</td>
</tr>
<tr>
<td>Eye Irrit. 2A, H319</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Acute 3, H402</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Aquatic Chronic 3, H412</td>
<td></td>
</tr>
</tbody>
</table>

References: Not available.

Indicates information that has changed from previously issued version.

Notice to reader

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