

# Material Safety Data Sheet (MSDS)

ARG80934 Neuropeptide Y ELISA Kit

Version: 2015/08/14

## 1. Product and Company Identification

**Product Catalog No:** ARG80934

**Product Name:** Neuropeptide Y ELISA Kit

**Components with dangerous ingredients:**

- A. 20X Assay Buffer Concentrate
- B. Streptavidin-HRP complex
- C. TMB substrate
- D. 2N HCl (Stop solution)

Not listed single components contains no hazardous substances in concentrations to be declared, a labelling is not required.

**Supplier:** Arigo Biolaboratories Corp.

No.22, Ln. 227, Gongyuan Rd., Hsinchu City 300 Taiwan

Tel: +886-3-5621738

Fax: +886-3-5613008

## 2. Composition / Information on Ingredients

### A. 20X Assay Buffer Concentrate

#### 2.1 Substances

- Name: 20x Assay Buffer Concentrate
- Synonyms: Assay Buffer, EIA Buffer

#### 2.2 Mixtures

| Name        | CAS No.     | EINECS/ELINCS No. | Content | EU Hazard** |
|-------------|-------------|-------------------|---------|-------------|
| Component A | Proprietary | Proprietary       | < 1%    | N/A         |
| Component B | Proprietary | Proprietary       | < 1%    | N/A         |
| Component C | Proprietary | Proprietary       | < 1%    | N/A         |
| Component D | Proprietary | Proprietary       | < 1%    | Xi          |
| Component E | Proprietary | Proprietary       | < 0.1%  | T+, N       |
| Component F | Proprietary | Proprietary       | < 0.1%  | Xn          |
| Water       | 7732-18-5   | 231-791-2         | > 96%   | N/A         |

\*\* T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritant, E = Explosive, F+ = Extremely flammable, F = Highly flammable, N = Dangerous for the environment, O = Oxidizing

### B. Streptavidin-HRP complex

#### 2.1 Substances

- Name: Streptavidin-Horseradish Peroxidase
- Synonyms: SA-HRP

#### 2.2 Mixtures

| Name            | CAS No.     | EINECS/ELINCS No. | Content | EU Hazard** |
|-----------------|-------------|-------------------|---------|-------------|
| SA-HRP Solution | Proprietary | Proprietary       | 100%    | Xi          |

\*\* T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritant, E = Explosive, F+ = Extremely flammable, F = Highly flammable, N = Dangerous for the environment, O = Oxidizing

### C. TMB substrate

#### 2.1 Substances

- Name: Substrate Solution (TMB)
- Synonyms: 3,3',5,5'-Tetramethylbenzidine

#### 2.2 Mixtures

| Name  | CAS No.    | EINECS/ELINCS No. | Content | EU Hazard** |
|-------|------------|-------------------|---------|-------------|
| TMB   | 54827-17-7 | 259-364-6         | < 1%    | N/A         |
| Water | 7732-18-5  | 231-791-2         | > 99%   | N/A         |

\*\* T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritant, E = Explosive, F+ = Extremely flammable, F = Highly flammable, N = Dangerous for the environment, O = Oxidizing

### D. 2N HCl (Stop solution)

#### 2.1 Substances

- Name: 2N HCL
- Synonyms: 2N Hydrochloric Acid, Stop Solution

#### 2.2 Mixtures

| Name                       | CAS No.     | EINECS/ELINCS No. | Content | EU Hazard** |
|----------------------------|-------------|-------------------|---------|-------------|
| Hydrochloric Acid Solution | Proprietary | Proprietary       | 100%    | C, Xi       |

\*\* T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritant, E = Explosive, F+ = Extremely flammable, F = Highly flammable, N = Dangerous for the environment, O = Oxidizing

## 3. Hazards Identification

### A. 20X Assay Buffer Concentrate

#### 3.1 Classification of the substance or mixture

- In compliance with EC regulation No. 1272/2008 and its amendments
- Skin corrosion/irritation (Category 2).
- Serious eye damage/irritation (Category 2A).
- Specific target organ toxicity, single exposure (Category 3).
- In compliance with directives 67/548/EEC or 1999/45/EC and their amendments
- Possibility of skin irritation, with prolonged contact may aggravate this effect.
- Possibility of irritation to the eyes.

#### 3.2 Label elements

**In compliance with EC regulation No. 1272/2008 and its amendments**



- Irritant
- Hazard statements
  - H315: Causes skin irritation.
  - H320: Causes eye irritation.
  - H335: May cause respiratory irritation.
- Precautionary statements - prevention
  - P261: Avoid breathing vapors.
  - P264: Wash hands thoroughly after handling.
  - P271: Use only outdoors or in a well-ventilated area.
  - P281: Use personal protective equipment as required.
- Precautionary statements – response

- P308+P313: If exposed or concerned, get medical advice/attention.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so, and continue rinsing.
- P302+P352: IF ON SKIN: Wash with soap and water.
- P362: Take off contaminated clothing and wash before use.
- Precautionary statements – storage
- P403+P233: Store in a well ventilated place. Keep container tightly closed.
- P501: Dispose of contents/container in accordance with local regulations.

**In compliance with directives 67/548/EEC or 1999/45/EC and their amendments**



- Irritant
  - Risk phrase
    - R36/37/38: Irritating to the eyes, respiratory system, and skin.
  - Safety phrase
    - S9: Keep container in a well ventilated place.
    - S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
    - S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
    - S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.
    - S45: In case of accident or if you feel unwell, seek medical advice immediately.
    - S61: Avoid release to the environment. Refer to special instructions / safety data sheet.
- 3.3 Other hazards
- None known.

**B. Streptavidin-HRP complex**

- 3.1 Classification of the substance or mixture
- In compliance with EC regulation No. 1272/2008 and its amendments
  - Skin corrosion/irritation (Category 3).
  - Serious eye damage/irritation (Category 2B).
  - In compliance with directives 67/548/EEC or 1999/45/EC and their amendments
  - Possibility of skin irritation, with prolonged contact may aggravate this effect.
  - Possibility of irritation to the eyes.

3.2 Label elements

**In compliance with EC regulation No. 1272/2008 and its amendments**



- Irritant
- Hazard statements
  - H316: Causes mild skin irritation.
  - H320: Causes eye irritation.
- Precautionary statements - prevention
  - P261: Avoid breathing vapors.
  - P264: Wash hands thoroughly after handling.

- 
- P271: Use only outdoors or in a well-ventilated area.
  - P281: Use personal protective equipment as required.
  - Precautionary statements – response
    - P308+P313: If exposed or concerned, get medical advice/attention.
    - P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
    - P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so, and continue rinsing.
    - P302+P352: IF ON SKIN: Wash with soap and water.
  - Precautionary statements – storage
    - P403+P233: Store in a well ventilated place. Keep container tightly closed.
    - P501: Dispose of contents/container in accordance with local regulations.

**In compliance with directives 67/548/EEC or 1999/45/EC and their amendments**



- Irritant
  - Risk phrase
    - R36/38: Irritating to the eyes and skin.
  - Safety phrase
    - S9: Keep container in a well ventilated place.
    - S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
    - S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.
    - S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.
    - S45: In case of accident or if you feel unwell, seek medical advice immediately.
    - S61: Avoid release to the environment. Refer to special instructions / safety data sheet.
- 3.3 Other hazards
- None known.

### **C. TMB substrate**

- 3.1 Classification of the substance or mixture
- This product does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC, or 1272/2008.
- 3.2 Label elements
- The product does not need to be labeled in accordance with EC directives or respective national laws.
- In compliance with EC regulation No. 1272/2008 and its amendments**
- Precautionary statements – prevention
    - P281: Use personal protective equipment as required.
  - Precautionary statements – response
    - P308+P313: If exposed or concerned, get medical advice/attention.
  - Precautionary statements – storage
    - P403+P233: Store in a well ventilated place. Keep container tightly closed.
    - P501: Dispose of contents/container in accordance with local regulations.
- 3.3 Other hazards
- None known.

### **D. 2N HCl (Stop solution)**

- 3.1 Classification of the substance or mixture
- In compliance with EC regulation No. 1272/2008 and its amendments
  - Skin corrosion/irritation (Category 2).

- 
- Serious eye damage/irritation (Category 2A).
  - Specific target organ toxicity, single exposure (Category 3).
  - In compliance with directives 67/548/EEC or 1999/45/EC and their amendments
  - Possibility of skin irritation, with prolonged contact may aggravate this effect.
  - Possibility of irritation to the eyes.

### 3.2 Label elements

#### In compliance with EC regulation No. 1272/2008 and its amendments



- Corrosive, Irritant
- Hazard statements
  - H315: Causes skin irritation.
  - H320: Causes eye irritation.
  - H335: May cause respiratory irritation.
- Precautionary statements - prevention
  - P261: Avoid breathing vapors.
  - P264: Wash hands thoroughly after handling.
  - P271: Use only outdoors or in a well-ventilated area.
  - P281: Use personal protective equipment as required.
- Precautionary statements – response
  - P308+P313: If exposed or concerned, get medical advice/attention.
  - P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do so, and continue rinsing.
  - P302+P352: IF ON SKIN: Wash with soap and water.
  - P362: Take off contaminated clothing and wash before use.
- Precautionary statements – storage
  - P403+P233: Store in a well ventilated place. Keep container tightly closed.
  - P501: Dispose of contents/container in accordance with local regulations.

#### In compliance with directives 67/548/EEC or 1999/45/EC and their amendments



- Corrosive, Irritant
- Risk phrase
  - R34: Causes burns.
  - R36/37/38: Irritating to the eyes, respiratory system, and skin.
- Safety phrase
  - S9: Keep container in a well ventilated place.
  - S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water.

- 
- S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.
  - S45: In case of accident or if you feel unwell, seek medical advice immediately.
  - S61: Avoid release to the environment. Refer to special instructions / safety data sheet.

### 3.3 Other hazards

- None known.

---

## 4. First Aid Measures

### A. 20X Assay Buffer Concentrate

#### 4.1 Description of first aid measures

- General advice
  - This product should be treated as a chemical substance.
  - Appropriate personal protective equipment should be worn at all times when handling this product.
  - In case of doubt or if symptoms persist, please seek medical attention immediately.
- In the event of exposure by inhalation
  - Remove the exposed person to open, fresh air.
  - If any respiratory complaints are reported, oxygen can be administered.
- In the event of splashes or contact with eyes
  - If necessary, remove contact lenses.
  - Rinse eyes thoroughly with a stream of clean water for at least 15 minutes, holding the eyelids open.
- In the event of swallowing
  - Rinse mouth with large amounts of water.
  - Do not induce vomiting unless directed to do so by medical personnel.
  - NEVER induce swallowing or administer anything orally to an unconscious person.
- In the event of contact with skin
  - Remove contaminated clothing and footwear and wash before reuse.
  - Wash the affected skin thoroughly with plenty of mild soap and water for at least 15 minutes.

#### 4.2 Most important symptoms and effects, both acute and delayed

- No data available

#### 4.3 Indication of any immediate medical attention and special treatment needed

- No data available.

### B. Streptavidin-HRP complex

### C. TMB substrate

### D. 2N HCl (Stop solution)

#### 4.1 Description of first aid measures

- General advice
  - This product should be treated as a chemical substance.
  - Appropriate personal protective equipment should be worn at all times when handling this product.
  - In case of doubt or if symptoms persist, please seek medical attention immediately.
- In the event of exposure by inhalation
  - Remove the exposed person to open, fresh air.
  - If any respiratory complaints are reported, oxygen can be administered.
- In the event of splashes or contact with eyes
  - If necessary, remove contact lenses.
  - Rinse eyes thoroughly with a stream of clean water for at least 15 minutes, holding the eyelids open.
- In the event of swallowing

- 
- Rinse mouth with large amounts of water.
  - Do not induce vomiting unless directed to do so by medical personnel.
  - NEVER induce swallowing or administer anything orally to an unconscious person.
  - In the event of contact with skin
    - Remove contaminated clothing and footwear and wash before reuse.
    - Wash the affected skin thoroughly with plenty of mild soap and water for at least 15 minutes.

#### 4.2 Most important symptoms and effects, both acute and delayed

- In the event of exposure by inhalation, possible nose and throat burning, irritation, and inflammation may occur. Some people may develop an inflammatory reaction to hydrogen chloride, called reactive airway dysfunction syndrome (RADS).
- In the event of splashes or contact with eyes, possible pain, swelling, or corneal erosion may occur.
- In the event of swallowing, possible irritation and burns of the gastrointestinal tract may occur, causing pain, nausea, vomiting, intense thirst, difficulty swallowing, salivation, chills, fever, uneasiness, and shock.
- In the event of contact with skin, possible irritation, pain, dermatitis, ulcerations, and burns may occur.

#### 4.3 Indication of any immediate medical attention and special treatment needed

- No data available.

---

## 5. Fire-Fighting Measures

### A. 20X Assay Buffer Concentrate

### B. Streptavidin-HRP complex

### C. TMB substrate

### D. 2N HCl (Stop solution)

- Non-flammable.

#### 5.1 Extinguishing media

- Water spray, alcohol-resistant foam, carbon dioxide, dry chemical powder.

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

- None known.

#### 5.3 Advice for firefighters

- None known.

---

## 6. Accidental Release Measures

### A. 20X Assay Buffer Concentrate

### B. Streptavidin-HRP complex

### C. TMB substrate

### D. 2N HCl (Stop solution)

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

- Wear suitable protective clothing, gloves, and eyewear (see Section 8 of MSDS).
- Evacuate all personnel to safe areas.
- Ensure adequate ventilation. Avoid breathing vapors, mist, dust, or gas.

#### 6.2 Environmental precautions

- Dilute with plenty of water.

- 
- Do not let product enter drains.
  - Contain and control any leaks or spills with absorbent materials.
  - Prevent pollution into sewage, surface, and ground water.
  - Prevent soil pollution.

#### 6.3 Methods and material for containment and cleaning up

- Cover spillage with suitable absorbent material.
- Ventilate area of spill, and clean thoroughly with water and soap.
- Hold all material for appropriate disposal (section 13 of MSDS).

#### 6.4 Reference to other sections

- For required PPE, see section 8 of MSDS.
- For disposal, see section 13 of MSDS.

---

## 7. Handling and Storage

### A. 20X Assay Buffer Concentrate

### B. Streptavidin-HRP complex

### C. TMB substrate

### D. 2N HCl (Stop solution)

#### 7.1 Precautions for safe handling

- Avoid inhalation. Use in a well-ventilated area.
- Avoid contact with skin, eyes, and clothing.
- Always wash hands after handling.
- Use suitable protective means to work with the substance.
- Do not eat, drink, or smoke in areas where this product is used.

#### 7.2 Conditions for safe storage, including any incompatibilities

- Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container sealed until ready for use.
- Recommended storage: +4°C.

#### 7.3 Specific end uses

- None known.

---

## 8. Exposure Controls / Personal Protection

### A. 20X Assay Buffer Concentrate

### B. Streptavidin-HRP complex

### C. TMB substrate

#### 8.1 Control parameters

- Contains no substances with occupational exposure limit values.

#### 8.2 Exposure controls

- **Appropriate engineering controls**
  - Ensure laboratory is equipped with a safety shower and eye wash station.
- **Personal protection measures, such as personal protective equipment**
  - Use clean personal protective equipment that has been properly maintained.
- **Eye protection**
  - Use appropriate chemical safety goggles.
- **Hand protection**



- Use appropriate chemical resistive gloves.
- Wash and dry hands before using.
- **Body protection**
  - Wear appropriate protective clothing.
- **Respiratory protection**
  - If requested by your safety advisor, use a suitable respirator.

#### D. 2N HCl (Stop solution)

##### 8.1 Control parameters

| Component         | CAS No.   | Value | Control Parameters             | Basis   |
|-------------------|-----------|-------|--------------------------------|---|
| Hydrochloric Acid | 7647-01-0 | STEL  | 5 ppm<br>7.5 mg/m <sup>3</sup> | USA. ACGIH Threshold Limit Values (TLV)               |
|                   |           | CEIL  | 5 ppm<br>7.5 mg/m <sup>3</sup> | USA. NIOSH Recommended Exposure Limits                |
|                   |           | CEIL  | 5 ppm<br>7 mg/m <sup>3</sup>   | USA. OSHA – Table AC-1<br>Permissible Exposure Limits |

##### 8.2 Exposure controls

- Appropriate engineering controls
  - Ensure laboratory is equipped with a safety shower and eye wash station.
- Personal protection measures, such as personal protective equipment
  - Use clean personal protective equipment that has been properly maintained.
- Eye protection
  - Use appropriate chemical safety goggles.
- Hand protection
  - Use appropriate chemical resistive gloves.
  - Wash and dry hands before using.
- Body protection
  - Wear appropriate protective clothing.
- Respiratory protection
  - If requested by your safety advisor, use a suitable respirator.

## 9. Physical and Chemical Properties

#### A. 20X Assay Buffer Concentrate

##### 9.1 Information on basic physical and chemical properties

- Appearance: clear, colorless liquid
- Odor: no data available
- Solubility: fully soluble in water
- Flammability: no data available
- pH: no data available
- Melting / freezing temperature: ~ 0°C (32°F)
- Boiling temperature (range): ~100°C (212°F)
- Flash point: no data available
- Vapor pressure: no data available

- 
- Relative density: ~1.0
  - Partition coefficient: no data available

**B. Streptavidin-HRP complex**

**C. TMB substrate**

9.1 Information on basic physical and chemical properties

- Appearance: colorless to light yellow liquid
- Odor: odorless
- Solubility: fully soluble in water
- Flammability: non-flammable
- pH: no data available
- Melting / freezing temperature: 0°C
- Boiling temperature (range): 100°C
- Flash point: no data available
- Vapor pressure: no data available
- Relative density: no data available
- Partition coefficient: no data available

**D. 2N HCl (Stop solution)**

9.1 Information on basic physical and chemical properties

- Appearance: clear, colorless liquid
- Odor: pungent odor of hydrogen chloride
- Solubility: 67% at 20°C (68°F)
- Flammability: no data available
- pH: ~1
- Melting / freezing temperature: ~ 0°C (32°F)
- Boiling temperature (range): ~100°C (212°F)
- Flash point: no data available
- Vapor pressure: 30,780 mm Hg at 20°C (68°F)
- Relative density: ~1.0
- Partition coefficient: no data available

---

## 10. Stability and Reactivity

---

**A. 20X Assay Buffer Concentrate**

10.1 Reactivity

- Stable under all known conditions.

10.2 Chemical stability

- Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

- None known.

10.4 Conditions to avoid

- Heat

10.5 Incompatible materials

- Strong acids or bases
- Strong oxidizers

10.6 Hazardous decomposition products

- Heating to decomposition temperature may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

**B. Streptavidin-HRP complex**

---

**C. TMB substrate**

- 10.1 Reactivity
  - Stable under all known conditions.
- 10.2 Chemical stability
  - Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions
  - None known.
- 10.4 Conditions to avoid
  - Heat, light.
- 10.5 Incompatible materials
  - Strong oxidizing agents.
  - Alkali metals.
  - Bases.
  - Amines.
  - Copper and copper alloys.
- 10.6 Hazardous decomposition products
  - Possible carbon monoxide, carbon dioxide, nitrous oxide, hydrogen chloride, hydrogen bromide, and phosphorous oxide fumes.

**D. 2N HCl (Stop solution)**

- 10.1 Reactivity
  - Stable under all known conditions.
- 10.2 Chemical stability
  - Stable under recommended storage conditions.
- 10.3 Possibility of hazardous reactions
  - None known.
- 10.4 Conditions to avoid
  - Heat, moisture.
- 10.5 Incompatible materials
  - Hydroxides, amines, alkalies, oxidizers, acetic anhydride, active metals, amines, 2-aminoethanol, ammonia, ammonium hydroxide, calcium phosphide, chlorosulfonic acid, ethylene diamine, ethyleneimine, epichlorohydrin, isocyanates, metal acetylides, oleum, organic anhydrides, perchloric acid, 3-propiolactone, uranium phosphide, sulfuric acid, vinyl acetate, vinylidene fluoride.
  - Highly corrosive to most metals, forming flammable hydrogen gas.
  - Attacks some plastics, rubber, and coatings.
- 10.6 Hazardous decomposition products
  - When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

---

**11. Toxicological Information****A. 20X Assay Buffer Concentrate**

- 11.1 Information on toxicological effects
  - Skin corrosion / irritation
    - Mild skin irritation observed in rabbits after dermal exposure to 500mg of Component D for 24 hours.
  - Serious damage to eyes / eye irritation
    - Moderate irritation observed in rabbits after exposure to 100mg of Component D for 24 hours.
  - Respiratory or skin sensitization

- 
- None known.
  - Swallowing
  - Irritating effect on mouth and throat.

**B. Streptavidin-HRP complex**

**C. TMB substrate**

11.1 Information on toxicological effects

- Skin corrosion / irritation
  - Irritating effect on skin and mucous membranes.
- Serious damage to eyes / eye irritation
  - None known.
- Respiratory or skin sensitization
  - None known.
- Swallowing
  - Irritating effect on the mouth and throat.

**D. 2N HCl (Stop solution)**

11.1 Information on toxicological effects

- Skin corrosion / irritation
  - Mild skin irritation observed after dermal exposure to 4% hydrochloric acid for 24 hours. <sup>1</sup>
- Serious damage to eyes / eye irritation
  - Mild eye irritation observed in rabbits after exposure to 5 mg of hydrochloric acid for 30 seconds, followed by rinsing. <sup>1</sup>
- Respiratory or skin sensitization
  - Iritis observed in rats after inhalation of 3,124 pg/mL of hydrochloric acid. <sup>1</sup>
- Swallowing
  - Lowest published lethal dose in humans from oral exposure to hydrochloric acid reported at 2,857 µg/kg. Respiratory depression and changes in structure or function of esophagus observed. <sup>1</sup>

---

## 12. Ecological Information

---

**A. 20X Assay Buffer Concentrate**

12.1 Toxicity

- LC 50 Dreissena Polymorpha 24 Hours 92,000 ug/L
- LC 50 Dreissena Polymorpha 24 Hours 137,000 ug/L
- LC 50 Dreissena Polymorpha 24 Hours 169,000 ug/L

12.2 Persistence and degradability

- No data available.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- None known.

**B. Streptavidin-HRP complex**

**C. TMB substrate**

12.1 Toxicity

- No data available.

12.2 Persistence and degradability

- No data available.

---

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- None known.

**D. 2N HCl (Stop solution)**

12.1 Toxicity

- LC 50 *Gambusia Affinis* 24 Hours 282,000 ug/L <sup>2</sup>
- LC 50 *Gambusia Affinis* 48 Hours 282,000 ug/L <sup>2</sup>
- LC 50 *Gambusia Affinis* 96 Hours 180,000 ug/L <sup>2</sup>

12.2 Persistence and degradability

- Hydrogen chloride dissociates readily in water to chloride and hydronium ions, decreasing the pH of the water. <sup>3</sup>
- Hydrochloric acid is expected to be essentially nonvolatile in water. <sup>3</sup>

12.3 Bioaccumulative potential

- Hydrogen chloride does not accumulate in the food chain. <sup>3</sup>

12.4 Mobility in soil

- Hydrogen chloride will evaporate from dry soil surfaces and dissociate into chloride and hydronium ions in moist soil. <sup>3</sup>

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- None known.

---

## 13. Disposal Considerations

**A. 20X Assay Buffer Concentrate**

**B. Streptavidin-HRP complex**

**C. TMB substrate**

**D. 2N HCl (Stop solution)**

13.1 Waste treatment methods

- Waste management is carried out without endangering human health, without harming the environment, and without risk to water, air, soil, plants, or animals.
- Waste
  - Recycle or dispose of waste in compliance with current state, federal, and/or national legislation, preferably via a specialized certified disposal company.
- Soiled packaging
  - Contaminated packaging can be disposed of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with state, federal, and/or national legislation.

---

## 14. Transport Information

**A. 20X Assay Buffer Concentrate**

- This product does not meet the criteria for classification as hazardous transport.
- This product is not classified as environmentally hazardous according to the UN Model Regulations.
- This product is not classified as a marine pollutant according to the IMDG Code.

- 
- Special precautions:
    - Do not expose to heat.
    - Avoid freezing.

**B. Streptavidin-HRP complex**

**C. TMB substrate**

- This product does not meet the criteria for classification as hazardous transport.
- This product is not classified as environmentally hazardous according to the UN Model Regulations.
- This product is not classified as a marine pollutant according to the IMDG Code.

**D. 2N HCl (Stop solution)**

**UN number**

ADR/RID: 1789 IMDG: 1789 IATA: 1789

**UN proper shipping name**

ADR/RID: HYDROCHLORIC ACID

IMDG: HYDROCHLORIC ACID

IATA: Hydrochloric acid

**Transport hazard class(es)**

ADR/RID: 8 IMDG: 8 IATA: 8

**Packaging group**

ADR/RID: III IMDG: III IATA: III

**Environmental hazards**

ADR/RID: no IMDG Marine pollutant: no IATA: no

**Special precautions for user**

no data available

---

## 15. Regulatory Information

**A. 20X Assay Buffer Concentrate**

**B. Streptavidin-HRP complex**

**C. TMB substrate**

**D. 2N HCl (Stop solution)**

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

- No data available.

15.2 Chemical safety assessment

- A Chemical Safety Assessment has not been made for this product.

---

## 16. Other Information

**Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

**Abbreviations:**

CAS Chemical Abstract Service

CEIL Ceiling Limit

---

EC European Council  
EINECS European Inventory of Existing Commercial Chemical Substances  
ELINKS European List of Notified Chemical Substances  
EMS Express Mail Service  
EU European Union  
MSDS Material Safety Data Sheet  
PBT Persistent, Bioaccumulative and Toxic  
PPE Personal Protective Equipment  
STEL Short Term Exposure Limit  
TWA Time Weighted Average  
UN United Nations  
vPvB Very Persistent and Very Bioaccumulative

1 Centers for Disease Control and Prevention, 1600 Clifton Rd., Atlanta, GA, 30333, USA, National Institute for Occupational

Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File #MW4025000, 2009.

2 Wallen, I.E., W.C. Greer, and R. Lasater, Toxicity to *Gambusia affinis* of Certain Pure Chemicals in Turbid Waters, *Sewage Ind.Wastes* 29(6):695-711, 1957.

3 <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/r?dbs+hsdb:@term+@rn+@rel+7647-01-0>, U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894, 2009.

**Data compared to the previous version altered.**

---