



## Safety Data Sheet

According to Regulation (EC) No. 1907/2006 (REACH), Annex II

Trade Name: Dengue Type 4 E. P. Recomb.

Material. No.: R01559

Version: 1.0

Revision: 000

Specification: R01559

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Revision Date: 16 DEC 2016

### 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY UNDERTAKING

Identification of the Substance or Preparation: Dengue Virus Type 4, Envelope Protein (a.a. 280-674), Recombinant, Catalog # R01559 and Phosphate Buffered Saline, pH 7.4

REACH Registration No: Not Applicable

Use of the Substance / Preparation:

Identified Use(s): For *in vitro* laboratory use. For professional use only.

Company Undertaking Identification:

Meridian Life Science, Inc.  
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### 2. HAZARDS IDENTIFICATION

Classification: Void

#### Information Pertaining to Special Dangers for Human and Environment:

This mixture does not require labeling, based on the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest version. This mixture is not classified as hazardous according to the EC Dangerous Preparations Directive (1999/45/EC) or EC 1272/2008 (CLP).

#### Classification System:

The classification is in alignment with current EC (European Community) Directives. It is expanded with information from technical literature.

**Physical Hazards:** Not classified as a physical hazard.

**Health Hazard:** Not classified as a health hazard.

**Environmental Hazard:** Not classified as environmental hazard.

**Precautionary Statements:** The chemical, physical and toxicological properties of this mixture have not been thoroughly characterized. Avoid contact with eyes and skin. Do not inhale. This mixture contains material of animal origin and should be considered as potentially capable of transmitting infectious disease.

#### Potential Health Effects:

Inhalation: No data available.

Eyes: No data available. Eye exposure may cause irritation, redness and watering.

Skin: No data available.

Ingestion: No data available.

Chronic Effects: No data available.

Target Organs: No data available.



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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Characterization (Hazardous Chemical Ingredients):

| Chemical Name | EC-No.    | Index-No.    | CAS-No. | %   | Classification | Labeling  |
|---------------|-----------|--------------|---------|-----|----------------|-----------|
|               |           |              |         |     | Symbol         | R-Phrases |
| Thimerosal    | 200-210-4 | 080-004-00-7 | 54-64-8 | 0.1 | None           | None      |

Dangerous Components According to EC Criteria: None

Additional Information: For wording of the listed risk phrases, refer to Section 16.

### 4. FIRST AID MEASURES

**In Case of Inhalation:** Remove from source of exposure. Seek medical attention if breathing becomes difficult or if cough or other symptoms develop.

**In Case of Skin Contact:** Remove clothing that product has touched. Rinse skin for 15 minutes. Seek medical attention if irritation persists.

**In Case of Eye Contact:** Immediately flush with tepid water for 15 minutes. Remove contact lenses if worn. Obtain medical attention if redness or irritation persists.

**In Case of Ingestion:** Rinse mouth with water. Seek medical attention if signs of toxicity occur.

**Self-Protection of the First Aider:** Follow company specific safety procedures.

### 5. FIRE-FIGHTING MEASURES

**Suitable Extinguishing Media:** Use extinguishing media suitable for surrounding fire, such as carbon dioxide, chemical foam, dry chemical or water spray.

**Extinguishing Media Which Must Not Be Used for Safety Reasons:** Unknown.

**Special Exposure Hazards Arising From the Substance or Preparation Itself, Combustion Products, Resulting Gases:** Dilute aqueous solution not considered a fire hazard.

**Special Protective Equipment for Fire-Fighters:** Fire fighters should wear NIOSH-approved or self-contained breathing apparatus and full protective gear.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** See Section 8.

**Environmental Precautions:** Do not allow in sewer system. Contain spill.

**Methods for Cleaning Up:** Absorb spill with inert material/absorbent. Decontaminate the spill site following standard procedures. Dispose of waste in accordance with all applicable federal, state, local and provincial environmental regulations per Section 13.



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### 7. HANDLING AND STORAGE

**Handling:** Follow good laboratory hygiene practices. See Section 8, Engineering Controls. Minimize contact and contamination of personal clothing and skin. Wash hands thoroughly after handling.

**Storage:** Store at  $\leq -20^{\circ}\text{C}$ . Store in original container.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Controls:** This product is not expected to require special ventilation controls. Facilities storing or using this product should be equipped with an eyewash fountain.

#### Personal Protection Equipment:

Respiratory Protection: A respirator is not expected to be required under normal conditions of use.

Hand Protection: Wear chemical resistant protective gloves.

Eye Protection: Wear appropriate protective safety eye glasses or goggles.

Body Protection: Wear lab coat or other protective garments. Remove contaminated clothing promptly.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Liquid

**Physical State:** Liquid

**Color:** Not Available

**Odor:** Not Available

| Parameter                          | Value          |
|------------------------------------|----------------|
| pH (20°C):                         | 7.4            |
| Melting Point/Range (°C):          | Not Available  |
| Boiling Point/Range (°C):          | Not Available  |
| Flash Point (°C):                  | Not Applicable |
| Ignition Temperature (°C):         | Not Applicable |
| Vapor Pressure (°C):               | Not Available  |
| Density (g/cm <sup>3</sup> ):      | Not Available  |
| Bulk Density (kg/m <sup>3</sup> ): | Not Available  |
| Water Solubility (20°C in g/L):    | Fully Miscible |
| Partition Coefficient              | Not Available  |
| n-Octanol/Water (log Po/w):        | Not Available  |
| Viscosity, Dynamic (mPa s):        | Not Available  |
| Dust Explosion Hazard:             | Not Applicable |



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### 10. STABILITY AND REACTIVITY

**Reactivity:** Unknown.

**Stability:** Stable under ordinary conditions of storage and use.

**Conditions to Avoid:** No decomposition if used and stored according to specifications.

**Materials to Avoid:** Incompatible with strong oxidizing agents, strong acids, strong bases.

**Hazardous Decomposition Products:** None expected under normal conditions of use.

### 11. TOXICOLOGICAL INFORMATION

Routes of exposure may include inhalation, skin absorption, and eye and skin contact.

Because of the small size of the containers and the low concentrations of hazardous ingredients, the toxicological risks are minor. Thimerosal is used as a preservative in pharmaceuticals.

The following toxicological information is for the hazardous ingredients in pure form:

#### Acute Toxicity:

After Inhalation: Irritation and/or damage of the mucous membranes of respiratory tract.

After Swallowing: Irritation of the mouth, throat, and other tissues of the gastrointestinal system can occur.

After Skin Contact: Irritation of the skin. Danger of skin absorption.

After Eye Contact: Eye Irritation Test (Rabbit): Slight irritation of the eye.

#### Systemic Effects of Thimerosal Exposure:

**Acute:** Metallic taste, nausea, vomiting, abdominal pain, bloody diarrhea, intestinal burns, glottal edema, aspiration pneumonia, drop in blood pressure, cardiac arrhythmia, circulatory collapse and renal failure.

**Chronic:** Inflammation of the mouth with loss of teeth and mercurial line. The principal signs manifest themselves in the CNS (impaired speech, vision, hearing and sensitivity, loss of memory, irritability, hallucinations, delirium).

**Animal Toxicological Data:** LD<sub>50</sub> (oral, rat): 75 mg/kg.

**Human Toxicological Data:** An oral dose of 29 mg/kg caused degenerative changes in the brain, anorexia and changes in motor activity.

An oral dose of 83 mg/kg caused coma, gastritis, renal tubular failure, dermatitis, gingivitis, delirium, polyneuropathy and respiratory failure.

**Further Toxicological Information:** Danger of cumulative effects.

**Additional Toxicological Information:** This product is not subject to classification, according to the calculation method of the General EC Classification Guidelines for preparations as issued in the latest version.

### 12. ECOLOGICAL INFORMATION

#### For Thimerosal Ingredient:

Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment. Hazard for drinking water supplies.

#### NCLASS Data:

Toxicity: L(E)C50 < 1 mg/L

Degradation: Readily Degradable = No

Bioaccumulation: Log Pow = NA, BCF = NA

**Ecotoxicity:** Fish Toxicity: *Lepomis macrochirus* (Bluegill) LC<sub>50</sub>: 110 mg/L (24 h)



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### 13. DISPOSAL CONSIDERATIONS

**Appropriate Disposal / Product:** Dispose of unused product, spilled substance and waste in accordance with all applicable federal, state, local and provincial environmental and waste regulations.

### 14. TRANSPORT INFORMATION

**Land Transport (ADR/RID/GGVSE):** Not restricted. Not regulated as hazardous goods.

**Sea Transport (IMDG-Code/GGVSee):** Not restricted. Not regulated as hazardous goods.

**Air Transport (ICAO-IATA/DGR):** Not restricted. Not regulated as hazardous goods.

### 15. REGULATORY INFORMATION

**EU Regulations:**

| Chemical Name | EC-No.    | Index-No.    | CAS-No. | %   | Classification | Labeling  |
|---------------|-----------|--------------|---------|-----|----------------|-----------|
|               |           |              |         |     | Symbol         | R-Phrases |
| Thimerosal    | 200-210-4 | 080-004-00-7 | 54-64-8 | 0.1 | None           | None      |

**Chemical Safety Assessment:** Observe general laboratory safety regulations when handling chemicals. This product is not subject to identification regulations under EC Directives.

### 16. OTHER INFORMATION

#### Exposure Scenarios:

Routes of exposure may include inhalation, skin absorption, and eye and skin contact.

#### Exposure Controls:

Observe general laboratory safety regulations when handling chemicals. This product is not expected to require special ventilation controls. Facilities storing or using this product should be equipped with an eyewash fountain.

#### Personal Protection Equipment:

Respiratory Protection: A respirator is not expected to be required under normal conditions of use.

Hand Protection: Wear chemical resistant protective gloves.

Eye Protection: Wear appropriate protective safety eye glasses or goggles.

Body Protection: Wear lab coat or other protective garments. Remove contaminated clothing promptly.



**Meridian**  
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This Safety Data Sheet (SDS) was prepared in accordance with the hazard criteria and content requirements of the EU Dangerous Substances Directive (67/548/EEC), Dangerous Preparations Directive (1999/45/EC), the Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) ((EC) No 1907/2006) and EC 1272/2008 Classification, Labeling, Packaging (CLP). These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. The information contained in this SDS is believed to be accurate but does not purport to be all inclusive and should be used only as a guide for experienced personnel. It is the responsibility of the user or supplier to determine the applicability of the data to the formulation of necessary safety precautions. Meridian Life Science, Inc. shall not be held liable for any damage resulting from the use of the above product or the information contained in this SDS.