Material Safety Data Sheet

Dengue NS1 Antigen ELISA

IDENTIFICATION OF THE PREPARATION AND COMPANY NAME.

Product Name: Dengue NS1 Antigen ELISA
Catalog No: 8404-25
Synonyms: N/A
Product Description: Diagnostic Kit for Dengue Infection
Intended Use: Laboratory Use
Kit Storage: 2-8°C

SECTION 1. HAZARD IDENTIFICATION

· Classification of the substance or mixture:
  The product does not need classification according to OSHA HazCom Standard 29 CFR paragraph (d) of §1910.1200(g) and GHS Rev 03.
· Label elements:
  · GHS label elements: Non-Regulated Material
  · Hazard pictograms: Non-Regulated Material
  · Signal word: Non-Regulated Material
  · Hazard statements: Non-Regulated Material
· Unknown acute toxicity:
  0% of the mixture consists of component(s) of unknown toxicity.
· Classification system:
  NFPA ratings (scale 0-4)

| HMIS HEALTH | 0 |
| HMIS FIRE | 0 |
| HMIS REACTIVITY | 0 |

HIMIS-ratings: (scale 0-4)

| HMIS HEALTH | 0 |
| HMIS FIRE | 0 |
| HMIS REACTIVITY | 0 |

Hazard(s) not otherwise classified (HNOC): None known

SECTION 2. Composition/Information on Ingredients

Coated Microtiter Strips:
· Description: Mixture: consisting of non-regulated material.
· Dangerous Components: Non-Regulated Material

Liquid TMB Substrate:
· Description: Mixture: consisting of non-regulated material.
· Dangerous Components: Non-Regulated Material

Cut-Off Control:
· Description: Mixture: consisting of non-regulated material.
· Dangerous Components: Non-Regulated Material

Positive Control:
· Description: Mixture: consisting of non-regulated material.
· Dangerous Components: Non-Regulated Material

Sample Dilution Buffer:
· Description: Mixture: consisting of non-regulated material.
**Dangerous Components:** Non-Regulated Material

**Negative Control:**

**Chemical characterization:** Substance

**CAS No. Description**
- Human Serum (normal)

### Conjugate Diluent:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>Acute Tox. 3, H331</th>
<th>Aquatic Acute 1, H400</th>
<th>Aquatic Chronic 1, H410</th>
<th>Acute Tox. 4, H302</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triton X-100</td>
<td>Glycerol</td>
<td>≤2.5%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 100X Conjugate:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>STOT SE 3, H335</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-81-5</td>
<td>Glycerol</td>
<td>≤2.5%</td>
</tr>
</tbody>
</table>

### 10x Wash Buffer:

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336</th>
</tr>
</thead>
<tbody>
<tr>
<td>7647-14-5</td>
<td>Sodium Chloride</td>
<td>5-10%</td>
</tr>
<tr>
<td>RTECS: VZ4725000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7558-79-4</td>
<td>Sodium Phosphate</td>
<td>≤2.5%</td>
</tr>
<tr>
<td>RTECS: WC 4500000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Stop Solution:

**Description:** Mixture of substances listed below with non-hazardous additions.

**Dangerous Components:**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Description</th>
<th>Skin Corr. 1A, H314</th>
</tr>
</thead>
<tbody>
<tr>
<td>7664-93-9</td>
<td>Sulfuric Acid</td>
<td>2-12%</td>
</tr>
</tbody>
</table>

## SECTION 3. FIRST AID MEASURES

- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
  - Generally the product does not irritate the skin. If skin irritation occurs, consult a doctor.
- **After eye contact:**
  - Rinse opened eye for several minutes under running water. If eye irritation occurs, consult a doctor.
- **After swallowing:** If swallowed and symptoms occur, consult a doctor.
- **Information for doctor:** N/A
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

## SECTION 4. FIRE-FIGHTING MEASURES

- **Suitable extinguishing agents:**
  - CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:** No further relevant information available.
- **Advice for firefighters:**
  - **Protective equipment:**
    - As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.
SECTION 5.  ACCIDENTAL RELEASE MEASURES

· **Personal precautions, protective equipment and emergency procedures:** Not required.
· **Environmental precautions:** Dilute with plenty of water. Do not allow to enter sewers/surface or ground water.
· **Methods and material for containment and cleaning up:**
  Dispose of the collected material according to regulations.
  Absorb with liquid-binding material (i.e sand, diatomite, acid binders, universal binders, sawdust).
· **Reference to other sections:**
  See Section 6 for information on safe handling.
  See Section 7 for information on personal protection equipment.
  See Section 12 for disposal information.

SECTION 6.  HANDLING AND STORAGE

· **Precautions for safe handling:** No special measures required.
· **Information about protection against explosions and fires:** No special measures required.
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **Specific end use(s):** No further relevant information available.

SECTION 7.  EXPOSURE CONTROL / PERSONAL PROTECTION

· **Additional information about design of technical systems:** No further data; see section 6.
· **Control parameters:**

  **100X Conjugate**

  · **Components with occupational exposure limits:**
    56-81-5 Glycerol
    **PEL** Long-term value: 15" 5"** mg/m³ mist; *total dust **respirable fraction
    **TLV** TLV withdrawn-sufficient data human occup. exp.

  **Stop Solution:**

  · **Components with occupational exposure limits:**
    7664-93-9 Sulfuric Acid
    **PEL** Long-term value: 1mg/m³
    **REL** Long-term value: 1mg/m³
    **TLV** Long-term value: 0.2" mg/m³ "as thoracic fraction

  **Other Components:**

  · **Components with occupational exposure limits:** The rest of the product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  · **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
  · **Exposure controls:**
    · **General protective and hygienic measures:**
      The usual precautionary measures for handling chemicals should be followed.
    · **Breathing equipment:** Not required.
    · **Protection of hands:**
      Protective gloves.
  · **Material of gloves:** Nitrile rubber, NBR.
  · **Penetration time of glove material:** The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.
  · **Eye protection:**
Goggles recommended during refilling.

SECTION 8. PHYSICAL AND CHEMICAL PROPERTIES

· Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th></th>
<th>Coated microtiter strips</th>
<th>Negative - control</th>
<th>Positive + control</th>
<th>Cut-off control</th>
<th>Sample diluent</th>
<th>100X Conjugate</th>
<th>Conjugate diluent</th>
<th>10X Wash buffer</th>
<th>TMB substrate</th>
<th>Stop sol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form</td>
<td>Strips</td>
<td>Liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Clear</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>None</td>
<td>Slight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting/boiling points</td>
<td>Not determined</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Form</td>
<td>Coated microtiter strips</td>
<td>Negative - control</td>
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<td>Cut-off control</td>
<td>Sample diluent</td>
<td>100X Conjugate</td>
<td>Conjugate diluent</td>
<td>10X Wash buffer</td>
<td>TMB substrate</td>
<td>Stop sol.</td>
</tr>
<tr>
<td>Flash point</td>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH at 20°C</td>
<td>N/A</td>
<td>7-8</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>Not determined</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Density at 20°C</td>
<td>N/A</td>
<td>1.009 g/cm³</td>
<td>1 g/cm³</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explosion hazard</td>
<td>Products do not present explosion hazards.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auto igniting</td>
<td>Products are not self-igniting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility/Miscibility in Water</td>
<td>Insoluble</td>
<td>Fully miscible.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organic solvents</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 9. STABILITY AND REACTIVITY

· Reactivity: No further relevant information available.
· Chemical stability: Stable under normal conditions.
· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
· Possibility of hazardous reactions: No dangerous reactions known.
· Conditions to avoid: No further relevant information available.
· Incompatible materials: Strong oxidizing agents.
· Hazardous decomposition products: No dangerous decomposition products known.

SECTION 10. TOXICOLOGICAL INFORMATION

· Information on toxicological effects:
· Acute toxicity:

LD/LC50 values that are relevant for classification:
9002-93-1 Triton X-100

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LD50</th>
<th>LC50/4 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>1800mg/kg (rat)</td>
<td>8000mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td>8.9 mg/l (Pimephales)</td>
<td></td>
</tr>
</tbody>
</table>

7647-14-5 Sodium Chloride

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
<th>LD50</th>
<th>LC50/4 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>4000 mg/kg (mouse)</td>
<td>3000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>&gt;10000 mg/kg (rabbit)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7558-79-4 Sodium Phosphate

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>17000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

7664-93-9 Sulfuric Acid

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50 Oral</th>
<th>LD50 Oral</th>
<th>LC50/96 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>2140 ml/kg (rat)</td>
<td>375 ml/kg (rat)</td>
<td>8.9 mg/l (Pimephales)</td>
</tr>
</tbody>
</table>

Sulfuric acid is harmful by all routes of entry.

· **Primary irritant effect:**
  · **On the skin:** May be irritating.
  · **On the eye:** May be irritating.

· **Additional toxicological information:**
  When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

· **Carcinogenic categories:**

  · **IARC (International Agency for Research on Cancer):**
    - Group 1 – Carcinogenic to humans
    - Group 2A – Probably carcinogenic to humans
    - Group 2B – Possibly carcinogenic to humans
    - Group 3 – Not classifiable as to its carcinogenicity to humans
    - Group 4 – Probably not carcinogenic to humans

  7647-01-0 | Hydrochloric acid | 3

· **NTP (National Toxicology Program):**
  None of the ingredients are listed.

· **OSHA-Ca (Occupational Safety & Health Administration):**
  None of the ingredients are listed.

SECTION 11. ECOLOGICAL INFORMATION

· **Aquatic toxicity:**
  9002-93-1 Triton X-100
  EC50 | 26 mg/l (daphnia)

7664-93-9 Sulfuric Acid

<table>
<thead>
<tr>
<th>Route</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>22 mg/l (daphnia)</td>
</tr>
</tbody>
</table>

7647-14-5 Sodium Chloride

<table>
<thead>
<tr>
<th>Route</th>
<th>EC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC50</td>
<td>340.7-469.2 mg/l (Water flea)</td>
</tr>
</tbody>
</table>

· **Persistence and degradability:** No further relevant information available.

· **Behavior in environmental systems:**
  · **Bioaccumulative potential:** No further relevant information available.
  · **Mobility in soil:** No further relevant information available.

· **Additional ecological information:**
  · **General notes:**
    Do not allow undiluted product or product that has not been neutralized to reach ground water, water course or sewage system.
Results of PBT and vPvB assessment:

- **PBT**: Not applicable.
- **vPvB**: Not applicable.

**Other adverse effects**: No further relevant information available.

### SECTION 12. DISPOSAL CONSIDERATIONS

- **Waste treatment methods**:
  - **Recommendation**: Smaller quantities can be disposed of with household waste. Observe all federal, state and local environmental regulations when disposing of this material.

- **Uncleaned packagings**
  - **Recommendation**: Disposal must be made according to official regulations.
  - **Recommended cleansing agent**: Water, if necessary with cleansing agents.

### SECTION 13. TRANSPORT INFORMATION

| UN-Number: |
| DOT, ADR, ADN, IMDG, IATA | Non-Regulated Material |
| UN proper shipping name: |
| DOT, ADR, ADN, IMDG, IATA | Non-Regulated Material |
| Transport hazard class(es): |
| DOT, ADR, ADN, IMDG, IATA |
| Class: | Non-Regulated Material |
| Packing group: |
| DOT, ADR, IMDG, IATA | Non-Regulated Material |
| Environmental hazards: | Not applicable. |
| Special precautions for user: | Not applicable. |
| Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: | Not applicable. |
| UN "Model Regulation": | Non-Regulated Material |

### SECTION 14. REGULATORY INFORMATION

- **SARA (Superfund Amendments and Reauthorization)**:
  - **Section 355 (extremely hazardous substances)**:
    - 7647-01-0 Hydrochloric acid
    - 7664-93-9 Sulfuric Acid
  - **Section 313 (Specific toxic chemical listings)**:
    - 7647-01-0 Hydrochloric acid
    - 7664-93-9 Sulfuric Acid
  - **TSCA (Toxic Substances Control Act)**:
    - 7732-18-5 Highly Purified Water
    - 7647-14-5 Sodium Chloride
    - 1185-53-1 Tris-HCl
    - 7558-79-4 Sodium Phosphate
    - 9002-93-1 Triton X-100

- **California Proposition 65**:
  - **Chemicals known to cause cancer**: None of the ingredients are listed.
  - **Chemicals known to cause reproductive toxicity for females**: None of the ingredients are listed.
· **Chemicals known to cause reproductive toxicity for males:**
  None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**
  None of the ingredients are listed.

· **Carcinogenic categories:**

  · **EPA (Environmental Protection Agency):**
    None of the ingredients are listed.

  · **TLV (Threshold Limit Value established by ACGIH):**
    | CAS       | Chemical           | TLV  |
    |-----------|--------------------|------|
    | 7647-01-0 | Hydrochloric acid  | A4   |
    | 7664-93-9 | Sulfuric acid      | A2   |

  · **NIOSH-Ca (National Institute for Occupational Safety and Health):**
    None of the ingredients are listed.

· **GHS label elements**
  Non-Regulated Material

· **Hazard pictograms:**
  Non-Regulated Material

· **Signal word:**
  Non-Regulated Material

· **Hazard statements:**
  Non-Regulated Material

· **National regulations:**
  The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· **State Right to Know:**
  **Coated Microtiter Strips**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Ingredient</th>
<th>60%-90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Highly purified water</td>
<td></td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Dengue IgG Positive Serum</td>
<td>15%-35%</td>
</tr>
<tr>
<td>7732-18-5</td>
<td>Goat Serum</td>
<td>2-12%</td>
</tr>
</tbody>
</table>

| CAS: 7647-14-5 | Sodium Chloride | ≤ 2.5% |
| RTECS: V24725000 |              |        |

| CAS: 1185-53-1 | Tris-HCl | ≤ 2.5% |

· **Negative control:**
  None of the ingredients are listed.

· **Positive control:**

<table>
<thead>
<tr>
<th>CAS: 7732-18-5</th>
<th>Highly Purified Water</th>
<th>90-99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 9048-46-8</td>
<td>Bovine Serum Albumin</td>
<td>≤ 2.5%</td>
</tr>
<tr>
<td>CAS: 7647-14-5</td>
<td>Sodium chloride</td>
<td>≤ 2.5%</td>
</tr>
<tr>
<td>CAS: 7558-79-4</td>
<td>Sodium phosphate</td>
<td>≤ 2.5%</td>
</tr>
</tbody>
</table>

| RTECS: WC 4500000 | Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336 | |

· **Cut-Off control:**

<table>
<thead>
<tr>
<th>CAS: 7732-18-5</th>
<th>Highly Purified Water</th>
<th>90-99%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7647-14-5</td>
<td>Dengue Positive Serum</td>
<td>2-12%</td>
</tr>
<tr>
<td></td>
<td>Bovine Serum Albumin</td>
<td>≤ 2.5%</td>
</tr>
</tbody>
</table>

| RTECS: V24725000 | Sodium chloride | ≤ 2.5% |

| CAS: 7558-79-4 | Sodium phosphate | ≤ 2.5% |

| RTECS: WC 4500000 | Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336 | |

· **Sample diluent:**

| CAS: 7732-18-5 | Highly Purified Water | 90-99% |
### Goat Serum
- CAS: 7647-14-5
- Sodium chloride
- ≤ 2.5%
- CAS: 1185-53-1
- Tris-HCl
- Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320
- ≤ 2.5%

### 100X Conjugate:
- CAS: 7732-18-5
- Highly Purified Water
- 90-99%
- CAS: 56-81-5
- Glycerol
- ≤ 2.5%
- RTECS: MA 8050000
- CAS: 9048-46-8
- Bovine Serum Albumin
- ≤ 2.5%
- CAS: 77647-01-0
- Hydrochloric acid
- Skin Corr. 1B, H314; Acute Tox. 4, H332; STOT SE 3, H335
- ≤ 2.5%
- RTECS: MW 9620000
- CAS: 77-86-1
- Tris base
- Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320
- ≤ 2.5%

### Conjugate diluent:
- CAS: 7732-18-5
- Highly Purified Water
- Goat Serum
- 60-90%
- 5-10%
- CAS: 1185-53-1
- Tris-HCl
- Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320
- ≤ 2.5%
- CAS: 77-86-1
- Triton X-100
- Acute Tox. 3, H331; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Eye Irrit. 2A, H319
- ≤ 2.5%
- RTECS: TY 2900000

### 10X Wash buffer:
- CAS: 7732-18-5
- Highly Purified Water
- 60-90%
- 5-10%
- CAS: 7647-14-5
- Sodium chloride
- STOT SE 3, H335
- ≤ 2.5%
- RTECS: VZ4725000
- CAS: 7558-79-4
- Sodium phosphate
- Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335-H336
- ≤ 2.5%
- RTECS: WC 4500000
- CAS: 9005-64-5
- Tween 20
- ≤ 2.5%
- RTECS: TR7400000

### TMB Substrate:
- CAS: 7732-18-5
- Highly Purified Water
- 90-99%
- CAS: 7664-93-9
- Sulfuric Acid
- Skin Corr. 1A, H314
- 2-12%

### Stop Solution:
- CAS: 7732-18-5
- Highly Purified Water
- 90-99%

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### OTHERS

**SECTION 15.**

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

**Last revision:** 4

**Abbreviations and acronyms:**
- ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
- ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- IMDG: International Maritime Code for Dangerous Goods
- DOT: US Department of Transportation
- IATA: International Air Transport Association
- ACGIH: American Conference of Governmental Industrial Hygienists
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
*Data compared to the previous version altered.*