Material Safety Data Sheet

Insulin ELISA

1. IDENTIFICATION OF THE PREPARATION AND COMPANY NAME.

| Product Name: | Insulin ELISA |
| Catalog No: | 1606-15 |
| Synonyms: | N/A |
| Intended Use: | Laboratory Use |

2. Information on product/preparation composition

The product contains the following hazardous substances and those with the following highest permissible concentrations in the working environment:

A. Insulin Calibrators (human sera with determined insulin Antigen concentrations)

<table>
<thead>
<tr>
<th>Identification numbers</th>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 2682-20-4</td>
<td>2-Methyl-4-isothiazolin-3-one</td>
<td>0.015 %</td>
<td>R22-34-43</td>
</tr>
<tr>
<td>EC (EINECS): 220-239-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merck Index:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS: 30007-47-7</td>
<td>5-Bromo-5-nitro-1, 3-dioxane (BND)</td>
<td>0.015 %</td>
<td>R21/22</td>
</tr>
<tr>
<td>EC (EINECS): 250-001-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

B. Insulin Enzyme Reagent - (Anti-human insulin biotin label and insulin analog coupled to horse radish peroxidase enzyme, in stabilizing solution)

<table>
<thead>
<tr>
<th>Identification numbers</th>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 2682-20-4</td>
<td>2-Methyl-4-isothiazolin-3-one</td>
<td>0.015 %</td>
<td>R22-34-43</td>
</tr>
<tr>
<td>EC (EINECS): 220-239-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merck Index:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS: 30007-47-7</td>
<td>5-Bromo-5-nitro-1, 3-dioxane (BND)</td>
<td>0.015 %</td>
<td>R21/22</td>
</tr>
<tr>
<td>EC (EINECS): 250-001-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Microtitr strips (96 wells, coated with streptavidin, vacuum sealed)

<table>
<thead>
<tr>
<th>Identification numbers</th>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 7558-79-4</td>
<td>Sodium Phosphate Dibasic</td>
<td>0.015 %</td>
<td>R22-34-43, S26</td>
</tr>
<tr>
<td>EC (EINECS):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merck Index: None</td>
<td>Sodium Azide</td>
<td>&gt;0.01 %</td>
<td>R20/21/22, S23, S24/25, S26, S28.1</td>
</tr>
<tr>
<td>CAS: 28628-22-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC (EINECS):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merck Index: None</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Wash solution concentrate (10x)

<table>
<thead>
<tr>
<th>Identification numbers</th>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 2682-20-4</td>
<td>2-Methyl-4-isothiazolin-3-one</td>
<td>0.015 %</td>
<td>R22-34-43</td>
</tr>
<tr>
<td>EC (EINECS): 220-239-6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merck Index:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS: 30007-47-7</td>
<td>5-Bromo-5-nitro-1, 3-dioxane (BND)</td>
<td>0.015 %</td>
<td>R21/22</td>
</tr>
<tr>
<td>EC (EINECS): 250-001-7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### E. Substrate A solution

<table>
<thead>
<tr>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>3,3',5,5'-Tetramethylbenzidine</td>
<td>&lt; 1 %</td>
<td>R20/21/22-36/37/38-40, S26-36/37</td>
</tr>
<tr>
<td>Dimethylsulfoxide</td>
<td>&lt; 1 %</td>
<td>R36/37/38, S23-26-36</td>
</tr>
</tbody>
</table>

### F. Substrate B solution

<table>
<thead>
<tr>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimethylsulfoxide</td>
<td>&lt; 1 %</td>
<td>R36/37/38, S23-26-36</td>
</tr>
<tr>
<td>Acetanilide</td>
<td>&lt; 1 %</td>
<td>R36/R37/R38, S26-36</td>
</tr>
<tr>
<td>Urea Hydrogen-peroxide</td>
<td>&lt; 0.05 %</td>
<td>R8-34, S17-26-36/37/39-45</td>
</tr>
</tbody>
</table>

### G. Stop solution

<table>
<thead>
<tr>
<th>Chemical name of substance</th>
<th>Concentrations</th>
<th>Risk and safety statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrochloric acid</td>
<td>&lt; 3 %</td>
<td>R36/37/38, S26</td>
</tr>
</tbody>
</table>

### Risk phrases
- R20/21/22 Harmful by inhalation, in contact with skin and if swallowed
- R21/22 Harmful in contact with skin and if swallowed
- R22 Harmful if swallowed
- R26/27/28 Very Toxic by inhalation, in contact with skin and if swallowed
- R28 Very Toxic if swallowed
- R32 Releases very toxic gas in contact with acids
- R33 Danger of cumulative effects
- R34 Causes burns
- R36/37/38 Irritating to eyes, respiratory system and skin
- R40 Possible risk of irreversible effects
- R45 May cause sensitization by skin contact

### Safety phrases
- S13 Keep away from food, drink and animal feeding stuffs
- S23 Do not breathe spray
- S24/25 Avoid contact with skin and eyes
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S28.1 After contact with skin, wash immediately with plenty of water
- S30 Never add water to this product
- S36 Wear suitable protective clothing
- S36/37 Wear suitable protective clothing and gloves
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show label where possible)
3. Substance/preparation hazards data

When used, the most adverse impacts of the substance/preparation on human health include:
The following components can damage health if ingested and/or can irritate eyes and skin: Stop solution, Streptavidin-HRP
Conjugate, Biotin-labelled Ab Concentrate, Biotin-Ab Diluent, Substrate (TMB) solution, Human Calibrators, Quality controls, Wash
solution concentrate. The Stop solution contains sulfuric acid in total concentration < 5% and is not classified as "Corrosive" or
"Irritating". The Quality controls (human serum matrix calibrators) contain thimerosal and L-ascopiroic acid in total
concentrations < 0.1% and are classified as "Harmful". The Quality controls are based on HIV-1, HIV-2 and HbsAg negative human
sera and must be handled as potentially infectious material. The Wash solution concentrate contains thimerosal in total
concentration < 0.1% and is classified as "Harmful".

4. First aid instructions

General instructions: Immediately rinse with soap and plenty of water. Use personal protective working aids.

If inhaled: Transport the affected person into the open air. When there are respiratory complaints, oxygen must be administered. When irritation persists, seek medical advice.

In case of skin contact: The contaminated clothing and footwear must be taken off, the affected skin must be rinsed with plenty of water. Use soap to completely remove the substance. When irritation persists, seek medical advice.

In case of contact with eyes: Remove contact lenses. Rinse with a stream of water for at least 15 minutes. Thorough rinsing must be ensured by opening the eyelids using sterile (clean) fingers. When irritation persists, seek medical advice.

If ingested: Rinse the mouth, administer a big amount of water to dilute the substance. In the case of unconsciousness, never administer anything orally. Seek medical advice.

5. Extinguishing measures

Suitable fire-extinguishing media: Carbon dioxide, dry powder, foam, water.

Thermal decomposition: No thermal decomposition degradation products are expected.

Special hazards: None.

Special protective means for firemen: None.

NFPA Kit Classification:
- Health Hazard (blue): 1
- Fire Hazard (red): 0
- Reactivity (yellow): 0
- Special Hazards (white): None

6. Incidental leakage measures

Safety measures to protect humans: Avoid contact with skin and eyes.

Environmental safety measures: Avoid penetration into sewerage systems, surface and ground water. Avoid soil pollution.

Recommended cleaning and disposal methods: Cover with suitable absorbing material. After removing the substance, rinse the spot of spilling thoroughly with water and soap.

7. Handling and storage instructions

Handling instructions: Avoid contact with skin, eyes and clothing. Use suitable protective means to work with the substance.

Storage instructions: Store at temperatures between + 2 and + 8°C in a dry and dark place.

8. Exposition checking and protection of persons

Technical measures: Do not eat, drink and smoke when working with the kit. Use the kit only in rooms enabling good ventilation.

Local exhaustion is necessary. General (forced) exhaustion is recommended.

Personal protective means – protection of respiratory organs: None

Personal protective means – eye protection: Protective glasses

Personal protective means – hand protection: Protective gloves (wash your hands before and after work)

Personal protective means – body protection: Protective clothing
9. Exposure controls and personal protection gear

State (at 20°C):
Solid: Microtiter strips
Liquids: Human serum calibrators, enzyme reagents, Wash solution concentrate, Substrate solutions, Stop solution

Colour:
Caramel to reddish: Streptavidin-HRP Conjugate, Dilution buffer
Colourless: Biotin-Ab Diluent, Substrate solution, Stop solution, Wash solution concentrate, Biotin-labelled Antibody Concentrate
Creamy to white: Human GDF-15 Master Standard, Quality controls
Smell (odour): Odourless
pH value (at 25°C): Stop solution: < 1
Others: 6.8 - 7.4

Melting temperature (temperature range) (°C): No data available.
Boiling temperature (temperature range) (°C): No data available.
Flash point (°C): No data available.
Inflammability: No data available.
Vapour tension (°C): No data available.
Water solubility: Soluble.
Partition coefficient a-octanol/water: No data available.

10. Stability and reactivity

Conditions to be avoided: Heat
Substances and materials with which the product is not allowed to get in touch: Acids
Hazardous decomposition products: Not known
Other data: No hazardous polymerization

11. Toxicological information

The product contains ε-aminocaproic acid in total concentration 0.03%, thimerosal in total concentration 0.05% and sulfuric acid in total concentration 1.96%.

Acute toxicity-LD50 orally, rat (mg/kg): Not known
Acute toxicity-LD50 dermally, rat or rabbit (mg/kg): Not known
Acute gingivostomatitis LD50: Not known
Acute toxicity-LD50 inspiration: Not known
Irritability: No data available
Mutagenicity: No data available
Reproduction toxicity: No data available
Tests on animals: No data available

Other data: Sodium azide damages central nervous system, it causes tachycardia, it reduces hemic pressure, abbreviates respiration, causes headache, vomiting and nausea.

12. Environmental information

Water hazard class: 2 (water-damaging substances)

13. Disposal information

The manner of disposing the substance/preparation:
Mix or dissolve the material in a combustible solvent and burn up in a facility whose equipment matches all regulations in effect.
Every waste disposal must be carried out in coincidence with national and local legislation or administrative regulations respectively.
Packages:
In coincidence with local legislation, or administrative regulations respectively.
14. Disposal considerations

Overland transportation (ADR/RID): As a mixture, the substance is subject to no limitations.
Transatlantic transportation (IMDG): As a mixture, the substance is subject to no limitations.
Air transportation (ICAO/IATA): As a mixture, the substance is subject to no limitations.

15. Information on legal regulations

According to the Act No. 157/1999 Coll. on chemical substances and chemical preparations and on amendments in some other laws and acts, components contained in the DAI ELISA kits are non-hazardous substances in said concentrations.
DAI ELISA kit is subject to special marking regulations according to the EC regulations (28/10/1999).

16. Additional Information

The material safety data sheet contains data necessary to ensure safety and health and environmental protection in working with chemical substances. The above-stated data match the contemporary state of knowledge and experience and are in coincidence with legal regulations currently in effect. This product is a chemical substance and can be solely used by persons with chemical education at their own risk.
DAI kits are designed for biomedical research. The manufacturer has no responsibility for damage caused by unsuitable use and by disrespecting the enclosed working instructions.
The above-stated information cannot be considered as complete and must be understood to be only a methodical instruction.

Quality Control
Diagnostic Automation/Cortez Diagnostics INC.
DAI code # 1606-15
Revision Date: 2016-03-01