SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
   - Product name: Human Apo B-48 ELISA Kit
   - Product code: AKHB48

1.2. Relevant identified uses of the substance or mixture and uses advised against
   - Identified uses: Reagent for lipid-related research
   - Uses advised against: No information

1.3. Details of the supplier of the safety data sheet
   - Name of manufacturer/supplier: Shibayagi Co. Ltd
   - Department in Charge: Business Group
   - Address: 1062-1, Ishihara, Shibukawa-shi, Gunma-ken, 377-0007, Japan
   - Telephone number: +81-279-25-0279
   - Fax number: +81-279-23-0313
   - E-mail address: syc-info@shibayagi.co.jp

1.4. Emergency telephone number
   - +81-279-25-0279

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
   - Classification in accordance with EC No 1272/2008:
     - Skin Irrit. 2; H315
     - Eye Irrit. 2; H319

2.2. Label elements
   - In accordance with EC No 1272/2008:
     - Pictogram

Signal word
- Warning
  - H315: Causes skin irritation
  - H319: Causes serious eye irritation

Hazard Statements
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352: IF ON SKIN: Wash with plenty of water.
- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
2.3. Other hazards
The product does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

SECTION 3: Composition/information on ingredients

3.1. Substances
Not applicable

3.2. Mixtures
Product Name: Human Apo B-48 ELISA Kit (AKHB48)

Information on ingredients: (contents of the product)
[7] Buffer: Phosphate Buffer
[8] Stop Solution (1mol/L sulfuric acid): Sulfuric acid

Concentration, identity and classification of Sulfuric acid [8]

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>EC No.</th>
<th>Index No.</th>
<th>REACH Registration No.*</th>
<th>Concentration (wt %)</th>
<th>Classification**</th>
<th>Specific Concentration limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric acid</td>
<td>7664-93-9</td>
<td>231-639-5</td>
<td>016-020-00-8</td>
<td>-</td>
<td>9.8</td>
<td>Skin Irrit. 2; H315 Eye Irrit. 2; H319</td>
<td>Skin Corr. 1A; H314: C ≥ 15%; Eye Irrit. 2; H319: 5% ≤ C &lt; 15%; Skin Irrit. 2; H315: 5% ≤ C &lt; 15%</td>
</tr>
</tbody>
</table>

* Registration numbers of ingredients which shall be in compliance with Regulation (EC) No 1907/2006 will be filled in later.

** Full texts of relevant hazard statements and risk phrases can be seen in SECTION 16 of this SDS.

SECTION 4: First aid measures

4.1. Description of first aid measures

IF INHALED
Gargle the throat well. Get medical advice/attention if you feel unwell.

IF ON SKIN
Wash with plenty of water. If skin irritation or rash occurs: Get medical attention.

IF IN EYES
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
4.2. Most important symptoms and effects, both acute and delayed
Sulfuric acid solution:
  Causes skin irritation
  Causes serious eye irritation

4.3. Indication of any immediate medical attention and special treatment needed
Stop Solution (1 mol/L sulfuric acid) in this product causes skin, eye and respiratory irritation solution. First-aider should be aware of such properties and wear protective gloves, glasses and clothing as appropriate. Avoid contact with skin or enter in eyes.

SECTION 5: Firefighting measures
5.1. Extinguishing media
Suitable extinguishing media:
  Use water, dry chemical powder, carbon dioxide, fire-foam or dry sand.

Unsuitable extinguishing media
  Applying direct water may be dangerous because fire may expand to surroundings.

5.2. Special hazards arising from the substance or mixture
Toxic and irritating fume or gases may be generated.

5.3. Advice for firefighters
  Move container to a safe area.
  Wear appropriate protective respiratory equipment to avoid breathing fume or gases.
  Non-responsible personnel should escape from the fire site.

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
For non-emergency personnel:
  Wear suitable personal protective equipment (e.g., safety gloves, hazard mask, protective glasses, air aspirator) to prevent any contamination of skin or eyes.
  Provide sufficient ventilation to control exposure.
  In case of emergency, contact responsible personnel and consult an expert.

For emergency responders:
  Wear protective equipment (e.g., safety gloves, hazard mask, protective glasses and/or air aspirator) and collect spilled product by absorbing in paper (acid-resistance material) or dry sand.

6.2. Environmental precautions
  Avoid releasing large amount of the product into the environment.

6.3. Methods and material for containment and cleaning up
  Absorb spilled product with inert material (e.g., acid-resistance material or dry sand), followed by
placing it in a waste container until disposal. Wash out remaining small amount of the product with plenty of water. Provide sufficient ventilation to keep air concentration as low as possible.

6.4. Reference to other sections

Refer to “SECTION 8: Exposure controls/personal protection” and “SECTION 13: Disposal considerations” as appropriate.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Protective measures:

Sulfuric acid solution:
- Avoid breathing mist/gases.
- Do not get in eyes, on skin, or on clothing.

Other ingredients:
- Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.

Advice on general occupational hygiene:
- Wash hands and contaminated clothing thoroughly after handling.
- Take off contaminated clothing and wash before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:
- Keep away from sunlight and heat.

Incompatible materials:
- Strong oxidizers, alkali materials

Conditions for safe storage:
- Storage in a cool and well ventilated place.

Packing material:
- Use a sealed container without damage or leakage.

7.3. Specific end use(s)
- Reagent for lipid-related research

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Acceptable concentration (exposure limit, biological exposure index)
- EU IOELV (2009) 0.05 mg/m³ (Sulfuric acid (mist)) (Thoracic fraction)
- Limit values-Eight hours
- ACGIH TLV-TWA (2015) 0.2 mg/m³ (Sulfuric acid) (Thoracic fraction)
8.2. Exposure controls

**Appropriate engineering controls:**
Handle the product only under conditions where sufficient ventilation is provided and/or in a closed system.
Avoid releasing large volume of the product to the environment.

**Personal protective equipment:**

- **Respiratory protection:** In case vapour accumulates, provide ventilation and/or wear hazard mask as appropriate.
- **Hand protection:** If hand contact is possible, wear protective gloves.
- **Eye protection:** In case splashing mist is expected, wear safety glasses and protective equipment of which made from acid-resistance materials.
- **Skin and body protection:** Wear protective clothing and apron if necessary.

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**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (physical state, form and colour)</td>
<td>[1] Colorless micro plate</td>
</tr>
<tr>
<td></td>
<td>[3] Clear liquid</td>
</tr>
<tr>
<td></td>
<td>[4] Orange clear liquid</td>
</tr>
<tr>
<td></td>
<td>[5] Blue clear liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>No information</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No information</td>
</tr>
<tr>
<td></td>
<td>[8] Strong acidity</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No information</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No information</td>
</tr>
<tr>
<td>Flash point</td>
<td>No information</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td>No information</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>No information</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No information</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information</td>
</tr>
<tr>
<td>Solubility (ies)</td>
<td>Water: [1] Insoluble</td>
</tr>
<tr>
<td>Partition coefficient: ( n )-octanol/water</td>
<td>No information</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No information</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No information</td>
</tr>
</tbody>
</table>
9.2. Other information

No information

SECTION 10: Stability and reactivity

10.1. Reactivity


10.2. Chemical stability

Ingredients [1] – [4] are considered to be unstable and therefore the product is single use only.

10.3. Possibility of hazardous reactions

Keep away from sunlight, heat and strong oxidizers. Thermal decomposition may yield toxic and/or irritating fume or gases in addition to carbon monoxide, nitrogen oxides and sulfur oxides.

10.4. Conditions to avoid

Keep away from sunlight and heat.

10.5. Incompatible materials

Strong oxidizers, alkali materials

10.6. Hazardous decomposition products

In case of fire, toxic and irritating fume or gases may be generated.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on product:

No information

Information on ingredients:

Sulfuric acid

- Acute toxicity (oral): \(LD_{50}\) (rat) = 2,140 mg/kg
- Acute toxicity (inhalation: dust/mist): \(LC_{20}\) (rat) = 0.375 mg/L (4 hours)
- Skin corrosion/irritation: Concentrated sulfuric acid is corrosive to skin.
- Serious eye damage/irritation: Concentrated sulfuric acid is very destructive to eyes and results in devastating injuries including dissolution of the anterior segment of the globe. 5% and 10% of sulfuric acid solution caused mild and strong irritation to rabbit eyes, respectively.
- STOT-single exposure: Inhalation exposure of low concentration of sulfuric acid caused respiratory irritation such as cough and shortness of breath to humans.
SECTION 12: Ecological information

12.1. Toxicity:
Information on product: No information

Information on ingredients:
Sulfuric acid

Aquatic acute toxicity: Fish: 96-h LC₅₀ (Bluegill) = 16-28 mg/L
Aquatic chronic toxicity: Fish: NOEC (embryo survival/ time hatching) = 0.31 mg/L (pH 5.2), 0.15 mg/L (pH 5.5)
Invertebrate: NOEC (chronomid, reproduction) = 0.15 mg/L (pH 5.5)

12.2. Persistence and degradability:
Information on product: No information

Information on ingredients: No information

12.3. Bioaccumulative potential:
Information on product: No information

Information on ingredients: No information

12.4. Mobility in soil:
Information on product: No information

Information on ingredients: No information

12.5. Results of PBT and vPvB assessment:

The product does not meet the PBT and vPvB criteria.

12.6. Other adverse effects:
No information

SECTION 13: Disposal considerations

13.1. Waste treatment methods
SECTION 14: Transport information

14.1. UN number  
Not applicable

14.2. UN proper shipping name  
Not applicable

14.3. Transport hazard class(es)  
Not applicable

14.4. Packing group  
Not applicable

14.5. Environmental hazards  
Not applicable

14.6. Special precautions for user

Transport and storage according to general precaution and instructions mentioned above.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and IBC code

Not applicable

SECTION 15: Regulatory information

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

The product and its ingredients are not regulated by specific provisions related to protection of human health or the environment at EU level, e.g. not considered as SVHCs or POPs.

15.2. Chemical safety assessment

Not conducted

SECTION 16: Other information

Update history:

Date of issue: 10th May, 2010
Date of revision: 15th July, 2015

References:

Information of Shibayagi Co. Ltd.
NITE GHS classification results (2015).
ACGIH, American Conference of Governmental Industrial Hygienists (2015) TLVs and BEIs.

Relevant risk phrases of which do not appear elsewhere in this SDS

H314: Causes severe skin burns and eye damage

Abbreviations

PBT: Persistent, Bioaccumulative and Toxic substance
POPs: Persistent Organic Pollutants
STOT: Specific Target Organ Toxicity
SVHC: Substances of Very High Concern
vPvB: Very Persistent and Very Bioaccumulative
[Disclaimer]
This SDS has been prepared based on the best available information however, it may not be sufficient in some cases. It is user’s responsibility to modify or update any contents in this SDS regarding information on hazardous properties and/or instruction for safe handling of the product when they become available. Precautionary measures in this SDS are only applicable for normal handling conditions and it is necessary to take appropriate additional measures to ensure safe handling which depend on your specific use conditions or situations.