

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision Date 10-May-2022
 Version 1

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|------------------------------------|
| Product name | LBIS Human TNF- α ELISA Kit |
| Product code | AKH-TNFA , FFWK : 639-42331 |

| | |
|---|--|
| Manufacturer | FUJIFILM Wako Shibayagi Corporation 1062-1, Ishihara, Shibukawa, Gunma, Japan Telephone number: +81-279-25-0279 Fax number: +81-279-23-0313 |
| Supplier | FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029 |
| Emergency telephone number | +81-279-25-0279 |
| Recommended uses and restrictions on use | For research use only |

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

| | |
|---|------------|
| Acute toxicity - Inhalation (Vapors) | Category 4 |
| Skin corrosion/irritation | Category 1 |
| Serious eye damage/eye irritation | Category 1 |
| Skin sensitization | Category 1 |
| Specific target organ toxicity (single exposure) | Category 1 |
| Category 1 respiratory system | |
| Specific target organ toxicity (repeated exposure) | Category 1 |
| Category 1 respiratory system | |
| Acute aquatic toxicity | Category 3 |

Pictograms



Signal word

Danger

Hazard statements

- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H332 - Harmful if inhaled
- H317 - May cause an allergic skin reaction
- H402 - Harmful to aquatic life
- H370 - Causes damage to the following organs: respiratory system
- H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray

- Wash face, hands and any exposed skin thoroughly after handling
- Wear protective gloves/protective clothing/eye protection/face protection
- Contaminated work clothing should not be allowed out of the workplace
- Do not eat, drink or smoke when using this product
- Avoid release to the environment

Precautionary statements-(Response)

- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor/physician
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- Wash contaminated clothing before reuse
- If skin irritation or rash occurs: Get medical advice/attention
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Precautionary statements-(Storage)

- Store locked up

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant.

Others**Other hazards**

Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**Single Substance or Mixture**

Kit (Set of mixtures)

| Chemical name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|--|----------|------------------|------|----------|--------|
| Anti-TNF- α antibody coated plate | - | N/A | N/A | N/A | N/A |
| Standard human TNF- α | - | N/A | N/A | N/A | N/A |
| Buffer solution | - | N/A | N/A | N/A | N/A |
| Biotinylated anti-TNF- α antibody | - | N/A | N/A | N/A | N/A |
| HRP-conjugated streptavidin | - | N/A | N/A | N/A | N/A |
| Chromogen (TMB): 3,3',5,5'-Tetramethyl-benzidine | - | N/A | N/A | N/A | N/A |
| Stop solution | - | N/A | N/A | N/A | N/A |
| Wash stock solution (10X) | - | N/A | N/A | N/A | N/A |

Impurities and/or Additives :

Not applicable

Substances Remarks:

Sulfuric Acid 6.9 %,
 Poly (oxyethylene) sorbitan monolaurate <1 %,
 2-Methyl-2H-isothiazol-3-one <3 %

Section 4: FIRST AID MEASURES**Inhalation**

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES

Suitable extinguishing media

Water spray (fog), Carbon dioxide (CO₂), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE

Handling**Technical measures**

Avoid contact with oxidizing and reducing agents. Avoid contact with alkaline substances. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Storage**Safe storage conditions****Storage conditions**

Keep container protect from light tightly closed. Store in a cool (2-8 °C) place.

Safe packaging material

No information available

Incompatible substances

Strong oxidizing agents, Reducing agent, Alkali

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**Engineering controls**

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

| Chemical name | JSOH (Japan) | ISHL (Japan) | ACGIH |
|----------------------------|---------------------|--------------|---------------------------|
| Sulfuric Acid 7664-93-9 | 1 mg/m ³ | N/A | TWA 0.2 mg/m ³ |

Personal protective equipment**Respiratory protection**

Gas mask for acidic gas

Hand protection

Impermeable protective gloves

Eye protection

protective eyeglasses or chemical safety goggles

Skin and body protection

Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Form****Appearance**

Kit (Set of mixtures)

Odor

No data available

Melting point/freezing point

No data available

Boiling point, initial boiling point and boiling range

No data available

Flammability

No data available

Evaporation rate:

No data available

Flammability (solid, gas):

No data available

Upper/lower flammability or explosive limits**Upper :**

No data available

Lower :

No data available

Flash point

No data available

Auto-ignition temperature:

No data available

Decomposition temperature:

No data available

pH

No data available

Viscosity (coefficient of viscosity)

No data available

Dynamic viscosity

No data available

Solubilities

No data available

n-Octanol/water partition coefficient: (log Pow)

No data available

Vapor pressure

No data available

Specific Gravity / Relative density

No data available

Vapor density

No data available

Particle characteristics

No data available

Section 10: STABILITY AND REACTIVITY**Stability****Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

Strong oxidizing agents, Reducing agent, Alkali

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x), Sulfur oxides (SO_x), Phosphorus oxide

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---|--|--------------------|---------------------|
| Sulfuric Acid | 2140 mg/kg (Rat) | N/A | 347 ppm (Rat) 4 h |
| 2-Methyl-2H-isothiazol-3-one | 120 mg/kg (Rat) | 200 mg/kg (Rabbit) | 0.11 mg/L (Rat) 4 h |
| Poly (oxyethylene) sorbitan monolaurate | 37000 mg/kg (Rat) 36700 µL/kg (Rat) | N/A | N/A |

| Chemical name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity - inhalation gas- source information |
|---------------|---|---|---|
| Sulfuric Acid | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| Chemical name | Acute toxicity -inhalation vapor- source information | Acute toxicity -inhalation dust- source information | Acute toxicity - inhalation mist- source information |
|---------------|--|---|--|
| Sulfuric Acid | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Skin irritation/corrosion

| Chemical name | Skin corrosion/irritation source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical name | Serious eye damage/irritation source information |
|---------------|--|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical name | Respiratory or Skin sensitization source information |
|---------------|--|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical name | germ cell mutagenicity source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical name | Carcinogenicity source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

| Chemical name | NTP | IARC | ACGIH | JSOH (Japan) |
|----------------------------|-----|---------|-------|--------------|
| Sulfuric Acid 7664-93-9 | - | Group 1 | A2 | - |

Reproductive toxicity

| Chemical name | Reproductive toxicity source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical name | STOT -single exposure- source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

STOT-repeated exposure

| Chemical name | STOT -repeated exposure- source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical name | Aspiration Hazard source information |
|---------------|---|
| Sulfuric Acid | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity**

| Chemical name | Algae/aquatic plants | Fish | Crustacea |
|------------------------------|----------------------|--|--|
| Sulfuric Acid | N/A | LC50: <i>Lepomis Macrochirus</i> 16-28 mg/L 96 h | LC50: <i>Daphnia magna</i> 29 mg/L 24 h |
| 2-Methyl-2H-isothiazol-3-one | N/A | LC50 : <i>Oncorhynchus mykiss</i> 0.07 mg/L 96 h | EC50 : <i>Daphnia magna</i> 0.18 mg/L 48 h |

Other data

| Chemical name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|---------------|--|---|
| Sulfuric Acid | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

Persistence and degradability

No information available

Bioaccumulative potential

No information available

Mobility in soil

No information available

Hazard to the ozone layer

No information available

Section 13: DISPOSAL CONSIDERATIONS**Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION**ADR/RID**

| | |
|-------------------------|---|
| UN number | UN3264 |
| Proper shipping name: | Corrosive liquid, acidic, inorganic, n.o.s. (Diluted Sulfuric Acid) |
| UN classification | 8 |
| Subsidiary hazard class | |
| Packing group | II |
| Marine pollutant | Not applicable |

IMDG

| | |
|--|---|
| UN number | UN3264 |
| Proper shipping name: | Corrosive liquid, acidic, inorganic, n.o.s. (Diluted Sulfuric Acid) |
| UN classification | 8 |
| Subsidiary hazard class | |
| Packing group | II |
| Marine pollutant (Sea) | Not applicable |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

IATA

| | |
|-----------|--------|
| UN number | UN3264 |
|-----------|--------|

Proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (Diluted Sulfuric Acid)
UN classification 8
Subsidiary hazard class
Packing group II
Environmentally Hazardous Substance Not applicable

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS -
TSCA -

Japanese regulations

Fire Service Act Not applicable
Poisonous and Deleterious Substances Control Law Not applicable
Industrial Safety and Health Act Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)
 Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9) No.613
 Group 3 Specified Chemical Substance, (Ordinance on Prevention of Hazards Due to Specified Chemical Substances Art.2 Para.1, Item 6)
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc Priority Assessment Chemical Substances (Law Article 2, Para.5)
Regulations for the carriage and storage of dangerous goods in ship Corrosive Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law Corrosive Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Marine Pollution Prevention Law Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
Pollutant Release and Transfer Register Law Not applicable
Water Pollution Control Act Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
Air Pollution Control Law Specified Substances
Industrial Safety and Health Law

| Law Name | Chemical Name in Regulation | Ordinance Number | Weight % |
|--|-----------------------------|------------------|----------|
| Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9, and Law Art.56-1) | Sulfuric acid | 613 | 6.9 |

Section 16: OTHER INFORMATION

Key literature references and sources for data etc. NITE: National Institute of Technology and Evaluation (JAPAN) <http://www.safe.nite.go.jp/japan/db.html>
 IATA dangerous Goods Regulations
 RTECS: Registry of Toxic Effects of Chemical Substances
 Japan Industrial Safety and Health Association GHS Model SDS
 Dictionary of Synthetic Organic Chemistry , SSOCJ,

Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
etc

Disclaimer

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet