

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 01-Mar-2024
 Revision Number 3.04

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|-------------------------------|
| Product Name | Presep® Multilayer Silica Gel |
| Product Code | 295-41651 |

| | |
|-----------------------------------|---|
| 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 | +81-6-6203-3741 / +81-3-3270-8571 |
| Recommended uses | For research use only |
| Restrictions on use | Seek expert judgment when using for purposes other than those recommended. |

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Skin corrosion/irritation

Category 1

Serious eye damage/eye irritation

Category 1

Reproductive Toxicity

Category 1B

Specific target organ toxicity (single exposure)

Category 1

Category 1 respiratory system, digestive system

Specific target organ toxicity (repeated exposure)

Category 1

Category 1 respiratory system

Acute aquatic toxicity

Category 1

Chronic aquatic toxicity

Category 1

Pictograms



Signal word

Danger

Hazard statements

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

H360 - May damage fertility or the unborn child

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H370 - Causes damage to the following organs: respiratory system, digestive system

H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling

- 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 INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
- Collect spillage

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 Article

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|---------------------|----------|------------------|---------|----------|------------|
| Silica Gel | 51 | 60.08 | (1)-548 | * | 63231-67-4 |
| Sodium Sulfate | 34.5 | 142.04 | (1)-501 | * | 7757-82-6 |
| Sulfuric Acid | 13.1 | 98.08 | (1)-430 | * | 7664-93-9 |
| Silver nitrate | 1.2 | 169.87 | (1)-8 | * | 7761-88-8 |
| Potassium Hydroxide | 0.2 | 56.11 | (1)-369 | * | 1310-58-3 |

Note on ISHL No.: * in the table means announced chemical substances.

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

Sweep up and gather scattered particles, and collect it in an empty airtight container.

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 acidic and 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, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. Store locked up.

Safe packaging material

Glass

Incompatible substances

Alkali, Acids

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 |
|-----------------------------|---------------------------------|--------------|--------------------------------|
| Silica Gel 63231-67-4 | N/A | N/A | TWA 10mg/m ³ |
| Sulfuric Acid 7664-93-9 | Ceiling: 1 mg/m ³ | N/A | TWA 0.2mg/m ³ |
| Silver nitrate 7761-88-8 | TWA: 0.01 mg/m ³ OEL | N/A | TWA: 0.01 mg/m ³ Ag |
| Potassium Hydroxide | Ceiling: 2 mg/m ³ | N/A | Ceiling: 2 mg/m ³ |

1310-58-3

Personal protective equipment

| | |
|---------------------------------|---|
| Respiratory protection | Gas mask for acidic gas (JIS T 8152) |
| Hand protection | chemical protective gloves (JIS T 8116) |
| Eye protection | protective eyeglasses or chemical safety goggles (JIS T 8147) |
| Skin and body protection | Long-sleeved work clothes |

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color white

Appearance Packed Column

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 water : insoluble .

n-Octanol/water partition coefficient:(log Pow) no data available

Vapour pressure no data available

Specific Gravity / Relative density no data available

Vapour density no data available

Particle characteristics no data available

Section 10: STABILITY AND REACTIVITY

Stability

Reactivity no data available

Chemical stability May be altered by light.

Hazardous reactions

None under normal processing

Conditions to avoid

Extremes of temperature and direct sunlight, Moisture

Incompatible materials

Alkali, Acids

Hazardous decomposition products

Nitrogen oxides (NOx), Sulfur oxides (SOx), Silicon compounds, Silver oxide

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|---------------------|-----------------------|----------------------|-------------------------------------|
| Silica Gel | 3160 mg/kg (Rat) | N/A | N/A |
| Sodium Sulfate | > 10000 mg/kg (Rat) | N/A | N/A |
| Sulfuric Acid | 2140 mg/kg (Rat) | N/A | 0.375 mg/L (Rat) 4 h |
| Silver nitrate | 1170 mg/kg (Rat) | > 2000 mg/kg (Rat) | > 750 µg/m ³ (Rat) 4 h |
| Potassium Hydroxide | 273 mg/kg (Rat) | N/A | N/A |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|---------------------|---|---|--|
| Sodium Sulfate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Potassium Hydroxide | 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 |
|---------------------|--|---|---|
| Sodium Sulfate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Potassium Hydroxide | 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 |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage/irritation source information |
|---------------------|--|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory or Skin sensitization source information |
|---------------------|--|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

| Chemical Name | NTP | IARC | ACGIH | JSOH (Japan) |
|---------------|-----|------|-------|--------------|
| | | | | |

| | | | | |
|-----------------------------|---|----------|----|---|
| Silica Gel 63231-67-4 | - | Group 3 | | - |
| Sulfuric Acid 7664-93-9 | - | Group 1 | A2 | - |
| Silver nitrate 7761-88-8 | - | Group 2A | | - |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|---------------------|---|
| Sodium Sulfate | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results. |
| Silver nitrate | Based on the NITE GHS classification results. |
| Potassium Hydroxide | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|----------------|---|--|---|
| Silica Gel | <i>EC50 : Pseudokirchneriella subcapita</i> 440 mg/L 72 h | N/A | N/A |
| Sodium Sulfate | <i>EC50 : Selenastrum capricornutum</i> 1584.583 mg/L 72 h | <i>LC50 : Fathead minnow</i> 7960 mg/L 96 h | <i>EC50 : Ceriodaphnia dubia</i> 3150.21 mg/L 48 h |
| Sulfuric Acid | N/A | <i>LC50: Lepomis macrochirus</i> 16 - 28 mg/L 96 h | <i>LC50: Daphnia magna</i> 29 mg/L 24 h |
| Silver nitrate | N/A | <i>LC50: 0.00512 - 0.00787mg/L (96h, Poecilia reticulata)</i> <i>LC50: 0.009 - 0.02mg/L (96h, Lepomis macrochirus)</i> <i>LC50: 0.0242 - 0.0484mg/L (96h, Lepomis macrochirus)</i> <i>LC50: 0.05 - 0.07mg/L (96h, Lepomis macrochirus)</i> <i>LC50: 0.001339 - 0.001637mg/L (96h, Oncorhynchus mykiss)</i> <i>LC50: =0.0075mg/L (96h, Oncorhynchus mykiss)</i> <i>LC50: 0.00839 - 0.1802mg/L</i> | <i>EC50 : Daphnia magna</i> 0.0014 mg/L 48 h |

| | | | |
|--|--|--|--|
| | | (96h, <i>Oncorhynchus mykiss</i>) LC50: 0.00452 - 0.00638mg/L (96h, <i>Pimephales promelas</i>) LC50: 0.00181 - 0.00214mg/L (96h, <i>Pimephales promelas</i>) LC50: 0.0064 - 0.0106mg/L (96h, <i>Pimephales promelas</i>) LC50: =0.009mg/L (96h, <i>Pimephales promelas</i>) LC50: =0.0027mg/L (96h, <i>Cyprinus carpio</i>) | |
|--|--|--|--|

Other data

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|---------------------|--|---|
| Sodium Sulfate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Sulfuric Acid | Based on the NITE GHS classification results | Based on the NITE GHS classification results |
| Silver nitrate | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |
| Potassium Hydroxide | 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 | UN1759 |
| Proper shipping name: | Corrosive solid, n.o.s. (Sulfuric acid / Potassium Hydroxide) |
| UN classification | 8 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant | Yes |

IMDG

| | |
|---|---|
| UN number | UN1759 |
| Proper shipping name: | Corrosive solid, n.o.s. (Sulfuric acid / Potassium Hydroxide) |
| UN classification | 8 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant (Sea) | Yes |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

IATA

| | |
|------------------------------|---|
| UN number | UN1759 |
| Proper shipping name: | Corrosive solid, n.o.s. (Sulfuric acid / Potassium Hydroxide) |
| UN classification | 8 |

Subsidiary hazard class
 Packing group III
 Environmentally Hazardous Substance Yes

Section 15: REGULATORY INFORMATION

Japanese regulations

Fire Service Act Not applicable
Poisonous and Deleterious Substances Control Law Deleterious Substances 2nd. Grade
Industrial Safety and Health Act Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)
 Notifiable Substances (Law Art.57-2)
 Group 3 Specified Chemical Substance
Industrial Safety and Health Act (2024-) 【2024.4.1~】 Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
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 (2023.4.1-) Not applicable
Water Pollution Control Act Harmful Substances (Law Art.2, Enforcement Order Art.2, Ordinance Designating Wastewater Standards Art.1)
Export Trade Control Order Narcotics and Psychotropics Control Law Appendix 2 Export Approval Item
Air Pollution Control Law Specified Substances

Industrial Safety and Health Law

| Law Name | Chemical Name in Regulation | Weight % | |
|--------------------------------------|----------------------------------|----------|--------------|
| Notifiable Substances (Law Art.57-2) | Sulfuric acid | 13.1 | Existing Law |
| Notifiable Substances (Law Art.57-2) | Silver and its soluble compounds | 1.2 | Existing Law |

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

Record of SDS revisions Disclaimer

The following contents were revised. Regulatory information.

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 Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet