

SAFETY DATA SHEET

According to JIS Z 7253:2019
Issue Date 20-Feb-2025
 Revision Number 1

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|---|
| Product Name | Piperonyl Butoxide Reference Material [CRM] |
| Product Code | 169-29461 |

Supplier FUJIFILM Wako Pure Chemical Corporation
 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
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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

| | |
|---|-------------|
| Serious eye damage/eye irritation | Category 2B |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Category 3 Respiratory irritation | |
| Specific target organ toxicity (repeated exposure) | Category 2 |
| Category 2 liver | |
| Acute aquatic toxicity | Category 1 |
| Chronic aquatic toxicity | Category 1 |

Pictograms



Signal word

Warning

Hazard statements

- H320 - Causes eye irritation
- H351 - Suspected of causing cancer
- H335 - May cause respiratory irritation
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects
- H373 - May cause damage to the following organs through prolonged or repeated exposure: liver

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
- Wash face, hands and any exposed skin thoroughly after handling
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- Avoid release to the environment

Precautionary statements-(Response)

- IF exposed or concerned: Get medical advice/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
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- Collect spillage

Precautionary statements-(Storage)

- Store locked up
- Store in a well-ventilated place. Keep container tightly closed

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 Substance

Formula C₁₉H₃₀O₅

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|--------------------|----------|------------------|----------|-------------------|---------|
| Piperonyl Butoxide | 98.0 | 338.44 | (9)-1484 | 8-(5)-65、8-(5)-85 | 51-03-6 |

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

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 dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

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

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use with local exhaust ventilation. 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

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). 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 (2-10 °C) place. Packed with an inert gas.

Safe packaging material Glass

Incompatible substances Strong oxidizing agents

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

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Personal protective equipment

Respiratory protection Protective mask

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 | Colorless - reddish yellow |
| Turbidity | clear |
| Appearance | liquid |
| 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 | 212 °C |
| 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 | Ethanol : Very soluble. acetone : soluble . water : practically insoluble,or 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, Heat, flames and sparks, static electricity, spark |
| Incompatible materials | Strong oxidizing agents |
| Hazardous decomposition products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |

Section 11: TOXICOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|--------------------|----------------------|---|----------------------|
| Piperonyl Butoxide | > 2000 mg/kg (Rat) | > 2000 mg/kg (Rat) > 2000 mg/kg (Rabbit) | 5.2 mg/L 4 h (Rat) |

| Chemical Name | Acute toxicity -oral- source information | Acute toxicity -dermal- source information | Acute toxicity -inhalation gas- source information |
|--------------------|---|---|--|
| Piperonyl Butoxide | 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 |
|--------------------|--|---|---|
| Piperonyl Butoxide | Based on the NITE GHS | Based on the NITE GHS | Based on the NITE GHS |

| | | | |
|--|-------------------------|-------------------------|-------------------------|
| | classification results. | classification results. | classification results. |
|--|-------------------------|-------------------------|-------------------------|

Skin irritation/corrosion

| Chemical Name | Skin corrosion/irritation source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage/irritation source information |
|--------------------|--|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory or Skin sensitization source information |
|--------------------|--|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

| Chemical Name | NTP | IARC | ACGIH | JSOH |
|-------------------------------|-----|---------|-------|------|
| Piperonyl Butoxide 51-03-6 | N/A | Group 3 | N/A | N/A |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|--------------------|---|
| Piperonyl Butoxide | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

Ecotoxicity

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|--------------------|----------------------|--|---|
| Piperonyl Butoxide | N/A | LC50 : <i>Oncorhynchus mykiss</i> 7.07 mg/L 96h | EC50: <i>Mysidopsis bahia</i> 0.49 mg/L 96 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 |
|--------------------|--|---|
| Piperonyl Butoxide | 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 UN3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Piperonyl Butoxide)
UN classification 9
Subsidiary hazard class
Packing group III
Marine pollutant Yes

IMDG

UN number UN3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Piperonyl Butoxide)
UN classification 9
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 UN3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Piperonyl Butoxide)
UN classification 9
Subsidiary hazard class
Packing group III
Environmentally Hazardous Substance Yes

Section 15: REGULATORY INFORMATION**Japanese regulations**

Fire Service Act Category IV, Class IV petroleums, dangerous grade 3
Poisonous and Deleterious Substances Control Law Not applicable
Industrial Safety and Health Act Not applicable
Regulations for the carriage and storage of dangerous goods in ship Noxious Substances (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law Miscellaneous Dangerous Substances and Articles (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer Register Law (2023.4.1-) Class 2
Class 2 - No. 809

| Chemical Name | Poisonous and Deleterious Substances Control Law | Industrial Safety and Health Act Substances (Law Art.57-2) | Pollutant Release and Transfer Register Law (2023.4.1-) |
|--|--|--|---|
| Piperonyl Butoxide 51-03-6 (98.0) | - | - | Applicable |

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput
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 Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet