

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 05-Sep-2024
 Revision Number 2.06

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|---------------------|
| Product Name | t-Butylhydroquinone |
| Product Code | 027-07212,021-07215 |

| | |
|-----------------------------------|---|
| 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**

Acute toxicity - Oral

Category 4

Skin sensitization

Category 1

Acute aquatic toxicity

Category 1

Chronic aquatic toxicity

Category 1

Pictograms**Signal word**

Warning

Hazard statements

- H302 - Harmful if swallowed
- H317 - May cause an allergic skin reaction
- H400 - Very toxic to aquatic life
- H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements-(Prevention)

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

Precautionary statements-(Response)

- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation or rash occurs: Get medical advice/attention
- Wash contaminated clothing before reuse
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- Collect spillage

Precautionary statements-(Storage)

- Not applicable

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 (CH₃)₃CC₆H₃(OH)₂

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|--------------------------|----------|------------------|---------|-----------------------|-----------|
| 2-tert-Butylhydroquinone | 98.0 | 166.22 | (3)-549 | 4-(10)-533,4-(10)-540 | 1948-33-0 |

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 strong oxidizing agents. 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.

Safe packaging material

Polyethylene, Polypropylene

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**

Dust mask (JIS T 8151)

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 - slightly brown

Appearance

crystalline powder

Odor

no data available

Melting point/freezing point

127 - 130 °C

| | |
|---|---|
| Boiling point, initial boiling point and boiling range | 273 °C |
| 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 | 171 °C |
| Auto-ignition temperature: | 457 °C |
| Decomposition temperature: | no data available |
| pH | no data available |
| Viscosity (coefficient of viscosity) | no data available |
| Dynamic viscosity | no data available |
| Solubilities | Ethanol , acetone : freely soluble . water : practically insoluble,or insoluble . |
| n-Octanol/water partition coefficient:(log Pow) | 2.94 |
| 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 |
| 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 |
|--------------------------|-------------------|-------------|-----------------|
| 2-tert-Butylhydroquinone | 756 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 |
|--------------------------|---|---|--|
| 2-tert-Butylhydroquinone | 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 |
|--------------------------|--|---|---|
| 2-tert-Butylhydroquinone | 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 |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Serious eye damage/ irritation

| Chemical Name | Serious eye damage/irritation source information |
|--------------------------|--|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Respiratory or skin sensitization

| Chemical Name | Respiratory or Skin sensitization source information |
|--------------------------|--|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

STOT-single exposure

| Chemical Name | STOT -single exposure- source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

STOT-repeated exposure

| Chemical Name | STOT -repeated exposure- source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | Based on the NITE GHS classification results. |

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|--------------------------|---|
| 2-tert-Butylhydroquinone | 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 |
|--------------------------|----------------------|---|-----------|
| 2-tert-Butylhydroquinone | N/A | LC50 : <i>Lepomis macrochirus</i> 0.15 mg/L 48 h | N/A |

Other data

| Chemical Name | Short-term (acute) hazardous to the aquatic environment source information | Long-term (chronic) hazardous to the aquatic environment source information |
|--------------------------|--|---|
| 2-tert-Butylhydroquinone | 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 | UN3077 |
| Proper shipping name: | Environmentally hazardous substance, solid, n.o.s. (2-tert-Butylhydroquinone) |
| UN classification | 9 |
| Subsidiary hazard class | |

Packing group III
Marine pollutant Yes

IMDG

UN number UN3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (2-tert-Butylhydroquinone)
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 UN3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (2-tert-Butylhydroquinone)
UN classification 9
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 | Not applicable |
| Industrial Safety and Health Act | Not applicable |
| Industrial Safety and Health Act (2024-) | <u>【2024.4.1~】 Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)</u> |
| Industrial Safety and Health Act (2025-) | <u>【2025.4.1~】 Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57,Para.1, Enforcement Order Art.18)</u> <u>【2025.4.1~】 Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached TableNo.9)</u> |
| 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 | Misellaneous Dangerous Substances and Articles (Ordinance Art.194, MITL Nortification for Air Transportation of Explosives etc., Attached Table 1) |
| Pollutant Release and Transfer Register Law (2023.4.1-) | Not applicable |
| Export Trade Control Order | Not 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 Oraganic 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