

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Issue Date** 19-Dec-2025  
 Revision Number 9.09

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	Tetrahydrofuran, with Stabilizer
<b>Product Code</b>	200-19391,206-19393

**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

## Flammable liquids

Acute toxicity - Oral

Acute toxicity - Inhalation (Vapors)

Skin corrosion/irritation

Serious eye damage/eye irritation

Carcinogenicity

Reproductive Toxicity

Specific target organ toxicity (single exposure)

Category 1 central nervous system

Category 3 Respiratory irritation, Narcotic effects

Specific target organ toxicity (repeated exposure)

Category 1 central nervous system, respiratory system, liver

Category 2

Category 4

Category 4

Category 2

Category 2A

Category 2

Category 2

Category 1, Category 3

Category 1

## Pictograms



## Signal word

Danger

## Hazard statements

H225 - Highly flammable liquid and vapor

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H302 - Harmful if swallowed

H332 - Harmful if inhaled

H351 - Suspected of causing cancer

H361 - Suspected of damaging fertility or the unborn child

H335 - May cause respiratory irritation

H336 - May cause drowsiness or dizziness

H370 - Causes damage to the following organs: central nervous system

H372 - Causes damage to the following organs through prolonged or repeated exposure: central nervous system,

respiratory system, 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 eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
- Keep container tightly closed
- Ground/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting / equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge
- Keep cool

#### Precautionary statements-(Response)

- IF exposed: Call a POISON CENTER or doctor/physician
- 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 skin irritation occurs: Get medical advice/attention
- 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
- Call a POISON CENTER or doctor/physician if you feel unwell
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth
- In case of fire: Use suitable extinguishing media for extinction

#### 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 C<sub>4</sub>H<sub>8</sub>O

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Tetrahydrofuran	99.5	72.11	(5)-53	*	109-99-9
2,6-Di(tert-butyl)-4-methylphenol	0.03	220.35	(3)-540,(9)-1805	*	128-37-0

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

**Impurities and/or Additives:** [Stabilizer]2,6-Di-t-butyl-4-methylphenol (BHT) about 0.03 %

### 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 (CO<sub>2</sub>), 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. Vapors may form explosive mixtures with air

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

**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**

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**

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Tetrahydrofuran 109-99-9	TWA: 50 ppm OEL TWA: 148 mg/m <sup>3</sup> OEL Skin	ISHL/ACL: 50 ppm	STEL: 100 ppm TWA: 50 ppm Skin
2,6-Di(tert-butyl)-4-methylphenol 128-37-0	N/A	N/A	TWA: 2 mg/m <sup>3</sup> inhalable fraction and vapor

Chemical Name	Concentration standard value set by the Minister of Health, Labor and Welfare (8hr)	Concentration standard value set by the Minister of Health, Labor and Welfare (Short-Term)
2,6-Di(tert-butyl)-4-methylphenol 128-37-0	10 mg/m <sup>3</sup>	N/A

**Personal protective equipment****Respiratory protection**

gas mask for organic 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**

colorless

**Turbidity**

clear

**Appearance**

liquid

**Odor**

characteristic odor

**Melting point/freezing point**

-108 °C

**Boiling point, initial boiling point and boiling range**

65 °C

**Flammability**

Highly flammable liquid and vapor

**Evaporation rate:**

no data available

**Flammability (solid, gas):**

no data available

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

11.8 vol%

**Lower:**

2.0 vol%

**Flash point**

-19 °C

**Auto-ignition temperature:**

321 °C

**Decomposition temperature:**

no data available

**pH**

no data available

Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	water , Ethanol : Very soluble .
n-Octanol/water partition coefficient:(log Pow)	0.46
Vapour pressure	145 mmHg
Specific Gravity / Relative density	0.884 – 0.889 g/m L (20 °C)
Vapour density	2.5 ( Air=1 )
Particle characteristics	no data available

## Section 10: STABILITY AND REACTIVITY

### Stability

Reactivity	no data available
Chemical stability	May be altered by light.

### Hazardous reactions

May form explosive peroxides. Reacts with strong oxidants causing fire/explosion hazard. Reacts violently with bases, may cause fire or explosion.

### 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<sub>2</sub>)

## 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](https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput)

### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Tetrahydrofuran	2000 mg/kg ( Rat )	N/A	18187 ppm ( Rat ) 4 h
2,6-Di(tert-butyl)-4-methylphenol	> 2930 mg/kg ( Rat )	> 2000 mg/kg ( Rat )	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Tetrahydrofuran	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	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
Tetrahydrofuran	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	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
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

### Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

### Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH
Tetrahydrofuran 109-99-9	N/A	Group 2B	A3	-
2,6-Di(tert-butyl)-4-methylphenol 128-37-0	N/A	Group 3	N/A	N/A

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
Tetrahydrofuran	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	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](https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput)

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Tetrahydrofuran	N/A	LC50 : Fathead minnow 2160 mg/L 96 h	EC50 : Daphnia magna 5930 mg/L 48 h
2,6-Di(tert-butyl)-4-methylphenol	EC50 : Pseudokirchneriella subcapitata 6 mg/L 72 h EC50 : Desmodesmus subspicatus >0.42 mg/L 72 h	LC50 : Oryzias latipes 0.053 mg/L	EC50 : Daphnia magna 0.84 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
Tetrahydrofuran	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
2,6-Di(tert-butyl)-4-methylphenol	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

**Persistence and degradability**  
**Bioaccumulative potential**  
**Mobility in soil**

No information available  
No information available  
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 UN2056  
 Proper shipping name: Tetrahydrofuran  
 UN classification 3  
 Subsidiary hazard class  
 Packing group II  
 Marine pollutant Not applicable

#### IMDG

UN number UN2056  
 Proper shipping name: Tetrahydrofuran  
 UN classification 3  
 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 UN2056  
 Proper shipping name: Tetrahydrofuran  
 UN classification 3  
 Subsidiary hazard class  
 Packing group II  
 Environmentally Hazardous Substance Not applicable

### Section 15: REGULATORY INFORMATION

#### Japanese regulations

**Fire Service Act** Category IV, Class I petroleums, dangerous grade 2 water-soluble  
**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)  
 Notifiable Substances (Law Art.57-2)  
 Class 2 Organic Solvents (Enforcement Order Attached Table No.6-2, Ordinance on Prevention of Organic Solvent Poisoning Art.1, Para.1, Item 5)  
 Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1)  
 Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4)  
 Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)  
**Regulations for the carriage and storage of dangerous goods in ship** Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)  
**Civil Aeronautics Law** Flammable Liquids (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 Z  
**Pollutant Release and Transfer Register Law (2023.4.1-)** Class 1  
**Class 1 - No.** 674  
**Water Pollution Control Act** Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)

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-)
Tetrahydrofuran 109-99-9 ( 99.5 )	-	Applicable	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](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

### Record of SDS revisions

The following contents were revised. Composition/information on ingredients. Exposure controls/personal protection. Physical and chemical properties. Stability and reactivity. Toxicological information. Ecological information. Regulatory information.

### 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**