

# SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Issue Date** 01-Jul-2025  
 Revision Number 3.03

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	O,O'-Diethyl Dithiophosphate
<b>Product Code</b>	044-01901

**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**

<b>Flammable liquids</b>	Category 4
<b>Acute toxicity - Oral</b>	Category 4
<b>Acute toxicity - Inhalation (Dusts/Mists)</b>	Category 4
<b>Serious eye damage/eye irritation</b>	Category 2A
<b>Specific target organ toxicity (repeated exposure)</b>	Category 2
<b>Category 2 testes</b>	
<b>Acute aquatic toxicity</b>	Category 2
<b>Chronic aquatic toxicity</b>	Category 2

**Pictograms**



**Signal word**

**Warning**

**Hazard statements**

- H227 - Combustible liquid
- H319 - Causes serious eye irritation
- H302 - Harmful if swallowed
- H332 - Harmful if inhaled
- H401 - Toxic to aquatic life
- H411 - Toxic to aquatic life with long lasting effects
- H373 - May cause damage to the following organs through prolonged or repeated exposure: testes

**Precautionary statements-(Prevention)**

- 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
- Wear protective gloves/protective clothing/eye protection/face protection
- Do not breathe dust/fume/gas/mist/vapors/spray
- Avoid release to the environment

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

**Precautionary statements-(Response)**

- Get medical advice/attention if you feel unwell
- 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
- 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
- Collect spillage

**Precautionary statements-(Storage)**

- Store in a well-ventilated place. Keep cool

**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>2</sub>H<sub>5</sub>O)<sub>2</sub>P(S)SH

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
O,O'-Diethyl dithiophosphate	90.0	186.23	(2)-1896	*	298-06-6

**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 (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.

**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.

**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

<b>Form</b>	
<b>Color</b>	Colorless - dark grayish brown or dark blue
<b>Appearance</b>	liquid
<b>Odor</b>	unpleasant
<b>Melting point/freezing point</b>	no data available
<b>Boiling point, initial boiling point and boiling range</b>	no data available
<b>Flammability</b>	Combustible liquid
<b>Evaporation rate:</b>	no data available
<b>Flammability (solid, gas):</b>	no data available
<b>Upper/lower flammability or explosive limits</b>	
<b>Upper:</b>	no data available
<b>Lower:</b>	no data available
<b>Flash point</b>	82 °C
<b>Auto-ignition temperature:</b>	no data available
<b>Decomposition temperature:</b>	no data available
<b>pH</b>	no data available
<b>Viscosity (coefficient of viscosity)</b>	no data available
<b>Dynamic viscosity</b>	no data available
<b>Solubilities</b>	Ethanol and acetone : miscible . water : practically insoluble, or insoluble .
<b>n-Octanol/water partition coefficient:(log Pow)</b>	no data available
<b>Vapour pressure</b>	no data available
<b>Specific Gravity / Relative density</b>	1.17 - 1.19 g/mL (20°C)
<b>Vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## Section 10: STABILITY AND REACTIVITY

### Stability

<b>Reactivity</b>	no data available
<b>Chemical stability</b>	May be altered by light.
<b>Hazardous reactions</b>	None under normal processing
<b>Conditions to avoid</b>	Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark
<b>Incompatible materials</b>	Strong oxidizing agents
<b>Hazardous decomposition products</b>	Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Phosphorus oxide, Sulfur oxides (SO <sub>x</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
O,O'-Diethyl dithiophosphate	300 - 2000 mg/kg ( Rat )	N/A	1.64 mg/L ( Rat ) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
O,O'-Diethyl dithiophosphate	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	Acute toxicity -inhalation dust-	Acute toxicity -inhalation mist-

	vapor- source information	source information	source information
O,O'-Diethyl dithiophosphate	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
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
O,O'-Diethyl dithiophosphate	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
O,O'-Diethyl dithiophosphate	N/A	N/A	EC50 : <i>Daphnia magna</i> = 4.5 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
O,O'-Diethyl dithiophosphate	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Mobility in soil</b>	No information available
<b>Hazard to the ozone layer</b>	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. (O,O'-Diethyl dithiophosphate)  
**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. (O,O'-Diethyl dithiophosphate)  
**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. (O,O'-Diethyl dithiophosphate)  
**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 III petroleum, dangerous grade 3  
**Poisonous and Deleterious Substances Control Law** Not applicable  
**Industrial Safety and Health Act** Not applicable  
**Industrial Safety and Health Act (2026-)** 【2026.4.1~】 Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)  
【2026.4.1~】 Notifiable Substances (Law Art.57-2)  
**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-)** Not applicable

### Industrial Safety and Health Law

Law Name	Chemical Name in Regulation	Weight %	Scheduled enforcement date
Notifiable Substances (Law Art.57-2)	Dithiophosphoric acid O,O-diethyl ester	90.0	2026/4/1

## 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. Product and company Identification. Hazards identification. Fire fighting measures. Exposure controls/personal protection. Physical and chemical properties. 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**