

## SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Issue Date** 21-Aug-2025  
 Revision Number 4.07

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	o-Phenylenediamine
<b>Product Code</b>	162-11021,160-11022,164-11025

**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

## Serious eye damage/eye irritation

Category 2A

## Skin sensitization

Category 1

## Germ cell mutagenicity

Category 2

## Carcinogenicity

Category 1B

## Specific target organ toxicity (single exposure)

Category 1, Category 2, Category 3

Category 1 blood system

Category 2 central nervous system

Category 3 Respiratory irritation

## Specific target organ toxicity (repeated exposure)

Category 2

Category 2 nasal cavity, kidneys, bladder, blood system

## Acute aquatic toxicity

Category 1

## Chronic aquatic toxicity

Category 1

## Pictograms



## Signal word

Danger

## Hazard statements

H319 - Causes serious eye irritation

H302 - Harmful if swallowed

H341 - Suspected of causing genetic defects

H350 - May cause cancer

H335 - May cause respiratory irritation

H317 - May cause an allergic skin reaction

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H370 - Causes damage to the following organs: blood system

H371 - May cause damage to the following organs: central nervous system

H373 - May cause damage to the following organs through prolonged or repeated exposure: nasal cavity, kidneys, bladder, blood 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
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves
- 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: 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 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 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
- 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  $\text{H}_2\text{NC}_6\text{H}_4\text{NH}_2$

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
o-Phenylenediamine (8CI)	95.0	108.14	(3)-185	*	95-54-5

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 (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**

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 tightly closed. Store in a cool (2-10 °C) place. Packed with an inert gas. Store locked up.

**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
o-Phenylenediamine (8Cl) 95-54-5	TWA: 0.1 mg/m <sup>3</sup> OEL	N/A	TWA: 0.1 mg/m <sup>3</sup>

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)
o-Phenylenediamine (8Cl) 95-54-5	Applicable (No standard value set)	Applicable (No standard value set)

**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 - dark brown  
**Appearance** crystals - crystalline powder or flakes

**Odor**

no data available

**Melting point/freezing point**

100 - 104 °C

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

252 °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:**

1.5 vol%

**Flash point**

155 °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 , acetone : freely soluble . water : soluble .

**n-Octanol/water partition coefficient:(log Pow)**

no data available

**Vapour pressure**

no data available

**Specific Gravity / Relative density**

no data available

**Vapour density**

3.9 (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**

The substance decomposes on burning producing toxic or corrosive gases and fumes.

**Conditions to avoid**

Extremes of temperature and direct sunlight

**Incompatible materials**

Strong oxidizing agents

**Hazardous decomposition products**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<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-Phenylenediamine (8Cl)	660 - 1284 mg/kg ( Rat )	> 5000 mg/kg ( Rat )	> 0.014 mg/L ( Rat ) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
o-Phenylenediamine (8Cl)	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
o-Phenylenediamine (8Cl)	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-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**Serious eye damage/ irritation**

Chemical Name	Serious eye damage/irritation source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**Respiratory or skin sensitization**

Chemical Name	Respiratory or Skin sensitization source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

Chemical Name	germ cell mutagenicity source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**Carcinogenicity**

Chemical Name	Carcinogenicity source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH
o-Phenylenediamine (8Cl) 95-54-5	N/A	Group 2B	A3	-

**Reproductive toxicity**

Chemical Name	Reproductive toxicity source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**STOT-single exposure**

Chemical Name	STOT -single exposure- source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**STOT-repeated exposure**

Chemical Name	STOT -repeated exposure- source information
o-Phenylenediamine (8Cl)	Based on the NITE GHS classification results.

**Aspiration hazard**

Chemical Name	Aspiration Hazard source information
o-Phenylenediamine (8Cl)	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-Phenylenediamine (8CI)	EC50 : <i>Selenastrum</i> 0.821 mg/L 72 h	LC50 : <i>Oryzias latipes</i> 4.6 mg/L 96 h	EC50 : <i>Daphnia magna</i> 0.87 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-Phenylenediamine (8CI)	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	UN1673
Proper shipping name:	Phenylenediamines (o-, m-, p-)
UN classification	6.1
Subsidiary hazard class	
Packing group	III
Marine pollutant	Yes

### IMDG

UN number	UN1673
Proper shipping name:	Phenylenediamines
UN classification	6.1
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	UN1673
Proper shipping name:	Phenylenediamines
UN classification	6.1
Subsidiary hazard class	
Packing group	III
Environmentally Hazardous Substance	Yes

## Section 15: REGULATORY INFORMATION

### Japanese regulations

<b>Fire Service Act</b>	Firefighting Inhibitor
<b>Poisonous and Deleterious Substances Control Law</b>	Deleterious Substances 3rd. Grade
<b>Industrial Safety and Health Act</b>	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)
	Notifiable Substances (Law Art.57-2)
	Mutagens - Existing Chemicals
	Substances with Health Hazards Prevention Guideline(Carcinogenicity Substance)
	Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
<b>Industrial Safety and Health Act (2027-)</b>	<u>【2027.4.1~】 Substances designated by the Minister of Health, Labor and Welfare as carcinogenic(Ordinance on Industrial Safety and Health Art.577, Para.2)</u>
<b>Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc</b>	Priority Assessment Chemical Substances (Law Article 2, Para.5)
<b>Regulations for the carriage and storage of dangerous goods in ship</b>	Toxic Substances - Poison (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
<b>Civil Aeronautics Law</b>	Toxic and Infectious Substances (Ordinance Art.194, MITL Nortification for Air Transportation of Explosives etc., Attached Table 1)
<b>Pollutant Release and Transfer Register Law (2023.4.1-)</b>	Class 1
<b>Class 1 - No.</b>	348
<b>Air Pollution Control Law</b>	Hazardous Air Pollutants

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-)
o-Phenylenediamine (8Cl) 95-54-5 ( 95.0 )	Applicable	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 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**