

## Safety Data Sheet

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### Section 1. Identification of the substance/mixture and of the company/undertaking

**Product identifier:**

Product name: Phenothiazine

Reference number(SDS):62430jis\_E-2

**Product type:**

Reagent

**Relevant identified uses of the substance or mixture and uses advised against**

Relevant identified uses of the product: Research and Development

Uses advised against: Do not use for other purposes.

**Details of the supplier of the safety data sheet**

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

FAX: +81-48-989-2787

e-mail address: shiyaku-t@junsei.co.jp

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### Section 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****HEALTH HAZARDS**

Skin corrosion/irritation: Category 2

Skin sensitization: Category 1B

Specific target organ toxicity – single exposure: Category 1 (liver, kidney, blood, nervous system, circulatory system)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 2 (blood)

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment, short-term (acute): Category 1

Hazardous to the aquatic environment, long-term (chronic): Category 1

(Note) GHS classification without description: Not classified/Classification not possible

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

H315–Causes skin irritation

H317–May cause an allergic skin reaction

H370–Causes damage to organs

H335–May cause respiratory irritation

H373–May cause damage to organs through prolonged or repeated exposure

H400–Very toxic to aquatic life

H410–Very toxic to aquatic life with long lasting effects

**PRECAUTIONARY STATEMENT****Prevention**

Avoid release to the environment.

- Do not breathe dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Wash contaminated parts thoroughly after handling.
- Wear protective gloves.
- Contaminated work clothing should not be allowed out of the workplace.
- Do not eat, drink or smoke when using this product.

**Response**

- Collect spillage.
- Specific treatment is required.
- Get medical advice/attention if you feel unwell.
- Call a POISON CENTER/doctor/physician if you feel unwell.
- IF exposed or concerned: Call a POISON CENTER/doctor/physician.
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.

**Storage**

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

**Disposal**

- Dispose of contents/container in accordance with local/national regulation.

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**Section 3. Composition/information on ingredients****Mixture/Substance selection:****Mixture**

Common name, synonyms: Thiodiphenylamine

Ingredient name: Phenothiazine

Content (%): 98.0 &lt;

Chemical formula: C<sub>12</sub>H<sub>9</sub>NS

ENCS: 5-908

CAS No.: 92-84-2

MW: 199.28

EC No.: 202-196-5

Note : The figures shown above are not the specifications of the product.

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**Section 4. First-aid measures****Descriptions of first-aid measures****General measures**

- Get medical advice/attention if you feel unwell.
- Call emergency medical service.

**IF INHALED**

- Remove person to fresh air and keep comfortable for breathing.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Call a POISON CENTER/doctor/physician if you feel unwell.
- IF INHALED: Call a POISON CENTER/doctor/physician if you feel unwell.

**IF ON SKIN (or hair)**

- Take off immediately all contaminated clothing. Rinse skin with water or shower.
- Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Remove and isolate contaminated clothing and shoes.

**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 SWALLOWED**

Rinse mouth.

**IF SWALLOWED:** Call a POISON CENTER/doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Abdominal cramps.

(Symptoms when skin and/or eye contact)

Severe itching of the skin. Redness of the skin.

Indication of any immediate medical attention and special treatment needed

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Specific treatment is required.

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**Section 5. Fire-fighting measures**

Extinguishing media

Suitable extinguishing media

In case of fire, use water mist, foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire resistant or flame retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with a full facepiece operated in the positive pressure mode.

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**Section 6. Accidental release measures**

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Do not touch or walk through spilled material.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

If appropriate, moisten first to prevent dusting.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

Prevent entry into waterways, sewers, basements or confined areas.

Prevent dust cloud.

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## Section 7. Handling and storage

### Precautions for safe handling

#### Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Precautions)

Avoid contact with skin.

Avoid contact with eyes.

#### Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

#### Any incompatibilities

Strong acids, Strong oxidizing agents should not be mixed with the chemicals.

#### Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing and wash it before reuse.

#### Storage

##### Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store in accordance with local/national regulation.

Store locked up.

##### Container and packaging materials for safe handling

Keep only in original packaging.

#### Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See

Section 8 for exposure controls and personal protection recommendations.

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## Section 8. Exposure controls/personal protection

### Control parameters

Control value and Concentration standard value under ISHA

Concentration standard value TWA: 0.5mg/m<sup>3</sup>

Occupational Exposure Limit

JSOH

Not established

ACGIH

TWA: 0.5mg/m<sup>3</sup>(I) (Phototoxicity; liver, bone marrow & spleen toxicity; anemia)

Notation

Skin

**Exposure controls****Appropriate engineering controls**

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

**Individual protection measures****Respiratory protection**

Select and wear respiratory protection in accordance with approved standards (e.g. JIS T8150).

Recommended respiratory protection: Dust mask

**Hand protection**

Wear protective gloves. Recommended material(s): nitrile

Inspect before use and replace worn or damaged gloves.

Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.

Chemical-resistant, impervious gloves complying with an approved standard (e.g. JIS T8116) should be used.

**Eye protection**

Wear safety glasses with side-shields.

Wear eye/face protection in accordance with approved standards (e.g. JIS T8147).

**Skin and body protection**

Wear impervious clothing and boots in case of repeated or prolonged treatment.

Personal protective equipment for the body and skin should be selected based on the task being performed and the risks involved.

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**Section 9. Physical and Chemical Properties****Information on basic physical and chemical properties**

Physical state: Crystals or crystalline powder

Color: Yellow or Grayish-green ~ Greenish-yellow

Odor: Odorless

Odor threshold data is not available.

Melting point/Freezing point: 182 ~ 187°C

Boiling point or initial boiling point: 371°C

Boiling range data is not available.

Flammability data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point: 202°C

Auto-ignition temperature: 471°C

Decomposition temperature: > 250°C

pH: ca. 6 (10g/L, 20°C)

Kinematic viscosity data is not available.

**Solubility:**

Solubility in water: 1.59 mg/L(25°C)

Solubility in solvent: Very soluble in acetone

Partition coefficient n-octanol/water: log Pow 4.15

Vapor pressure data is not available.

Density and/or relative density: 1.3g/cm<sup>3</sup>(20°C)

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

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**Section 10. Stability and Reactivity****Reactivity**

Reactivity data is not available.

**Chemical stability**

Stable under normal storage/handling conditions.

Turns deep green on exposure to light.

**Possibility of hazardous reactions**

Decomposes on heating and on contact with strong acids. This produces toxic and irritating fumes.

Reacts violently with strong oxidants. This generates fire hazard.

**Conditions to avoid**

Contact with incompatible materials.

Open flames. Heating. Light. Air.

**Incompatible materials**

Strong acids, Strong oxidizing agents

**Hazardous decomposition products**

Carbon oxides, Nitrogen oxides, Sulfur oxides

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**Section 11. Toxicological Information****Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

rat LD50: 5000 mg/kg (source: NITE)

**Acute toxicity (Dermal)**

[Product]

Based on available data, the classification criteria are not met.

[Data for components of the product]

[NITE-CHRIP]

rabbit LD0: ca. 9400 mg/kg (source: NITE)

**Acute toxicity (Inhalation)**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

[NITE-CHRIP]

dust: rat : no toxicity at 2000 mg/L (1-hour) (converted 4-hour equivalent value: 50 mg/L) (source: NITE)

**Irritant properties****Skin corrosion/irritation**

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[NITE-CHRIP]

Category 2 (source: NITE)

**Serious eye damage/irritation**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

**Sensitization****Respiratory sensitization**

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

## Skin sensitization

[Product]

Category 1B, May cause an allergic skin reaction

[Data for components of the product]

[NITE-CHRIP]

Category 1B (source: NITE)

## Germ cell mutagenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

## Carcinogenicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

## Reproductive toxicity

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

## Specific target organ toxicity (STOT)

## STOT-single exposure

[Product]

Category 1, Causes damage to organs

Category 3, May cause respiratory irritation

[Data for components of the product]

[NITE-CHRIP]

Category 1 (blood, circulator system, liver, nervous system, kidneys), Category 3  
(Respiratory tract irritation) (source: NITE)

## STOT-repeated exposure

[Product]

Category 2, May cause damage to organs through prolonged or repeated exposure

[Data for components of the product]

[NITE-CHRIP]

Category 2 (blood) (source: NITE)

## Aspiration hazard

[Product]

Classification not possible (Insufficient data available or no data available).

[Data for components of the product]

No data available.

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**Section 12. Ecological Information**

## Ecotoxicity

## Aquatic toxicity

[Product]

Category 1, Very toxic to aquatic life

Category 1, Very toxic to aquatic life with long lasting effects

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

[NITE-CHRIP]

(Phenothiazine)

Crustacea (Daphnia magna) 48-hour EC50: 0.055 mg/L (source: NITE)

Hazardous to the aquatic environment, long-term (chronic)

[NITE-CHRIP]

Algae (*Raphidocelis subcapitata*) 72-hour NOErC: 0.1 mg/L (source: NITE)

Water solubility

[Data for components of the product]

1.59 mg/L(25°C) (source: HSDB)

Persistence and degradability

[Data for components of the product]

Not rapidly degradable (Degradation rate: 0% (by BOD)) (source: NITE)

Bioaccumulative potential

[Data for components of the product]

log Pow: 4.15 (source: ICSC, 2009)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

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### Section 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment.

Dispose of contents/container in accordance with local/national regulation.

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### Section 14. Transport Information

UN No., UN CLASS

UN Number or ID Number : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Packing group : III

ERG GUIDE No.: 171

Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Packing group : III

Special provisions No.: 274; 335; 375; 966; 967; 969

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 3077

UN Proper Shipping Name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division (Transport hazard class) : 9

Hazard labels : Miscellaneous & Environmentally hazardous

Packing group : III

Special provisions No.: A97; A158; A179; A197; A215

Environmental hazards

Marine pollutants (yes/no) : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable to Transport in bulk according to Annex II of MARPOL and the IBC Code

MARPOL Annex V – HME (Harmful to the Marine Environment)

Hazardous to the aquatic environment – short-term (acute): cat.1

Phenothiazine

Hazardous to the aquatic environment – long-term (chronic): cat.1, 2

Phenothiazine

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## Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

92-84-2

All components are listed or exempted.

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility.

Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

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## Section 16. Other information

GHS classification and labelling

H315–Skin corrosion/irritation, Category 2: H315 Causes skin irritation

H317–Skin sensitization, Category 1B: H317 May cause an allergic skin reaction

H370–STOT – single exposure, Category 1: H370 Causes damage to organs

H335–STOT – single exposure, Category 3, Respiratory tract irritation: H335 May cause respiratory irritation.

H373–STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

H400–Hazardous to the aquatic environment, short-term (acute), Category 1: H400 Very toxic to aquatic life

H410–Hazardous to the aquatic environment, long-term (chronic), Category 1: H410 Very toxic to aquatic life with long lasting effects

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 23rd edit., 2023 UN

IMDG Code, 2024 Edition (Incorporating Amendment 42-24)

IATA Dangerous Goods Regulations (66th Edition) 2025

2024 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2025 TLVs and BEIs. (ACGIH)

JIS Z 7252 : 2019

JIS Z 7253 : 2019

Recommendation of occupational exposure limits (2023-2024) (JSOH)

Notification No. 0111-1 (January 11, 2022), Chemical Hazards Control Division, Industrial Safety and Health Department, Labour Standards Bureau, MHLW in Japan

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.34 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

([https://www.chem-info.nite.go.jp/chem/chrip/chrip\\_search/systemTop](https://www.chem-info.nite.go.jp/chem/chrip/chrip_search/systemTop))

**Abbreviations and acronyms**

SDS (Safety Data Sheet)  
LD50 (Lethal Dose, 50%)  
LC50 (Lethal Concentration, 50%)  
IARC (International Agency for Research on Cancer)  
ACGIH (American Conference of Governmental Industrial Hygienists)  
EPA (US Environmental Protection Agency)  
NTP (US National Toxicology Program)  
METI (Ministry of Economy, Trade and Industry in Japan)  
MHLW (Ministry of Health, Labour and Welfare in Japan)  
MOE (Ministry of the Environment in Japan)  
JSOH (Japan Society for Occupational Health)  
ISHA (Industrial Safety and Health Act in Japan)  
CSCL (Chemical Substances Control Law in Japan)  
EU (European Union)  
EC50 (Effective Concentration, 50%)  
NOEC (No Observed Effect Concentration)  
BOD (Biochemical Oxygen Demand)  
COD (Chemical Oxygen Demand)  
BCF (Bioconcentration Factor)  
anh (anhydride)

**General Disclaimer**

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Data published in Japan (National Institute of Technology and Evaluation (NITE) Chemical Risk Information Platform (NITE-CHRIP), up to FY2023).