

# SAFETY DATA SHEETS

According to the UN GHS revision 10

## 1: Identification

### 1.1 GHS Product identifier

Product name Phenothiazine

### 1.2 Other means of identification

Product number 92-84-2

Other names Phenothiazine

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company MolBest.com

Address MolBest.com

Telephone MolBest.com

### 1.5 Emergency phone number

Emergency phone number MolBest.com

Service hours MolBest.com

## 2: Hazard identification

### 2.1 Emergency Overview

Low-risk substances usually cause only mild irritation or discomfort. Under normal handling conditions, they are unlikely to pose a significant risk to human health or the environment. However, basic safety precautions must be followed.

### 2.2 GHS Classification

Acute toxicity, oral : Category 4

Sensitization, Skin : Category 1, 1A, 1B

Specific target organ toxicity, repeated exposure : Category 2

Hazardous to the aquatic environment, acute hazard : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 1

Hazardous to the aquatic environment, long-term hazard : Category 3

### 2.3 GHS label elements, including precautionary statements

**Pictogram(s)****Signal word**

Warning

**Hazard statement(s)**

H302 Harmful if swallowed

H317 May cause an allergic skin reaction

H373 May causes damage to organs through prolonged or repeated exposure

H400 Very toxic to aquatic life

H410 Very toxic to aquatic life with long lasting effects

H412 Harmful to aquatic life with long lasting effects

**Precautionary statement(s)****Prevention**

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 Wash hands [and ...] thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

**Response**

P319 Get medical help if you feel unwell.

P321 Specific treatment (see ... on this label).

P330 Rinse mouth.

P391 Collect spillage.

P301+P317 IF SWALLOWED,Get medical help.

P302+P352 IF ON SKIN,wash with plenty of water/...

P333+P317 If skin irritation or rash occurs,Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

**Storage**

no data available

**Disposal**

P501 Dispose of contents/container to ...

## 2.4 Physical and chemical

The physical and chemical hazards are low, and they are non-flammable, non-explosive, and non-corrosive. Some substances may be slightly flammable or irritating, but the risk is low.

## 2.5 Health hazards

May cause mild skin or eye irritation, such as redness and itching. Inhalation or ingestion of small amounts may cause temporary discomfort, but no serious or long-term health effects. No special medical treatment is generally required.

## 2.6 Environmental hazards

It has a low impact on the environment and is only slightly toxic to aquatic organisms and terrestrial ecosystems. Under normal disposal conditions, it will not cause significant environmental pollution and is highly biodegradable.

## 2.7 Other hazards which do not result in classification

no data available

### 3: Composition/information on ingredients

#### 3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Phenothiazine	Phenothiazine	92-84-2	202-196-5	99%

### 4: First-aid measures

#### 4.1 General advice

Stop contact immediately and rinse the contact area with clean water; if symptoms are mild (such as skin redness, eye stinging), rest and observe; if symptoms persist or worsen, seek medical attention and carry the material SDS

#### 4.2 If inhaled

Move to a ventilated place and breathe fresh air deeply; if a mild cough occurs, drink plenty of warm water to relieve it, no special treatment is required

#### 4.3 In case of skin contact

Rinse with running water for 5-10 minutes. If itching occurs, apply anti-allergic ointment; avoid scratching

#### 4.4 In case of eye contact

Rinse with clean water for 5 minutes and apply artificial tears; if discomfort persists, go to an ophthalmologist for treatment.

#### 4.5 If swallowed

If a small amount is accidentally ingested (such as a mild irritant), drink plenty of water to promote excretion; seek medical attention if nausea occurs, and do not induce vomiting on your own.

#### 4.6 Most important symptoms and effects, both acute and delayed

Mild redness and itching of the skin, brief stinging of the eyes, and a mild cough; no long-term health effects.

#### 4.7 Protection of first-aiders

Rescuers need to wear ordinary gloves and goggles; no special heavy equipment is required, and they can just wash their hands after contact.

#### 4.8 Notes to physician

Inform your doctor of the substance type (e.g., mild irritant, aquatic hazard); treat symptomatically (e.g., anti-allergic, anti-inflammatory); no special treatment is required.

## **5: Fire-fighting measures**

### **5.1 Unsuitable extinguishing media**

Mild irritants: No special contraindications, avoid using fire extinguishing agents that are incompatible with the substance (such as using alkali when encountering acid); Aquatic hazardous substances: Avoid using fire extinguishing agents that pollute water bodies (such as phosphorus-containing foam)

### **5.2 Specific hazards during fire fighting**

The risk of combustion is low, mostly small local fires that are not easy to spread; some substances release slightly irritating gases (such as acetic acid) when burned, which have little impact on health; if the wastewater from fire extinguishing of aquatic hazardous substances enters the water body, it may harm aquatic life.

### **5.3 Hazardous combustion products**

Carbon dioxide, water vapor, slightly irritating gases (such as sulfur dioxide, acetic acid vapor).

### **5.4 Specific extinguishing methods**

For small areas: use dry powder/water to extinguish the fire (if compatible), and use wet cleaning for dust (to prevent dust); for large areas: use foam/water to extinguish the fire, and collect the fire extinguishing wastewater at the same time (to prevent water pollution); after extinguishing the fire, ventilate to dilute the residual gas.

### **5.5 Special protective equipment for fire-fighters**

Wear anti-static work clothes, nitrile gloves, and goggles; wear a dust mask when working with dust; no special heavy equipment is required, and maintain good ventilation during operation.

## **6: Accidental release measures**

### **6.1 Protective measures for workers**

Wear chemical protective clothing (resistant to corresponding chemicals), chemical protective gloves, and goggles; wear a gas mask (organic vapor filter cartridge) for volatile substances; avoid skin contact.

### **6.2 Environmental protection measure**

Set up waterproof cofferdams to prevent leaks from entering rivers/farmland; use oil-absorbing cotton/adsorbents to intercept leaks that have already entered the water body; take samples from contaminated water bodies for testing and assess the ecological impact.

### **6.3 Containment methods for leaked chemicals**

Collect liquids in water-resistant containers (to prevent rain); collect solids in chemical-resistant bags (to prevent rain erosion); and store them in rain-proof and seepage-proof areas after collection.

### **6.4 Cleanup methods for chemical spills**

Small leakage: absorb with aquatic protective adsorption materials; large leakage: transfer to storage tank with corrosion-resistant pump; cleaning water is collected and treated, and direct discharge is prohibited.

## **6.5 Measures to prevent the spread of leaks**

Designate a 10-meter isolation zone and monitor the drainage outlet; add a rain shelter on rainy days; and set up monitoring points in downstream water bodies.

## **6.6 Container leakage treatment**

Minor leaks: seal with waterproof sealant; serious leaks: move to a rainproof area, have professionals handle it, and reuse the container after passing inspection.

## **6.7 Special considerations**

Do not discharge leaked materials/cleaning water directly into water bodies; use phosphorus-free detergents; report the leak to the environmental protection department after treatment.

# **7: Handling and storage**

## **7.1 Safe storage conditions**

Store in a normally ventilated warehouse (natural ventilation or mechanical ventilation, air changes ? 2 times/hour); the container should be ordinary plastic or glass (such as polyethylene bottles, glass bottles) with a sealed lid; the warehouse floor should be ordinary cement with no special anti-corrosion requirements; equipped with basic fire-fighting equipment (such as fire extinguishers, fire sand).

## **7.2 Storage precautions**

Store materials by category (e.g. liquids and solids separated) to avoid confusion; clearly mark the substance name and H code on container labels; check containers for damage monthly and clean up minor leaks immediately; eating and drinking are prohibited in the warehouse, and hands must be washed after work.

## **7.3 VCI Storage Grade**

Level 4 (lowest): Metal containers do not require additional VCI protection and can be stored normally. The humidity in the warehouse is ?70%, which prevents slight rust on ordinary metals without affecting their use. For long-term storage (over 6 months), the dust on the surface of the container needs to be wiped off.

## **7.4 Recommended storage temperature**

10-35?, store at room temperature; avoid extreme temperatures (below -5? or above 40?); deliquescent substances (such as certain salts) should be stored in a dry place with a desiccant (such as silica gel) and replaced regularly (if the label has a recommended storage temperature, follow the label).

## **7.5 Handling**

For precautions see Safety Data Sheet section 2

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

## 8: Exposure controls/personal protection

### 8.1 Respiratory protection

When exposed to slightly irritating dust (such as talcum powder) or vapor (such as acetic acid), wear an ordinary dust mask; a respirator is not necessary when ventilation is good.

### 8.2 Recommended Filter type

For dust, choose Type P1 filter cotton; for slight organic vapor, choose Type A1 filter cartridge; no composite filtration is required, basic protection is sufficient.

### 8.3 Eye/face protection

Wear ordinary impact-resistant goggles with resin lenses. Wear protective glasses when handling liquids to avoid splashing.

### 8.4 Skin and body protection

Wear ordinary work clothes (cotton or chemical fiber) and wear a waterproof apron when handling liquids to prevent clothes from getting wet.

### 8.5 Hand protection

Wear nitrile or latex gloves with a thickness of  $\geq 0.2$ mm and replace them promptly after use to avoid damage.

### 8.6 Hygiene measures

Wash your hands with soap and running water after work. If your skin becomes red or itchy, apply moisturizer. Do not rub your eyes with your hands. Wash your clothes normally; no special disinfection requirements are required.

## 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	yellow or pale green powder
<b>Colour</b>	YELLOW, RHOMBIC LEAFLETS OR DIAMOND-SHAPED PLATES FROM TOLUENE OR BUTANOL
<b>Odour</b>	SLIGHT ODOR
<b>Melting point/freezing point</b>	384°C(dec.)(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	371°C(lit.)
<b>Flammability</b>	Combustible Solid, but not a high fire risk. Combustible. Gives off irritating or toxic fumes (or gases) in a fire.

<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	62°C(lit.)
<b>Auto-ignition temperature</b>	471°C
<b>Decomposition temperature</b>	no data available
<b>pH</b>	6 (10g/l, H <sub>2</sub> O, 20?)(aqueous suspension)
<b>Kinematic viscosity</b>	no data available
<b>Solubility</b>	In water:2 mg/L (25 oC)
<b>Partition coefficient n-octanol/water</b>	log Kow = 4.15
<b>Vapour pressure</b>	0 mm Hg (approx) (NIOSH, 2016)
<b>Density and/or relative density</b>	1.362
<b>Relative vapour density</b>	no data available
<b>Particle characteristics</b>	no data available

## 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

READILY OXIDIZED BY SUNLIGHT OR WHEN IN PRESENCE OF FINELY DIVIDED INERT CARRIER, ACQUIRING GREENISH-BROWN TINT

### 10.3 Possibility of hazardous reactions

ALTHOUGH PHENOTHIAZINE OXIDIZES FAIRLY EASILY WHEN IT IS EXPOSED TO AIR, RISK OF FIRE IS NOT HIGH.PHENOTHIAZINE is slowly decomposed by sunlight. . Organosulfides are incompatible with acids, diazo and azo compounds, halocarbons, isocyanates, aldehydes, alkali metals, nitrides, hydrides, and other strong reducing agents. Reactions with these materials generate heat and in many cases hydrogen gas. Many of these compounds may liberate hydrogen sulfide upon decomposition or reaction with an acid.

### 10.4 Conditions to avoid

no data available

### 10.5 Incompatible materials

STABILITY: This compound is slowly decomposed by sunlight.

## 10.6 Hazardous decomposition products

...IF INVOLVED IN FIRE, PHENOTHIAZINE PRODUCES HIGHLY TOXIC SULFUR & NITROGEN OXIDES, WHICH ARE DANGEROUS LUNG IRRITANTS.

## 11: Toxicological information

### 11.1 Acute toxicity

Oral: LD50 Rat oral 5000 mg/kg.

Inhalation: no data available

Dermal: no data available

### 11.2 Skin corrosion/irritation

no data available

### 11.3 Serious eye damage/irritation

no data available

### 11.4 Respiratory or skin sensitization

no data available

### 11.5 Germ cell mutagenicity

no data available

### 11.6 Carcinogenicity

no data available

### 11.7 Reproductive toxicity

no data available

### 11.8 STOT-single exposure

no data available

### 11.9 STOT-repeated exposure

no data available

### 11.10 Aspiration hazard

no data available

## 12: Ecological information

## 12.1 Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

## 12.2 Persistence and degradability

A four-week biodegradation study using 30 mg/l sludge and a phenothiazine concentration of 100 mg/l gave a theoretical BOD of 0%(1).

## 12.3 Bioaccumulative potential

An estimated BCF value of 840 was calculated for phenothiazine(SRC), using an experimental log Kow of 4.15(1) and a recommended regression-derived equation(2). An eight-week bioconcentration study using carp and phenothiazine concentrations of 20 and 2 ug/l gave BCF values of 127-660 and 180-528, respectively(4). According to a classification scheme(3), these BCF values suggest that bioconcentration in aquatic organisms is high(SRC).

## 12.4 Mobility in soil

The Koc of phenothiazine is estimated as approximately 4300(SRC), using an experimental log Kow of 4.15(1) and a regression-derived equation(2,SRC). According to a recommended classification scheme(3), this estimated Koc value suggests that phenothiazine has slight mobility in soil(SRC). The adsorptivity of phenothiazine is expected to be sensitive to pH since phenothiazine is a base with a pKa of 2.52(4).

## 12.5 Other adverse effects

no data available

# 13: Disposal considerations

## 13.1 Disposal methods for waste chemicals

It can be disposed of as ordinary industrial waste or recycled by a qualified unit. Liquid substances can be neutralized to a neutral pH before discharge (subject to compliance with local environmental protection standards). Solid substances can be safely landfilled or incinerated. After cleaning, the container can be recycled as ordinary waste.

## 13.2 Precautions

Before disposal, the characteristics of the substance must be confirmed to avoid misjudging the risk level. Mildly irritating substances must be strictly separated from food-grade waste. The disposal process must comply with local environmental regulations. Small amounts of residue can be rinsed with water, and the rinse water must be treated. Records of the amount and destination of disposal must be kept for at least three years.

# 14: Transport information

## 14.1 UN Number

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

## 14.2 UN Proper Shipping Name

ADR/RID: unknown IMDG: unknown IATA: unknown

## 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

## 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

## 14.5 Environmental hazards

ADR/RID: yes IMDG: yes IATA: yes

## 14.6 Special precautions for user

no data available

## 14.7 Transport in bulk according to IMO instruments

no data available

## 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Phenothiazine	Phenothiazine	92-84-2	202-196-5
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
European INventory of Existing Commercial chemical Substances			Not Listed.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			Not Listed.
TSCA Inventory of Chemical Substances			Listed.

## 16: Other information

## Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

## Abbreviations and acronyms in SDS

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

## SDS References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: [http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

**Any questions regarding this Safety Data Sheet, Please send your inquiry to [info@MolBest.com](mailto:info@MolBest.com)**

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