

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Phenothiazine for synthesis

Revision: 29.01.2025

Product code: 25316

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SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Phenothiazine for synthesis

CAS No: 92-84-2

EC No: 202-196-5

1.2. Relevant identified uses of the substance or mixture and uses advised against**Use of the substance/mixture**

Reagents and laboratory chemicals

Only for laboratory and analysis purposes.

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name: AnalytiChem GmbH

ACD

Street: Stempelstraße 6

Place: D-47167 Duisburg

Telephone: 0203/5194-0

Telefax: 0203/5194-290

E-mail: info@analytichem.de

Contact person: Abteilung Produktsicherheit

Telephone: 0203/5194-107/117

E-mail: produktsicherheit@analytichem.de

Internet: www.analytichem.de

Responsible Department: Abteilung Produktsicherheit

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Acute Tox. 4; H302

Skin Sens. 1; H317

STOT RE 2; H373

Aquatic Acute 1; H400

Aquatic Chronic 1; H410

Full text of hazard statements: see SECTION 16.

2.2. Label elements**Regulation (EC) No 1272/2008****Signal word:** Warning

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Pictograms:



Hazard statements

| | |
|------|--|
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |
| H373 | May cause damage to organs (blood) through prolonged or repeated exposure. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary statements

| | |
|-----------|---|
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P302+P352 | IF ON SKIN: Wash with plenty of water and soap. |
| P314 | Get medical advice/attention if you feel unwell. |

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients**3.1. Substances**

| | |
|-------------------|-----------------------------------|
| Sum formula: | C ₁₂ H ₉ NS |
| Molecular weight: | 199,26 g/mol |

Relevant ingredients

| CAS No | Chemical name | | | Quantity |
|---------|---|----------|----------|----------|
| | EC No | Index No | REACH No | |
| | Classification (Regulation (EC) No 1272/2008) | | | |
| 92-84-2 | phenothiazine | | | 100 % |
| | 202-196-5 | | | |
| | Acute Tox. 4, Skin Sens. 1, STOT RE 2, Aquatic Acute 1, Aquatic Chronic 1; H302 H317 H373 H400 H410 | | | |

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

| CAS No | EC No | Chemical name | Quantity |
|---------|--|---------------|----------|
| | Specific Conc. Limits, M-factors and ATE | | |
| 92-84-2 | 202-196-5 | phenothiazine | 100 % |
| | dermal: LD50 = > 2000 mg/kg; oral: LD50 = 1370 mg/kg | | |

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

SECTION 4: First aid measures**4.1. Description of first aid measures**

General information

No data available

After inhalation

Provide fresh air.

Call a physician immediately.

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After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

Rinse immediately carefully and thoroughly with eye-bath or water.
Remove contact lenses, if present and easy to do. Continue rinsing.
In case of eye irritation consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Allergic reactions
Vomiting
Spasms

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Combustible solids
Danger of dust explosion.
Hazardous combustion products
In case of fire may be liberated:
Nitrogen oxides (NO_x)
Sulphur oxides

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.
Avoid contact with skin, eyes and clothes.

Additional information

Use water spray jet to protect personnel and to cool endangered containers.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures****For non-emergency personnel**

Provide adequate ventilation.
Use personal protection equipment.
Avoid contact with skin, eyes and clothes.
Remove persons to safety.
Emergency procedures
Consult an expert
Do not breathe dust/fume/gas/mist/vapours/spray.

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For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up**For containment**

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Take up carefully when dry. Take up dust-free and set down dust-free.

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

SECTION 7: Handling and storage**7.1. Precautions for safe handling****Advice on safe handling**

- Keep container tightly closed.
- Do not breathe dust.
- Avoid contact with skin, eyes and clothes.
- Read label before use.
- Use extractor hood (laboratory).

Advice on protection against fire and explosion

- Danger of dust explosion.
- The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Advice on general occupational hygiene

- Wash contaminated clothing prior to re-use.
- Avoid contact with skin, eyes and clothes.

Further information on handling

- Wash contaminated clothing before reuse.
- Wash hands before breaks and after work.
- Draw up and observe skin protection programme.

7.2. Conditions for safe storage, including any incompatibilities**Requirements for storage rooms and vessels**

- Keep container tightly closed.
- storage temperature: < +30°C

Hints on joint storage

- national regulations

Further information on storage conditions

- Store in a dry place.

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Protect against: Light, Air

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

| CAS No | Substance | ppm | mg/m ³ | fib/cm ³ | Category | Origin |
|---------|---------------|-----|-------------------|---------------------|-----------|--------|
| 92-84-2 | Phenothiazine | - | 5 | | TWA (8 h) | |

DNEL/DMEL values

| CAS No | Substance | Exposure route | Effect | Value |
|--------------------------|---------------|----------------|----------|------------------------|
| 92-84-2 | phenothiazine | | | |
| Worker DNEL, acute | | inhalation | systemic | 1,59 mg/m ³ |
| Worker DNEL, long-term | | dermal | systemic | 0,15 mg/kg bw/day |
| Worker DNEL, long-term | | inhalation | systemic | 0,53 mg/m ³ |
| Consumer DNEL, long-term | | dermal | systemic | 0,08 mg/kg bw/day |
| Consumer DNEL, long-term | | oral | systemic | 0,08 mg/kg bw/day |
| Consumer DNEL, long-term | | inhalation | systemic | 0,13 mg/m ³ |
| Consumer DNEL, acute | | inhalation | systemic | 0,39 mg/m ³ |
| Consumer DNEL, acute | | oral | systemic | 0,24 mg/kg bw/day |

PNEC values

| CAS No | Substance | Value |
|--|---------------|-------------|
| 92-84-2 | phenothiazine | |
| Freshwater | | 0 mg/l |
| Freshwater (intermittent releases) | | 0,002 mg/l |
| Marine water | | 0 mg/l |
| Freshwater sediment | | 0,019 mg/kg |
| Marine sediment | | 0,002 mg/kg |
| Micro-organisms in sewage treatment plants (STP) | | 0,054 mg/l |
| Soil | | 0,023 mg/kg |

8.2. Exposure controls**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

Individual protection measures, such as personal protective equipment**Eye/face protection**

goggles

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Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatrill® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatrill® L

Recommended material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

Respiratory protection

Respiratory protection necessary at: dust formation

Filtering device with filter or ventilator filtering device of type: P2

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties**

| | |
|---|-------------------|
| Physical state: | solid |
| Colour: | yellow |
| Odour: | characteristic |
| Melting point/freezing point: | 182-185 °C |
| Boiling point or initial boiling point and boiling range: | 381 °C |
| Flammability: | No data available |
| Lower explosion limits: | No data available |
| Upper explosion limits: | No data available |
| Flash point: | ? |
| Auto-ignition temperature: | 397 °C |
| Decomposition temperature: | >250 °C |
| pH-Value (at 20 °C): | 6 (10 g/l) |
| Viscosity / kinematic: | No data available |
| Water solubility: (at 23 °C) | 0,127 g/l |

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Solubility in other solvents

No data available

Partition coefficient n-octanol/water:

3,78 (25 °C)

Vapour pressure:

0 hPa

(at 20 °C)

Vapour pressure:

No data available

Density:

1,30 g/cm³

Bulk density:

~650 kg/m³

Relative vapour density:

No data available

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

Danger of dust explosion.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Sustained combustibility:

No data available

Self-ignition temperature

Solid:

397 °C

Gas:

No data available

Oxidizing properties

No data available

Other safety characteristics

Evaporation rate:

No data available

Solvent separation test:

No data available

Solvent content:

No data available

Solid content:

No data available

Sublimation point:

No data available

Softening point:

No data available

Pour point:

No data available

No data available:

Viscosity / dynamic:

No data available

Flow time:

No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

Danger of dust explosion.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2. Chemical stability

Protect against: Light, Air

10.3. Possibility of hazardous reactions

Strong acid

10.4. Conditions to avoid

Light

Air

10.5. Incompatible materials

No data available

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10.6. Hazardous decomposition products

In case of fire may be liberated:

Nitrogen oxides (NO_x)

Sulphur oxides

Further information

No data available

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Toxicokinetics, metabolism and distribution**

No data available

Acute toxicity

Harmful if swallowed.

Resorption (oral)

| CAS No | Chemical name | | | | |
|---------|----------------|-------------------|---------|---------------------|---|
| | Exposure route | Dose | Species | Source | Method |
| 92-84-2 | phenothiazine | | | | |
| | oral | LD50 1370 mg/kg | Rat | Study report (1977) | other: As outlined in "Appraisal of the |
| | dermal | LD50 > 2000 mg/kg | Rat | Study report (2010) | OECD Guideline 402 |

Irritation and corrosivity

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met.

Sensitising effects

May cause an allergic skin reaction. (phenothiazine)

Carcinogenic/mutagenic/toxic effects for reproduction

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

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

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

STOT-single exposure

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

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure. (phenothiazine)

Aspiration hazard

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

Specific effects in experiment on an animal

No data available

Additional information on tests

No data available

Practical experience

No data available

11.2. Information on other hazards**Other information**

No data available

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Further information

Allergic reactions
Vomiting
Spasms

SECTION 12: Ecological information**12.1. Toxicity**

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

| CAS No | Chemical name | | | | | |
|---------|----------------------|------------------|-----------|-------------------------|---------------------|--------------------|
| | Aquatic toxicity | Dose | [h] [d] | Species | Source | Method |
| 92-84-2 | phenothiazine | | | | | |
| | Acute fish toxicity | LC50 70,7 mg/l | 96 h | Oncorhynchus mykiss | Study report (2010) | OECD Guideline 203 |
| | Acute algae toxicity | ErC50 > 100 mg/l | 72 h | Desmodesmus subspicatus | Study report (2010) | OECD Guideline 201 |

12.2. Persistence and degradability

0 %; 28 d; aerob
OECD 301D

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

| CAS No | Chemical name | Log Pow |
|---------|---------------|----------|
| 92-84-2 | phenothiazine | ca. 3,78 |

BCF

| CAS No | Chemical name | BCF | Species | Source |
|---------|---------------|--------|-----------------|---------------------|
| 92-84-2 | phenothiazine | >= 310 | Cyprinus carpio | Study report (1983) |

12.4. Mobility in soil

No data available

12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

12.6. Endocrine disrupting properties

This substance does not have endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

Discharge into the environment must be avoided.

Further information

Do not allow to enter into surface water or drains.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Do not mix with other wastes.
Do not empty into drains.

Contaminated packaging

Handle contaminated packages in the same way as the substance itself.

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The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

SECTION 14: Transport information

Land transport (ADR/RID)

| | |
|--|---|
| 14.1. UN number or ID number: | UN 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (phenothiazine) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Classification code: | M7 |
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 kg |
| Excepted quantity: | E1 |
| Transport category: | 3 |
| Hazard No: | 90 |
| Tunnel restriction code: | - |

Inland waterways transport (ADN)

| | |
|--|---|
| 14.1. UN number or ID number: | UN 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (phenothiazine) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Classification code: | M7 |
| Special Provisions: | 274 335 375 601 |
| Limited quantity: | 5 kg |
| Excepted quantity: | E1 |

Marine transport (IMDG)

| | |
|--|---|
| 14.1. UN number or ID number: | UN 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (phenothiazine) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Special Provisions: | 274, 335, 966, 967, 969 |
| Limited quantity: | 5 kg |
| Excepted quantity: | E1 |
| EmS: | F-A, S-F |

Air transport (ICAO-TI/IATA-DGR)

| | |
|--|---|
| 14.1. UN number or ID number: | UN 3077 |
| 14.2. UN proper shipping name: | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (phenothiazine) |
| 14.3. Transport hazard class(es): | 9 |
| 14.4. Packing group: | III |
| Hazard label: | 9 |
| Special Provisions: | A97 A158 A179 A197 |
| Limited quantity Passenger: | 30 kg G |
| Passenger LQ: | Y956 |
| Excepted quantity: | E1 |

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| | |
|--|--------|
| IATA-packing instructions - Passenger: | 956 |
| IATA-max. quantity - Passenger: | 400 kg |
| IATA-packing instructions - Cargo: | 956 |
| IATA-max. quantity - Cargo: | 400 kg |

14.5. Environmental hazards

| | |
|-----------------------------|---------------|
| ENVIRONMENTALLY HAZARDOUS: | Yes |
| Danger releasing substance: | phenothiazine |

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

Restrictions on use (REACH, annex XVII):
Entry 75

Information according to Directive 2012/18/EU (SEVESO III): E1 Hazardous to the Aquatic Environment

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 3 - highly hazardous to water

SECTION 16: Other information**Changes**

This data sheet contains changes from the previous version in section(s): 12.

Abbreviations and acronyms

Acute Tox. 4: Acute toxicity, hazard category 4
Skin Sens. 1: Skin sensitisation, hazard category 1
STOT RE 2: Specific target organ toxicity - repeated exposure, hazard category 2
Aquatic Acute 1: Hazardous to the aquatic environment, hazard category: Acute 1
Aquatic Chronic 1: Hazardous to the aquatic environment, long-term hazard category: Chronic 1

Relevant H and EUH statements (number and full text)

H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H373 May cause damage to organs (blood) through prolonged or repeated exposure.
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.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

Provide appropriate information, instructions and training to users

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