



# SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0  
Creation Date: July 15, 2019  
Revision Date: July 15, 2019

## SECTION 1: Identification

### 1.1 GHS Product identifier

Product name Phenyl-2-thiourea

### 1.2 Other means of identification

Product number -  
Other names 1-Phenyl-2-thiourea; Thiourea, phenyl-; 1-Phenylthiourea

### 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 Shanghai Yien Chemical Technology Co., Ltd  
Address Building 6, 28 Yingong Road, Fengxian District, Shanghai  
Chemical Industry Zone, Shanghai, 201400, China  
Telephone +86-400-133-2688

### 1.5 Emergency phone number

Emergency phone number +86-400-133-2688  
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## SECTION 2: Hazard identification

### 2.1 Classification of the substance or mixture

Acute toxicity - Category 1, Oral  
Skin sensitization, Category 1

### 2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger  
Hazard statement(s) H300 Fatal if swallowed  
H317 May cause an allergic skin reaction

Precautionary statement(s)  
Prevention P264 Wash ... thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

|                 |  |
|-----------------|--|
| <b>Response</b> | <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.<br/> P272 Contaminated work clothing should not be allowed out of the workplace.<br/> P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...</p> <p>P301+P316 IF SWALLOWED: Get emergency medical help immediately.<br/> P321 Specific treatment (see ... on this label).<br/> P330 Rinse mouth.<br/> P302+P352 IF ON SKIN: Wash with plenty of water/...<br/> P333+P317 If skin irritation or rash occurs: Get medical help.<br/> P362+P364 Take off contaminated clothing and wash it before reuse.</p> |
| <b>Storage</b>  | P405 Store locked up.  |
| <b>Disposal</b> | P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.  |

### 2.3 Other hazards which do not result in classification

no data available

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

| Chemical name     | Common names and synonyms | CAS number | EC number | Concentration |
|-------------------|---------------------------|------------|-----------|---------------|
| Phenyl-2-thiourea | Phenyl-2-thiourea         | 103-85-5   | 203-151-2 | 100%          |

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

#### If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

#### Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

#### Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

#### Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

### 4.2 Most important symptoms/effects, acute and delayed

It is classified as extremely toxic. The probable oral lethal dose is 5-50 mg/kg or between 7 drops and 1 teaspoon for a 70 kg (150 lb.) person. (EPA, 1998)

### 4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and

maintain normal body temperature. Obtain medical attention. /Organic bases/amines and related compounds/

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

### **5.1 Suitable extinguishing media**

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### **5.2 Specific hazards arising from the chemical**

Dangerous disaster hazard; emits toxic fumes of oxides of sulfur and nitrogen when heated to decomposition. Avoid acids or acid fumes. (EPA, 1998)

### **5.3 Special protective actions for fire-fighters**

Wear self-contained breathing apparatus for firefighting if necessary.

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## **SECTION 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

### **6.2 Environmental precautions**

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

### **6.3 Methods and materials for containment and cleaning up**

Spillages often occur in storage and repacking rooms, and they must be cleaned up with care. Pesticides

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## **SECTION 7: Handling and storage**

### **7.1 Precautions for safe handling**

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

### **7.2 Conditions for safe storage, including any incompatibilities**

Rooms used only for storage should be soundly constructed and fitted with secure locks. Floors should be kept clear and the pesticides clearly identified. Pesticides

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Occupational Exposure limit values**

no data available

#### **Biological limit values**

no data available

### **8.2 Appropriate engineering controls**

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

### Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

### Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

### Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

### Thermal hazards

no data available

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## SECTION 9: Physical and chemical properties and safety characteristics

|   |  |
|---|--|
| <b>Physical state</b>   | Needle-like crystals. Used in the manufacture of rodenticides and in medical genetics. (EPA, 1998) |
| <b>Colour</b>   | Needles from water; prisms from alcohol  |
| <b>Odour</b>  | no data available  |
| <b>Melting point/freezing point</b>                             | 252°C(lit.)  |
| <b>Boiling point or initial boiling point and boiling range</b> | 71°C/12mmHg(lit.)  |
| <b>Flammability</b>   | no data available  |
| <b>Lower and upper explosion limit/flammability limit</b>       | no data available  |
| <b>Flash point</b>  | 64°C(lit.)   |
| <b>Auto-ignition temperature</b>                                | no data available  |
| <b>Decomposition temperature</b>                                | no data available  |
| <b>pH</b>   | no data available  |
| <b>Kinematic viscosity</b>                                      | no data available  |
| <b>Solubility</b>   | less than 1 mg/mL at 70° F (NTP, 1992)   |
| <b>Partition coefficient n-octanol/water</b>                    | log Kow = 0.71   |
| <b>Vapour pressure</b>  | 0.00852mmHg at 25°C  |
| <b>Density and/or relative density</b>                          | 1.294 g/cm <sup>3</sup>  |
| <b>Relative vapour density</b>                                  | no data available  |
| <b>Particle characteristics</b>                                 | no data available  |

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

PHENYLTHIOUREA is incompatible with strong oxidizers, strong acids and strong bases. It emits toxic fumes on contact with acid fumes. (NTP, 1992)

### 10.4 Conditions to avoid

no data available

## 10.5 Incompatible materials

On contact with acid or acid fumes, it emits highly toxic fumes of sulfoxides and nitroxides.

## 10.6 Hazardous decomposition products

When heated to decomposition ... it emits highly toxic fumes of sulfoxides and nitroxides.

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## SECTION 11: Toxicological information

### Acute toxicity

- Oral: LD50 Rat oral 3 mg/kg
- Inhalation: no data available
- Dermal: no data available

### Skin corrosion/irritation

no data available

### Serious eye damage/irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

no data available

### Reproductive toxicity

no data available

### STOT-single exposure

no data available

### STOT-repeated exposure

no data available

### Aspiration hazard

no data available

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## SECTION 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

no data available

### 12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for 1-phenyl-2-thiourea(SRC), using a log Kow of 0.71(1) and a regression-derived equation(2). According to a classification

scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

## 12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of 1-phenyl-2-thiourea can be estimated to be 100(SRC). According to a classification scheme(2), this estimated Koc value suggests that 1-phenyl-2-thiourea is expected to have high mobility in soil. The estimated pKa of 1-phenyl-2-thiourea is 9.62(3), indicating that this compound will exist partially in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4).

## 12.5 Other adverse effects

no data available

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## SECTION 13: Disposal considerations

### 13.1 Disposal methods

#### Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

#### Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

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## SECTION 14: Transport information

### 14.1 UN Number

|   |  |  |
|---|--|--|
| ADR/RID: UN2811 (For reference only, please check.) | IMDG: UN2811 (For reference only, please check.) | IATA: UN2811 (For reference only, please check.) |
|---|--|--|

### 14.2 UN Proper Shipping Name

|   |  |  |
|---|--|--|
| ADR/RID: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.) | IMDG: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.) | IATA: TOXIC SOLID, ORGANIC, N.O.S. (For reference only, please check.) |
|---|--|--|

### 14.3 Transport hazard class(es)

|  |   |   |
|--|---|---|
| ADR/RID: 6.1 (For reference only, please check.) | IMDG: 6.1 (For reference only, please check.) | IATA: 6.1 (For reference only, please check.) |
|--|---|---|

### 14.4 Packing group, if applicable

|  |   |   |
|--|---|---|
| ADR/RID: I (For reference only, please check.) | IMDG: I (For reference only, please check.) | IATA: I (For reference only, please check.) |
|--|---|---|

### 14.5 Environmental hazards

|             |          |          |
|-------------|----------|----------|
| ADR/RID: No | IMDG: No | IATA: No |
|-------------|----------|----------|

### 14.6 Special precautions for user

no data available

### 14.7 Transport in bulk according to IMO instruments

no data available

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## SECTION 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   |
|--|---------------------------|------------|-------------|
| Phenyl-2-thiourea  | Phenyl-2-thiourea         | 103-85-5   | 203-151-2   |
| European Inventory of Existing Commercial Chemical Substances (EINECS)   |                           |            | Listed.     |
| EC Inventory   |                           |            | Listed.     |
| United States Toxic Substances Control Act (TSCA) Inventory              |                           |            | Listed.     |
| China Catalog of Hazardous chemicals 2015                                |                           |            | Not Listed. |
| New Zealand Inventory of Chemicals (NZIoC)                               |                           |            | Listed.     |
| Philippines Inventory of Chemicals and Chemical Substances (PICCS)       |                           |            | Listed.     |
| Vietnam National Chemical Inventory                                      |                           |            | Listed.     |
| Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) |                           |            | Listed.     |
| Korea Existing Chemicals List (KECL)                                     |                           |            | Not Listed. |

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## SECTION 16: Other information

### Information on revision

Creation Date July 15, 2019

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### Abbreviations and acronyms

- 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%

### 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 SDS, Please send your inquiry to [sds@xixisis.com](mailto:sds@xixisis.com)**

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