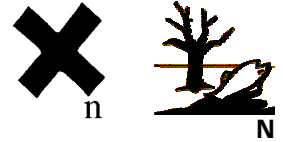


# Material Safety Data Sheet

Revision: 04/07/2005



Hazard information is provided for compliance with both the UK Chemicals (Hazard Information and Packaging) (CHIP) Regulations and the US Hazard Communication Standard (HCS)

**IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY**

**PRODUCT NAME:**  
Thiourea

**PRODUCT CODE:**  
22270

**EEC NUMBER:**  
200-543-5

**SUPPLIER:**  
USB Corporation, 26111 Miles Road, Cleveland, Ohio 44128 Phone: (216) 765-5000  
Please visit our website at [www.usbweb.com](http://www.usbweb.com) for contact information on USB product distributors within your area.

**Emergency Contact:**  
Chemtrec (800) 424-9300  
Outside USA & Canada 703 527 3887

**COMPOSITION/HAZARDOUS COMPONENTS**

**HAZARD**

**CAS NO.**

**%WT**

**TLV**

**CHIP R & S Phrases**

Thiourea

62-56-6

~99%

—

R:22 Harmful if swallowed.  
R:40 Possible risks of irreversible effects.  
R:51/53 Toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.  
R:63 Possible risk of harm to unborn child.  
S:36/37 Wear suitable protective clothing and gloves.  
S:61 Avoid release to the environment. Refer to special instructions/safety data sheet.

**HAZARDS IDENTIFICATION**

**CHIP**

Carcinogen, Category 3; Reproductive, Category 3; Harmful; Dangerous for the Environment

**HCS**

Toxic; Possible Carcinogen

**FIRST-AID MEASURES**

**EYES:** Flush with water for 15 minutes. Seek medical advice if irritation persists.

**SKIN:** Flush with water, then wash thoroughly with soap and water. Remove contaminated clothing and wash before reuse. Seek medical attention if irritation persists.

**INHALATION:** Remove the victim from exposure and move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Keep victim quiet and warm. Seek immediate medical attention.

**INGESTION:** Drink water and seek immediate medical attention. Avoid alcoholic beverages. Never give anything by mouth to an unconscious person.

**FIRE-FIGHTING INFORMATION**

Use media suitable to extinguish the supporting or surrounding fire. Wear NIOSH (or equivalent) approved self contained breathing apparatus. For small fires only: use carbon dioxide, dry powder or foam. Dust may form explosive mixtures with air. Emits toxic fumes under fire conditions.

Flash Point = No data available. Autoignition Temperature = 440°C.

**ACCIDENTAL RELEASE MEASURES**

Wear appropriate personal protective equipment and clothing including lab coat, safety glasses, gloves and NIOSH-approved respirator. Collect in a manner that does not create dust and place in a suitable waste container. Avoid contact of material with skin or eyes. Use adequate ventilation.

**HANDLING AND STORAGE**

Wear appropriate personal protective equipment and clothing including lab coat, safety glasses, gloves and NIOSH-approved respirator. Avoid contact of material with skin or eyes. Use adequate ventilation. Store ambient away from incompatible material.

**PERSONAL PROTECTION**

Wear appropriate personal protective equipment and clothing including lab coat, safety glasses, gloves and NIOSH-approved respirator. A qualified industrial hygienist should evaluate the need for respiratory protection. Use respiratory protection approved by NIOSH (or equivalent) and appropriate to the hazard. Avoid contact of material with skin or eyes. Mechanical ventilation or local exhaust as needed to control exposure to dust, vapors or mists. Access to a safety shower and eye-wash.

**PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: White crystalline powder  
Vapor Pressure: 2.6  
Solubility (Water): Soluble  
Percent Volatile: No data available  
Chemical formula: C-H4-N2-S

Boiling Point: No data available  
Vapor Density: No data available  
Specific Gravity: 1.41  
Evaporation Rate: No data available  
Melting Point: 171-184°C

## **STABILITY AND REACTIVITY**

Product is stable under normal storage conditions. Avoid high temperatures and sources of ignition. Hazardous decomposition products include oxides of sulfur, nitrogen and carbon. Incompatible with heat, strong oxidizing agents, strong acids and strong bases. Hazardous polymerization will not occur under normal conditions.

## **TOXICOLOGICAL INFORMATION**

### **EFFECTS OF OVEREXPOSURE:**

**EYES:** Contact may cause irritation.

**SKIN:** Contact may cause irritation and/or allergic reaction. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. May cause eczema, dermatitis and skin eruptions.

**INHALATION:** May cause irritation to mucous membranes and upper respiratory tract. Symptoms may include shortness of breath, cough, tightness and burning of chest, respiratory distress and respiratory failure. Dust may induce pulmonary edema. Chronic exposure may induce lesions of the throat and mucous membranes and thrombopenia (blood disorder).

**INGESTION:** Toxic if swallowed. May cause allergic reaction characterized by a rash. May cause severe irritation of the digestive tract with nausea, vomiting and diarrhea. May cause difficulty in swallowing, odor of hydrogen sulfide on breath, redness of tongue and throat, abdominal pain, headache, vertigo, loss of memory, tremors, convulsions, fever and death. May cause anemia, leukopenia and thrombocytopenia. May cause goiter or bone marrow depression with a decrease in the number of red blood cells.

### **ADDITIONAL INFORMATION:**

May be harmful by inhalation, ingestion or skin absorption. May cause sensitization. Chronic ingestion may cause liver damage. May cause cancer based on animal studies. May cause reproductive and fetal effects. Possible risk of congenital malformation in the fetus. May be a fetotoxin. Prolonged or repeated exposure may cause thyroid damage. Laboratory experiments have resulted in mutagenic effects.

Target Organ(s): Liver, Thyroid and Bone Marrow.

Reproductive effects, Irritation, tumorigenic, mutation and toxicity data listed in RTECS under YU2800000.

Oral Rat LD50 = 125 mg/kg (1959). Details of toxic effects not reported other than lethal dose value.

Reproductive: Effects on embryo or fetus included fetotoxicity (except death, e.g. stunted fetus)(1985). Specific developmental abnormalities - central nervous system and musculoskeletal system (1976).

Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants)(1981).

Tumorigenic data: Carcinogenic by RTECS criteria (1957).

Neoplastic by RTECS criteria (1948).

Equivocal tumorigenic agent by RTECS criteria (1967).

Carcinogenicity data: IARC Cancer Review: Animal - Sufficient Evidence (1974).

Human - No Adequate Data (1974).

Group 2B - Possibly Carcinogenic to Humans (1987).

NTP 9<sup>th</sup> Report on Carcinogens, 2000: Reasonably anticipated to be human carcinogen.

Definitions: IARC = International Agency for Research on Cancer

NTP = National Toxicology Program Annual Report on Carcinogens

RTECS = Registry of Toxic Effects of Chemical Substances

## **ECOLOGICAL INFORMATION**

If released into the soil, Thiourea is expected to be highly mobile in soil and susceptible to leaching. May suppress microflora activity for extended periods of time. In one soil degradation study, thiourea persisted for periods in excess of 15 weeks.

Aquatic Toxicity Data: LC50 (Fish): 10,000 mg/L (Brachydanio rerio-96 h).

EC10 (Bacteria): 1,265 mg/L (Pseudomonas putida).

EC 50 (Daphnia): 110 mg/L (24 hr).

EC50 (Algae): 6.8 mg/L (Scenedesmus subspicatus).

## **DISPOSAL CONSIDERATIONS**

Dispose of material in accordance with applicable local, state, and federal regulations.

## **TRANSPORTATION INFORMATION**

US DOT / IATA - Toxic solid, organic, n.o.s. (Thiourea), UN2811, class 6.1, PGIII. Label: Toxic.

## **REGULATORY INFORMATION**

RCRA - Hazardous Waste: U219.

SARA 302 - Final RQ = 10 lbs (4.54 kg). This material does not have a TPQ.

SARA 313 - This material contains Thiourea (CAS# 62-56-6, 100%) which is subject to the reporting requirement of Section 313 of SARA Title III and 40 CFR Part 373.

EPA TSCA Section 8(b) - Chemical Inventory.

Exposure Limits - Not established.

California Proposition 65 - This product contains a chemical(s) known to the State of California to cause cancer.

This data sheet is based upon information believed to be reliable. The Company makes no statement or warranty as to the accuracy or completeness of the information contained herein which is offered for your consideration, investigation and verification. Any use of the information contained in this data sheet must be determined by the user to be in accordance with appropriate applicable regulations.