

SAFETY DATA SHEET

1. Identification

Product identifier: THIOUREA

Other means of identification

Product No.: 4123

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034

Telephone: Customer Service: 855-282-6867

Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral)	Category 2
Carcinogenicity	Category 2
Toxic to reproduction	Category 2

Environmental hazards

Acute hazards to the aquatic environment	Category 2
Chronic hazards to the aquatic environment	Category 2

Label elements

Hazard symbol:



Signal word: Danger

Hazard statement: Fatal if swallowed.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Toxic to aquatic life with long lasting effects.
May form combustible dust concentrations in air.

Precautionary statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. Avoid release to the environment. Prevent dust accumulation to minimize explosion hazard.

Response: IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. IF exposed or concerned: Get medical advice/attention. Collect spillage.

Storage: Store locked up.

Disposal: 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.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
THIOUREA		62-56-6	99 - 100%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Call a physician or poison control center immediately. Rinse mouth thoroughly.

Inhalation: Move to fresh air. Get medical attention if symptoms persist.

Skin contact: Wash the skin immediately with soap and water. Get medical attention if symptoms occur. Wash contaminated clothing before reuse.

Eye contact: Flush thoroughly with water. If irritation occurs, get medical assistance.

Most important symptoms/effects, acute and delayed

Symptoms: Fatal if swallowed. May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards: Dust may form explosive mixture with air.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Use personal protective equipment. See Section 8 of the MSDS for Personal Protective Equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

Methods and material for containment and cleaning up: Avoid dust formation. Sweep up and place in a clearly labeled container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

Environmental precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling: Remove sources of ignition. Use personal protective equipment as required. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. Wash hands thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Keep in a cool, well-ventilated place. Store in a dry place.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

None of the components have assigned exposure limits.

Appropriate engineering controls

No data available.

Individual protection measures, such as personal protective equipment

General information:	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.
Eye/face protection:	Wear safety glasses with side shields (or goggles) and a face shield.
Skin protection	
Hand protection:	Chemical resistant gloves
Other:	Wear suitable protective clothing.
Respiratory protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not eat, drink or smoke when using the product. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state:	Solid
Form:	Crystalline solid
Color:	White
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	176 °C
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	< 0.01 kPa (25 °C)
Vapor density:	No data available.
Relative density:	1.41 (20 °C)
Solubility(ies)	
Solubility in water:	0.47 g/l (0 °C)

Solubility (other):	133.9 g/l (25 °C) 704.1 g/l (100 °C) alcohol: Soluble ether: Sparingly Soluble
Partition coefficient (n-octanol/water):	-1.08
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Molecular weight:	76.12 g/mol (CH ₄ N ₂ S)

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Contact with incompatible materials.
Incompatible materials:	Strong oxidizing agents. Hydrogen peroxide (H ₂ O ₂) Nitric acid.
Hazardous decomposition products:	Thermal decomposition may produce oxides of carbon and nitrogen. Oxides of sulfur.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	Fatal if swallowed.
Inhalation:	Dust may irritate respiratory system or lungs.
Skin contact:	May be harmful in contact with skin.
Eye contact:	May irritate eyes.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	LD 50 (Norway rat): 1,860 mg/kg LD 50 (Rat): 20 mg/kg
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Dermal

Product:	LD 50 (Rat): > 6,810 mg/kg LD 50 (Rabbit): > 2,800 mg/kg
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Inhalation

Product:	No data available.
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Repeated dose toxicity

Product:	No data available.
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Skin corrosion/irritation

Product:	May cause skin irritation.
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Serious eye damage/eye irritation

Product: May irritate eyes.

Respiratory or skin sensitization

Product: Not a skin sensitizer.

Carcinogenicity

Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:

THIOUREA Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: Suspected of damaging fertility or the unborn child.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Specified substance(s):

THIOUREA LC 50 (Water flea (Daphnia magna), 48 h): 5.6 - 18 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: Log Kow: -1.08

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

THIOUREA No data available.

Other adverse effects: Toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number:	UN 2811
UN proper shipping name:	Toxic solids, organic, n.o.s.(THIOUREA)
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
Packing group:	III
Marine Pollutant:	No

IMDG

UN number:	UN 2811
UN proper shipping name:	TOXIC SOLID, ORGANIC, N.O.S.(THIOUREA)
Transport hazard class(es)	
Class(es):	6.1
Label(s):	6.1
EmS No.:	F-A, S-A
Packing group:	III
Marine Pollutant:	No

IATA

UN number: UN 2811
 Proper Shipping Name: Toxic solid, organic, n.o.s.(THIOUREA)
 Transport hazard class(es):
 Class(es): 6.1
 Label(s): 6.1
 Marine Pollutant: No
 Packing group: III

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
 None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):
 THIOUREA Reportable quantity: 10 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance
 None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
THIOUREA	10 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
THIOUREA	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
THIOUREA	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
 None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):
 None present or none present in regulated quantities.

US state regulations

US. California Proposition 65
 THIOUREA Carcinogenic.

US. New Jersey Worker and Community Right-to-Know Act
 THIOUREA Listed

US. Massachusetts RTK - Substance List
 THIOUREA Listed

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