



THIOUREA (13C, 99%; 15N2, 98%)

Safety Data Sheet

according to Regulation (EC) No. 453/2010 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 20/07/2011

Revision date: 18/05/2016

Supersedes: 20/07/2011

Version: 2.0

CNLM-4818

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance
Substance name : THIOUREA (13C, 99%; 15N2, 98%)
EC index no : 612-082-00-0 (Unlabeled)
EC no : 200-543-5 (Unlabeled)
CAS No : 285977-83-5
Product code : CNLM-4818
Formula : H₂*N*CS*NH₂
Synonyms : Sulfourea / Thiocarbamide
Other means of identification : Also applicable to:
CNLM-4818-M MANUFACTURING GRADE

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

1.2.1. Relevant identified uses

Main use category : Professional use
Industrial/Professional use spec : For professional use only.

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302
Carc. 2 H351
Repr. 2 H361
Aquatic Chronic 2 H411

Full text of H-phrases: see section 16

Classification according to Directive 67/548/EEC or 1999/45/EC

Xn; R22
Carc.Cat.3; R40
Repr.Cat.3; R62
Repr.Cat.3; R63
N; R51/53

Full text of R-phrases: see section 16

Classification (GHS-US)

Acute Tox. 4 (Oral) H302
Carc. 2 H351
Repr. 2 H361
Aquatic Acute 2 H401
Aquatic Chronic 2 H411

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Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

Warning

Hazard statements (CLP) :

H302 - Harmful if swallowed
H351 - Suspected of causing cancer
H361 - Suspected of damaging fertility. Suspected of damaging the unborn child
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) :

P264 - Wash Both hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective clothing, protective gloves
P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell
P308+P313 - IF exposed or concerned: Get medical advice/attention
P330 - Rinse mouth
P391 - Collect spillage

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302 - Harmful if swallowed
H351 - Suspected of causing cancer (Dermal, Inhalation, oral)
H361 - May damage fertility or the unborn child (Dermal, Inhalation, oral)
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P264 - Wash Both hands thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P273 - Avoid release to the environment
P280 - Wear protective clothing, protective gloves
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P308+P313 - IF exposed or concerned: Get medical advice/attention
P330 - If swallowed, rinse mouth
P391 - Collect spillage
P405 - Store locked up
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
THIOUREA (13C, 99%; 15N2, 98%) (Main constituent)	(CAS No) 285977-83-5 (EC no) 200-543-5 (Unlabeled) (EC index no) 612-082-00-0 (Unlabeled)	100	Xn; R22 Carc.Cat.3; R40 Repr.Cat.3; R62 Repr.Cat.3; R63 N; R51/53

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Full text of R-, H- and EUH-phrases: see section 16

Name	Product identifier	%	Classification (GHS-US)
THIOUREA (13C, 99%; 15N2, 98%) (Main constituent)	(CAS No) 285977-83-5	100	Acute Tox. 4 (Oral), H302 Carc. 2, H351 Repr. 2, H361 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

Reactivity : Not available.

5.3. Advice for firefighters

Firefighting instructions	: Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Avoid breathing (dust, vapor, mist, gas). Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

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

6.3. Methods and material for containment and cleaning up

For containment : Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep container tightly closed in a cool, dry and well-ventilated place.

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

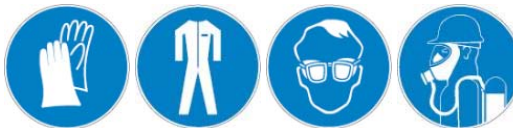
SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Hand protection : Wear suitable protective clothing and gloves.

Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Crystalline.
Molecular mass : 79.1 g/mol (Labeled)
Color : white.
Odor : Odourless.
Odor threshold : No data available
pH : 5 - 7 at 50 g/l at 20 °C (68 °F)
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : 170 - 176 °C (338 - 349 °F)
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Self ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapor pressure : No data available
Relative vapor density at 20 °C : No data available
Relative density : 1.405 g/cm³ at 20 °C (68 °F)
Solubility : Water: 137 g/l at 20 °C (68 °F)
Log Pow : -0.92 at 20 °C (68 °F)
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Explosive limits : No data available

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9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not available.

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Heat.

10.5. Incompatible materials

Strong oxidizing agent. strong acids. Strong bases. Hydrogen peroxide. Sulphur oxides.

10.6. Hazardous decomposition products

carbon oxides. Nitrogen oxides. Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)	
LD50 oral rat	1750 mg/kg
LD50 dermal rabbit	> 2800
LC50 inhalation rat (mg/l)	> 170 mg/kg 4 h
ATE (oral)	500.000 mg/kg body weight

Skin corrosion/irritation	: Not classified Skin - rabbit Result: No skin irritation pH: 5 - 7 at 50 g/l at 20 °C (68 °F)
Serious eye damage/irritation	: Not classified Eyes - Rabbit Result: Mild eye irritation pH: 5 - 7 at 50 g/l at 20 °C (68 °F)
Respiratory or skin sensitization	: Not classified Maximisation Test (GPMT) - Guinea pig Does not cause skin sensitisation.
Germ cell mutagenicity	: In vitro assay Result: Not mutagenic in Ames Test.
Carcinogenicity	: Limited evidence of carcinogenicity in animal studies.
Reproductive toxicity	: Suspected of damaging fertility. Suspected of damaging the unborn child.
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Liver - Irregularities - Based on Human Evidence.
IARC group	: 3
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)	
LC50 fish 1	10 mg/l Danio rerio (Zebra fish) - 96 h
EC50 Daphnia 1	5.6 - 18 mg/l Daphnia magna (Water flea) - 48 h
EC50 other aquatic organisms 1	6.8 mg/l Desmodesmus subspicatus (green algae) - 96 h

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12.2. Persistence and degradability

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)

Persistence and degradability : Biotic/Aerobic. - Exposure time 31 d. Result: <1% - Not readily biodegradable.

12.3. Bioaccumulative potential

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)

Log Pow : -0.92 at 20 °C (68 °F)

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.

Waste disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / ADN R / IMDG / ICAO / IATA

14.1. UN number

UN-No.(DOT) : 3077
DOT NA no. : UN3077

14.2. UN proper shipping name

DOT Proper Shipping Name : Environmentally hazardous substances, solid, n.o.s.
(Thiourea)

Department of Transportation (DOT) Hazard Classes : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : III - Minor Danger

DOT Special Provisions (49 CFR 172.102) : 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.

146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.

335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s." UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.

A112 - Notwithstanding the quantity limits shown in Column (9A) and (9B) for this entry, the following IBCs are authorized for transportation aboard passenger and cargo-only aircraft. Each IBC may not exceed a maximum net quantity of 1,000 kg:

a. Metal: 11A, 11B, 11N, 21A, 21B and 21N

b. Rigid plastics: 11H1, 11H2, 21H1 and 21H2

c. Composite with plastic inner receptacle: 11HZ1, 11HZ2, 21HZ1 and 21HZ2

d. Fiberboard: 11G

e. Wooden: 11C, 11D and 11F (with inner liners)

f. Flexible: 13H2, 13H3, 13H4, 13H5, 13L2, 13L3, 13L4, 13M1 and 13M2 (flexible IBCs must be sift-proof and water resistant or must be fitted with a sift-proof and water resistant liner).

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B54 - Open-top, sift-proof rail cars are also authorized.
IB8 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IP3 - Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
N20 - A 5M1 multi-wall paper bag is authorized if transported in a closed transport vehicle.
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

DOT Packaging Exceptions (49 CFR 173.xxx) : 155
DOT Packaging Non Bulk (49 CFR 173.xxx) : 213
DOT Packaging Bulk (49 CFR 173.xxx) : 240

14.3. Additional information

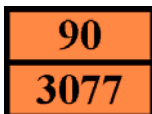
Other information : No supplementary information available.
Special transport precautions : Not dangerous goods.

Overland transport

Packing group (ADR) : III
Class (ADR) : 9 - Miscellaneous dangerous substances and articles
Hazard identification number (Kemler No.) : 90
Classification code (ADR) : M7
Danger labels (ADR) : 9 - Miscellaneous dangerous compounds



Orange plates :



Tunnel restriction code : E
Limited quantities (ADR) : 5kg
EAC : 2Z
Excepted quantities (ADR) : E1

Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
MFAG-No : 171

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit
Civil Aeronautics Law : Miscellaneous dangerous substances & articles

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14.4. Environmental hazards

Dangerous for the environment



Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : Not dangerous goods.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)

SARA Section 313 - Emission Reporting	100 % Thiourea
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15.2. International regulations

CANADA

THIOUREA (13C, 99%; 15N2, 98%) (285977-83-5)

Listed on the Canadian DSL (Domestic Substances List) inventory.

15.2.1. National regulations

No additional information available

15.3. US State regulations

THIOUREA (13C, 99%; 15N2, 98%)(285977-83-5)

State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List WARNING! This product contains a chemical known by the state of California to cause cancer.
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SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of R-, H- and EUH-phrases::

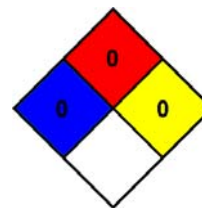
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Carc. 2	Carcinogenicity Category 2
Repr. 2	Reproductive toxicity Category 2
H302	Harmful if swallowed
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects
R22	Harmful if swallowed
R40	Limited evidence of a carcinogenic effect
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R62	Possible risk of impaired fertility
R63	Possible risk of harm to the unborn child
N	Dangerous for the environment
Xn	Harmful

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NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product