

1 Identification

Product identifier

Product name: Thiourea

Stock number: 16749

CAS Number:
62-56-6

EC number:
200-543-5

Index number:
612-082-00-0

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

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS08 Health hazard

Carc. 2 H351 Suspected of causing cancer.

Repr. 2 H361 Suspected of damaging fertility or the unborn child.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS07 GHS08

Signal word

Warning

Hazard statements

H302 Harmful if swallowed.

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

Precautionary statements

P281 Use personal protective equipment as required.

P264 Wash thoroughly after handling.

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

D2A - Very toxic material causing other toxic effects



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 1 Health (acute effects) = 1

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

62-56-6 Thiourea

Identification number(s):

EC number: 200-543-5

Index number: 612-082-00-0

Product name: Thiourea

(Contd. of page 1)

4 First-aid measures

Description of first aid measures
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.
After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.
After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
After swallowing Seek medical treatment.
Information for doctor
Most important symptoms and effects, both acute and delayed No further relevant information available.
Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)
Hydrogen cyanide (HCN)
Sulfur oxides (SOx)
Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.
Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13.
Prevention of secondary hazards: No special measures required.
Reference to other sections
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.
Information about protection against explosions and fires: No information known.
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Store away from oxidizing agents.
Further information about storage conditions:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
Components with limit values that require monitoring at the workplace:

Thiourea

Austria	Suspected carcinogen
Finland	Carcinogen
France	Carcinogen
Germany	Carcinogen
Russia	0.3 mg/m3-STEL
Sweden	Carcinogen
Netherlands	MAC-TGG 0.5 mg/m3 (skin)

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.
Penetration time of glove material (in minutes) Not determined

(Contd. on page 3)
USA

Product name: Thiourea	
<div>Eye protection: Safety glasses</div> <div>Body protection: Protective work clothing.</div>	
(Contd. of page 2)	
9 Physical and chemical properties	
Information on basic physical and chemical properties	
General Information	
Appearance:	
Form:	Crystalline powder
Color:	White
Odor:	Odorless
Odor threshold:	Not determined.
pH-value (50 g/l) at 20 °C (68 °F): 6-8	
Change in condition	
Melting point/Melting range:	172-178 °C (342-352 °F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined
Flash point: Not applicable	
Flammability (solid, gaseous) Not determined.	
Ignition temperature: 440 °C (824 °F)	
Decomposition temperature: Not determined	
Auto igniting: Not determined.	
Danger of explosion: Product does not present an explosion hazard.	
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	1.405 g/cm³ (11.725 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water at 20 °C (68 °F):	137 g/l
	Soluble
Partition coefficient (n-octanol/water): Not determined.	
Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
Other information No further relevant information available.	
10 Stability and reactivity	
Reactivity No information known.	
Chemical stability Stable under recommended storage conditions.	
Thermal decomposition / conditions to be avoided: Decomposition will not occur if used and stored according to specifications.	
Possibility of hazardous reactions No dangerous reactions known	
Conditions to avoid No further relevant information available.	
Incompatible materials: Oxidizing agents	
Hazardous decomposition products:	
Carbon monoxide and carbon dioxide	
Nitrogen oxides	
Sulfur oxides (SOx)	
Hydrogen cyanide	
11 Toxicological information	
Information on toxicological effects	
Acute toxicity: Harmful if swallowed.	
LD/LC50 values that are relevant for classification: No data	
Skin irritation or corrosion: May cause irritation	
Eye irritation or corrosion: Causes mild irritant effect.	
Sensitization: No sensitizing effects known.	
Germ cell mutagenicity: No effects known.	
Carcinogenicity:	
Suspected of causing cancer.	
NTP-R: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.	
IARC-3: Not classifiable as to carcinogenicity to humans.	
Reproductive toxicity: Suspected of damaging fertility or the unborn child.	
Specific target organ system toxicity - repeated exposure: No effects known.	
Specific target organ system toxicity - single exposure: No effects known.	
Aspiration hazard: No effects known.	
Other information (about experimental toxicology):	
Tumorigenic effects have been observed on tests with laboratory animals.	
Reproductive effects have been observed on tests with laboratory animals.	
Subacute to chronic toxicity:	
The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:	
Blood - hemorrhage.	
Blood - granulocytopenia	
Blood - changes in cell count (unspecified).	
Endocrine - evidence of thyroid hyperfunction.	
Endocrine - changes in thyroid weight.	
Endocrine - thyroid tumors.	
Behavioral - changes in motor activity (specific assay).	
Related to Chronic Data - changes in prostate weight	
Lungs, Thorax, or Respiration - emphysema.	
Lungs, Thorax, or Respiration - chronic pulmonary edema.	
Lungs, Thorax, or Respiration - other changes.	
Skin and Appendages - tumors.	
Brain and Coverings - other degenerative changes.	
Liver - fatty liver degeneration.	
Liver - tumors.	
Liver - multiple effects.	
(Contd. on page 4)	
USA	

Product name: Thiourea

(Contd. of page 3)

Sense Organs and Special Senses (Eye) - tumors.
Sense Organs and Special Senses (Ear) - effect, not otherwise specified.
Reproductive - Specific Developmental Abnormalities - Central Nervous System.
Reproductive - Specific Developmental Abnormalities - musculoskeletal system.
Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).
Reproductive - Specific Developmental Abnormalities - endocrine system.
Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).
Reproductive - Maternal Effects - uterus, cervix, vagina.
Reproductive - Maternal Effects - other effects.
Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).
Reproductive - Paternal Effects - other effects on male.
Tumorigenic - carcinogenic by RTECS criteria.
Tumorigenic - neoplastic by RTECS criteria.
Tumorigenic - equivocal tumorigenic agent by RTECS criteria.
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.


12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability No further relevant information available.
Bioaccumulative potential No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Toxic for aquatic organisms
Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Toxic for aquatic organisms
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic to aquatic life.
May cause long lasting harmful effects to aquatic life.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
Other adverse effects No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

UN-Number DOT, IMDG, IATA	UN3077
UN proper shipping name DOT IMDG IATA	Environmentally hazardous substances, solid, n.o.s. ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiourea), MARINE POLLUTANT ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiourea)
Transport hazard class(es) DOT, IMDG, IATA 	9 Miscellaneous dangerous substances and articles. 9 9 (M7) Miscellaneous dangerous substances and articles 9
Packing group DOT, IMDG, IATA	III
Environmental hazards: Marine pollutant (IMDG): Special marking (ADR): Special marking (IATA):	Symbol (fish and tree) Symbol (fish and tree) Symbol (fish and tree)
Special precautions for user EMS Number:	Warning: Miscellaneous dangerous substances and articles F-A,S-F
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information: DOT Hazardous substance: Marine Pollutant (DOT): Remarks:	10 lbs, 4.54 kg No Special marking with the symbol (fish and tree).
UN "Model Regulation":	UN3077, Environmentally hazardous substances, solid, n.o.s., 9, III

15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

(Contd. on page 5)
USA

Product name: Thiourea

Hazard pictograms



GHS07 GHS08

Signal word Warning

Hazard statements

H302 Harmful if swallowed.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.

Precautionary statements

P281 Use personal protective equipment as required.
P264 Wash thoroughly after handling.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor/.../if you feel unwell.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

SARA Section 313 (specific toxic chemical listings)

62-56-6 Thiourea

California Proposition 65

Prop 65 - Chemicals known to cause cancer

62-56-6 Thiourea

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department

Date of preparation / last revision 11/23/2015 / -

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)