



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Thiourea

SDS No. : 7791E-3

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

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2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****HEALTH HAZARDS**

Acute toxicity (Oral): Category 4

Serious eye damage/eye irritation: Category 2B

Skin sensitization: Category 1

Carcinogenicity: Category 2

Reproductive toxicity: Category 2

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – repeated exposure: Category 1 (thyroid gland)

Specific target organ toxicity – repeated exposure: Category 2 (liver)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

Harmful if swallowed

Causes eye irritation

May cause an allergic skin reaction

Suspected of causing cancer

Suspected of damaging fertility or the unborn child

May cause respiratory irritation

Causes damage to organs through prolonged or repeated exposure (thyroid gland)

May cause damage to organs through prolonged or repeated exposure (liver)

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT**Prevention**

Avoid release to the environment.



Do not breathe dust/fume/gas/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash contaminated parts thoroughly after handling.
Wear protective gloves.
Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.

Response

Collect spillage.
Get medical advice/attention if you feel unwell.
IF exposed or concerned: Get medical advice/attention.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Rinse mouth.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name:Thiourea
Content (%):97(min)
Chemical formula:CH₄N₂S
Chemicals No, Japan:2-1733
CAS No.:62-56-6
MW:76.12
ECNO:200-543-5

Note : The figures shown above are not the specifications of the product.

4. First-aid measures**Descriptions of first-aid measures****General measures**

Get medical attention/advice if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

**IF SWALLOWED**

Rinse mouth.

Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures**Personnel precautions, protective equipment and emergency procedures**

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Avoid raising dust.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage**Precautions for safe handling****Preventive measures**

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

**Advice on general occupational hygiene**

- Wash contaminated parts thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Contaminated work clothing should not be allowed out of the workplace.
- Take off contaminated clothing and wash it before reuse.

Storage**Conditions for safe storage**

- Keep container tightly closed.
- Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

- Glass
- Polyethylene

8. Exposure controls/personal protection**Control parameters****Exposure controls****Appropriate engineering controls**

- Do not use in areas without adequate ventilation.
- Eye wash station should be available.
- Washing facilities should be available.

Individual protection measures**Respiratory protection**

- Wear respiratory protection.

Hand protection

- Wear protective gloves.

Eye protection

- Wear eye/face protection.

9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Crystals or powder

Color: White

Odor: Odourless

Melting point/Freezing point: 182°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: Soluble

n-Octanol/water partition coefficient: log Pow -2.38 through -0.95

Vapor pressure data is not available.

Density and/or relative density: 1.4g/cm³

Relative vapor density (Air=1) data is not available.

No Particle characteristics data is not available.



10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Decomposes on heating. This produces toxic fumes of nitrogen oxides and sulfur oxides.

Reacts violently with acrolein, strong acids and strong oxidants. (ICSC0680)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Strong acids, Strong oxidizing agents, Acrolein

Hazardous decomposition products

Sulfur oxides, Nitrogen oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Thiourea)

rat LD50=1750mg/kg (BUA 179, 1995)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]

(Thiourea)

rabbit LD50>2800mg/kg (CICAD 49, 2003)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Thiourea)

rabbit no irritation (CICAD 49, 2003; NITE primary risk assessment, 2005)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Thiourea)

rabbit mild redness and edema (CICAD 49, 2003; NITE primary risk assessment, 2005)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]

(Thiourea)

cat. 1; NITE primary risk assessment, 2005; MOE risk assessment, vol.13, 2015; CICAD 49, 2003

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]

(Thiourea)

cat.2; NTP R (NTP RoC 14th, 2016); EU Carc. 2 (ECHA CL Invt., Access on Jun. 2017); JSOH 2B (JSOH, 2016)

(Thiourea)

IARC-Gr.3 : Not Classifiable as a Human Carcinogen

(Thiourea)

EU-Category 2; Substances suspected human carcinogens

**Reproductive toxicity**

[GHS Cat. Japan, base data]

(Thiourea)

cat. 2; NITE primary risk assessment, 2005; MOE risk assessment, vol.13, 2015; EU CLP Repr. 2 (ECHA CL Inv., Access on Jun. 2017)

STOT**STOT-single exposure**

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Thiourea)

respiratory tract irritation (NITE primary risk assessment, 2005; BUA 179, 1995)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Thiourea)

thyroid gland (NITE primary risk assessment, 2005)

[cat.2]

[GHS Cat. Japan, base data]

(Thiourea)

liver (NITE primary risk assessment, 2005)

Aspiration hazard data is not available.

Additional data

May cause lung disorders by massive inhalation of powdered substance.

-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax

12. Ecological Information**Ecotoxicity****Aquatic toxicity**

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Thiourea)

Crustacea (Daphnia magna) EC50=9mg/L/96hr (WHO/IPCS CICAD, 2003)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Thiourea)

Crustacea (Daphnia magna) NOEC (Reproductive inhibition)=0.75mg/L/21days (NITE primary risk assessment, 2005)

Water solubility

(Thiourea)

moderate (ICSC, 2001)

Persistence and degradability

(Thiourea)

Not degrade rapidly (BOD_Degradation: 2.6% (CSCL DB, 1979))

Bioaccumulative potential

(Thiourea)

log Pow=-2.38 through -0.95 (ICSC, 2001); BCF < 2 (Check & Review, Japan)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.



13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Avoid release to the environment (- if this is not the intended use).

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Packing group : III

ERG GUIDE No.: 171

Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Packing group : III

Special provisions No.: 274; 335; 966; 967; 969

IATA Dangerous Goods Regulations

UN No.: 3077

Proper Shipping Name :

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

Class or division : 9

Hazard labels : Miscellaneous & Environmentally hazardous

Packing group : III

Special provisions No.: A97; A158; A179; A197

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : yes

MARPOL Annex V – Prevention of pollution by garbage discharge

Specific target organ toxicity – repeated exposure: cat.1

Thiourea

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Thiourea

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

Chemicals listed in TSCA Inventory

Thiourea

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.



16. Other information

GHS classification and labelling

Acute Tox. 4: H302 Harmful if swallowed

Eye Irrit. 2B: H320 Causes eye irritation

Skin Sens. 1: H317 May cause an allergic skin reaction

Carc. 2: H351 Suspected of causing cancer

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

STOT SE 3: H335 May cause respiratory irritation

STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

Aquatic Acute 2: H401 Toxic to aquatic life

Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2018).