

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 Version 2 Revision Date 20.12.2018

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

### 1.1 Product identifiers

Product name : Thiourea

Product Number : 5285

Brand : Better Equipped

Index-No. : 612-082-00-0

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. : 62-56-6

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

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : Not for sale to the general public

### 1.3 Details of the supplier of the safety data sheet

Company : Better Equipped,  
Wrenbury Business Park,  
Wrenbury Road,  
Wrenbury,  
Nantwich, Cheshire,  
CW5 8EB, UK

Telephone +44 (0) 800 9707142

Fax +44 (0) 800 066 4443

E-mail address [sales@betterequipped.co.uk](mailto:sales@betterequipped.co.uk)

### 1.4 Emergency telephone number

Emergency Phone # +44 (0)1270 781238

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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Carcinogenicity (Category 2), H351

Reproductive toxicity (Category 2), H361d

Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

### 2.2 Label elements

#### Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Warning

Hazard statement(s)

H302 Harmful if swallowed.  
 H351 Suspected of causing cancer.  
 H361d Suspected of damaging the unborn child.  
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.  
 P264 Wash thoroughly after handling  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.  
 P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.  
 Rinse mouth.  
 P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
 P330 Rinse mouth  
 P391 Collect spillage.  
 P501 Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements: none

**2.3 Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**SECTION 3: Composition/information on ingredients**

**3.1 Substances**

Synonyms : SulfoareaThiocarbamide  
 Formula : CH<sub>4</sub>N<sub>2</sub>S  
 Molecular weight : 76.12 g/mol  
 CAS-No. : 62-56-6  
 EC-No. : 200-543-5  
 Index-No. : 612-082-00-0

**Hazardous ingredients according to Regulation (EC) No 1272/2008**

Component	Classification	Concentration
<b>Thiourea</b>		
CAS-No. 62-56-6	Acute Tox. 4; Carc. 2; Repr. 2; Aquatic Chronic 2; H302, H351, H361d, H411	<= 100 %
EC-No. 200-543-5		
Index-No. 612-082-00-0		

For the full text of the H-Statements mentioned in this Section, see Section 16.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**General advice**

Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**In case of skin contact**

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

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**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Unsuitable extinguishing media**

It is not recommended to use Tap water.

**5.2 Special hazards arising from the substance or mixture**

No data available

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**- 6.1.1 For non-emergency personnel**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**- 6.1.2 For emergency responders**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

**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 materials for containment and cleaning up**

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**

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 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.

7.1.2 Advice on general occupational hygiene:

- No smoking.
- Do not eat or drink.
- Wash hands after use.
- Remove contaminated clothing.

For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

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

Handle and store under inert gas.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

#### 8.1.2 The relevant DNELs and PNECs for the substance/s for the exposure scenarios:

DNEL's. The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole.

#### Data for Workers

INHALATION Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 1 mg/m <sup>3</sup>	repeated dose toxicity
Acute /short term:	No hazard identified	
Local Effects		
Long-term:	Hazard unknown (no further information necessary)	
Acute /short term:	Hazard unknown (no further information necessary)	
DERMAL Exposure	Threshold	Most sensitive study

Systemic Effects		
Long-term:	(DNEL) 3.4 mg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	
Local Effects		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
EYE Exposure		
No hazard identified		

### Data for the General Population

INHALATION Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 200 µg/m <sup>3</sup>	repeated dose toxicity
Acute /short term:	No hazard identified	
Local Effects		
Long-term:	Hazard unknown (no further information necessary)	
Acute /short term:	Hazard unknown (no further information necessary)	
DERMAL Exposure	Threshold	Most sensitive study
Systemic Effects		
Long-term:	(DNEL) 1.7 mg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	
Local Effects		
Long-term:	No hazard identified	
Acute /short term:	No hazard identified	
ORAL Exposure	Threshold	Most sensitive study
Systemic Effects		

Long-term:	(DNEL) 100 µg/kg bw/day	repeated dose toxicity
Acute /short term:	No hazard identified	
EYE Exposure		
No hazard identified		

PNEC's. The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole.

Hazard for Aquatic Organisms	
Freshwater	10 µg/L (1)
Intermittent releases (freshwater)	38 µg/L (1)
Marine water	1 µg/L (1)
Intermittent releases (marine water)	-
Sewage treatment plant (STP)	380 µg/L (1)
Sediment (freshwater)	72.5 µg/kg sediment dw (1)
Sediment (marine water)	7.25 µg/kg sediment dw (1)

Hazard for Air	
Air	No hazard identified (1)
Hazard for Terrestrial Organism	
Soil	2.725 mg/kg soil dw (1)
Hazard for Predators	
Secondary poisoning	No potential for bioaccumulation (1)

## 8.2 Exposure controls

### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday. Use Local exhaust ventilation (LEV).

### Personal protective equipment

#### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without

touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break

through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber

Minimum layer thickness: 0.11 mm Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

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

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: white
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	5.0 - 7 at 50 g/l at 20 °C
e)	Melting point/freezing point	Melting point/range: 170 - 176 °C
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.405 g/cm <sup>3</sup> at 20 °C
n)	Water solubility	137 g/l at 20 °C
o)	Partition coefficient: n- octanol/water	log Pow: -0.92 at 20 °C
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

## 9.2 Other safety information

Bulk density 640 kg/m<sup>3</sup>

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### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

None based on the data available

#### 10.2 Chemical stability

Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

None under normal processing

#### 10.4 Conditions to avoid

Heat

#### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases, Hydrogen peroxide, Sulphur oxides

#### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>), Sulphur oxides

Other decomposition products - No data available

In the event of fire: see section 5

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### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

LD50 Oral - Rat - 1,750 mg/kg

LC50 Inhalation - Rat - 4 h - > 170 mg/m<sup>3</sup>

LD50 Dermal - Rabbit - > 2,800 mg/kg

##### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

##### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Mild eye irritation

(OECD Test Guideline 405)

##### Respiratory or skin sensitisation

Maximisation Test - Guinea pig

Does not cause skin sensitisation.

##### Germ cell mutagenicity

No data available

in vitro assay

Result: Not mutagenic in Ames Test

##### Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.

Limited evidence of carcinogenicity in animal studies



IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Thiourea)

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity**

Suspected human reproductive toxicant

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

RTECS: YU2800000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

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**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish	LC50 - Danio rerio (zebra fish) - 10.000 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 5.6 - 18.0 mg/l - 48 h
Toxicity to algae	EC50 - Desmodesmus subspicatus (green algae) - 6.8 mg/l - 96 h

**12.2 Persistence and degradability**

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

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects**

Toxic to aquatic life with long lasting effects.

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**SECTION 13: Disposal considerations**

**13.1 Waste treatment methods**

**Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Unused product may be returned and reused, in addition to disposal.

### Contaminated packaging

Dispose of as unused product.

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 3077

IMDG: 3077

IATA: 3077

### 14.2 UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiourea)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thiourea)

IATA: Environmentally hazardous substance, solid, n.o.s. (Thiourea)

### 14.3 Transport hazard class(es)

ADR/RID: 9

IMDG: 9

IATA: 9

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: yes

### 14.6 Special precautions for user

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

N/A

### Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

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## SECTION 15: Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### 15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

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## SECTION 16: Other information

### Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.
H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H411	Toxic to aquatic life with long lasting effects.

### Revisions made since previous version of data sheet:

The following sections of this data sheet have been updated:

1.1, 1.2, 4.1, 5.1, 6.1, 7.1, 8.1, 8.2, 11, 12, 13, 14.7, 16

We strongly recommend reading the entire data sheet for this chemical in preparation ahead of use.

### Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Better Equipped and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

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