

## SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 04.11.2010

Version 4.4

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

#### 1.1 Product identifier

Catalogue No.	820423
Product name	N,N'-Dibutylthiourea for synthesis
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Chemical for synthesis For additional information on uses please refer to the Merck Chemicals portal ( <a href="http://www.merck-chemicals.com">www.merck-chemicals.com</a> ).
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#### 1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	LS-QHC * e-mail: <a href="mailto:prodsafe@merckgroup.com">prodsafe@merckgroup.com</a>

1.4 Emergency telephone number	Please contact the regional company representation in your country.
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### 2. Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

Acute toxicity, Category 4, Oral, H302

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

**Classification (67/548/EEC or 1999/45/EC)**

Xn; R22

For the full text of the R-phrases mentioned in this Section, see Section 16.

#### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

*Hazard pictograms*



*Signal word*

Warning

*Hazard statements*

H302 Harmful if swallowed.

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**Reduced labelling (≤125 ml)**

*Hazard pictograms*



*Signal word*  
Warning

CAS-No. 109-46-6

**Labelling (67/548/EEC or 1999/45/EC)**

Symbol(s)	Xn	Harmful
R-phrases(s)	22	Harmful if swallowed.
EC-No.	203-674-6	

**Reduced labelling (≤125 ml)**

Symbol(s)	Xn	Harmful
R-phrases(s)	22	Harmful if swallowed.

**2.3 Other hazards**

None known.

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**3. Composition/information on ingredients**

Formula	(CH <sub>3</sub> CH <sub>2</sub> CH <sub>2</sub> CH <sub>2</sub> NH) <sub>2</sub> CS	C <sub>9</sub> H <sub>20</sub> N <sub>2</sub> S (Hill)
CAS-No.	109-46-6	
EC-No.	203-674-6	
Molar mass	188,33 g/mol	

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**4. First aid measures**

**4.1 Description of first aid measures**

After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

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

irritant effects, Cough, Gastrointestinal disturbance

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

No information available.

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**5. Fire-fighting measures**

**5.1 Extinguishing media**

*Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

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*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

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

Combustible material, Development of hazardous combustion gases or vapours possible in the event of fire.

Fire may cause evolution of:  
nitrogen oxides, Sulphur oxides

**5.3 Advice for firefighters**

*Special protective equipment for fire-fighters*

In the event of fire, wear self-contained breathing apparatus.

*Further information*

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**6. Accidental release measures**

**6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**6.2 Environmental precautions**

Do not empty into drains.

**6.3 Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7.2 and 10.5).

Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

**6.4 Reference to other sections**

Indications about waste treatment see section 13.

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**7. Handling and storage**

**7.1 Precautions for safe handling**

Observe label precautions.

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

Tightly closed. Dry.

Store at +15°C to +25°C.

**7.3 Specific end uses**

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

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**8. Exposure controls/personal protection**

**8.1 Control parameters**

**8.2 Exposure controls**

Engineering measures

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Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

**Individual protection measures**

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

*Hygiene measures*

Change contaminated clothing. Preventive skin protection recommended. Wash hands after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

full contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,11 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

*Respiratory protection*

required when dusts are generated.

Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

*Environmental exposure controls*

Do not empty into drains.

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**9. Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

Form powder, finecrystalline

Colour yellow

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Odour	odourless
Odour Threshold	No information available.
pH	6 at 0,2 g/l 20 °C
Melting point	62 - 65 °C
Boiling point	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	0,0032 hPa at 25 °C
Relative vapour density	No information available.
Relative density	No information available.
Water solubility	at 20 °C practically insoluble
Partition coefficient: n-octanol/water	log Pow: 2,75 Method: (experimental)  No remarkable bioaccumulation potential is expected (log Pow 1-3).
Autoignition temperature	No information available.
Decomposition temperature	> 100 °C
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Oxidizing properties	No information available.

## 9.2 Other data

Bulk density	500 kg/m <sup>3</sup>
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## 10. Stability and reactivity

### 10.1 Reactivity

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The following applies in general to flammable organic substances and preparations: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

**10.2 Chemical stability**

The product is chemically stable under standard ambient conditions (room temperature) .

**10.3 Possibility of hazardous reactions**

Violent reactions possible with:

Strong oxidizing agents

**10.4 Conditions to avoid**

Strong heating.

**10.5 Incompatible materials**

no information available

**10.6 Hazardous decomposition products**

in the event of fire: See chapter 5.

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**11. Toxicological information**

**11.1 Information on toxicological effects**

*Acute oral toxicity*

LD50 rat

Dose: 350 mg/kg

(RTECS)

Symptoms: Gastrointestinal disturbance

absorption

*Acute inhalation toxicity*

Symptoms: slight mucosal irritations, Cough

*Skin irritation*

slight irritation

*Eye irritation*

slight irritation

*Specific target organ toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

No aspiration toxicity classification

**11.2 Further information**

*Further information*

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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**12. Ecological information**

**12.1 Toxicity**

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*Toxicity to daphnia and other aquatic invertebrates.*

EC50

Species: Daphnia magna (Water flea)

Dose: 10,7 mg/l

Exposure time: 48 h

(ECOTOX Database)

**12.2 Persistence and degradability**

No information available.

**12.3 Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 2,75

Method: (experimental)

No remarkable bioaccumulation potential is expected (log Pow 1-3).

**12.4 Mobility in soil**

No information available.

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

**12.6 Other adverse effects**

*Additional ecological information*

Do not allow to run into surface waters, wastewater, or soil.

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**13. Disposal considerations**

*Waste treatment methods*

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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**14. Transport information**

Not classified as dangerous in the meaning of transport regulations.

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**15. Regulatory information**

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

*EU regulations*

Major Accident Hazard 96/82/EC

Legislation Directive 96/82/EC does not apply

Occupational restrictions Take note of Dir 94/33/EC on the protection of young people at work. Take note of Dir 92/85/EEC on the safety and health at work of pregnant workers.

*National legislation*

Storage class VCI 10 - 13 Other liquids and solids

**15.2 Chemical Safety Assessment**

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

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**16. Other information**

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

H302	Harmful if swallowed.
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**Full text of R-phrases referred to under sections 2 and 3**

R22	Harmful if swallowed.
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**Training advice**

Provide adequate information, instruction and training for operators.

Regional representation:	This information is given on the authorised Safety Data Sheet for your country.
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**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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*The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.*