

SHANDONG YANGGU HUATAI CHEMICAL CO., LTD.

MATERIAL SAFETY DATA SHEET

According to EC-directive 2001/58/EC

TBBS(NS)

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product label name: N-tert-Butyl-2-benzothiazolesulfenamide
Supplier : Shandong Yanggu Huatai Chemical Co., Ltd.
No.217,Nanhuan Road, Yanggu County, China 252300
Tel.: 0086-635-6381126
Fax: 0086-635-6381030
Emergency telephone:0086-635-6381031

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a substance in conformance to EC directives.

Information on hazardous ingredients:

Chemical description: N-tert-Butyl-2-benzothiazolesulfenamide

Composition / information on ingredients:

Composition: 98% w/w

CAS-number: 95-31-8

EC-number: 202-409-1

Formula: C₁₁H₁₄N₂S₂.

3. HAZARDS IDENTIFICATION

May cause sensitization by skin contact.

May cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

Symptoms and effects : Dust may be irritating to the respiratory tract and cause symptoms of bronchitis.

Repeated contact may cause skin sensitization.

First aid:

General: In all cases of doubt, or when symptoms persist, seek medical attention.

Inhalation: Move to fresh air. If symptoms persist, seek medical advice.

Skin: Remove all contaminated clothing immediately. Wash off with plenty of soap and water.

Seek medical advice if irritation develops. Launder clothes before reuse.

Eye: Rinse thoroughly with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Seek medical advice if irritation develops.

Ingestion: Rinse mouth, give water to drink.

Advice to physician: No specific recommendations.

5. FIRE-FIGHTING MEASURES

Extinguishing media: waterspray, water mist, foam, dry chemical powder, CO₂

Unsuitable extinguishing media: waterjet.

Special exposure hazards: Emits toxic fumes under fire conditions.

Hazardous decomposition/combustion products: carbon monoxide (CO), Sulfur oxides (SO_x), nitrous gases (NO_x).

Protective equipment: Wear self contained breathing apparatus.

Other information: Do not allow run-off from fire fighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: For personal protection see Section 8.

Environmental precautions: Avoid discharge into the environment.

Methods for cleaning up: Collect as much as possible in a clean container for (preferable) reuse or disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin. Avoid dust generation.

Fire and explosion prevention : Take precautionary measures against static discharges.

Avoid dust accumulation. Dust/air mixtures may ignite violently upon exposure to sparks or sources of ignition.

Kst: 171 - 273 bar.m/s. Maximum corrected explosion pressure: 7.9 - 8.5 bar.

Storage requirements : Store in a dry and cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Avoid dust generation. Ensure good ventilation and local exhaustion of the working area.

Exposure limits

Name: N-tert-Butyl-2-benzothiazolesulfenamide

OES-TWA 5.0 mg/m³ (Respirable dust)

Personal protection

Respiratory: Avoid breathing dust. In case of dust formation use dust mask.

Hand : Wear protective gloves.

Eye: Wear safety goggles.

Skin and body: Wear suitable protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dedusted powder or granular

Colour: cream

Odour: faint amine like, aromatic

Boiling point/range: not determined

Melting point/range: 109 °C

Flash point approx: 165 °C

Flammability: solid substance: not (in)flammable.

Autoignition temperature: approx. 340 - 380 °C

Explosive properties: dust explosion hazard

Explosion limits: Lower Explosion Limit (LEL): 10 - 20 g/m.

Minimum ignition energy: =< 3 mJ.

Oxidizing properties: not applicable

Vapour pressure: Negligible at room temperatures

Density: approx. 1290 kg/m (20 °C)

Bulk density: not determined

Solubility in water: 0.00032 kg/m (25 °C)

Solubility in other solvents: in most organic solvents

pH value: not determined
Partition coefficient (n-octanol/water): 4.38
Relative vapour density (air=1) : not applicable
Viscosity: not applicable

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage and handling conditions (see section 7).
Conditions: to avoid Heating > 100°C: May catch fire.
Materials to avoid: No specific recommendations.
Hazardous decomposition: Thermal decomposition products: carbon monoxide (CO), nitrous gases (NO_x), Sulfur
Products: oxides (SO_x).

11. TOXICOLOGICAL INFORMATION

Name: N-tert-Butyl-2-benzothiazolesulfenamide
Acute toxicity
Oral LD50: rat: 6310 mg/kg.
Dermal LD50: rabbit: >7940 mg/kg.
Irritation:
Skin: Slightly irritating to skin but not sufficient for classification.
Eye: Slightly irritating to eyes but not sufficient for classification.
Sensitization: Patch testing (Human experience): Sensitizing (skin).

12. ECOLOGICAL INFORMATION

Ecotoxicity
fish: 96h-LC50 (Lepomis macrochirus): 1.2 mg/l.
96h-LC50 (Oncorhynchus mykiss): 1.6
96h-LC50 (Pimephales promelas): 21 mg/l.
48h-EC50 (Daphnia magna): > 100 mg/l.

Fate
Degradation Biotic: Not readily biodegradable.
Other information: LC50, EC50 > Solubility in water.

13. DISPOSAL CONSIDERATIONS

Product Avoid: discharge into the environment.
Small quantities: According to local regulations.
Large quantities: Consult Flexsys for special advice.
Contaminated packaging: According to local regulations.
Other information: Waste code number: Please refer to your specific industry in the European Waste Catalogue.

14. TRANSPORT INFORMATION

Land transport (ADR/ RID)
ADR class: not restricted
RID class: not restricted ADR/RID packing group not relevant
Hazard Identification No.: not relevant Substance Identification No. not relevant

TREM-Card: not relevant UN number none
Proper Shipping Name : not relevant
Sea transport (IMDG-code/ IMO)
IMO/IMDG code: not restricted Class : not restricted
Packing group: not relevant UN number: none
EMS : not relevant Subsidiary Risk: no
Marine pollutant: no
Proper Shipping Name: not relevant
Air transport (ICAO-TI/ IATA-DGR)
ICAO-TI/IATA-DGR UN number : none
Class: not restricted Packing group: not relevant
Proper Shipping Name : not relevant

15. REGULATORY INFORMATION

Chemical description N-tert-Butyl-2-benzothiazolesulfenamide
Labelling according to EC directives
EC-number: See section 2
Classification based on : Tests
Symbol(s) : IRRITANT (Xi)
R(isk) phrase(s): R 43 May cause sensitization by skin contact
R 53 May cause long-term adverse effects in the aquatic environment
S(afety) phrase(s) :S 22 Do not breathe dust
S 24 Avoid contact with skin
S 37 Wear suitable gloves
S 61 Avoid release to the environment. Refer to special instructions/Safety data sheets

16. OTHER INFORMATION

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.