SAFETY DATA SHEET

Fenbendazole

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

1.1. Product identifiers

Product name: **Fenbendazole**
CAS-No.: 43210-67-9
EC-No.: 256-145-7
HS Code: 293300
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.

1.2. Relevant identified uses of the substance or mixture

Laboratory chemical, chemical synthesis (professional use only).

1.3. Details of the supplier of the safety data sheet

Company:
Curaltus Ltd
Piliakalnio st. 7, LT-06229 Vilnius, Lithuania
info@curaltus.com

1.4. Emergency telephone

Email: info@fenbendazole-lab.com

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP) and OSHA 29 CFR 1910.1200 (GHS).

Reproductive toxicity	(Category 2), H361fd
Specific target organ toxicity – repeated exposure	(Category 2), H373 liver, lymph nodes, stomach, nervous system
Short term (acute) aquatic hazard	(Category 1), H400
Long-term (Chronic) aquatic hazard	(Category 1), H410

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP) and OSHA GHS.

Hazard pictograms	 GHS08, GHS09
Signal word	Warning
Hazard statements:	
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs (liver, stomach, nervous system, lymph nodes) through prolonged or repeated exposure if swallowed.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Precautionary statements:	
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/ face protection
P308+ P313	If exposed or concerned: get medical advice/ attention.
P391	Collect spillage
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

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. This substance does not meet the criteria for endocrine-disrupting properties according to Article 57(f) of REACH or relevant CLP provisions. May form explosible dust-air mixture if dispersed. Dust contact with eyes may cause mechanical irritation. Not classified as carcinogenic based on available data.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name:	FENBENDAZOLE
Synonyms:	Methyl 5-(phenylthio)-2-benzimidazolecarbamate
Formula:	$C_{15}H_{13}N_3O_2S$
Molecular Weight:	299,35 g/mol
Content:	≥99% (No impurities contributing to classification.)
CAS-No. :	43210-67-9
EC-No. :	256-145-7
HS Code:	293300

4. FIRST AID MEASURES

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
If inhaled:	Move to fresh air. If breathing is difficult, give oxygen. Consult a physician. Get medical attention immediately if symptoms occur.
In case of skin contact:	Remove contaminated clothing. Wash off with soap and plenty of water. Consult a physician. Get medical attention immediately if symptoms occur.
In case of eye contact:	Flush eyes with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do. Consult a physician. Get medical attention if irritation develops and persists.
If swallowed:	Rinse mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Consult a physician. Get medical attention if symptoms occur.

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

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

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

No data available

5. FIRE FIGHTING MEASURES

5.1. Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide that are appropriate according to local circumstances and the surrounding environment.

5.2. Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, combustible, risk of dust explosion.

5.3. Advice for firefighters

Wear self-contained breathing apparatus in pressure demand, MSHA/NIOSH (approved or equivalent) and full protective gear for firefighting if necessary. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

5.4. Further information

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

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Avoid inhalation of dust. Use appropriate personal protective equipment (see section 8). Avoid substance contact. Avoid breathing vapors, mist or gas. Evacuate the danger area, observe emergency procedures, consult an expert.

6.2. Environmental precautions

Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Product should not be released into the environment.

6.3. Methods and materials for containment and cleaning up

Mechanically collect using HEPA vacuum or damp sweeping. Avoid dust formation. Avoid breathing dust and mist. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

For disposal see section 13. For personal protection see section 8.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. Wear personal protective equipment. Normal measures for preventive fire protection. Avoid ingestion, inhalation and dust formation. Wash hands after working with substance. For precautions see 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. Do not store with strong oxidizing agents and strong acids.

7.3. Specific end use(s)

Pregnant workers should avoid exposure according to Directive 92/85/EEC.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters:

No occupational exposure limits established for this substance.

8.2. Exposure Controls

Appropriate engineering controls

Facilities storing or utilizing this material should be equipped with local exhaust ventilation, an eyewash station, and a safety shower. Follow general industrial hygiene practices.

8.3. Personal Protective Equipment

Eyes:	Wear chemical safety goggles approved NIOSH (US) or EN 166(EU).
Skin:	Wear appropriate protective gloves (e.g. nitrile).
Clothing:	Wear appropriate protective clothing.
Respirators:	Use a NIOSH-approved or EN 143 P3 particulate respirator when dust is generated.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid (Powder)	Boiling Point:	Not available
Color:	Almost White	Freezing/Melting Point:	233°C
Odor:	Odorless	Decomposition Temperature:	Not available
Vapor Pressure:	Not available	Solubility in water:	Poorly soluble in water
Vapor Density:	Not available	Specific Gravity/Density:	Not available
Evaporation Rate:	Not available	Molecular Formula:	C15H13N3O2S
Viscosity:	Not available	Molecular Weight:	299.35 g/mol

10. STABILITY AND REACTIVITY

Reactivity:	No hazardous reactivity under normal conditions
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	May form explosive dust-air mixture during processing. Can react with strong oxidizing agents.
Conditions to avoid:	Heat, flames, sparks, dust formation.
Incompatible materials:	Strong oxidizing agents
Hazardous decomposition products:	Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides (under fire conditions). In the event of fire: see section 5
Other decomposition products	No data available

In the event of fire: see 5

11. TOXICOLOGICAL INFORMATION

Unless otherwise specified data extracted from RTECS – Register of Toxic Effects of Chemical Substances.

11.1. Toxicity

Oral (rat) LD50:	>10 g/kg
Oral (mouse) LD50:	>10 g/kg
Oral (dog) LD50:	~500 mg/kg
Skin corrosion/irritation:	No data available; expected to be non-irritating.
Serious eye damage/eye	Mechanical irritation possible from dust.

irritation:	
Respiratory or skin sensitization	No data available.
Germ cell mutagenicity:	No data available indicating mutagenic potential.
Carcinogenicity:	Not classified as carcinogenic. No evidence in standard studies.
Reproductive toxicity:	Suspected of damaging fertility or the unborn child (Category 2).
Specific target organ toxicity – single exposure	No data available.
Specific target organ toxicity – repeated exposure:	May cause damage to liver, stomach, nervous system, and lymph nodes.
Aspiration hazard:	Not applicable.

11.2. Additional information

The most important known symptoms and effects are described in section 2.2.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) ~7.5 mg/l -96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) 0.008 mg/l - 48 h (OECD Test Guideline 202) Very toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. 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.

12.5. Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to reach article 57(f) or commission delegated regulation (eu) 2017/2100 or commission regulation (eu) 2018/605 at levels of 0.1% or higher.

12.6. Other adverse effects

No data available.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product: Dispose of in accordance with local regulations.

Recommended EWC code (substance): 16 05 08* (discarded organic chemicals consisting of or containing dangerous substances).

13.2. Contaminated packaging

Dispose of as unused product. Recommended EWC code: 15 01 10* (packaging containing residues of or contaminated by hazardous substances).

14. TRANSPORT INFORMATION

ADR/RID/IMDG/IATA: Environmentally hazardous substance, solid, n.o.s. (Fenbendazole), Class 9, Packing Group III (in many jurisdictions due to aquatic toxicity).

15. REGULATORY INFORMATION

Chemical safety assessment: Not required for this use.

This safety data sheet complies with Regulation (EU) 2020/878 and US OSHA Hazard Communication Standard (29 CFR 1910.1200).

International Chemical Weapons Convention: Neither banned nor restricted.

Restrictions on marketing and use: None specific beyond general hazardous substance rules.

Candidate List of SVHC: Not listed.

16. OTHER INFORMATION

Revision: Updated to align with current EU REACH Annex II (2020/878), CLP, and US OSHA GHS requirements. Incorporated latest available hazard and transport information. The information is believed to be accurate and represents the best information currently available. It is provided as a guide for safe handling, use, processing, storage, transportation, disposal, and release. The supplier assumes no liability for any loss or damage. Users should verify compliance with applicable regulations.