according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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

1.1 Product identifier

Trade name Fenbendazole Paste Formulation

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

: Veterinary product Use of the Sub-

stance/Mixture

Recommended restrictions Not applicable

on use

1.3 Details of the supplier of the safety data sheet

MSD Company

Kilsheelan

Clonmel Tipperary, IE

Telephone 353-51-601000

E-mail address of person

responsible for the SDS

EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

+1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Reproductive toxicity, Category 2 H361fd: Suspected of damaging fertility. Suspected

of damaging the unborn child.

Specific target organ toxicity - repeated H373: May cause damage to organs through pro-

longed or repeated exposure.

H400: Very toxic to aquatic life. Short-term (acute) aquatic hazard, Cate-

gory 1

Long-term (chronic) aquatic hazard, Cat-

egory 1

H410: Very toxic to aquatic life with long lasting

effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

exposure, Category 2



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Signal word : Warning

Hazard statements : H361fd Suspected of damaging fertility. Suspected of damag-

ing the unborn child.

H373 May cause damage to organs through prolonged or

repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P201 Obtain special instructions before use. P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

P391 Collect spillage.

Storage:

P405 Store locked up.

Hazardous components which must be listed on the label:

fenbendazole

EUH208 Contains Cinnamaldehyde. May produce an allergic reaction.

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.

Ecological information: 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.

Toxicological information: 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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration
	EC-No.		(% w/w)
	Index-No.		
	Registration number		
fenbendazole	43210-67-9	Repr. 2; H361fd	>= 10 - <=
	256-145-7	STOT RE 2; H373	18,75

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		(Liver, Stomach, Nervous system, Lymph nodes) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 100 M-Factor (Chronic aquatic toxicity): 10	
Ethanol#	64-17-5 200-578-6 603-002-00-5	Flam. Liq. 2; H225 Eye Irrit. 2; H319 ————————————————————————————————————	<= 0,04
Diethyl malonate#	105-53-3 203-305-9	Eye Irrit. 2; H319	<= 0,006
2-Furaldehyde#	98-01-1 202-627-7 605-010-00-4	Flam. Liq. 3; H226 Acute Tox. 3; H301 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Carc. 2; H351 STOT SE 3; H335 Aquatic Chronic 3; H412 Acute toxicity estimate Acute oral toxicity: 108 mg/kg	<= 0,006
		Acute inhalation toxicity (vapour): 1 mg/l Acute dermal toxici- ty: 300 mg/kg	
Cinnamaldehyde#	104-55-2 203-213-9 606-155-00-6	Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1A; H317 ——— specific concentration limit	<= 0,002

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		Skin Sens. 1A; H317 >= 0,01 % Acute toxicity estimate	
	500.00	Acute dermal toxicity: 1.260 mg/kg	0.000
Isovaleraldehyde#	590-86-3 209-691-5	Flam. Liq. 2; H225 Eye Irrit. 2; H319 Skin Sens. 1B; H317 STOT SE 3; H335 Aquatic Chronic 2; H411	<= 0,002
Acetaldehyde#	75-07-0 200-836-8 605-003-00-6	Flam. Liq. 1; H224 Acute Tox. 4; H302 Eye Irrit. 2; H319 Muta. 2; H341 Carc. 1B; H350 STOT SE 3; H335 Acute toxicity estimate	<= 0,0002
		Acute oral toxicity: 661 mg/kg	
Trans-hex-2-en-1-ol#	928-95-0 213-191-2	Skin Corr. 1B; H314 Eye Dam. 1; H318 EUH071	<= 0,0002

For explanation of abbreviations see section 16.

#: Voluntarily-disclosed substance

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

Protection of first-aiders First Aid responders should pay attention to self-protection,

and use the recommended personal protective equipment

when the potential for exposure exists (see section 8).

If inhaled If inhaled, remove to fresh air.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with soap and plenty

of water.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Suspected of damaging fertility. Suspected of damaging the

unborn child.

May cause damage to organs through prolonged or repeated

exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Nitrogen oxides (NOx)

Sulphur oxides

Carbon oxides

5.3 Advice for firefighters

Special protective equipment :

for firefighters

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

Use personal protective equipment.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions : Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Do not breathe vapours.

Do not swallow.

Avoid contact with eyes.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Avoid prolonged or repeated contact with skin.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contami-

nated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

: Keep in properly labelled containers. Store locked up. Store in

accordance with the particular national regulations.

Advice on common storage : Do not store with the following product types:

Strong oxidizing agents

Gases

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
fenbendazole	43210-67-9	TWA	100 μg/m3 (OEB 2)	Internal
Propylene glycol	57-55-6	TWA	25 ppm 79 mg/m3	FOR-2011- 12-06-1358
Ethanol	64-17-5	TWA	500 ppm 950 mg/m3	FOR-2011- 12-06-1358
2-Furaldehyde	98-01-1	TWA	2 ppm 8 mg/m3	FOR-2011- 12-06-1358
	Further information: Chemicals that can be absorbed through the skin.			
Acetaldehyde	75-07-0	TWA	25 ppm 45 mg/m3	FOR-2011- 12-06-1358
	Further information: Substances considered to be carcinogenic			

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene glycol	Workers	Inhalation	Long-term local ef-	10 mg/m3

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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			fects	1
	Workers	Inhalation	Long-term systemic effects	168 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	10 mg/m3
	Consumers	Inhalation	Long-term systemic effects	50 mg/m3
Glycerine	Workers	Inhalation	Long-term local ef- fects	56 mg/m3
	Consumers	Ingestion	Long-term systemic effects	229 mg/kg bw/day
	Consumers	Inhalation	Long-term local ef- fects	33 mg/m3
Ethanol	Workers	Inhalation	Long-term systemic effects	380 mg/m3
	Workers	Skin contact	Long-term systemic effects	267 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	114 mg/m3
2-Furaldehyde	Workers	Inhalation	Long-term systemic effects	17,8 mg/m3
	Workers	Inhalation	Acute systemic ef- fects	152 mg/m3
	Workers	Inhalation	Long-term local ef- fects	8 mg/m3
	Workers	Inhalation	Acute local effects	20 mg/m3
	Workers	Skin contact	Long-term systemic effects	4 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	8 mg/m3
	Consumers	Inhalation	Acute systemic ef- fects	136 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	8 mg/m3
	Consumers	Inhalation	Acute local effects	20 mg/m3
	Consumers	Skin contact	Long-term systemic effects	2,4 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2,4 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	2,4 mg/kg bw/day
Cinnamaldehyde	Workers	Inhalation	Long-term systemic effects	2,204 mg/m3
	Workers	Skin contact	Long-term systemic effects	2,513 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,543 mg/m3
	Consumers	Skin contact	Long-term systemic effects	0,625 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	2,5 mg/kg bw/day

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Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
fenbendazole	<u> </u>	0,0001 mg/l
Propylene glycol	Fresh water	260 mg/l
	Freshwater - intermittent	183 mg/l
	Marine water	26 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg dry
		weight (d.w.)
	Marine sediment	57,2 mg/kg dry
		weight (d.w.)
	Soil	50 mg/kg dry
		weight (d.w.)
Glycerine	Fresh water	0,885 mg/l
	Marine water	0,0885 mg/l
	Intermittent use/release	8,85 mg/l
	Sewage treatment plant	1000 mg/l
	Fresh water sediment	3,3 mg/kg dry
		weight (d.w.)
	Marine sediment	0,33 mg/kg dry
		weight (d.w.)
	Soil	0,141 mg/kg dry
		weight (d.w.)
Ethanol	Fresh water	0,96 mg/l
	Freshwater - intermittent	2,75 mg/l
	Marine water	0,79 mg/l
	Sewage treatment plant	580 mg/l
	Fresh water sediment	3,6 mg/kg dry
		weight (d.w.)
	Marine sediment	2,9 mg/kg dry
4	0.11	weight (d.w.)
	Soil	0,63 mg/kg dry
	0.1(0.1.5)	weight (d.w.)
H	Oral (Secondary Poisoning)	380 mg/kg food
2-Furaldehyde	Fresh water	0,033 mg/l
H	Freshwater - intermittent	0,027 mg/l
H	Marine water	0,003 mg/l
H	Sewage treatment plant	7,6 mg/l
	Fresh water sediment	0,12 mg/kg dry
H	Marina andirect	weight (d.w.)
	Marine sediment	0,012 mg/kg dry
1	Soil	weight (d.w.)
	Suil	2,6 mg/kg dry weight (d.w.)
H	Oral (Secondary Poisoning)	35,3 mg/kg food
Cinnamaldehyde	Fresh water	0,021 mg/l
Cirinamaluenyue	Marine water	0,021 mg/l
H		0,002 mg/l
H	Freshwater - intermittent	
H	Sewage treatment plant Fresh water sediment	7,1 mg/l
	riesii watei sediment	0,021 mg/kg dry
Ш		weight (d.w.)

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Marine sediment	0,002 mg/kg dry weight (d.w.)
Soil	0,004 mg/kg dry weight (d.w.)

8.2 Exposure controls

Engineering measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Laboratory operations do not require special containment.

Personal protective equipment

Eye/face protection : Wear safety glasses with side shields or goggles.

If the work environment or activity involves dusty conditions,

mists or aerosols, wear the appropriate goggles.

Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or

aerosols.

Hand protection

Material : Chemical-resistant gloves

Skin and body protection : Work uniform or laboratory coat.

Respiratory protection : If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection. Equipment should conform to NS EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : paste

Colour : white to off-white

Odour : cinnamon-like

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit / Upper

flammability limit

No data available

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Lower explosion limit / Lower :

flammability limit

No data available

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : 6-8

Viscosity

Viscosity, kinematic : No data available

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

Not applicable

Vapour pressure : No data available

Relative density : No data available

Density : No data available

Relative vapour density : No data available

Particle characteristics

Particle size : No data available

9.2 Other information

Explosives : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Evaporation rate : No data available

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

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10.3 Possibility of hazardous reactions

Hazardous reactions : Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of : Inhalation

exposure Skin contact Ingestion

Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Components:

fenbendazole:

Acute oral toxicity : LD50 (Rat): > 10.000 mg/kg

LD50 (Mouse): > 10.000 mg/kg

Ethanol:

Acute oral toxicity : LD50 (Rat): 10.470 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male): 116,9 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 15.800 mg/kg

Diethyl malonate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg

Method: OECD Test Guideline 402

Remarks: Based on data from similar materials

2-Furaldehyde:

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Acute oral toxicity : LD50 (Rat): 108 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 1 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : Acute toxicity estimate: 300 mg/kg

Method: Expert judgement

Cinnamaldehyde:

Acute oral toxicity : LD50 (Rat): 2.200 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 1.260 mg/kg

Isovaleraldehyde:

Acute oral toxicity : LD50 (Rat): 5.740 mg/kg

Acute inhalation toxicity : LC50 (Rat): 42,7 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): 2.534 mg/kg

Acetaldehyde:

Acute oral toxicity : LD50 (Rat): 661 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 3.540 mg/kg

Trans-hex-2-en-1-ol:

Acute oral toxicity : LD50 (Rat): 3.500 mg/kg

Acute inhalation toxicity : Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 4.500 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

fenbendazole:

Species : Rabbit

Result : No skin irritation

Ethanol:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

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Diethyl malonate:

Species : Rabbit

Result : No skin irritation

2-Furaldehyde:

Result : Skin irritation

Remarks : Based on national or regional regulation.

Cinnamaldehyde:

Species : human skin Result : Skin irritation

Isovaleraldehyde:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Mild skin irritation

Acetaldehyde:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Trans-hex-2-en-1-ol:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 431

Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation

Not classified based on available information.

Components:

fenbendazole:

Species : Rabbit

Result : No eye irritation

Ethanol:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Diethyl malonate:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

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2-Furaldehyde:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Cinnamaldehyde:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Isovaleraldehyde:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Acetaldehyde:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Trans-hex-2-en-1-ol:

Result : Irreversible effects on the eye Remarks : Based on skin corrosivity.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Ethanol:

Test Type : Mouse ear swelling test (MEST)

Exposure routes : Skin contact
Species : Mouse
Result : negative

Diethyl malonate:

Test Type : Buehler Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

Remarks : Based on data from similar materials

2-Furaldehyde:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

Cinnamaldehyde:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Result : positive

Assessment : Probability or evidence of high skin sensitisation rate in hu-

mans

Isovaleraldehyde:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig

Method : OECD Test Guideline 406

Result : positive

Remarks : Based on data from similar materials

Assessment : Probability or evidence of low to moderate skin sensitisation

rate in humans

Acetaldehyde:

Test Type : Maximisation Test Exposure routes : Skin contact Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

Trans-hex-2-en-1-ol:

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact Species : Mouse

Method : OECD Test Guideline 429

Result : negative

Remarks : Based on data from similar materials

Germ cell mutagenicity

Not classified based on available information.

Components:

fenbendazole:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

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Test Type: DNA Repair

Result: negative

Test Type: Chromosomal aberration

Result: negative

Test Type: in vitro assay

Test system: mouse lymphoma cells Metabolic activation: Metabolic activation

Result: equivocal

Ethanol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Rat

Application Route: Ingestion

Result: negative

Diethyl malonate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: negative

Remarks: Based on data from similar materials

2-Furaldehyde:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: positive

Test Type: Chromosome aberration test in vitro

Method: OECD Test Guideline 473

Result: positive

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: positive

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: positive

Genotoxicity in vivo : Test Type: Unscheduled DNA synthesis (UDS) test with

mammalian liver cells in vivo

Species: Rat

Application Route: Ingestion

Result: negative

Test Type: Transgenic rodent somatic cell gene mutation as-

say

Species: Mouse

Application Route: Ingestion

Result: negative

Cinnamaldehyde:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Ingestion

Result: negative

Remarks: Based on data from similar materials

Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow

cytogenetic test, chromosomal analysis)

Species: Mouse

Application Route: Ingestion

Result: negative

Test Type: Unscheduled DNA synthesis (UDS) test with

mammalian liver cells in vivo

Species: Rat

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Application Route: Ingestion

Result: negative

Isovaleraldehyde:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Remarks: Based on data from similar materials

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: positive

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

Acetaldehyde:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: positive

Test Type: Chromosome aberration test in vitro

Result: positive

Test Type: in vitro micronucleus test

Result: positive

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: positive

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: positive

Genotoxicity in vivo : Test Type: In vivo micronucleus test

Species: Rat

Application Route: Intraperitoneal injection

Result: positive

Test Type: Mammalian bone marrow sister chromatid ex-

change

Species: Mouse

Application Route: Intraperitoneal injection

Result: positive

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Germ cell mutagenicity- As-

sessment

Positive result(s) from in vivo mammalian somatic cell muta-

genicity tests.

Trans-hex-2-en-1-ol:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)

Method: OECD Test Guideline 471

Result: negative

Test Type: in vitro micronucleus test Method: OECD Test Guideline 487

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Method: OECD Test Guideline 474

Result: negative

Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:

fenbendazole:

Species : Mouse
Application Route : oral (feed)
Exposure time : 2 Years

NOAEL : 405 mg/kg body weight

Result : negative

Species : Rat
Application Route : Oral
Exposure time : 2 Years

NOAEL : 5 mg/kg body weight

Result : negative

Target Organs : Lymph nodes, Liver

2-Furaldehyde:

Species : Mouse
Application Route : Ingestion
Exposure time : 103 weeks

Method : OECD Test Guideline 451

Result : positive

Remarks : The mechanism or mode of action is not relevant in humans.

Species : Hamster

Application Route : inhalation (vapour)

Exposure time : 52 weeks

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Result negative

Species Mouse Application Route Skin contact Exposure time 47 weeks Result positive

Carcinogenicity - Assess-

ment

Limited evidence of carcinogenicity in animal studies

Cinnamaldehyde:

Species Rat Application Route Ingestion Exposure time : 106 weeks Result : negative

Remarks Based on data from similar materials

Species Mouse

Application Route : Intraperitoneal injection

Exposure time 24 weeks Result negative

Isovaleraldehyde:

Species Rat

Application Route : inhalation (vapour)

Exposure time : 2 Years Result : negative

Remarks Based on data from similar materials

Acetaldehyde:

Species Rat Application Route Inhalation Exposure time 121 weeks Result positive

Carcinogenicity - Assess-

Sufficient evidence of carcinogenicity in animal experiments

ment

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

fenbendazole:

Effects on fertility Test Type: Three-generation reproduction toxicity study

Species: Rat

Application Route: oral (feed)

General Toxicity - Parent: NOAEL: 15 mg/kg body weight

Fertility: LOAEL: 45 mg/kg body weight

Result: Effects on fertility

Effects on foetal develop-Test Type: Development

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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ment Species: Dog, female

Application Route: Oral

Developmental Toxicity: LOAEL: 100 mg/kg body weight Result: Embryotoxic effects and adverse effects on the off-

spring were detected., No teratogenic effects

Test Type: Embryo-foetal development

Species: Rabbit Application Route: Oral

Developmental Toxicity: NOAEL: 25 mg/kg body weight

Result: Fetotoxicity

Test Type: Embryo-foetal development

Species: Rabbit Application Route: Oral

Developmental Toxicity: LOAEL: 63 mg/kg body weight

Test Type: Embryo-foetal development

Species: Rat

Application Route: Oral

Developmental Toxicity: NOAEL: 120 mg/kg body weight

Result: No effects on foetal development

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of adverse effects on development, based on animal experi-

ments.

Ethanol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Mouse

Application Route: Ingestion

Result: negative

Diethyl malonate:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

Effects on foetal develop-

ment

Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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2-Furaldehyde:

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion

Result: negative

Cinnamaldehyde:

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Mouse

Application Route: Ingestion

Result: negative

Acetaldehyde:

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion

Result: negative

Trans-hex-2-en-1-ol:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 422

Result: negative

Remarks: Based on data from similar materials

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

Remarks: Based on data from similar materials

STOT - single exposure

Not classified based on available information.

Components:

2-Furaldehyde:

Assessment : May cause respiratory irritation.

Isovaleraldehyde:

Assessment : May cause respiratory irritation.

Acetaldehyde:

Assessment : May cause respiratory irritation.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components:

fenbendazole:

Exposure routes Ingestion

Target Organs Liver, Stomach, Nervous system, Lymph nodes

Assessment : May cause damage to organs through prolonged or repeated

exposure.

2-Furaldehyde:

Assessment No significant health effects observed in animals at concentra-

tions of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

fenbendazole:

Species Rat LOAEL 500 mg/kg Application Route Exposure time Target Organs : Oral : 2 Weeks Target Organs : Kidney, Liver

Species : Rat

NOAEL > 2.500 mg/kg

NOAEL Application Route Exposure time Remarks : Oral 30 Days

Remarks : No significant adverse effects were reported

Species

1.600 mg/kg

Species LOAEL Application Route Exposure time Target Organs Symptoms Oral : 90 Days

Central nervous system

Symptoms **Tremors**

Species Dog NOAEL 4 mg/kg LOAEL 8 mg/kg Exposure time 6 Months

Stomach, Nervous system, Lymph nodes Target Organs

Ethanol:

Species Rat

NOAEL 1.730 mg/kg NOAEL LOAEL Application Route Exposure time 3.200 mg/kg : Ingestion Exposure time 90 Days

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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2-Furaldehyde:

Species : Rat

NOAEL : 53 mg/kg

Application Route : Ingestion

Exposure time : 13 Weeks

Cinnamaldehyde:

Species : Rat

NOAEL : 200 mg/kg

Application Route : Ingestion

Exposure time : 12 Weeks

Acetaldehyde:

Species : Rat

NOAEL : 125 mg/kg LOAEL : 675 mg/kg Application Route : Ingestion Exposure time : 28 Days

 Species
 : Rat

 NOAEL
 : 0,3 mg/kg

 LOAEL
 : 1 mg/kg

Application Route : inhalation (vapour)

Exposure time : 13 Weeks

Trans-hex-2-en-1-ol:

Species : Rat

NOAEL : > 100 mg/kg
Application Route : Ingestion
Exposure time : 98 Days

Remarks : Based on data from similar materials

Aspiration toxicity

Not classified based on available information.

Components:

fenbendazole:

No aspiration toxicity classification

11.2 Information on other hazards

Endocrine disrupting properties

Product:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Assessment : The substance/mixture does not contain components consid-

ered 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.

Experience with human exposure

Components:

fenbendazole:

Ingestion : Symptoms: Rapid respiration, Salivation, anorexia, Diarrhoea

SECTION 12: Ecological information

12.1 Toxicity

Components:

fenbendazole:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,009 mg/l

Exposure time: 21 d

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.0088 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

M-Factor (Acute aquatic tox- :

icity)

100

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0,00113 mg/l Exposure time: 21 Days

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

M-Factor (Chronic aquatic

toxicity)

: 10

Ethanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 14.200 mg/l

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 5.012 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

: ErC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l Exposure time: 72 h

EC10 (Chlorella vulgaris (Fresh water algae)): 11,5 mg/l

Exposure time: 72 h

Toxicity to microorganisms : EC50 (Protozoa): 5.800 mg/l

Exposure time: 4 h

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Toxicity to fish (Chronic tox-

icity)

NOEC: >= 79 mg/l

Exposure time: 100 d

Species: Oryzias latipes (Japanese medaka)

Toxicity to daphnia and other: aquatic invertebrates (Chron-

ic toxicity)

NOEC: 9,6 mg/l Exposure time: 9 d

Species: Daphnia magna (Water flea)

Diethyl malonate:

LC50 (Pimephales promelas (fathead minnow)): 12 - 17 mg/l Toxicity to fish

Exposure time: 96 h

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 179 mg/l

Exposure time: 48 h

Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aguatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): > 800 mg/l

Exposure time: 72 h

EC10 (Desmodesmus subspicatus (green algae)): 115 mg/l

Exposure time: 72 h

EC50 (Pseudomonas putida): 3.097 mg/l Toxicity to microorganisms

> Exposure time: 16 h Method: DIN 38 412 Part 8

2-Furaldehyde:

Toxicity to fish EC50 (Leuciscus idus (Golden orfe)): 29 mg/l

Exposure time: 48 h

aquatic invertebrates

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 29 mg/l

Exposure time: 24 h

Toxicity to algae/aquatic

plants

NOEC (Microcystis aeruginosa (blue-green algae)): 2,7 mg/l

Exposure time: 8 d

Toxicity to microorganisms EC50: 760 mg/l

Exposure time: 30 min

Method: OECD Test Guideline 209

Toxicity to fish (Chronic tox-

icity)

: NOEC: 0,33 mg/l

Exposure time: 12 d

Species: Danio rerio (zebra fish)

Toxicity to daphnia and other: aquatic invertebrates (Chron-

ic toxicity)

NOEC: 1,9 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Cinnamaldehyde:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Toxicity to fish : LC50 (Danio rerio (zebra fish)): 4,15 mg/l

Exposure time: 96 h

Method: Directive 67/548/EEC, Annex V, C.1.

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3,21 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Chlorella vulgaris (Fresh water algae)): 16,09 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 : 71 mg/l

Exposure time: 3 h Method: ISO 8192

Isovaleraldehyde:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 3,25 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 177 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): 137,37

mg/l

Exposure time: 96 h

EC10 (Desmodesmus subspicatus (green algae)): 101,83

ma/l

Exposure time: 96 h

Toxicity to microorganisms : EC10 (Pseudomonas putida): 310 mg/l

Exposure time: 17 h Method: DIN 38 412 Part 8

Acetaldehyde:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 30,8 mg/l

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 57,4 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

EC10 (Pseudokirchneriella subcapitata (green algae)): > 100

ng/l

Exposure time: 72 h

Method: OECD Test Guideline 201

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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II

Trans-hex-2-en-1-ol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Based on data from similar materials

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 163 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

: ErC50 (Pseudokirchneriella subcapitata (green algae)): 226

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

12.2 Persistence and degradability

Components:

Ethanol:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 84 % Exposure time: 20 d

Diethyl malonate:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 99 % Exposure time: 28 d

Method: Regulation (EC) No. 440/2008, Annex, C.4-A

2-Furaldehyde:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 93,5 % Exposure time: 14 d

Cinnamaldehyde:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 100 % Exposure time: 28 d

Method: OECD Test Guideline 301B

Isovaleraldehyde:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 49,5 %

Exposure time: 28 d

Method: OECD Test Guideline 301D

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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Acetaldehyde:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 80 % Exposure time: 14 d

Method: OECD Test Guideline 301C

Trans-hex-2-en-1-ol:

Biodegradability : Result: Readily biodegradable.

Remarks: Based on data from similar materials

12.3 Bioaccumulative potential

Components:

fenbendazole:

Partition coefficient: n-

octanol/water

: log Pow: 3,32

Ethanol:

Partition coefficient: n-

octanol/water

log Pow: -0,35

Diethyl malonate:

Partition coefficient: n-

octanol/water

log Pow: 0,96

2-Furaldehyde:

Partition coefficient: n-

octanol/water

: log Pow: 0,83

Remarks: Calculation

Cinnamaldehyde:

Partition coefficient: n-

: log Pow: 2,107

octanol/water

Isovaleraldehyde:

Partition coefficient: n- : log Pow: 1,5

octanol/water

Acetaldehyde:

Partition coefficient: n-

: log Pow: 0,45

octanol/water

Trans-hex-2-en-1-ol:

Partition coefficient: n- : log Pow: 1,61

octanol/water Remarks: Calculation

12.4 Mobility in soil

Components:

fenbendazole:

Distribution among environ: log Koc: 3,8 - 4,7

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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mental compartments Method: FDA 3.08

12.5 Results of PBT and vPvB assessment

Product:

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 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components consid-

ered 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.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

According to the European Waste Catalogue, Waste Codes

are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in

discussion with the waste disposal authorities.

Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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N.O.S.

(fenbendazole)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(fenbendazole)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S

(fenbendazole)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(fenbendazole)

IATA : Environmentally hazardous substance, liquid, n.o.s.

(fenbendazole)

14.3 Transport hazard class(es)

Class Subsidiary risks

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

ADR

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo : 964

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen- : 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

rid

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) Conditions of restriction for the following entries should be considered:
Number on list 3

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

Substance(s) or mixture(s) are listed

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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> here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or

not.

Not applicable

Not applicable

Not applicable

Not applicable

Not applicable

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

REACH - List of substances subject to authorisation

(Annex XIV)

Regulation (EC) on substances that deplete the ozone

Regulation (EU) 2019/1021 on persistent organic pollu-

tants (recast)

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import

of dangerous chemicals

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of

major-accident hazards involving dangerous substances.

Quantity 1 Quantity 2 E1

ENVIRONMENTAL 100 t 200 t

HAZARDS

Other regulations:

Note the Working Environment Act § 4-1 and § 4-2 on requirements for the employer to protect pregnant employees against discomfort and injury as a result of the work situation and the working environment.

Note the regulation on organization, leadership and participation, chapter 12 on the work of children and young people.

The components of this product are reported in the following inventories:

AICS not determined

DSL not determined

IECSC not determined

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information Items where changes have been made to the previous version

are highlighted in the body of this document by two vertical

lines.

Full text of H-Statements

H224 Extremely flammable liquid and vapour. H225 Highly flammable liquid and vapour.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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H226 H301 H302 H311 H312 H314 H315 H317 H318 H319 H330 H335 H341 H350 H351 H361fc H373		: Flammable lique: Toxic if swallow: Harmful if swallow: Harmful in contact: Harmful in contact: Causes severe: Causes skin in: May cause and Causes seriou: Causes seriou: Causes seriou: Fatal if inhaled: May cause rest Suspected of contact:	uid and vapour. wed. llowed. ct with skin. tact with skin. e skin burns and eye damage. citation. allergic skin reaction. s eye damage. s eye irritation piratory irritation. causing genetic defects. causing cancer. damaging fertility. Suspected of damaging the mage to organs through prolonged or repeated allowed. quatic life. quatic life with long lasting effects. c life with long lasting effects.		
EUH07	'1	-	Harmful to aquatic life with long lasting effects. Corrosive to the respiratory tract.		

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard

Carc. Carcinogenicity Eye Dam. Serious eye damage : Eye irritation Eye Irrit. : Flammable liquids Flam. Liq. Muta. : Germ cell mutagenicity Repr. Reproductive toxicity Skin Corr. : Skin corrosion Skin irritation Skin Irrit. Skin Sens. Skin sensitisation

STOT RE : Specific target organ toxicity - repeated exposure STOT SE : Specific target organ toxicity - single exposure

FOR-2011-12-06-1358 : Norway. Occupational Exposure limits

FOR-2011-12-06-1358 / : Long term exposure limit

TWA

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good La-

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



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boratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association: IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals: OECD - Organization for Economic Co-operation and Development: OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

compile the Safety Data Sheet

Sources of key data used to : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Classification procedure:

Classification of the mixture:

Repr. 2 H361fd Calculation method STOT RE 2 H373 Calculation method H400 Calculation method Aquatic Acute 1 H410 Aquatic Chronic 1 Calculation method

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

NO / EN