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

1.1. Product identifier

Product name

RATIMOR BRODIFACOUM WAX BLOCKS

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

Relevant identified uses

Rodenticide for the extermination of mice and rats Type of biocidal product: PT14

Uses advised against

To use only for the purposes stated in this Safety Data Sheet or on the product label. Any other use is prohibited. Do not use rodenticide unprotected in places where other animals or people move or stay.

1.3. Details of the supplier of the safety data sheet

<u>Supplier</u>

UNICHEM D.O.O. Address: Sinja Gorica 2, 1360 Vrhnika, Slovenia Phone: +386 1 755 81 50 Fax: +386 1 755 81 55 www.unichem.si E-mail: unichem@unichem.si

1.4. Emergency telephone number

112

+386 1 755 81 50

SECTION 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

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

STOT RE 2; H373 May cause damage to organs (blood) through prolonged or repeated exposure.

- 2.2 Label elements
 - 2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]



Signal word: Warning

H373 May cause damage to organs (blood) through prolonged or repeated exposure.

EUH208 Contains 1,2-benzisothiazol-3(2H)-one. May produce an allergic reaction.

P260 Do not breathe dust.

P314 Get medical advice if you feel unwell.

P501 Dispose of container and unused bait as hazardous waste in accordance with national regulations.

2.2.2. Contains:



chemius.net/T2W81



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2.2.3. Special provisions

Special hazards are not known or expected.

2.3. Other hazards

No information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

For mixtures see 3.2.

3.2. Mixtures

Name	CAS EC Index	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Conc. Limits	REACH Registration No.
1,2-benzisothiazol- 3(2H)-one	2634-33-5 220-120-9 613-088-00-6	, ,	Acute Tox. 4; H302 Skin Irrit. 2; H315 Skin Sens. 1; H317 Eye Dam. 1; H318 Aquatic Acute 1; H400	Skin Sens. 1; H317: C ≥ 0,05 %	-
brodifacoum (ISO)	56073-10-0 259-980-5 607-172-00-1	0,0029	Acute Tox. 1; H300 Acute Tox. 1; H310 Acute Tox. 1; H330 Repr. 1A; H360D STOT RE 1; H372 (blood) Aquatic Acute 1; H400 [M=10] Aquatic Chronic 1; H410 [M=10]	Repr. 1A; H360D: $C \ge 0,003$ % STOT RE 1; H372: $C \ge 0,02$ % STOT RE 2; H373: 0,002 % $\le C < 0,02$ %	-
denatonium benzoate	3734-33-6 223-095-2 -	0,001	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335		-

SECTION 4. FIRST AID MEASURES

4.1. Description of first aid measures

General notes

Remove affected person from the contaminated area to fresh air or well-ventilated area, providing her basic life functions and protect it from the cold or heat. Never give anything by mouth to an unconscious person. Place patient in recovery position and ensure airway patency.

Following inhalation

Remove patient to fresh air - move out of dangerous area. If symptoms develop and persist, seek medical attention.

Following skin contact

Take off all contaminated clothing. Wash affected skin areas thoroughly with plenty of water and soap. If symptoms develop and persist, seek medical attention.

Following eye contact

Immediately flush eyes with plenty of water while keeping eyelids apart (at least 15 minutes). After 5 minutes of rinsing, remove contact lenses, if present, and continue rinsing. If irritation persists, seek professional medical attention.

Following ingestion

Do not induce vomiting! Rinse mouth thoroughly with water. In case of doubt or if feeling unwell seek medical help. Show the physician the safety data sheet or label.



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

Inhalation

Breathing dust can irritate the respiratory tract. Coughing, sneezing, nasal discharge, labored breathing.

Skin contact

Powder can cause localised skin irritation in folds of the skin or under tight clothing. Contact with skin may cause irritation (redness, itching).

Eye contact

Dust irritates the eyes (by mechanical means). Contact with eyes can cause irritation (redness, tearing, pain).

Ingestion

The product contains an anticoagulant which may produce bleeding. Symptoms may be delayed for several days after exposure. In case of poisoning bleeding disorders and increased bleeding tendency my occur. In severe poisoning a strong internal bleeding can cause circulatory collapse and consequent death.

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

In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). ADVICE FOR DOCTORS: Brodifacoum is an indirect anti-coagulant. Phytomenadione, Vitamin K1, is antidotal. Determine prothrombin time not less than 18 hours after consumption. If elevated, administer Vitamin K1 until prothrombin time normalises. Continue determination of prothrombin time for two weeks after withdrawal of antidote and resume treatment if elevation occurs in that time.

SECTION 5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

Unsuitable extinguishing media

Full water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

In case of heating harmful vapours/gases can be generated.

5.3. Advice for firefighters

Protective actions

In case of fire or heating do not breathe fumes/vapours. Cool containers at risk with water spray. If possible remove containers from endangered area.

Special protective equipment for firefighters

Firefighters should wear appropriate protective clothing for firefighters (including helmets, protective boots and gloves) (EN 469) and self-contained breathing apparatus (SCBA) with a full face-piece (EN 137).

Additional information

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- 6.1. Personal precautions, protective equipment and emergency procedures
- 6.1.1. For non-emergency personnel

Protective equipment

Use personal protective equipment (Section 8). Refer to protective measures listed in Sections 7 and 8.

Emergency procedures

Ensure adequate ventilation.

6.1.2. For emergency responders

6.2. Environmental precautions

Do not allow product to reach water/drains/sewage systems or permeable soil. If accidental large entry into water or ground occurs, inform responsible authorities.

6.3. Methods and material for containment and cleaning up

6.3.1. For containment

6.3.2. For cleaning up

Collect in a suitable container and dispose of according to regulations.

6.3.3. Other information

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6.4. Reference to other sections

See also Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

7.1. Precautions for safe handling

7.1.1. Protective measures

Measures to prevent fire

Ensure adequate ventilation.

Measures to prevent aerosol and dust generation

Avoid formation of dust.

Measures to protect the environment

7.1.2. Advice on general occupational hygiene

Refer to instructions on label and regulations for safety and health at work. Use personal protective equipment. Use good personal hygiene practices – wash hands at breaks and when done working with material. Do not eat, drink or smoke while working. Do not breathe dust.

7.2. Conditions for safe storage, including any incompatibilities

7.2.1. Technical measures and storage conditions

Store in original, tightly closed container in a dry place. Store at room temperature. Keep container in a well ventilated place. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children. Keep away from animals. Protect from open fire, heat and direct sunlight. Keep in a locked place.

7.2.2. Packaging materials

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7.2.3. Requirements for storage rooms and vessels

7.2.4. Storage class

7.2.5. Further information on storage conditions

7.3. Specific end use(s)

Recommendations

The product is intended for use as a rodenticide (biocidal agent). Before using this product read the instructions for use.

Industrial sector specific solutions

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.1.1. Occupational exposure limit values

No information.

8.1.2. Information on monitoring procedures

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 482:2012+A1:2015 Workplace exposure. General requirements for the performance of procedures for the measurement of chemical agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values.

8.1.3. DNEL/DMEL values

No information.

8.1.4. PNEC values

No information.

8.2. Exposure controls

8.2.1. Appropriate engineering control

Substance/mixture related measures to prevent exposure during identified uses

Use good personal hygiene practices – wash hands at breaks and when done working with material. Avoid contact with eyes and skin. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Technical measures to prevent exposure

Provide good ventilation and local exhaust in areas with increased concentration. Keep away from food, drink and animal feeding stuffs.

8.2.2. Personal protective equipment

Eye and face protection

Safety glasses with side protection (EN 166).

Hand protection

Protective gloves (EN 374).

Appropriate materials

Material	Thickness	Penetration Time	Remark
PVC			
Butyl rubber			

Skin protection

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

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Respiratory protection

Not needed under normal use and adequate ventilation. In case of dusting use respiratory protection. Use a half-mask (EN 140 or EN 149) with a particle filter P (EN 143).

Thermal hazards

8.2.3. Environmental exposure controls

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

-	Physical state:	solid
-	Colour:	blue or red
-	Odour:	mild, characteristic

Important health, safety and environmental information

-	рН	No information.
-	Melting point/freezing point	No information.
-	Initial boiling point/boiling range	No information.
-	Flash point	not highly flammable (EEC Method A.10)
•	Evaporation rate	No information.
•	Flammability (solid, gas)	No information.
•	Explosion limits (vol%)	No information.
•	Vapour pressure	No information.
•	Vapour density	No information.
•	Density	No information.
-	Solubility	Water: Insoluble
•	Partition coefficient	No information.
-	Auto-ignition temperature	No information.
•	Decomposition temperature	No information.
-	Viscosity	No information.
-	Explosive properties	Product is not explosive. Product is not self igniting.
-	Oxidising properties	Not oxidising.

9.2. Other information

- Remarks:

SECTION 10. STABILITY AND REACTIVITY

10.1. Reactivity

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10.2. Chemical stability

Product is stable under normal conditions of use, recommended handling and storage conditions.

10.3. Possibility of hazardous reactions

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10.4. Conditions to avoid

Avoid high temperatures.

10.5. Incompatible materials

Strong oxidising agents.

10.6. Hazardous decomposition products

Under normal use conditions no hazardous decomposition products are expected. In case of fire/explosion vapours/gases that pose a health hazard are released.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

(a) Acute toxicity

Name	Exposure route	Туре	Species	Time	Value	Method	Remark
brodifacoum (ISO) (56073-10-0)	dermal	LD_{50}	rat		7,48 mg/kg		
brodifacoum (ISO) (56073-10-0)	oral	LD_{50}	rat		< 0,27 mg/kg		
denatonium benzoate (3734-33-6)	oral	LD_{50}	rat		584 mg/kg		
denatonium benzoate (3734-33-6)	dermal	LD_{50}	rabbit		> 2000 mg/kg		

(b) Skin corrosion/irritation

No information.

(c) Serious eye damage/irritation

No information.

(d) Respiratory or skin sensitisation

No information.

(e) (Germ cell) mutagenicity

No information.

(f) Carcinogenicity

No information.

(g) Reproductive toxicity

No information.

Summary of evaluation of the CMR properties

No information.

(h) STOT-single exposure

No information.

(i) STOT-repeated exposure

Additional information: May cause damage to organs (blood) through prolonged or repeated exposure.

(j) Aspiration hazard

No information.

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SECTION 12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1. Acute (short-term) toxicity

For components

Substance (CAS Nr.)	Туре	Value	Exposure time	Species	Organism	Method	Remark
brodifacoum (ISO) (56073-10-0)	EC_{50}	0,04 mg/L	72 h	algae			
	EC_{50}	0,25 mg/L	48 h	crustacea	Daphnia magna		
	LC_{50}	0,042 mg/L	96 h	fish	Oncorhynchus mykiss		
denatonium benzoate (3734-33-6)	LC_{50}	> 1000 mg/L	96 h	fish	Oncorhynchus mykiss		
	LC_{50}	> 1000 mg/L	96 h	fish	Salmo gairdneri		
		13 mg/L	48 h	crustacea	Daphnia magna		

12.1.2. Chronic (long-term) toxicity

No information.

12.2. Persistence and degradability

12.2.1. Abiotic degradation, physical- and photo-chemical elimination

No information.

12.2.2. Biodegradation

No information.

12.3. Bioaccumulative potential

12.3.1. Partition coefficient

For components

Substance (CAS Nr.)	Media	Value	Temperature	рΗ	Concentration	Method
brodifacoum (ISO) (56073-10-0)	Octanol-water (log Pow)	4,9	20 °C	7		
denatonium benzoate (3734-33-6)	Octanol-water (log Pow)	1,78				

12.3.2. Bioconcentration factor (BCF)

No information.

12.4. Mobility in soil

12.4.1. Known or predicted distribution to environmental compartments

No information.

12.4.2. Surface tension

No information.

12.4.3. Adsorption/Desorption

For components

Substance (CAS Nr.)	Туре	Criterion	Value	Evaluation	Method	Remark
denatonium benzoate (3734-33-6)	Soil	Henry constant (H)	1,63E-21 atm m3/mol			25 °C

12.5. Results of PBT and vPvB assessment

No evaluation.

12.6. Other adverse effects

No information.

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12.7. Additional information

For product

No ecotoxicological data available. Avoid release to the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

13.1.1. Product / Packaging disposal

Waste chemical

Disposal must be made according to official regulations: deliver it to authorised collector/remover/transformer of hazardous waste. Any disposal in the environment or discharging into water is prohibited.

Packaging

Deliver completely emptied containers to approved waste disposal authorities.

13.1.2. Waste treatment-relevant information

13.1.3. Sewage disposal-relevant information

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13.1.4. Other disposal recommendations

SECTION 14. TRANSPORT INFORMATION

14.1. UN number

Not applicable.

14.2. UN proper shipping name

ADR, RID, IMDG, ADN, IATA: Not dangerous according to transport regulations.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

NO.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

SECTION 15. REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2015/830)

- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures

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15.1.1. Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)

Not applicable.

15.2. Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Indication of changes

Abbreviations and acronyms

ATE - Acute Toxicity Estimate ADR - Agreement concerning the International Carriage of Dangerous Goods by Road ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways CEN - European Committee for Standardisation C&L - Classification and Labelling CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008 CAS# - Chemical Abstracts Service number CMR - Carcinogen, Mutagen, or Reproductive Toxicant CSA - Chemical Safety Assessment CSR - Chemical Safety Report DMEL - Derived Minimal Effect Level **DNEL - Derived No Effect Level** DPD - Dangerous Preparations Directive 1999/45/EC DSD - Dangerous Substances Directive 67/548/EEC DU - Downstream User EC - European Community ECHA - European Chemicals Agency EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS) EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway) EEC - European Economic Community EINECS - European Inventory of Existing Commercial Substances ELINCS - European List of notified Chemical Substances EN - European Standard EQS - Environmental Quality Standard EU - European Union Euphrac - European Phrase Catalogue EWC - European Waste Catalogue (replaced by LoW - see below) GES - Generic Exposure Scenario GHS - Globally Harmonized System IATA - International Air Transport Association ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air IMDG - International Maritime Dangerous Goods IMSBC - International Maritime Solid Bulk Cargoes IT - Information Technology IUCLID - International Uniform Chemical Information Database IUPAC - International Union for Pure Applied Chemistry JRC - Joint Research Centre Kow - octanol-water partition coefficient LC50 - Lethal Concentration to 50 % of a test population LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose) LE - Legal Entity LoW - List of Wastes (see http://ec.europa.eu/environment/waste/framework/list.htm) LR - Lead Registrant M/I - Manufacturer / Importer MS - Member States MSDS - Material Safety Data Sheet **OC** - Operational Conditions OECD - Organization for Economic Co-operation and Development

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OEL - Occupational Exposure Limit OJ - Official Journal **OR** - Only Representative OSHA - European Agency for Safety and Health at work PBT - Persistent, Bioaccumulative and Toxic substance PEC - Predicted Effect Concentration PNEC(s) - Predicted No Effect Concentration(s) PPE - Personal Protection Equipment (Q)SAR - Qualitative Structure Activity Relationship REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 RID - Regulations concerning the International Carriage of Dangerous Goods by Rail **RIP - REACH Implementation Project** RMM - Risk Management Measure SCBA - Self-Contained Breathing Apparatus SDS - Safety data sheet SIEF - Substance Information Exchange Forum SME - Small and Medium sized Enterprises STOT - Specific Target Organ Toxicity (STOT) RE - Repeated Exposure (STOT) SE - Single Exposure SVHC - Substances of Very High Concern **UN - United Nations** vPvB - Very Persistent and Very Bioaccumulative Key literature references and sources for data

List of relevant H phrases

- H300 Fatal if swallowed.
- H302 Harmful if swallowed.
- H310 Fatal in contact with skin.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H360D May damage the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure .
- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

Provided correct labelling of the product

- Compliance with the local legislation
- Provided correct classification of the product
- Provided adequate transport data

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The information of this SDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this SDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.