

Safety data sheet

according to Regulation (EU) 2015/830

Printing date 16.01.2019

Revision: 16.01.2019

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

- 1.1 Product identifier

- Trade name: **BRODIFACOUM OWB 0.005% RODENTICIDE WAX BLOCK BAIT**

- Sds code/version: 0/19

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

Ready for use rodenticide (biocidal product-PT14)

- Application of the substance / the mixture Ready for use rodenticide (biocidal product-PT14)

- 1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier:

Zapi S.p.A.
Via Terza Strada, 12
35026 Conselve (Pd)
Italy
Tel. +39 049 9597737 Fax +39 049 9597735

E-mail address of the competent person responsible for the SDS: techdept@zapi.it

- Further information obtainable from: Tech. dept.

- 1.4 Emergency telephone number:

Zapi customer service: tel. +39 049 9597737 (9:00-12:00/14:00-17:00)

Italian medical emergency telephone n°: 118

List of the main Italian Poison Centres:

Torino Tel. 011/6637637 Azienda ospedaliera "S.G.Battista" - Molinette di Torino Corso A.M. Dogliotti, 14

Milano Tel. 02/66101029 Ospedale Ca' Granda Niguarda P.zza Ospedale Maggiore, 3

Pavia Tel. 0382/24444 Cen.Naz.Inform.Tossic.Fond. S.Maugeri Via Salvatore Maugeri 10

Firenze Tel. 055/7947819 A.S.L. 10/Universita' degli studi - U.O. Tossicologia Medica Viale Morgagni, 65

Roma Tel. 06/3054343 Policlinico A.Gemelli - Università Cattolica del Sacro Cuore Largo Agostino Gemelli 8

Napoli Tel. 081/7472870 Azienda ospedaliera A. Cardarelli Via Cardarelli, 9

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture

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

Repr. 1A H360D May damage the unborn child.

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

- 2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

- Hazard pictograms



GHS08

- Signal word Danger

- Hazard-determining components of labelling:

brodifacoum

- Hazard statements

H360D May damage the unborn child.

H373 May cause damage to the blood through prolonged or repeated exposure.

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- Precautionary statements

- P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P280 Wear protective gloves.
 P308+P313 IF exposed or concerned: Get medical advice/attention.
 P314 Get medical advice/attention if you feel unwell.
 P405 Store locked up.
 P501 Dispose of contents/container in accordance with local regulation.

- Additional information:

Restricted to professional users.

- 2.3 Other hazards

- Results of PBT and vPvB assessment

- PBT:	
56073-10-0 brodifacoum	
PBT	Brodifacoum fulfils the P, B and T criteria.
- vPvB:	
56073-10-0 brodifacoum	
vPvB	Brodifacoum fulfils the vP criterion.

SECTION 3: Composition/information on ingredients

- 3.2 Mixtures

- Description: Mixture of substances listed below with nonhazardous additions.

- Dangerous components:		
CAS: 56073-10-0	brodifacoum	0.005%
EINECS: 259-980-5	Acute Tox. 1, H300; Acute Tox. 1, H310; Acute Tox. 1, H330; Repr. 1A,	
Index number: 607-172-00-1	H360D; STOT RE 1, H372; Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10)	

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures

- General information: Please refer to the instructions below for each specific way of exposure.

- After inhalation: Supply fresh air and to be sure call for a doctor.

- After skin contact:

Remove contaminated clothing.
 Wash skin with water and then with water and soap.
 If needed, seek for medical advice.

- After eye contact:

Rinse eyes with eye-rinse liquid or water, keep eyelids open at least 10 minutes.
 If needed, seek medical advice.

- After swallowing:

Rinse mouth carefully with water. Never give anything by mouth to unconscious person. Do not provoke vomiting. If swallowed, seek medical advice immediately and show the product's container or label.

Contact a veterinary surgeon in case of ingestion by a pet.

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

This product contains an anticoagulant substance. If ingested, symptoms, which may be delayed, may include nosebleed and bleeding gums. In severe cases, there may be bruising and blood present in the faeces or urine.
 Antidote: Vitamin K1 administered by medical/veterinary personnel only.

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

The primary treatment are the antidote therapy and the clinical assessment. Antidote: Vitamin K1 (phytomenadione). The effectiveness of the treatment should be monitored by measuring the clotting time. Do not interrupt the treatment until the clotting time is back to normality and is stable.
Consult a Poison Control Centre.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media

- **Suitable extinguishing agents:** CO₂, powder or water spray. Fight larger fires with water spray.

- **For safety reasons unsuitable extinguishing agents:** To our knowledge, there are no unsuitable equipments.

- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.

- **5.3 Advice for firefighters** Firefighters equipment in accordance with EN469 European standards.

- Protective equipment:

Do not inhale explosion gases or combustion gases.

Firefighters equipment in accordance with EN469 European standards.

- Additional information

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

- 6.2 Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

- 6.3 Methods and material for containment and cleaning up:

Pick up mechanically.

After cleaning up, ensure adequate ventilation.

Dispose of the material collected according to regulations.

- 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling

When using the product, do not eat, drink or smoke.

Wash hands and directly exposed skin after using the product.

Wear appropriate protective gloves.

Place the product out of the reach of children, birds, pets and farm animals and other non-target animals.

Place the product away from food, drink and animal feeding stuffs, as well as from utensils or surfaces that have contact with these.

- Information about fire - and explosion protection:

See Section 6.

See section 5.

- 7.2 Conditions for safe storage, including any incompatibilities

- Requirements to be met by storerooms and receptacles:

Store in a dry, cool and well ventilated place. Keep the container closed and away from direct sunlight.

Store in places prevented from the access of children, birds, pets and farm animals.

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- Information about storage in one common storage facility:

Place the product away from food, drink and animal feeding stuffs, as well as from utensils or surfaces that have contact with these.

- Further information about storage conditions:

Protect from frost.
Protect from humidity and water.

- 7.3 Specific end use(s) This product is a rodenticide bait for rodents' control.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- 8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:

The product does not contain any substances with critical values that have to be monitored at the workplace.

- PNECs		
56073-10-0 brodifacoum		
Oral	PNEC	1.28x10 ⁻⁵ mg/kg bw (bird)
		1.1x10 ⁻⁵ mg/kg bw (mammal)
	PNEC	0.00004 mg/l (aquatic organisms)
		>0.0038 mg/l (microorganisms)
	PNEC	>0.88 mg/kg (soil)
- Other exposure limit values		
56073-10-0 brodifacoum		
Oral	AEL - short term	3.3x10 ⁻⁶ mg/kg bw (AEL)
	AEL - medium term	6.67x10 ⁻⁶ mg/kg bw (AEL)
	AEL - long term	3.3x10 ⁻⁶ mg/kg bw (AEL)

- 8.2 Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from food, drink and animal feeding stuffs.
Wash hands before breaks and at the end of work.
Do not eat, drink, smoke or sniff while working.

- Respiratory protection: Not required during normal use of the product.

- Protection of hands:



Wear protective chemical resistant gloves during product handling phase (EN 374, category III).

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

- Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
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- **Eye protection:** Not required during normal use of the product.
- **Limitation and supervision of exposure into the environment** See section 6.
- **Risk management measures** Follow the above-reported directions.

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties	
- General Information	
- Appearance:	
Form:	Solid
Colour:	According to product specification
- Odour:	Characteristic
- Odour threshold:	No data available.
- pH-value:	No data available.
- Change in condition	
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	Not applicable (solid).
- Flash point:	Not applicable.
- Flammability (solid, gas):	Not available (the product does not contain any ingredient classified as flammable).
- Ignition temperature:	No data available.
- Decomposition temperature:	No data available.
- Auto-ignition temperature:	Product is not selfigniting.
- Explosive properties:	Product does not present an explosion hazard.
- Explosion limits:	
Lower:	No data available.
Upper:	No data available.
- Oxidising properties	Not oxidising.
- Vapour pressure:	Not applicable.
- Density:	No data available.
- Relative density	No data available.
- Vapour density	Not applicable.
- Evaporation rate	Not applicable.
- Solubility in / Miscibility with	
water:	Insoluble.
- Partition coefficient: n-octanol/water:	No data available.
- Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
- 9.2 Other information	No further relevant information available.

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SECTION 10: Stability and reactivity

- 10.1 Reactivity

Under standard handling and storing conditions, the product does not show any dangerous reaction.
No further relevant information available.

- **10.2 Chemical stability** Stable at room temperature and if used as recommended.

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **10.3 Possibility of hazardous reactions** No dangerous reactions known.

- 10.4 Conditions to avoid

Under standard handling and storing conditions, the product does not show any dangerous reaction.

- 10.5 Incompatible materials:

Store only in original container.

Given the lack of information about possible incompatibilities with other substances, it is recommended not to use it in combination with other products.

- 10.6 Hazardous decomposition products:

No dangerous decomposition products known under normal conditions of storage and use.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects

- **Acute toxicity** Based on available data, the classification criteria are not met.

- LD/LC50 values relevant for classification:

56073-10-0 brodifacoum

Oral	LD50	0.4 mg/kg bw (male rat and mouse)
Dermal	LD50	3.16 mg/kg bw (rat)
Inhalative	LC50/4h	3.05 mg/m ³ (rat)

- Primary irritant effect:

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.

- **Serious eye damage/irritation** Based on available data, the classification criteria are not met.

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.

- **Carcinogenicity** Based on available data, the classification criteria are not met.

- Reproductive toxicity

56073-10-0 brodifacoum

developmental toxicity	Clear developmental toxicity was not observed in rabbits or rats. However, as a precaution, Brodifacoum should be considered teratogenic to humans because it contains the same chemical moiety responsible for the teratogenicity of warfarin, a known human teratogenic agent, and it has the same mode of action that is a known mechanism of teratogenicity in humans.
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May damage the unborn child.

- **STOT-single exposure** Based on available data, the classification criteria are not met.

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- STOT-repeated exposure		
56073-10-0 brodifacoum		
Oral	NOAEL	0.04 mg/kg bw (rat) The study reveals that repeated oral exposure results in toxic effects: prothrombin time prolongation, kaolin-caphalin time prolongation, haemorrhage. Based on the results of the acute dermal and inhalation toxicity studies and route-to-route extrapolation, it is justified to assume a similar concern for serious damage to health by prolonged exposure through dermal and inhalation routes also.

May cause damage to the blood through prolonged or repeated exposure.

- Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- 12.1 Toxicity

- Aquatic and/or terrestrial toxicity:	
56073-10-0 brodifacoum	
LC50/14d	(eisenia foetida) >994 mg/kg dry weight >879.6 mg/kg wet weight
ErC50/72h	0.04 mg/l (selenastrum capricornutum)
EC10/3h	>0.058 mg/l (activated sludge) Based on water solubility at pH 7 and T=20°C.
EC10/6h	>0.0038 mg/l (pseudomonas putida) Based on water solubility at pH 5.2 and T=20°C.
LC50/96h	0.042 mg/l (oncorhynchus mykiss)
LC50 (diet)	0.72 mg/kg food (laughing gull)
NOEC (reproductive toxicity)	0.0038 mg/kg food (bird)
NOEL (reproductive toxicity)	0.000385 mg/kg bw/d (bird)
LD50	0.31 mg/kg bw (mallard duck)
EC50/48h	0.25 mg/l (daphnia magna)

- 12.2 Persistence and degradability

56073-10-0 brodifacoum	
biodegradability	Not easily biodegradable. Brodifacoum will probably partition into sewage sludge/sediment due to its high log Kow and poor water solubility.
photolytic half-life	0.083 days. Degrades rapidly by photolysis.
Hydrolytic half-life	> 1 year. Stable at pH 5, 7 and 9.

- 12.3 Bioaccumulative potential

56073-10-0 brodifacoum	
bioconcentration factor	BCF fish = 35645 (calculated according to TGD eq. 75, using log Kow = 6.12). BCF earthworm = 15820 (calculated according to TGD ed. 82d, using log Kow = 6.12).
octanol-water partition coefficient	log Kow = 6.12 (estimated from measured Koc).

- 12.4 Mobility in soil

56073-10-0 brodifacoum	
DT50	157 days. Persistent.
organic carbon partition coefficient	Koc = 9155 l/kg (pH 7,1-7.6). Immobile in soil.
soil mobility	Under basic conditions (high pH), Brodifacoum is not likely to be adsorbed onto soils or sewage sludge due to the ionisation of the molecule. Under acidic conditions (low pH), Brodifacoum is likely to be adsorbed onto soils or sewage sludge as the molecule is in its neutral or non-ionised form.

- General notes:

Hazardous to wildlife.

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Do not allow the product to reach ground water, water course or sewage system.

- 12.5 Results of PBT and vPvB assessment

- PBT:	
56073-10-0 brodifacoum	
PBT	Brodifacoum fulfils the P, B and T criteria.
- vPvB:	
56073-10-0 brodifacoum	
vPvB	Brodifacoum fulfils the vP criterion.
- 12.6 Other adverse effects	
56073-10-0 brodifacoum	
.	The major environmental concern of Brodifacoum is primary and secondary poisoning of non-target animals.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods

- Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.
At the end of the treatment, dispose of uneaten bait and the packaging in accordance with local requirements.

- Uncleaned packaging:

- **Recommendation:** Dispose of in accordance with local requirements.

SECTION 14: Transport information

- 14.1 UN-Number	
- ADR, ADN, IMDG, IATA	Not applicable
- 14.2 UN proper shipping name	
- ADR, ADN, IMDG, IATA	Not applicable
- 14.3 Transport hazard class(es)	
- ADR, ADN, IMDG, IATA	
- Class	Not applicable
- 14.4 Packing group	
- ADR, IMDG, IATA	Not applicable
- 14.5 Environmental hazards:	
	Not applicable.
- 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.
- UN "Model Regulation":	
	Not applicable

SECTION 15: Regulatory information

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

- Directive 2012/18/EU

- **Named dangerous substances - ANNEX I** None of the ingredients is listed.

- **Seveso category** This product is not subject to Seveso directive dispositions.

- LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

The product does not contain any substance included in annex XIV.

- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 30

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- **Other regulations, limitations and prohibitive regulations** No further information available.
- **Substances of very high concern (SVHC) according to REACH, Article 57** None.
- **Regulation (EC) n. 1005/2009: substances that deplete the ozone layer** None.
- **Regulation (EC) n. 850/2004: persistent organic pollutants** None.
- **Substances listed in Regulation (EC) n. 649/2012 (PIC):** None.
- **15.2 Chemical safety assessment:**
A Chemical Safety Assessment for the mixture has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. Any responsibility derived from misuse of the product or in case of violation of current regulations is refused.

- Relevant phrases

- H300 Fatal if swallowed.
- H310 Fatal in contact with skin.
- H330 Fatal if inhaled.
- 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.

- Abbreviations and acronyms:

NOELR: No Observed Effect Loading Rate
 RD50: Respiratory Decrease, 50 percent
 LC0: Lethal concentration, 0 percent
 NOEC: No Observed Effect Concentration
 IC50: Inhibitory concentration, 50 percent
 NOAEL: No Observed Adverse Effect Level
 EC50: Effective concentration, 50 percent
 EC10: Effective concentration, 10 percent
 AEC: Acceptable Exposure Concentration
 LL0: Lethal Load, 0 percent
 AEL: Acceptable Exposure Limit
 LL50: Lethal Load, 50 percent
 EL0: Effective Load, 0 percent
 EL50: Effective Load, 50 percent
 ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 PNEC: Predicted No-Effect Concentration (REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Acute Tox. 1: Acute toxicity – Category 1
 Repr. 1A: Reproductive toxicity – Category 1A
 STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1
 STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
 Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
 Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

- References

- Biocidal Products Committee (BPC) opinion June 2016 on the active substance;
- Assessment Report on the active substance (available at ECHA website);

- Sources

1. The E-Pesticide Manual 2.1 Version (2001)
2. Regulation (EC) 1907/2006 and following amendments
3. Regulation (EC) 1272/2008 and following amendments
4. Regulation (EU) 2015/830
5. Regulation (EU) 528/2012
6. Regulation (EC) 790/2009 (1st ATP CLP)

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7. Regulation (EU) 286/2011 (2nd ATP CLP)
8. Regulation (EU) 618/2012 (3rd ATP CLP)
9. Regulation (EU) 487/2013 (4th ATP CLP)
10. Regulation (EU) 944/2013 (5th ATP CLP)
11. Regulation (EU) 605/2014 (6th ATP CLP)
12. Regulation (EU) 2015/1221 (7th ATP CLP)
13. Regulation (EU) 2016/918 (8th ATP CLP)
14. Regulation (EU) 2016/1179 (9th ATP CLP)
15. Regulation (EU) 2017/776 (10th ATP CLP)
16. Regulation (EU) 2018/669 (11th ATP CLP)
17. Directive 2012/18/EU (Seveso III)
18. ECHA web site