

Safety Data Sheet

Murin Forte Block

Safety Data Sheet dated 9/2/2018, version 1

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

1.1. Product identifier

Mixture identification:

Trade name: Murin Forte Block

Authorization of Ministry of Health n° : Italian Ministry of health n°IT/2014/000185/AUT

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

Recommended use:

rodenticide

Uses advised against:

All uses not listed in the Recommended uses

1.3. Details of the supplier of the safety data sheet

Company:

Authorization holder:

VEBI ISTITUTO BIOCHIMICO SRL

Via Desman, 43 - 35010 Borgoricco (PD)

Tel. +39 049 9337111 - www.vebi.it

Distributor:

VEBI ISTITUTO BIOCHIMICO SRL

Via Desman, 43 - 35010 Borgoricco (PD)

Tel. +39 049 9337112 - www.vebi.it

Competent person responsible for the safety data sheet:

info@vebi.it

1.4. Emergency telephone number

Antipoison Center - Centro Antiveleni di Milano (Ospedale Niguarda) +39 02 66101029

VEBI ISTITUTO BIOCHIMICO customer assistance: Tel. +39 49 9337111 8:00-12:00- 13:00-17:00

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)



Danger, Repr. 1B, May damage the unborn child.



Danger, STOT RE 1, Causes damage to organs (blood) through prolonged or repeated exposure.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

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Danger

Hazard statements:

H360D May damage the unborn child.

H372 Causes damage to organs (blood) through prolonged or repeated exposure.

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.

P501 Dispose of contents and container in accordance with applicable regulations.

Special Provisions:

None

Contains

Bromadiolone

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards










SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.









3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
500 ppm	bronopol (INN); 2-bromo-2-nitropropan e-1,3-diol	Index number: 603-085-00-8 CAS: 52-51-7 EC: 200-143-0	 3.8/3 STOT SE 3 H335  3.2/2 Skin Irrit. 2 H315  3.3/1 Eye Dam. 1 H318  4.1/A1 Aquatic Acute 1 H400 M=10.  3.1/4/Oral Acute Tox. 4 H302  3.1/4/Dermal Acute Tox. 4 H312
50 ppm	Bromadiolone	CAS: 28772-56-7 EC: 249-205-9	 3.1/1/Dermal Acute Tox. 1 H310  3.7/1B Repr. 1B H360D  3.1/1/Inhal Acute Tox. 1 H330

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			 3.9/1 STOT RE 1 H372  4.1/A1 Aquatic Acute 1 H400 M=1.  4.1/C1 Aquatic Chronic 1 H410 M=1.  3.1/1/Oral Acute Tox. 1 H300
10 ppm	Denantonium Benzoate	CAS: 3734-33-6 EC: 223-095-2	 3.1/4/Oral Acute Tox. 4 H302  3.2/2 Skin Irrit. 2 H315  3.3/2 Eye Irrit. 2 H319  3.8/3 STOT SE 3 H335

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap. Wash with plenty of water and soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

In case of eyes contact:

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

Remove casualty to fresh air and keep warm and at rest.

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

Active ingredient is a so-called second generation anticoagulant rodenticide, which like other Coumarin derivatives, is a vitamin K antagonist. It disrupts the normal blood clotting mechanisms resulting in profuse internal haemorrhage and death.

- Harmful to skin contact; could be absorbed and cause internal hemorrhage.
- Harmful if swallowed; serious risk of internal hemorrhage
- Harmful if inhaled; serious risk of internal hemorrhage
- Soil and water could be contaminated.
- Symptoms may be associated to increased bleeding tendency.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

The anticoagulant rodenticide active substances work by blocking the regeneration of vitamin K 2,3-epoxide to vitamin K hydroquinone. Since, the amount of vitamin K in the body is finite, the progressive block of the regeneration of vitamin K will lead to an increasing probability of a fatal hemorrhage.

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1. To check the prothrombinic activity many times, also after a few days, particularly if the quantity swallowed is high. Diagnosis: changes in prothrombin time (symptoms and clotting tests)
2. Treatment: vitamin K1.
3. In animals and particularly in pets, vitamin K1 can be given even in absence of alterations of the coagulation, because of the gravity of the hemorrhage which can appear in case of ingestion.

Other Medical data:

No significant effects caused by active ingredient in personnel with occupational exposure have been observed.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

Water.

Carbon dioxide (CO₂).

Extinguishing media which must not be used for safety reasons:

None in particular.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove persons to safety.

See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.

Retain contaminated washing water and dispose it.

In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.

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Exercise the greatest care when handling or opening the container.
 Don't use empty container before they have been cleaned.
 Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
 Contaminated clothing should be changed before entering eating areas.
 Do not eat or drink while working.
 See also section 8 for recommended protective equipment.

7.2. Conditions for safe storage, including any incompatibilities

Avoid temperatures > 50°C
 Avoid light and sunlight exposure
 Keep away from food, drink and feed.
 Incompatible materials:
 None in particular.
 Instructions as regards storage premises:
 Adequately ventilated premises.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No occupational exposure limit available
 DNEL Exposure Limit Values
 N.A.
 PNEC Exposure Limit Values
 N.A.

8.2. Exposure controls

Eye protection:
 Use close fitting safety goggles, don't use eye lens.
 Protection for skin:
 Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.
 Protection for hands:
 Butyl caoutchouc (butyl rubber).
 UNI EN 374
 Respiratory protection:
 Not needed for normal use.
 Thermal Hazards:
 None
 Environmental exposure controls:
 None
 Appropriate engineering controls:
 None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes
Appearance and colour:	Red solid	--	--
Odour:	butter	--	--

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Odour threshold:	Not Relevant	--	--
pH:	Not Relevant	--	The measurement of the pH of a 1% w/v aqueous suspension is not considered relevant due to either nature and use of the product (ready to-use solid, not intended for dissolution/ emulsion/ dispersion in water).
Melting point / freezing point:	Not Relevant	--	--
Initial boiling point and boiling range:	Not Relevant	--	--
Flash point:	Not Relevant	--	--
Evaporation rate:	Not Relevant	--	--
Solid/gas flammability:	Not flammable	--	--
Upper/lower flammability or explosive limits:	Not Relevant	--	--
Vapour pressure:	Not Relevant	--	--
Vapour density:	Not Relevant	--	--
Relative density:	1.0201 g/ml	OECD 109	--
Solubility in water:	Non soluble	--	--
Solubility in oil:	Not soluble	--	--
Partition coefficient (n-octanol/water):	Not Relevant	--	--
Auto-ignition temperature:	>200 °C	--	--
Decomposition temperature:	Not Relevant	--	--
Viscosity:	Not Relevant	--	--
Explosive properties:	Not explosive	--	--
Oxidizing properties:	Not oxidant	--	--

9.2. Other information

Properties	Value	Method:	Notes
Miscibility:	Not Relevant	--	--
Fat Solubility:	Not Relevant	--	--
Conductivity:	Not Relevant	--	--
Substance Groups relevant properties	Not Relevant	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

The product is stable for 2 years

10.3. Possibility of hazardous reactions

None

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10.4. Conditions to avoid

Stable under normal conditions.

10.5. Incompatible materials

None in particular.

10.6. Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological information of the product:

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a) acute toxicity

Not classified

Based on available data, the classification criteria are not met

Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg

b) skin corrosion/irritation

Not classified

Based on available data, the classification criteria are not met

Test: Skin Irritant - Route: Skin - Species: Rabbit Negative

c) serious eye damage/irritation

Not classified

Based on available data, the classification criteria are not met

Test: Eye Irritant - Species: Rabbit Negative

d) respiratory or skin sensitisation

Not classified

Based on available data, the classification criteria are not met

Test: Skin Sensitization - Route: Skin - Species: vebi1 Negative

e) germ cell mutagenicity

Not classified

Based on available data, the classification criteria are not met

f) carcinogenicity

Not classified

Based on available data, the classification criteria are not met

g) reproductive toxicity

The product is classified: Repr. 1B H360D

h) STOT-single exposure

Not classified

Based on available data, the classification criteria are not met

i) STOT-repeated exposure

The product is classified: STOT RE 1 H372

j) aspiration hazard

Not classified

Based on available data, the classification criteria are not met

Toxicological information of the main substances found in the product:

bronopol (INN); 2-bromo-2-nitropropane-1,3-diol - CAS: 52-51-7

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat = 307 mg/kg

Test: LD50 - Route: Skin - Species: Rat > 2000 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 0.588 mg/l - Duration: 4h

b) skin corrosion/irritation:

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- Test: Eye Irritant Positive
 Test: Skin Corrosive Positive
- e) germ cell mutagenicity:
 Test: Mutagenesis Negative
- f) carcinogenicity:
 Test: Carcinogenicity Negative
- g) reproductive toxicity:
 Test: Reproductive Toxicity Negative
- Bromadiolone - CAS: 28772-56-7
- a) acute toxicity:
 Test: LD50 - Route: Oral - Species: Rat = 1.31 mg/kg
 Test: LD50 - Route: Skin - Species: Rat = 8.1 mg/kg
 Test: LC50 - Route: Inhalation - Species: Rat = 0.00043 ml/l - Duration: 4h
- c) serious eye damage/irritation:
 Test: Eye Corrosive - Species: Rabbit Negative
- Denantonium Benzoate - CAS: 3734-33-6
- a) acute toxicity:
 Test: LD50 - Route: Oral - Species: Rat = 584 mg/kg

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
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Not classified for environmental hazards

Based on available data, the classification criteria are not met
 bronopol (INN); 2-bromo-2-nitropropane-1,3-diol - CAS: 52-51-7

a) acute toxicity::

Endpoint: EC50 - Species: Daphnia = 1.4 mg/l - Duration h: 48 - Notes: Daphnia magna

Endpoint: EC50 - Species: Algae = 0.4-2.8 mg/l - Duration h: 72 - Notes: Algae

Endpoint: LC50 - Species: Fish = 42.2 mg/l - Duration h: 96 - Notes: Oncorhynchus mykiss

f) Effects in sewage plants:

Endpoint: EC50 > 50 mg/l - Notes: Bacteria

Bromadiolone - CAS: 28772-56-7

a) acute toxicity::

Endpoint: EC50 - Species: Daphnia = 5.79 mg/l - Duration h: 48 - Notes: Daphnia magna

Endpoint: LC50 - Species: Fish = 2.86 mg/l - Duration h: 96 - Notes: Oncorhynchus mykiss

Endpoint: EC50 - Species: Algae = 1.14 mg/l - Duration h: 72 - Notes: Pseudokirchneriella subcapitata

d) Terrestrial toxicity:

Endpoint: LC50 = 918 mg/l - Notes: Eisenia fetida 13d

f) Effects in sewage plants:

Endpoint: EC50 = 132.8 mg/l - Duration h: 3

12.2. Persistence and degradability

N.A.

12.3. Bioaccumulative potential

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N.A.

12.4. Mobility in soil

N.A.

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions. In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number

Not classified as dangerous in the meaning of transport regulations.

14.2. UN proper shipping name

N.A.

14.3. Transport hazard class(es)

N.A.

14.4. Packing group

N.A.

14.5. Environmental hazards

ADR-Environmental Pollutant: No

IMDG-Marine pollutant: No

14.6. Special precautions for user

N.A.

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

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)

Dir. 2000/39/EC (Occupational exposure limit values)

Regulation (EC) n. 1907/2006 (REACH)

Regulation (EC) n. 1272/2008 (CLP)

Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013

Regulation (EU) 2015/830

Regulation (EU) n. 286/2011 (ATP 2 CLP)

Regulation (EU) n. 618/2012 (ATP 3 CLP)

Regulation (EU) n. 487/2013 (ATP 4 CLP)

Regulation (EU) n. 944/2013 (ATP 5 CLP)

Regulation (EU) n. 605/2014 (ATP 6 CLP)

Regulation (EU) n. 2015/1221 (ATP 7 CLP)

Regulation (EU) n. 2016/918 (ATP 8 CLP)

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Regulation (EU) n. 2016/1179 (ATP 9 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

No restriction.

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)

Regulation (EC) nr 648/2004 (detergents).

Dir. 2004/42/EC (VOC directive)

WGK Classification (Water hazard class)

WGK3 - Highly hazardous for water

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

None

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H335 May cause respiratory irritation.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H400 Very toxic to aquatic life.

H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H310 Fatal in contact with skin.

H360D May damage the unborn child.

H330 Fatal if inhaled.

H372 Causes damage to organs through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

H300 Fatal if swallowed.

H319 Causes serious eye irritation.

Hazard class and hazard category	Code	Description
Acute Tox. 1	3.1/1/Dermal	Acute toxicity (dermal), Category 1
Acute Tox. 1	3.1/1/Inhal	Acute toxicity (inhalation), Category 1
Acute Tox. 1	3.1/1/Oral	Acute toxicity (oral), Category 1
Acute Tox. 4	3.1/4/Dermal	Acute toxicity (dermal), Category 4
Acute Tox. 4	3.1/4/Oral	Acute toxicity (oral), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
Repr. 1B	3.7/1B	Reproductive toxicity, Category 1B

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STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3
STOT RE 1	3.9/1	Specific target organ toxicity - repeated exposure, Category 1
Aquatic Acute 1	4.1/A1	Acute aquatic hazard, category 1
Aquatic Chronic 1	4.1/C1	Chronic (long term) aquatic hazard, category 1

This safety data sheet has been completely updated in compliance to Regulation 2015/830. Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Repr. 1B, H360D	Calculation method
STOT RE 1, H372	Calculation method

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods

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by Rail.
STEL: Short Term Exposure limit.
STOT: Specific Target Organ Toxicity.
TLV: Threshold Limiting Value.
TWA: Time-weighted average
WGK: German Water Hazard Class.