Química de Munguía S.A.

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SAFETY DATA SHEET

MURIBROM BLOCK / BROMADIOLONE 0.005% Wax Block

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

1.1 Product identifier:

Trade name: MURIBROM BLOCK
Chemical name : Bromadiolone 0.005 % w/w Wax Block
Registration number: ES/AA-2014-14-00206

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

Formulated bait to control rodent infestation

1.3 Details of the supplier of the safety data sheet

Manufacturer: QUIMICA DE MUNGUIA S.A.
Derio Bidea 51
48100 MUNGUIA- SPAIN
Tel: 946741085Fax:946744829.
e-mail: j.calzada@quimunsa.com

1.4 Emergency telephone number:

Toxicology National Institute (Spain): + 34 91 562 04 20

2.- HAZARDS IDENTIFICATION

Anticoagulant product derived from coumarin that inhibits vitamin K metabolism and blocks prothrombin formation.

2.1 Classification of the substance or mixture

Regulation (EC) nº 1272/2008 [UE-GHS/CLP]: Classification

Not classified

Directive UE 67/584/CE and Directive 1999/45/CE: Classification

Not classified

Harmful effects will be described in 9 and 12 sections.

2.2 Label elements

Labeling according to Regulation (EC) nº 1272/2008 [UE-GHS/CLP]

Hazard pictograms: N.A.
Warning word(s): N.A.
Hazard statements: N.A.
Precautionary statements:

P102	Keep out of reach of children.
P103	Read label before use.
P280	Wear protective gloves and protective clothing
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Labeling according to Directive UE 67/584/CE and Directive 1999/45/CE

Hazard pictograms: N.A.
Symbols: N.A.
Indications of danger: N.A.
Risk Phrases: N.A.
Safety Phrases:

S2	Keep out of the reach of children
S13	Keep away from food, drink and animal foodstuffs
S37	Wear suitable gloves

S46 If swallowed, seek medical advice immediately and show this container or label

2.3 Other hazards

None

3.- COMPOSITION/INFORMATION ON INGREDIENTS

Substance:	**Bromadiolone**			
IUPAC Name :	[3-{ 3-(4'-bromobiphenyl-4-yl)-3-hydroxy-1-phenylpropyl-4-hydroxycoumarin]			
No. CAS	No. CE	Clas. 67/548/CE	Clasificación CLP	Concentration
28772-56-7	249-205-9	T+; N R26/27/28; R48/23/24/25; R50-53; R61	Acute Tox.:1; H300, H310, H330 Tox. Reproduction:1A; H360D STOT RE 1; H372 Acute Aquatic:1; H400 Chronic Aquatic: 1; H410	0,005 % ± 10 %

Sustancia:	**Denatonium benzoate**			
IUPAC Name : : N,N-Diethyl-N-[(2,6-dimethylphenylcarbamoyl)-methyl]-benzylammonium benzoate				
No. CAS	No. CE	Clas. 67/548/CE	Classification CLP	Concentration
3734-33-6	223-095-2	Xn, XiR20/22, R41, R38, R52/53	Acute Tox., Oral: cat. 4; H301, Dermal Irrit. cat. 2; H315 Eyes Irrit.: cat 2; H319 STOT RE: cat. 3; H335	0,002 % ± 10 %

Sustancia:	**Proplenglycol**			
IUPAC Name : 1,3-propaneydiol				
No. CAS	No. CE	Clas. 67/548/CE	Classification CLP	Concentration
57-55-6	200-338-0	N.A.	Not classified	2, 00%

Othersubstances:				
No. CAS	No. CE	No. Índice	Classification CLP	Concentration
			Not classified	Up to 100%

4.- FIRSTS AID MEASURES

4.1. Description of first aid measures

General recomendatios:

Exposition

Remove the affected person/s from the contaminated zone and seek medical advice.

After skin contact: Wash the affected areas with plenty of water and soap. Take off the contaminated clothes.

After eye contact: Flush eyes with plenty of water for several minutes. Seek medical attention.

After ingestion: Wash out mouth with water. If swallowed, DO NOT induces vomiting. Maintain body temperature; breath control. Seek immediate medical attention and show the label an safety sheet.

After inhalation: Bring person to open air.

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

Substance is an anticoagulant and the risk is a potential internal haemorrhage.

Could be absorbed in contact with the skin and cause internal haemorrhage.
If swallowed serious risk of internal haemorrhage.
Other symptoms: pallor, abdominal or back pain.

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

As a rule, symptomatic treatment for compensating the observed effects.
Stomach-wash if haemorrhage symptoms are not observed.
In the event of haemorrhages, inject vitamin K1, control coagulation time, and if necessary give fresh blood transfer.

Antidote: **Vitamin K1** (Konakion ®).

5. - FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Dry chemical, foam and CO_2 are to be used.
Avoid the use of water jets. Water can be used to refresh contiguous zones, objects, recipients and containers exposed to heat.

5.2. Special hazards arising from the substance or mixture

Toxic smoke and fumes can form due to the combustion or exposure to heat.

5.3. Advice for fire-fighters

Wear usual fire protection and self contained breathing equipment.
AVOID INHALATION OF FUMES AND SMOKE.
FIRES PRODUCED IN CONFINED SPACES SHOULDS BE DEALT WITH BY QUALIFIED PERSONEL WEARING CERTIFIED BREATHING EQUPMENT.

6. - ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Do not inhale the powder that could be generated.
Stay upwind from the spillage.
Be protected adequately using aprons, gloves, eye protection and dust filter mask. (See section 8).

6.2. Environmental precautions

Avoid that the product reaches drains, water drains, and penetrates in the soil.
In the case of spillage in water, use adequate barrier devices to avoid the dispersion of the product.
Contact the competent authorities if situation cannot be controlled.

6.3. Methods and material for containment and cleaning up

Contain the spilled product. Avoid spillage of the product into drains or riverbeds, in order to minimize the risk of pollution.
Collect the spillage with a spade and deposit it in a secure and closed container, mentioning the relative risks of the product and deliver it to a company duly authorized for its destruction. Incineration is the recommended treatment.

6.4. Reference to other sections

See sections 8 and 13.

7. - HANDLING AND STORAGE

7.1. Precautions for safe handling

Insure correct ventilation. Avoid inhaling the smoke, vapours or dust generated during handling.
Avoid extended or frequent contact of the product with the skin. Use special protective gloves for chemical products

(nitrile). Wash the gloves with plenty water and soap after handling.
Wash hands after each utilization. Moisturizing creams after washing hands can avoid skin dryness and chapping.
Avoid contact with the eyes. In the event of risk, use adequate ocular protection.
Personal hygiene after work.

7.2. Conditions for safe storage, including any incompatibilities

Store in fresh and dry place. Keep away from sources of ignition and heat.
Keep locked up and out of the reach of children and domestic animals.
Keep away from foods and drinks.
Keep in its original packing.
Packing material to avoid: None.

7.3. Specific end use(s)

Formulated bait to control rodent infestation

8. - EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

AOEL sub chronic / chronic:	0.0012 µg/kg bw /day	**(*)**
AOEL acute:	0.0023 µg/kg bw /day	**(*)**

(*) Referred to active ingredient Bromadiolone

8.2. Exposure controls

Technical controls:

Handle with appropriate hygiene precautions and follow the instructions.
Wash hands during breaks and at the end of workday.

Personal protection:

- *Respiratory protection:* Respiratory protection equipment is not necessary when the concentration of dust, vapour and smokes is maintained at a correct level, but it is recommended.
- The use of respiratory equipment must be done according to the instructions of the manufacturer and to the regulation and rules for its utilization.
- Filter P2 (for solid and liquid particles, DIN 3181).
- *Hand protection:* Use gloves to prevent skin contact.
- *Eye protection:* Use safety goggles or face shield when eye contact can occur.
- *Skin protection:* Use wear-once-only clothes and eliminate them when contaminated. Dry wash and starch are recommended.
- *Industrial hygiene:* Eye fountain and washing facilities in the working area. Personal hygiene after work.

9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

a - Appearance:	Red Wax Blocks
b - Odour:	Aromatic
c - Odour threshold;	N.A.
d - pH:	N.A.
e - Melting point;	N.A.
f - Initial boiling point and boiling range;	N.A.
g - Flash point;	N.A.
h - Evaporation rate;	N.A.
i - Flammability (solid, gas) ;	N.A.

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j - Upper/lower flammability or explosive limits;	N.A.
k - Vapour pressure;	N.A.
l - Vapour density;	N.A.
m - Relative density;	N.A.
n - Solubility(ies) at 20 º C.;	N.A.
o - Partition coefficient: n-octanol/water;	Log P 4.10 at pH 7 **(*)**
p - Auto-ignition temperature;	N.A.
q - Decomposition temperature;	N.A.
r - Viscosity;	N.A.
s - Explosive properties;	Not explosive
t - Oxidising properties.	Not highly oxidizing

(*) Referred to active ingredient Bromadiolone

9.2. Other information

None

10. - STABILITY AND REACTIVITY

10.1 Reactivity

None

10.2 Chemical stability

Stable at normal conditions

10.3 Possibility of hazardous reactions

None

10.4 Conditions to avoid

Exposure to high temperatures

10.5 Incompatible materials

Strong oxidant agents

10.6 Hazardous decomposition products

Thermal decomposition can generate toxic compounds

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11.- TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

a - Acute toxicity:

Oral:	Rat:	Oral LD_{50}	1.125	mg/kg	***(*)***
	Rabbit:	Oral LD_{50}	1.0	mg/kg	***(*)***
	Dog:	Oral LD_{50}	8.1	mg/kg	***(*)***
	Cat:	Oral LD_{50}	25.0	mg/kg	***(*)***
Dermal:	Rabbit	Dermal LD_{50}	1.71	mg/kg	***(*)***
Inhalation: Rats		Inhalation LC50	0.43 µg/L (males and females combined)		***(*)***

(*) Referred to active ingredient Bromadiolone

b - Skin corrosion/irritation; Not irritant
c - Serious eye damage/irritation; Not irritant
d - Respiratory or skin sensitisation; Not sensitizer (Buehler test)
e - Germ cell mutagenicity; N.A.
f - Carcinogenicity; N.A.
g - Reproductive toxicity; N.A.
h - STOT-single exposure; N.A.
i - STOT-repeated exposure; N.A.
j - Aspiration hazard. N.A.

12- ECOLOGICAL INFORMATION

12.1. Toxicity

Aquatic toxicity:

Oncorhynchus mykiss	LC_{50}	2.86	mg/L (96 h.)	***(*)***
Daphnia magna	EC_{50}	5.79	mg/L (48 h.)	***(*)***
Rainbow trout:	LC_{50}	1.4	mg/L (96 h.)	***(*)***
Pseudokirchneriella subcapitata	E_rC_{50}	1.14	mg/L (72 h.)	***(*)***
Activated sludge	EC_{50}	132.8	mg/L (extrapolated) (3 h.)	***(*)***

Effects on earthworms or other soil non-target organisms

Eisenia fetida	LC50	918	mg/L wet soil - 13 days	***(*)***

Birds toxicity:

Japanese quail	LD_{50}	134	mg/Kg.	***(*)***
Bobwhite quail)	LD_{50}	138	mg/Kg.	***(*)***

(*) Referred to active ingredient Bromadiolone

12.2. Persistence and degradability

Degradation in soil is slow.

Aerobic degradation: half life = 53 days
Anaerobic degradation: half life = 60 days

12.3. Bioaccumulative potential

N.A.

12.4. Mobility in soil

N.A.

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12.5. Results of PBT and vPvB assessment

Considered as PBT substance.

12.6. Other adverse effects

N.A.

13 - DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product:

In the EEC there is not a consensus on the regulation for the elimination of chemical residues. Their elimination is regulated by local laws and arrangements. We request contact with the competent authority so as to be informed about each particular case.

Containers:

Their elimination must be accomplished according to the local official arrangements. The same measures should be adopted for the contaminated containers as for the product.

Incineration is the preferred method.

14.- TRANSPORT INFORMATION

14.1. UN number

Not Classified

14.2. UN proper shipping name

Coumarin derivative pesticide, liquid, toxic.

14.3. Transport hazard class(es)

Rail and road transport ADR/RID:	Not Classified
Sea shipment:	Not Classified
Air shipment:	Not Classified

14.4. Packing group

Rail and road transport ADR/RID:	Not Classified
Sea shipment:	Not Classified
Air shipment:	Not Classified

14.5. Environmental hazards

Rail and road transport ADR/RID:	None
Sea shipment:	None

14.6. Special precautions for user

N.A.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

N.A.

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15.- REGULATORY INFORMATION.

MSDS was done according to:

Regulation EC Nº 1907/2006 (Reach), and
Regulation EC Nº 453/2010

Clasification and labelling according to:

Directive 67/548/CE (Classification, bulking and labelling of the dangerous substances) and next modified.
Directive 1999/45/CE
Regulation EC Nº1272/2008 (CLP) and modifications

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

Directive 98/8/CE (Biocides)
Regulation (EU) 528/2012
Sanco /10203/2011 rev 4
CAR Bromadiolone

15.2. Chemical safety assessment

Not available

16. - OTHER INFORMATION

Track Changes:

Adaptation to the requirements of Regulation (EC) No 453/2010.
Modification Classification and labelling in agreement to Assessment Report of Bromadiolone
Modified paragraphs 2, 3,14 and 15, minor corrections other sections.
Modification according to the biocidal product authorisations (RMS: Spain), November 2013.

Abbreviations

N.A. – Not available
PG – Packing Group / Grupoembalaje
PI – PackingInstructions / Instrucciones de embalaje
SP – SpecialProvisions / Disposiciones Especiales

The data supplied on this safety data sheet is based on our current knowledge and on the current ECC regulations, and describes only the safety measures in the managing of the product. No warranty, express o implied is made.