



Development, Production, and Marketing of advanced pest control solutions

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## MATERIAL SAFETY DATA SHEET – CUFTION PLUS

### 1. IDENTIFICATION OF THE MIXTURE AND OF THE COMPANY

1.1. Product name: CUFTION PLUS

1.2 Relevant uses: Rodenticide bait

1.3 Details of the supplier of the Material Safety Data Sheet:

Distributor: RPC Ltd.  
P.O.BOX 128 – NES HARIM  
Tel. 1-700-500-405

1.4 Emergency telephone number:

Tel. RPC Pest Control Co. Ltd. 1-700-500-405  
Tel. Anti-poison center Harambam Hospital +972-48541900

### 2. HAZARD IDENTIFICATION

2.1 Classification of the mixture

Directive 1999/45/CE classification: The mixture is not classified dangerous

If the classification is uncompleted, make reference to the section 16 for the complete text. Harmful effects will be described in 9 and 12 sections.

2.2 Label elements  
N.A.

2.3 Other hazards  
N.A.

### 3. COMPOSITION/ INFORMATIONS ON INGREDIENT

3.1 Substances: N.A.

3.2 Mixture

NAME	CAS	Class 67/548/CE	Class CLP	Conc. % w/w
Brodifacoum	56073-10-0	T+,N; R27/28 R48/24/25,R50/53	Acute Tox cat 1 H300,H310 STOT.RE H372 Tox acq Acute1 H400 Tox acq Chron 1H410	0,0050
Denatonium benzoate	3734-33-6	Xn,Xi; R20/22,R41,R38,R52/53	eye damage cat1 H318 Skin corrosive cat2 H315 Tox.acq.acute cat4 H302,H332 Tox.acq.chron.cat.3 H412	0,001

If the classification is uncompleted, make reference to the section 16 for the complete text.



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## 4. FIRST AID MEASURES

This product is not dangerous for the health but here follow there are same information about the Active ingredient Brodifacoum.

### 4.1 Description of first-aid measures (Brodifacoum)

Way of exposure:

General indications: In any case, it's better to seek medical advice. Do not give any substance through mouth to unconscious people.+

Skin contact: Take off immediately all contaminated clothing. Wash skin immediately with water, followed by soap and water. Such action is essential to minimize contact with skin. Contaminated clothing should be laundered before re-issue

Eye contact: Immediately irrigate with eyewash solution or clean water holding the eyelids apart, for at least 15 minutes. Obtain immediate medical attention.

Ingestion: TRANSFER TO HOSPITAL IMMEDIATELY, Refer to the leaflet 'The treatment of Anticoagulant Rodenticide Poisoning', 1988. Induce vomiting, if this has not already occurred by tickling the back of the throat with a clean, blunt instrument (e.g. spoon handle).

Inhalation: Unlikely to be hazardous by inhalation unless present as a dust. Remove patient from exposure, keep warm and at rest. Obtain medical attention as a precaution.

### 4.2 Most important symptoms and effects, both acute and delayed (Brodifacoum)

Brodifacoum 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 (Brodifacoum). The anticoagulant rodenticide active substances such as Brodifacoum 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.

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)

Treatment: vitamin K1. 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 *Brodifacoum* in personnel with occupational exposure have been observed.

## 5. FIREFIGHTING MEASURES

### 5.1 Extinguishing media

For small fires, use foam, carbon dioxide or dry powder extinguish ant.

For large fires, use foam or water-fog; avoid use of water jet. Contain run-off water with, for example, temporary earth barriers.

5.2 Special hazards arising from the substance: In case of combustion can produce toxic gas

### 5.3 Advises for firefighters

Keep fire exposed containers cool by spraying with water. A self-contained breathing apparatus and suitable protective clothing should be worn in fire conditions.



## 6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedure: N.A.

6.2 Environmental precautions: N.A.

6.3 Methods and materials for containment and cleaning up: N.A.

6.4 Reference to other sections: If necessary, see 8 and 13 sections.

## 7. HANDLING AND STORAGE

7.1 Precautions for safe handling: use all the individual precautions provided to avoid contact. Protect eyes and skin. When using do not eat, drink or smoke.

7.2 Conditions for safe storage, included any incompatibilities. Keep container tightly closed in cool and dry places, far from unauthorized people, far from foods and domestic animals. Protect from direct solar rays. Keep far from combustion fonts. Accurate ventilation/aspiration in work places.

7.3 Specific end use: The mixture is used as rodenticide bait

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control Parameters

DNEL: N.A.

PNEC: N.A.

Exposure control

Respiratory protection: Not Necessary

Hand protection: Gloves for chemical products. Foresee the periodic substitution.

Eye protection : Goggles for chemical products.

Skin protection: Protective clothes. Foresee the periodic substitution.

All the usual precautions for handling chemical products have to be followed.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Aspect	Solid Blue
Odour	Characteristic
pH	6,91 (1% aqueous solution at 22°C)
Self ignition point	304,9°C
Flammability	Not Highly Flammable
Tap density	1,308 g/ml
Dustiness	nearly dust free
Flow ability	No changes after 14 days at 54° under pressure

9.2 Other information: N.D.



## 10. STABILITY AND REACTIVITY

- 10.1 Reactivity: None  
10.2 Chemical stability: Stable, in commercial original packaging and following label conditions, for two years (study n° CH 363-2010 Chem service)  
10.3 Possibility of hazardous reaction: None  
10.4 Condition to avoid: None  
10.5 Incompatible materials: None  
10.6 Hazardous decomposition products: None

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

Cuftion Plus Pellet is not skin irritant (study n° JRF 406-1-01-2062 of JAI Research Foundation)

Cuftion Plus Pellet is not eye irritant (study n° JRF 407-1-01-2063 of JAI Research Foundation)

Cuftion Plus Pellet is not dangerous for the health but here following there are toxicological information about active ingredient Brodifacoum:

Rat LD50 oral acute	<5 mg/kg bw
Rat LD50 dermal acute	7,48 mg/kg bw (female rats)
Rat NOAEL	0,04 mg/ kg bw/day
Skin irritation	Not irritating
Eye irritation	Not irritating
Skin sensitization	Not skin reaction (LLNA test on mice)
Maternaltoxicity (rabbit):	LOAEL 0,004 mg/kg bw/day/ NOAEL 0,002 mg/kg bw/day

## 12. ECOLOGICAL INFORMATION

Cuftion Plus Pellet is not dangerous for the environmental but here following there are ecotoxicological information about three active ingredients dangerous for environmental Brodifacoum and Denatonium benzoate

Use following good practice, avoid to spread it in the environment (see also 6,7,13,14 e 15 sections). There aren't eco-toxicity information regard the mixture but only for the singular substances environmental dangerous whose is composed.

### 12.1 Toxicity

Brodifacoum: Toxic effects on fish, plankton and other organisms. Limited risk for the waters.

*Oncorhynchus mykiss* 96 h LC50 = 0,042 mg/L (nominal)

*Daphnia magna* 48 hours immobilization EC50 = 0,25 mg/L (nominal)

*Selenastrum capricornutum* 72 hours growth rate (gr) ErC50 = 0,04 mg/L

Activated sludge 3 hours EC50 >0,058 mg/L (based on water solubility at pH 7 and T = 20°C)

Effects on earthworms or other soil non-target organisms

Acute toxicity to *Eisenia fetida* 14 days LC50 = 994 mg/Kg dwt (>879,6mg/Kg wwt)

Effects on terrestrial vertebrates

Acute toxicity to mammals

LD50 = <5 mg/kg bw (rat)

Two-generation repr toxicity study in rat females),

NOAEL 0.001mg/kg bw/d (rat, parent corresponding to NOEC 0.02 mg/kg food.

Acute toxicity to birds

LD50 = 19 mg/kg bw (Japanese quail)

Reproductive toxicity to birds

NOEC = 0.012 mg/kg food

NOEL = 0.0012 mg/kg bw/d

NOEC > 0.01 mg/Kg



Denatonium benzoate:

Fishes LC50 (96h) : >1000mg/L

LC50 (shrimp)(96h): >400mg/L

*Daphnia magna* EC50 (48h):13mg/L

12.2 Persistence and degradability

Brodifacoum:

Route and rate of degradation in water. No hydrolysis was found at the investigated pH4, pH7 and pH9. Photolytic/photo-oxidative degradation  $t_{1/2} = 0.083$  days. Direct photolysis in air is  $t_{1/2} = 6.61$  h..

Denatonium benzoate:

In water: abiotic degradation 10% after 30 days at 25°C all Ph values

12.3 Bioaccumulative potential

Brodifacoum: No reliable estimate

Denatonium benzoate: LogPow=0,9

12.4 Mobility in soil

Brodifacoum: Koc = 50000 (The Pesticide Manual 13th edition) The DT50 in soil is 157 days at 20 °C, the DT50 considering the temperature correction to 12°C is 298 days.

Denatonium benzoate: N.D.

12.5 Results of PBT e vPvB assessment

Brodifacoum: Brodifacoum is considered a potential PBT

Denatonium benzoate: N.D.

12.6 Other adverse effects:

Brodifacoum: N.D.

Denatonium benzoate: N.D.

### 13. DISPOSAL CONSIDERATIONS

13.1 Waste and treatment methods

Arrange disposal by incineration or with other approved suitable treatments.

Elimination according with the local Authority Regulations. In a professional use, containers, even if completely empty, must be clean up before to be disposed.

### 14. TRANSPORT INFORMATION

14.1 UN number N.A.

14.2 UN proper shipping name N.A.

14.3 Transport hazard class

Rail and road transport ADR/RID: class N.A.

Sea shipment IMDG: class N.A.

Fly shipment IATA: class N.A.

14.4 Packing Group

Rail and road transport ADR/RID: Group N.A.

Sea shipment IMDG: Group N.A.

Fly shipment IATA: Group N.A.

14.5 Environmental hazards

Rail and road transport ADR/RID: N.A.

Sea shipment IMDG: N.A.

14.6 Special precautions for user N.A.

14.7 Transport of bulk according to Annex II of MARPOL 73/78 and the IBC code N.A.

### 15. REGULATORY INFORMATION

15.1 Safety, health Rules and environment Regulation/Legislations specific for the mixture

Directive 67/548/CE (Classification, Packaging and Labeling of dangerous substances) and next modified; Directive 99/45/CE (Classification, Packaging and Labeling of dangerous mixture) and next modified;



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Regulation n°1907/2006/CE (REACH);

Regulation n°1272/2008/CE (CLP);

Regulation n°790/2009/CE (with modified, to promote the technical and scientific improvement, ATP of Regulations n°1272/2008/CE)

Directive 453/2010/CE

Directive 98/24/CE (Safety and health protection of worker against chemical agents risk)

15.2 Chemical safety assessment: N.A.

## 16. OTHER INFORMATIONS

This information is based on our present state of knowledge and according to the last labeling regulation. Do not use the mixture in way different to the one described in the 1 section, without previous written authorization.