Regulation (EU) No 528/2012 concerning the making available on the market and use of biocidal products

PRODUCT ASSESSMENT REPORT OF A BIOCIDAL PRODUCT FOR THE MAJOR CHANGE AND RENEWAL OF A NATIONAL AUTHORISATION

Product identifier in R4BP	CHEMRAT DIFE
Product type(s):	14 (Rodenticide)
Active ingredient(s):	Difenacoum
Case No. in R4BP	BC-BN025604-44 (NA-MAC) BC-CM029974-28 (NA-RNL)
Asset No. in R4BP	ES-0014214-0000
Evaluating Competent Authority	Spain
Internal registration/file no	ES/BB(NA)-2018-14-00375
Date	August 2018

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1 Conclusion

The assessment presented in this report includes the major change submitted by the applicant according to Implementing Regulation 354/2013 in order to include the trained professional user.

The assessment presented in this report has shown that the ready-to-use product, CHEMRAT DIFE with the active substance difenacoum, at a level of 0.005% w/w, may be authorised for use as a rodenticide (product-type 14) since the conclusions of initial evaluation remain valid.

For clarification, this product CHEMRAT DIFE (authorised in June 2016) was an identical product to AGRORAT DIFE-5 (currently AGRORAT DIFE-3, asset number ES-0000105-0000) which was authorised in November 2012. In February 2018 was authorised a major change and the renewal requested by the applicant. The major change consisted in the decrease of the active substance concentration difenacoum from 50ppm to 29ppm so the product was named AGRORAT DIFE-3. This major change was not requested for CHEMRAT DIFE. The conclusions to the previous assessment (referred to the product AGRORAT DIFE-5) remain valid.

However, the biocidal product CHEMRAT DIFE contains 0.005 %w/w difenacoum and the Commission Regulation (EU) 2016/1179 of 19 July 2016 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures has been applied.

Due to national legislation in relation to categories of users which three categories of users are established (general public, professional and trained professional user) based on the qualification obtained, therefore the professional is extrapolated to the general public (under this national regulation the professional user is not bounded to use PPE when they apply the product). For that, the biocidal product rodenticides containing 0.005 %w/w difenacoum only can be authorised by trained professional user because of the toxicological classification the use of PPE are mandatory. Given that, this legislation is national and in other Member States legislation could be different, each Competent Authority should consider that in order to grant the authorisation.

Therefore, CHEMRAT DIFE can be authorised as a rodenticide product against house mice (*Mus musculus*) and brown rats (*Rattus norvegicus*). It is to be used indoors, outdoors around buildings, outdoor in open areas and waste dumps by trained professional. It is a ready to used grain bait to be used in tamper-resistant bait stations. The specific intended uses of the product are in section 2.4. of this assessment report.

According to the renewal of anticoagulant active substance for trained professional users the product may be authorised for use in covered and protected bait points other than tamper resistant bait stations. The applicant has not submitted any additional information to include these application methods, so the ES CA does not authorise other use different to tamper resistant bait stations.

The risk assessment for the environment has been performed for the intended uses in and around buildings, sewer system, open areas, and waste dumps since the concentration of the active substance is the same, the new evaluation shows that the conclusions for the first evaluation remain valid.

The overall conclusion is that the intended uses of CHEMRAT DIFE do not pose an unacceptable risk to the sewage treatment plant, soil, air, surface water, sediment, and groundwater compartments.

However, an unacceptable risk is however identified for the primary and secondary poisoning of non-target vertebrates, and specific risk mitigation measures on the use of the product are required to reduce the risk for the environment. The risk for primary poisoning can be significantly reduced by deploying baits so that they cannot be reached by the non-target animals, using the baits in tamper-resistant bait stations, and applying the granulate formulations only inside buildings. The risk for secondary poisoning is more difficult to control, as poisoned rodents may be available for predators for several days after intake of difenacoum. One way to reduce the risk is to limit the field of use of grain baits to indoor use only. Carcases and unconsumed baits must be collected during and after the control campaign to reduce the secondary poisoning.

Please, note that this assessment report includes all uses requested by the applicant and assessed by ES CA, only as information for the concerned Member States.

Spanish CA only grants the use of CHEMRAT DIFE according to the table 5 included in this assessment report due to our national risk mitigation measures.

2 Summary of the product assessment

2.1 Administrative information

2.1.1 Identifier in R4BP

CHEMRAT DIFE

2.1.2 Manufacturer(s) of the product

Name of manufacturer	LABORATORIOS AGROCHEM S.L.
Address of manufacturer	C/ Tres Rieres, 10 08292 - Esparreguera (Barcelona) SPAIN
Location of manufacturing sites	C/ Tres Rieres, 10 08292 - Esparreguera (Barcelona) SPAIN

2.1.3 Manufacturer(s) of the active substance(s)

Active substance	Difenacoum
Name of manufacturer	Activa s.r.l
Address of manufacturer	Via Feltre, 32 20132 Milano Italy
Location of manufacturing sites	Dr Tezza s.r.l Via Tre Ponti 22 37050 S. Maria di Zevio (VR) - Italy

2.2 Composition and formulation

2.2.1 Qualitative and quantitative information on the composition

Table 1

Common name	IUPAC name	Function	CAS number	EC number	Content (%)
Difenacoum	3-(3-biphenyl-4-yl-1,2,3,4-tetrahydro-1-naphthyl)-4-hydroxycoumarin	Active substance	56073-07-5	259-978-4	0.005
-	-	Non-active substance	-	-	-

- The product contains a bittering agent and a dye.

  - Information on the full composition is provided in the confidential annex (see chapter **¡Error! No se encuentra el origen de la referencia.**).

- According to the information provided the product contains no nanomaterial as defined in Article 3 paragraph 1 (z) of Regulation No. 528/2012

2.2.2 Information on the substance(s) of concern

No substance of concern was identified upon initial assessment (the application for authorisation was submitted and the assessment took place before the Biocidal Products Regulation 528/2012 entered into force).

2.2.3 Candidate(s) for substitution

No candidate for substitution was identified upon initial assessment (the application for authorisation was submitted and the assessment took place before the Biocidal Products Regulation 528/2012 entered into force).

Now that the Biocidal Products Regulation 528/2012 entered into force, the following substance(s) was/were identified as candidate(s) for substitution upon this renewal:

Difenacoum does meet the exclusion criteria according to Article 5(1) BPR. Because the following exclusion criteria are met:

- toxic for reproduction category 1B
- persistent and very persistent, bioaccumulative and toxic

And therefore, difenacoum does meet the conditions laid down in Article 10 BPR, and is consequently a candidate for substitution.

2.2.4 Type of formulation

Ready-to-use bait: grain.

2.3 Classification and Labelling according to the Regulation (EC) No 1272/2008

Table 2

Classification **Hazard classes, Hazard categories**	**Hazard statements**
Reproductive toxicity; Repr. 1B	H360D May damage the unborn child
Specific target organ toxicity — repeated exposure; STOT RE 2	H373 May cause damage to organs (blood) through prolonged or repeated exposure

Table 3

Labelling	**Code**	**Pictogram / Wording**
	GHS08	
Signal word	-	Danger
Hazard statements	H360D	May damage the unborn child
	H373	May cause damage to organs (blood) through prolonged or repeated exposure
Supplemental hazard information	-	-
Supplemental label elements	-	-
Precautionary statements	P201	Obtain special instructions before use.
	P202	Do not handle until all safety precautions have been read and understood.
	P260	Do not breathe dust.
	P264	Wash … thoroughly after handling
	P270	Do not eat, drink or smoke when using this product.
	P280	Wear protective gloves.
	P314	Get medical advice/attention if you feel unwell
	P405	Store locked up.
	P501	Dispose of contents and/ or container as a hazardous waste to a registered establishment or undertaking, in accordance with current regulations.
Note	-	

2.4 Use(s) appropriate for <u>further</u> authorisation

In order to make proper use of the standard sentences for SPCs for rodenticides it is considered necessary to split the uses currently authorised in Spain further down:

Table 4

Use(s) considered appropriate for authorisation after former assessment (uses currently under authorisation in Spain)		**Use(s) appropriate for further authorisation**	
1	House mice and/or brown rats –general public – indoor	1	House mice and/or brown rats – trained professionals – indoor
2	House mice and/or brown rats – professional– indoor	2	House mice and/or brown rats – trained professionals – outdoor around buildings
-	-	3	Brown rats – trained professionals – Outdoor open areas & waste dumps

Uses authorized in Spain according national Risk Mitigation Measures

Table 5

Use(s) considered appropriate for authorisation after former assessment (uses currently <u>under authorisation in Spain</u>)	**Use(s) appropriate for authorisation in Spain according national Risk Mitigation Measures.**
House mice and/or brown rats –general public – indoor	House mice and/or brown rats – trained professionals – indoor
House mice and/or brown rats – professional– indoor	Brown rats – trained professionals – outdoor around buildings

2.4.1 Use 1 - House mice and/or brown rats – trained professionals – indoor

Product Type(s)	14
Where relevant, an exact description of the use	Rodenticide
Target organism(s) (including development stage)	*Mus musculus* (house mice) *Rattus norvegicus* (brown rats)
Field(s) of use	Indoor
Application method(s)	- Ready-to-use bait to be used in tamper-resistant bait stations, in sachets or as loose grain.
Application rate(s) and frequency	**Rats:** bait boxes with 100-200 g per baiting point **Mice**: bait boxes with 60-80 g per baiting point
Category(ies) of users	Trained professionals
Pack sizes and packaging	**Minimum pack size of 3 kg.**

material	Grain in sachets: Individual sachets of 10, 15, 20, 25, 50, 75, 90, 100 or 200 grams inside closure packaging up to 30Kg. Loose grains: Packs of loose grain up to 30kg. Package is restricted to separately packed bags with a maximum of 10kg per packed bag. Sachets material: Paper or sachets of: PP or PE or PET or LDPE or PET/PET MET/PE or PET/ALU/PE or PET/PE or PA/PE Packaging material: Plastic bottles or buckets: HDPE or PE or PP or PET or PVC. Carton bags of: PET or LDPE or Paper Kraft. Carton boxes.

2.4.1.1 Use-specific instructions for use

- Remove the remaining product at the end of treatment period.

- Follow any additional instructions provided by the relevant code of best practice.

2.4.1.2 Use-specific risk mitigation measures

- Where possible, prior to the treatment inform any possible bystanders (e.g. users of the treated area and their surroundings) about the rodent control campaign.
- Consider preventive control measures (e.g. plug holes, remove potential food and drinking as far as possible) to improve product intake and reduce the likelihood of reinvasion.
- To reduce risk of secondary poisoning, search for and remove dead rodents during treatment at frequent intervals, in line with the recommendations provided by the relevant code of best practice.
- Do not use the product as permanent baits for the prevention of rodent infestation or monitoring of rodent activities.
- Do not use the product in pulsed baiting treatments.

2.4.1.3 Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

- When placing bait points close to water drainage systems, ensure that bait contact with water is avoided.

2.4.1.4 Where specific to the use, the instructions for safe disposal of the product and its packaging

See section 2.5.4.

2.4.1.5 Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

See section 2.5.5.

2.4.2 Use 2 - Mice and/or brown rats – trained professionals – outdoor around buildings

Product Type(s)	14
Where relevant, an exact description of the use	Rodenticide
Target organism(s) (including development stage)	*Mus musculus* (house mice) *Rattus norvegicus* (brown rats)
Field(s) of use	Outdoor around buildings.
Application method(s)	- Ready-to-use bait to be used in tamper-resistant bait stations, in sachets or as loose grain
Application rate(s) and frequency	**Rats:** bait boxes with 100-200 g per baiting point **Mice:** bait boxes with 60-80 g per baiting point
Category(ies) of users	Trained professionals
Pack sizes and packaging material[1]	**Minimum pack size of 3 kg.** Grain in sachets: Individual sachets of 10, 15, 20, 25, 50, 75, 90, 100 or 200 grams inside closure packaging up to 30Kg. Loose grains: Packs of loose grain up to 30kg. Package is restricted to separately packed bags with a maximum of 10kg per packed bag. Sachets material: Paper or sachets of: PP or PE or PET or LDPE or PET/PET MET/PE or PET/ALU/PE or PET/PE or PA/PE Packaging material: Plastic bottles or buckets: HDPE or PE or PP or PET or PVC. Carton bags of: PET or LDPE or Paper Kraft. Carton boxes.

2.4.2.1 Use-specific instructions for use

- Protect bait from the atmospheric conditions. Place the baiting points in areas not liable to flooding.
- Replace any bait in baiting points in which bait has been damaged by water or contaminated by dirt.
- Remove the remaining product at the end of treatment period
- Follow any additional instructions provided by the relevant code of best practice.

2.4.2.2 Use-specific risk mitigation measures

- Where possible, prior to the treatment inform any possible bystanders (e.g. users of the treated area and their surroundings) about the rodent control campaign.
- Consider preventive control measures (plug holes, remove potential food and drinking as far as possible) to improve product intake and reduce the likelihood of reinvasion.
- To reduce risk of secondary poisoning, search for and remove dead rodents during treatment at frequent intervals, in line with the recommendations provided by the relevant code of best practice.
- Do not use this product as permanent baits for the prevention of rodent infestation or monitoring of rodent activities.
- Do not use this product in pulsed baiting treatments.
- Do not apply this product directly in the burrows.

2.4.2.3 Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

- When placing bait points close to surface waters (e.g. rivers, ponds, water channels, dykes, irrigation ditches) or water drainage systems, ensure that bait contact with water is avoided.

2.4.2.4 Where specific to the use, the instructions for safe disposal of the product and its packaging

See section 2.5.4.

2.4.2.5 Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

See section 2.5.5.

2.4.3 Use 3 – Brown rats – trained professionals – Outdoor open areas & waste dumps

Product Type(s)	14
Where relevant, an exact description of the use	Rodenticide
Target organism(s) (including development stage)	*Rattus norvegicus* (brown rats)
Field(s) of use	Outdoor open areas Outdoor waste dumps
Application method(s)	Ready-to-use bait to be used in tamper-resistant bait stations, in sachets or as loose grain.
Application rate(s) and frequency	**Rats:** bait boxes with 100-200 g per baiting point.
Category(ies) of users	Trained professionals
Pack sizes and packaging material	**Minimum pack size of 3 kg.** Grain in sachets: Individual sachets of 10, 15, 20, 25, 50, 75, 90, 100 or 200 grams inside closure packaging up to 30Kg. Loose grains: Packs of loose grain up to 30kg. Package is restricted to separately packed bags with a maximum of 10kg per packed bag. Sachets material: Paper or sachets of: PP or PE or PET or LDPE or PET/PET MET/PE or PET/ALU/PE or PET/PE or PA/PE Packaging material: Plastic bottles or buckets: HDPE or PE or PP or PET or PVC. Carton bags of: PET or LDPE or Paper Kraft. Carton boxes.

2.4.3.1 Use-specific instructions for use

- Protect bait from the atmospheric conditions. Place the bait stations in areas not liable to flooding. - Replace any bait in baiting points in which bait has been damaged by water or contaminated by dirt. - Remove the remaining product at the end of treatment period.

- Follow any additional instructions provided by the relevant code of best practice.

2.4.3.2 Use-specific risk mitigation measures

- Where possible, prior to the treatment inform any possible bystanders (e.g. users of the treated area and their surroundings) about the rodent control campaign.
- To reduce risk of secondary poisoning, search for and remove dead rodents during treatment at frequent intervals, in line with the recommendations provided by the relevant code of best practice.
- Do not use this product as permanent baits for the prevention of rodent infestation or monitoring of rodent activities.
- Do not use this product in pulsed baiting treatments.
- Do not apply this product directly in the burrows.

2.4.3.3 Where specific to the use, the particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

- When placing bait points close to surface waters (e.g. rivers, ponds, water channels, dykes, irrigation ditches) or water drainage systems, ensure that bait contact with water is avoided.

2.4.3.4 Where specific to the use, the instructions for safe disposal of the product and its packaging

See section 2.5.4.

2.4.3.5 Where specific to the use, the conditions of storage and shelf-life of the product under normal conditions of storage

See section 2.5.5.

2.5 General directions for use

2.5.1 Instructions for use

- Read and follow the product information as well as any information accompanying the product or provided at the point of sale before using it.

- Carry out a pre-baiting survey of the infested area and an on-site assessment in order to identify the rodent species, their places of activity and determine the likely cause and the extent of the infestation.

- Remove food which is readily attainable for rodents (e.g. spilled grain or food waste). Apart from this, do not clean up the infested area just before the treatment, as this only disturbs the rodent population and makes bait acceptance more difficult to achieve.

- The product should only be used as part of an integrated pest management (IPM) system, including, amongst others, hygiene measures and, where possible, physical methods of control.

- The product should be placed in the immediate vicinity of places where rodent activity has been previously explored (e.g. travel paths, nesting sites, feedlots, holes, burrows etc.).

- Where possible, bait stations must be fixed to the ground or other structures.

- Bait stations must be clearly labelled to show they contain rodenticides and that they must not be moved or opened *(see section 2.5.3 for the information to be shown on the label)*.

- When the product is being used in public areas, the areas treated should be marked during the treatment period and a notice explaining the risk of primary or secondary poisoning by the anticoagulant as well as indicating the first measures to be taken in case of poisoning must be made available alongside the baits.

- Bait should be secured so that it cannot be dragged away from the bait station.

- 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.

- Wear protective chemical resistant gloves during product handling phase (glove material to be specified by the authorisation holder within the product information).

- When using the product do not eat, drink or smoke. Wash hands and directly exposed skin after using the product.

- The frequency of visits to the treated area should be at the discretion of the operator, in the light of

the survey conducted at the outset of the treatment. That frequency should be consistent with the recommendations provided by the relevant code of best practice.

- If bait uptake is low relative to the apparent size of the infestation, consider the replacement of bait points to further places and the possibility to change to another bait formulation.

- If after a treatment period of 35 days baits are continued to be consumed and no decline in rodent activity can be observed, the likely cause has to be determined. Where other elements have been excluded, it is likely that there are resistant rodent so consider the use of a non-anticoagulant rodenticide, where available, or a more potent anticoagulant rodenticide. Also consider the use of traps as an alternative control measure.

-Instructions for use that are “bait-specific”:

- Bait in sachets: Do not open the sachets containing the bait
- Loose grains: Place the bait in the bait station by using a dosage devise. Specify the methods to minimise dust (e.g. wet wiping)

2.5.2 Risk mitigation measures

- Where possible, prior to the treatment inform any possible bystanders about the rodent control campaign.

- The product information (i.e. label and/or leaflet) shall clearly show that the product shall only be supplied to trained professional users holding certification demonstrating compliance with the applicable training requirements (e.g. "for trained professionals only").

- Do not use in areas where resistance to the active substance can be suspected.

- Products shall not be used beyond 35 days without an evaluation of the state of the infestation and of the efficacy of the treatment.

- Do not rotate the use of different anticoagulants with comparable or weaker potency for resistance management purposes. For rotational use, consider using a non-anticoagulant rodenticide, if available, or a more potent anticoagulant.

- Do not wash the bait stations or utensils used in covered and protected bait points with water between applications.

- Dispose dead rodents in accordance with local requirements [The method of disposal shall be described specifically in the national SPC and be reflected on the product label].

2.5.3 Particulars of likely direct or indirect effects, first aid instructions and emergency measures to protect the environment

- 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.

- In case of:

- Dermal exposure, wash skin with water and then with water and soap.

- Eye exposure, always check for and remove contact lenses, rinse eyes with eyes-rinse liquid or water, keep eyes lids open at least 10 minutes.

- Oral exposure, 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 [insert country specific information]. Contact a veterinary surgeon in case of ingestion by a pet [insert country specific information]

- Bait stations must be labelled with the following information: "do not move or open"; "contains a rodenticide"; "product name or authorisation number"; "active substance(s)" and "in case of incident, call a poison centre [insert national phone number]"

- Hazardous to wildlife.

2.5.4 Instructions for safe disposal of the product and its packaging

- At the end of the treatment, dispose the uneaten bait and the packaging in accordance with local requirements [The method of disposal shall be described specifically in the national SPC and be reflected on the product label].

2.5.5 Conditions of storage and shelf-life of the product under normal conditions of storage

- 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.
- Shelf life: 2 years.

2.5.6 Other information

- Because of their delayed mode of action, anticoagulant rodenticides may take from 4 to 10 days to be effective after effective consumption of the bait.
- Rodents can be disease carriers. Do not touch dead rodents with bare hands, use gloves or use tools such as tongs when disposing them.
- This product contains a bittering agent and a dye.

Further information is required:

The authorization holder has to report any observed suspected incidents of rodenticide poisoning of vertebrate wildlife, pets or some livestock to the Spanish Competent Authorities previously to the renovation of the authorisation. Data should be collected from veterinary clinics, NGOs of animal protection or citizen complaints.

3 Assessment of the product

3.1 Use(s) considered appropriate for authorisation after former assessment (uses currently under authorisation in Spain)

3.1.1 Use 1 – House mice and/or brown rats –general public– indoor

Product Type(s)	14
Where relevant, an exact description of the use	Rodenticide
Target organism(s) (including development stage)	*Mus musculus* (house mice) *Rattus norvegicus* (brown rats)
Field(s) of use	Indoor.
Application method(s)	Ready-to-use bait to be used in tamper-resistant bait stations
Application rate(s) and frequency	**Mice:** 2 bait stations with 50g each 10 m^2 **Rats:** 3-5 bait stations with 200g each 10 m^2
Category(ies) of users	General public
Pack sizes and packaging material	Individual sachets of 25 and 50g in containers of 200, 250 and 500g and 1 kg. Material: PE or PP or Carton box or HDPE or PE

3.1.2 Use 2 – House mice and/or brown rats – professional – indoor

Product Type(s)	14
Where relevant, an exact description of the use	Rodenticide
Target organism(s) (including development stage)	*Mus musculus* (house mice) *Rattus norvegicus* (brown rats)
Field(s) of use	Indoor.
Application method(s)	Ready-to-use bait to be used in tamper-resistant bait stations
Application rate(s) and frequency	**Mice:** 2 bait stations with 50g each 10 m^2 **Rats:** 3-5 bait stations with 200g each 10 m^2
Category(ies) of users	Professionals
Pack sizes and packaging material	Individual sachets of 25 and 50g in containers of 200, 250 and 500g and 1 kg. Material: PE or PP or Carton box or HDPE or PE

3.2 Physical, chemical and technical properties

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding physical, chemical and technical properties remains valid.

3.3 Physical hazards and respective characteristics

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding physical hazards and respective characteristics remains valid.

3.4 Methods for detection and identification

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding methods for detection and identification remains valid.

3.5 Efficacy against target organisms

The conclusion from the former assessment regarding efficacy against target organisms remains valid. However, the applicant has provided two new field studies, one of them against rats (*Rattus norvergicus*) and the other one against mice (*Mus musculus*). These studies have been performed with the same formulation but with different content in active substance (0.0026 ppm).

ES CA considers that the different between both formulations are negligible and as the formulation has proven the efficacy with the content of active substance lower these studies complete the assessment of the efficacy for this product.

Please, see the summary of field trials submitted by the applicant:

Experimental data on the efficacy of the biocidal product against target organism(s)							
Function	**Field of use envisaged**	**Test substance**	**Test organism(s)**	**Test method**	**Test system / concentrations applied / exposure time**	**Test results: effects**	**Reference**
Rodenticide	Field test: (Indoor/ Outdoor)	**Difenacoum 0.0026% w/w**	Brown rat (Rattus norvegicus)	Field test. According The guidance on the BPR Volume II Efficacy, assessment and evaluation, parts B + C and Transitional Guidance for PT14	The trial was set up in a snail farm. The test included the phases: pre-treatment census, pre-treatment lag, treatment census, post-treatment lag, post treatment census. 100g of biocidal product was disposed at each bait station at a distance of 5m between stations.	Efficacy = 100 % Percentage of bait consumed after the control operation compared to the amount of bait consumed before the control operation is ≤10% (according TNG for PT 14)	IUCLID 6.7
Rodenticide	Field test (Indoor/ Outdoor)	**Difenacoum 0.0026% w/w**	House mouse (*Mus musculus*)	Field test. According The guidance on the BPR Volume II Efficacy, assessment and evaluation, parts B + C and Transitional Guidance for PT 14	The trial was set up in a snail farm. The test included the phases: pre-treatment census, pre-treatment lag, treatment census, post-treatment lag, post treatment census. 50g of biocidal product was disposed at each bait station at a distance of 5m between stations.	Efficacy = 100 % Percentage of bait consumed after the control operation compared to the amount of bait consumed before the control operation is ≤10% (according TNG for PT 14)	IUCLID 6.7

3.6 Risk assessment for human health

3.6.1 Assessment of effects of the active substance on human health

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding effects of the active substance on human health remains valid.

3.6.2 Assessment of effects of the product on human health

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding effects of the product on human health remains valid.

Information on dermal absorption

	Re-assessment of the relevant data
Justification	In the initial evaluation for authorisation of 'BD-RATICIDA DIFENACOUM 5' (conducted in 2013) concluded, in the absence of access to the study data underlying the EU Endpoint values, a default value of 10% was appropriate. After re-assessment we concluded the final **value of 3%** for dermal absorption in the case of **grain and pellet**, in formulations with **difenacoum**, data was already collected in the assessment report of the active substance for a pellet formulation. So we consider this more refined and approximate value for re-evaluation.

3.6.3 Exposure assessment

Regarding human exposure no studies have been submitted; therefore, the exposure assessment has been performed using the paper "HEEG opinion on a harmonised approach for the assessment of rodenticides (anticoagulants)" agreed at TMII 2011. This paper was based on an operator exposure study conducted by CEFIC/EBPF Rodenticides Data Development Group (*Chambers et al. (2004)*) and the number of manipulations agreed at TMII 2010.

This opinion was revised by Ad hoc Working Group on Human Exposure in September 2016, including the sentence *"For package sizes ≤ 10kg, loose grains have to be placed on the bait point by using a dosage device (decanting is to be avoided)"*. Since CHEMRAT DIFE is put on the market in packs up to 30kg, but the number of packed bags per packaging is up to 10kg, "mixing & loading (decanting of grain bait)" scenario has not been done.

The most relevant routes of exposure to product are the following:

Exposure path	Trained professionals	Professional user	General public
Inhalation	Not relevant	Not relevant	Not relevant
Dermal	Potentially signifcant	Potentially signifcant	Potentially signifcant
Oral	Negligible	Negligible	Relevant

ES CA proposes to use the value of 3% as a worst case in the human exposure assessment.

Due to the new harmonized classification of difenacoum, published in the 9th ATP of CLP Regulation, and according to article 19 of BPR, CHEMRAT DIFE (difenacoum 0.005%) will not be authorised for use for the general public (non-professional user).
In addition, in Spain, there is a national legislation about user's categories. In this legislation, three user categories (trained professional, professional and non-professional user) are included. Regarding of this, the professional user (for example, livestock farmers) is extrapolated to non-professional user. Therefore, CHEMRAT DIFE (difenacoum 0.005%) will not be authorised for professional user either.

3.6.3.1 List of scenarios

Summary table: scenarios			
Scenario number	**Scenario**	**Primary or secondary exposure** **Description of scenario**	**Exposed group**
1.	Application (refillable bait stations)	Primary exposure during the loading and placing bait boxes. As the previous scenario, this is taken from HEEG Opinion 12 and following this HEEG Opinion, grain bait from a 10 L bucket is placed using a plastic scoop. Only potential dermal exposure is foreseeable, while inhalation exposure is assessed as negligible.	Trained professionals
2.	Post-application (Cleaning) (refillable and sealed bait stations)	Primary exposure during cleaning of bait boxes. The operator emptied a loaded bait station containing with grain bait into a 10 L bucket. Only potential dermal exposure is foreseeable, while inhalation exposure is assessed as negligible.	Trained professionals

Summary table: scenarios			
Scenario number	**Scenario**	**Primary or secondary exposure** **Description of scenario**	**Exposed group**
3.	Touching unprotected bait	Secondary exposure: accidentally touched of unprotected bait. Adults or children may be present following application and may be incidentally exposed by touching unprotected bait. For products applied in bait stations or outdoors, incidental exposure will be very limited.	Bystanders (children, infants and adults)

3.6.3.2 Trained professional user (Pest Control Operator)

Pest Control Operators are trained in the correct use of the grain bait, i.e. placement, number of bait boxes required based on the infestation rate area, the amount of grain bait per bait box and safe handling procedures. They will be exposed during loading of bait boxes, application of the bait and clean-up. The exposure will be via the dermal route, with the theoretical inhalation exposure being negligible, due to the fact that product is applied inside sachets. Gloves are worn when loading bait boxes and disposing of remaining bait and carcasses.

Although HEEG paper does not include information for grain bait in sachets, data for loose grain bait has been taken into account for the assessment as a worst case without considering decanting task. Therefore, the total daily exposure frequency will be of 79 manipulations, for the placing of 200g bait (maximum dose for rats) on 63 sites and the cleaning of 16 bait sites.

Scenario [1] – Application (Loading and placing bait boxes)

Description of Scenario [1] - *Trained professional*		
In this scenario the operator may be in contact with the bait when the bait is loaded and placed. Trained professional operator is bounded to use PPE during the development of the different tasks of his work. Inhalation exposure is considered as negligible during this scenario. Total systemic exposure has been assessed without (Tier 1) and PPE with (Tier 2).		
	Parameters	Value
Tier 1	A.S. content of BP	0.005%
	Dermal absorption:	3%
	Operator body weight:	60 kg
	Indicative dermal exposure:	2.04 mg bp per 3kg bait (for >4

Description of Scenario [1] - *Trained professional*		
		decanting operations)
	Number of manipulations during loading	63
Tier 2	PEE (gloves)	10%

Calculations for Scenario [1]

Summary table: estimated exposure from trained professional uses					
Exposure scenario	**Tier/PPE**	**Estimated inhalation uptake**	**Estimated dermal uptake**	**Estimated oral uptake**	**Estimated total uptake**
Scenario [2]	Tier 1 / No PPE	-	3.21×10^{-6} mg/Kg bw/day		3.21×10^{-6} mg/Kg bw/day
Scenario [2]	Tier 2 / PPE (gloves)	-	3.21×10^{-7} mg/Kg bw/day	-	3.21×10^{-7} mg/Kg bw/day

Scenario [2] – Post application (cleaning of bait boxes)

Description of Scenario [2] - *Trained professional*		
During the process of cleaning of bait boxes, the trained operator may be in contact with the bait by handling. Trained professional users are assumed to use PPE during the development of the different tasks of his work. The total systemic exposure has been assessed with (Tier 2) and without PPE (Tier 1).		
	Parameters	Value
Tier 1	A.S. content of BP	0.005%
	Dermal absorption:	3%
	Operator body weight:	60 kg
	Indicative dermal exposure:	3.79 mg bp/manipulation (for >4 manipulations)
	Number of manipulations during cleaning	16
Tier 2	PEE (gloves)	10%

Calculations for Scenario [2]

Summary table: estimated exposure from professional uses					
Exposure scenario	**Tier/PPE**	**Estimated inhalation uptake**	**Estimated dermal uptake**	**Estimated oral uptake**	**Estimated total uptake**

Summary table: estimated exposure from professional uses					
Exposure scenario	**Tier/PPE**	**Estimated inhalation uptake**	**Estimated dermal uptake**	**Estimated oral uptake**	**Estimated total uptake**
Scenario [3]	Tier 1 / No PPE	-	1.52×10^{-6} mg/Kg bw/day	-	1.52×10^{-6} mg/Kg bw/day
Scenario [3]	Tier 2 / PPE (gloves)	-	1.52×10^{-7} mg/Kg bw/day	-	1.52×10^{-7} mg/Kg bw/day

Combined scenarios for professional users

Summary table: combined systemic exposure from Trained professional uses				
Scenarios combined	**Estimated inhalation uptake [mg/kg bw/day]**	**Estimated dermal uptake [mg/kg bw/day]**	**Estimated oral uptake [mg/kg bw/day]**	**Estimated total uptake [mg/kg bw/day]**
Scenarios [1+ 2] / Tier 1		4.73×10^{-6}	-	4.73×10^{-6}
Scenarios [1 + 2] / Tier 2		4.73×10^{-7}	-	4.73×10^{-7}

3.6.3.3 Non-trained professional user

Given that CHEMRAT DIFE classifies as Repr1B H360D and STOT RE 2 H373, the use of gloves is mandatory (P280). Therefore, the exposure assessment for non-trained professional user is covered by the trained professional because it should be noted that the number of manipulation of non-trained professional user is lower than trained professional. In this sense the exposure assessment for trained professional is a worse case.

Nevertheless, according our national rules, the non-trained professional user (for example, livestock farmers) is extrapolated to general public (non-professional user). Therefore, in Spain CHEMRAT DIFE (difenacoum 0.005%) will not be authorised for non-trained professional user

3.6.3.4 Non-professional user

The biocidal product CHEMRAT DIFE will not be authorized for non- professional user

3.6.3.5 Exposure of the general public (Bystanders and children)

Adults or children/infants may be present following application and may be incidentally exposed by touching unprotected bait. For products applied in bait stations or outdoors, incidental exposure will be very limited.

Description of Scenario [3]		
Where appropriate, exposure assessments are based on default values in EU Guidance documents. These defaults are used for all Difenacoum products. However, the default value when handling dead rodents is considered unrealistic and is not presented. For oral exposure of infants/children two sub-scenarios are made: (Tier 1.) one for infant with 10 mg bait (default value for bait treated with repellent) and (Tier 2) one for children with 5 grams (TNsG on Human Exposure to Biocidal Products, User Guidance). Users should clean-up unused or part-consumed products. Bait stations protect the product and should prevent access by infants (worse-case).		
	Parameters	Value
	Infants Body weight	10 kg
	A.S. content of BP	0.005%
	Tier 1 Quantity ingested (g)	5
	Tier 2 Quantity ingested (g)	0.01

Calculations for Scenario [3]

Summary table: systemic exposure from general public					
Exposure scenario	**Tier/PPE**	**Estimated inhalation uptake**	**Estimated dermal uptake**	**Estimated oral uptake**	**Estimated total uptake**
Scenario [3.]	Tier 1	-	-	2.5 x l0^{-2} mg/kg bw/d	2.5 x 10^{-2} mg/kg bw/d
Scenario [3]	Tier 2	-	-	5 x 10^{-5} mg/kg bw/d	5 x 10^{-5} mg/kg bw/d

Further information and considerations on scenario [3]

These values assume ingestion of bait, however ‘CHEMRAT DIFE’ contains a bittering aversive agent, which will reduce the likelihood of ingestion. Since the bittering agent is not 100% efficient in protecting against ingestion in all children, it is therefore important that the baits are kept out of reach of children (and other non-target species, including pets and livestock) during storage and use.

3.6.3.6 Monitoring data

No monitoring studies have been submitted; therefore, the exposure assessment has been performed using the paper "HEEG opinion on a harmonised approach for the assessment of rodenticides (anticoagulants)" agreed at TMII 2011. This paper was based on an operator exposure study conducted by CEFIC/EBPF Rodenticides Data Development Group (Chambers et al. (2004)) and the number of manipulations agreed at TMII 2010.

3.6.3.7 Dietary exposure

Not applicable: non exposure is foreseen because the bait boxes with the product must not be placed where food, feeding stuffs, drinking water and surfaces where food is prepared an become contaminated.

3.6.3.8 Exposure associated with production, formulation and disposal of the biocidal product

Please see “Cleaning” for trained professional exposure which is related with disposal of the biocidal product.

3.6.3.9 Aggregated exposure

No aggregated exposure is foreseable since the product is not intended to be used under another biocidal product type.

Summary of exposure assessment

Scenarios and values to be used in risk assessment			
Scenario number	**Exposed group (e.g. professionals, non-professionals, bystanders)**	**Tier/PPE**	**Estimated total uptake**
1. Loading	Trained professional user	Tier 1/ no PPE (unrealistic)	3.21 x 10^{-6} mg/Kg bw/day
1. Loading	Trained professional user	Tier 2/ PPE	3.21 x 10^{-7} mg/Kg bw/day
2. Cleaning	Trained professional user	Tier 1/ no PPE	1.52 x 10^{-6} mg/Kg bw/day
2. Cleaning	Trained professional user	Tier 2/ PPE	1.52 x 10^{-7} mg/Kg bw/day

Scenarios and values to be used in risk assessment			
Scenario number	**Exposed group (e.g. professionals, non-professionals, bystanders)**	**Tier/PPE**	**Estimated total uptake**
Combined 1+2	Trained professional user	Tier 1/ no PPE	4.73×10^{-6} mg/Kg bw/day
Combined scenarios 1+2	Trained professional user	Tier 2/ PPE	4.73×10^{-7} mg/Kg bw/day
3. Touching unprotected bait	General public (Children)	Tier 1	2.5×10^{-2} mg/kg bw/day
3. Touching unprotected bait.	General public (Children)	Tier 2	5×10^{-5} mg/kg bw/day

3.6.4 Risk characterisation for human health

Risk assessments for human exposure was carried out following latest technical guidance for the biocidal product (product-type 14, rodenticide) with the aim to determine if safe uses can be established for the intended uses of the product for national registration acc. to the BPR (Biocidal Product Regulation). The human exposure assessment was based on the endpoints of the toxicological studies with the representative products.

Reference	Study	NOAEL (LOAEL) (µg/kg bw/day)	AF	Correction for oral absorption	Value (µg/kg bw/day)
AOEL (Operator/worker exposure)	Teratogenicity study in rabbit	0.001mg/kg bw/day	600	68%	0.0011
Drinking water	-	-	-	-	Not applicable
ARfD				-	Not applicable
ADI		-		-	Not applicable

3.6.4.1 Risk for trained professional users (pest control operators)

A) Loose grain

Task/ Scenario	Tier	AEL mg/kg bw/d	Estimated uptake mg/kg bw/d	Estimated uptake/ AEL (%)	Acceptable (yes/no)
Application / Scenario	Tier 1	1.1×10^{-6}	3.21×10^{-6}	292	No

Task/ Scenario	Tier	AEL mg/kg bw/d	Estimated uptake mg/kg bw/d	Estimated uptake/ AEL (%)	Acceptable (yes/no)
[1]	Tier 2		3.21×10^{-7}	29	Yes
Cleaning / Scenario [2]	Tier 1		1.52×10^{-6}	138	no
	Tier 2		1.52×10^{-7}	14	Yes
application and cleaning/combined scenarios [1+2]	Tier 1		$4.73 \times l0^{-6}$	430	No
application and cleaning/combined scenarios [1+2]	Tier 2		$4.73 \times l0^{-7}$	43	Yes

3.6.4.2 Risk for Non-trained professional users

Given that CHEMRAT DIFE classifies as Repr1B H360D and STOT RE 2 H373, the use of gloves is mandatory (P280). Therefore, risk assessment for non-trained professional user is covered by the trained professional because it should be noted that during the exposure assessment, the number of manipulation of non-trained professional user is lower than trained professional. In this sense the risk assessment for trained professional is a worse case.

Nevertheless, according our national rules, the non-trained professional user (for example, livestock farmers) is extrapolated to general public (non-professional user). Therefore, in Spain CHEMRAT DIFE (difenacoum 0.005%) will not be authorised for non-trained professional user.

3.6.4.3 Risk for Non-professional users

The biocidal product CHEMRAT DIFE will not be authorized for non- professional user.

3.6.4.4 Risk for the general public

Adults or children may be present following application and may be incidentally exposed by touching unprotected bait. For products applied in bait stations or outdoors, incidental exposure will be very limited.

Children are potentially the group most at risk as they may play inside or around buildings where baits have been placed. Infants could be exposed orally by chewing bait or touching their mouth with contaminated fingers.

Systemic effects

Task/ Scenario	Tier	NOAEL (LOAEL) (µg/kg bw/day)	AEL_{acute} mg/kg bw/d	Estimated uptake mg/kg bw/d	Estimated uptake/ AEL (%)	Acceptable (yes/no)

Infants may ingest part of the bait / [Tier 1	Tier 1	0.001	1.1×10^{-6}	2.5×10^{-2}	2.27×10^{6}	No
Infants may ingest part of the bait / [Tier 2]	Tier 2			5×10^{-5}	4550	No

Conclusion

These values assume ingestion of poison bait; however 'CHEMRAT DIFE' contains denatonium benzoate, a bittering agent which will reduce the likelihood of ingestion. Since the deterrent is not completely effective in protecting against ingestion in all children, it is important that the product is kept out of the reach of children, and away from other non-target species, including pets and livestock, during storage and use.

The calculated exposure was 4550% of AEL based on a default exposure value which assumes that infants will ingest 10 mg of poison bait and 2.27×10^{6} of AEL when assuming that children will ingest 5 g bait. These values show that infants and children ingesting bait will be at risk. However, 'CHEMRAT DIFE' contains a bittering agent which would prevent ingestion of the baits. Therefore, in practice the margins of safety are expected to be higher than those calculated. It is also important that product labels and good practice advise users to prevent access to bait by children.

3.6.4.5 Risk for consumers via residues in food

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding risks for consumers via residues in food remains valid.

3.6.4.6 Risk characterisation from combined exposure to several active substances or substances of concern within a biocidal product

The biocidal product does not contain other substances in quantities that would be of toxicological concern in the production formulation.

3.6.4.7 Summary of risk characterisation

Exposure for trained professional operators applying 'CHEMRAT DIFE' for control of rats and mice is acceptable with the use of PPE.

The authorisation for general public and professional user which have been removed to the authorisation in order to comply with the requirements laid down in Commission Regulation (EU) 2016/1179 of 19 July 2016 amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures.

3.7 Risk assessment for animal health

Neither new data was not provided nor had new guidance to be taken into account for re-assessment. Accordingly, the conclusion from the former assessment regarding animal health remains valid.

3.8 Risk assessment for the environment

Neither new data was not provided nor had new guidance to be taken into account for re-assessment performed with the new substance active concentration. Accordingly, the conclusion from the former assessment regarding the environment remains valid. However, the new threshold value in groundwater for difenacoum of 0.01 µg/L used for the risk assessment ECHA/BPC/112/2016 has to be considered for the re-assessment of the product.

3.8.2 Risk characterisation

Groundwater

Concentrations in soil pore water were calculated for the use of CHEMRAT DIFE in all proposed scenarios: sewer systems, in and around buildings, open areas and waste dumps. According to ESD and TGN the potential exposure to STP and surface water (and hence sediment) from the proposed use is considered to be negligible.

Exposure to groundwater for the proposed uses (realistic worst case, normal use) were derived from ECsoils and the new threshold value in groundwater for difenacoum of 0.01 µg/L was used for the risk assessment ECHA/BPC/112/2016:

Calculated PEC/PNEC values for groundwater				
Scenario /Tier	**PEC_{gw} (mg/L)**	**Thresould value (mg/L)**	**$PEC_{gw}/PNEC_{gw}$**	**Risk**
Scenario [1] – 'Sewer system'	$1.5X10^{-8}$	1 E-5	<1	No
Scenario [2] - 'In and around buildings' / Tier 1	$1.5X10^{-6}$		<1	No
Scenario [3] - 'Open areas' / Tier 1	$1.08x\ 10^{-5}$		>1	Yes
Scenario [4] - 'Waste dumps' / Tier 1	$1.01X10^{-7}$		<1	No

Conclusion: According to the table above, the risk is unacceptable for the "open area" scenario. For the rest of scenarios evaluated, PECgw are well-below the maximum permissible according to the new threshold. Hence, as a tier 2, a FOCUS modelling was realized to refine the PEC groundwater for the "open areas" scenario.

Parameters use in FOCUS:

Model used	**FOCUS PEARL**
Years of simulation	1
Application rate	0.0017 kg/ha (open areas)
Standard crop for arable land	Maize (for agricultural soil) Grass (alfalfa)
Application depth	Incorporation 0 cm
Date of application	12 application per year
Molar mass	444.5 g.mol-1
Vapour pressure	< 10^{-6} Pa at 20°C
Water solubility	1.7 mg.L-1 at 20°C
Kom	1048266.3 L.kg-1 at 20°C
Freundlich exponent	1
DT50soil	833 d at 12°C
Coefficient for uptake for plant	0

The same results were obtained for all scenarios, see the following table:

LOCATION	MAIZE	ALFALFA
CHATEAUDUN	0.00000	0.00000
HAMBURG	0.00000	0.00000
JOKIOINEN	0.00000	0.00000
KREMSMUENSTE	0.00000	0.00000
OKEHAMPTON	0.00000	0.00000
PIACENZA	0.00000	0.00000
PORTO	0.00000	0.00000
SEVILLA	0.00000	0.00000
THIVA	0.00000	0.00000

According to the FOCUS modelling, the risk is acceptable in groundwater for the use of CHEMRAT DIFE in all scenarios.

3.9 Assessment of a combination of biocidal products

A use with other biocidal products is not intended.

3.10 Comparative assessment

As difenacoum is a Candidate for Substitution, a comparative assessment must be carried out as part of the evaluation process.

The Biocidal Products Committee of the European Chemicals Agency published its Opinion on Questions regarding the comparative assessment of anticoagulant rodenticides on 02 March 2017 (Document no. ECHA/BPC/145/2017).

The Decision states that:

- In the absence of anticoagulant rodenticides, the use of rodenticide biocidal products containing other active substances would lead to an inadequate chemical diversity to minimize the occurrence of resistance in the target harmful organisms. These products also show some significant practical or economical disadvantages for the relevant uses.
- There is insufficient scientific evidence to prove that non-chemical alternative methods of rodent control are sufficiently effective according to the criteria established in agreed Union guidance with a view to prohibit or restrict the authorised uses of anticoagulant rodenticides.

The Decision forms the basis of the COMMISSION IMPLEMENTING DECISION (EU) 2017/1532 of 7 September 2017 addressing questions regarding the comparative assessment of anticoagulant rodenticides in accordance with Article 23(5) of Regulation (EU) No 528/2012 of the European Parliament and of the Council.

On the basis of this comparative assessment, the authorisation of rodenticide products containing difenacoum is justified.