HET COLLEGE VOOR DE TOELATING VAN GEWASBESCHERMINGSMIDDELEN EN BIOCIDEN

1 TOELATING

Gelet op de aanvraag d.d. 12 mei 2010 (20100576 TNB) van

SCJ EurAFNE Ltd
Frimley Green Road
CAMBERLEY, SURREY, GU16 7AJ
GROOT-BRITTANNIË

tot verkrijging van een toelating als bedoeld in artikel 49, eerste lid, Wet gewasbeschermingsmiddelen en biociden voor de biocide, op basis van de werkzame stof indoxacarb,

Raid Cockroach Bait

gelet op artikel 44, Wet gewasbeschermingsmiddelen en biociden,

BESLUIT HET COLLEGE als volgt:

1.1 Toelating

1. Het middel Raid Cockroach Bait is toegelaten voor de in bijlage I genoemde toepassingen onder nummer 13674 N met ingang van datum dezes. Voor de gronden van dit besluit wordt verwezen naar bijlage II bij dit besluit.

2. De toelating geldt tot 31 december 2019.

1.2 Samenstelling, vorm en verpakking

De toelating geldt uitsluitend voor het middel in de samenstelling, vorm en de verpakking als waarvoor de toelating is verleend.
Het middel wordt aangeboden en geëtiketteerd voor niet-professioneel gebruik.

1.3 Gebruik
Het middel dat uitsluitend bestemd is voor niet-professioneel gebruik mag slechts worden gebruikt met inachtneming van hetgeen in bijlage I bij dit besluit is voorgeschreven.

1.4 Classificatie en etikettering

Gelet op artikel 50, eerste lid, sub d, Wet gewasbeschermingsmiddelen en biociden,

1. De aanduidingen, welke ingevolge artikelen 9.2.3.1 en 9.2.3.2 van de Wet milieubeheer en artikelen 14, 15a, 15b, 15c en 15d van de Nadere regels verpakking en aanduiding milieugevaarlijke stoffen en preparaten op de verpakking moeten worden vermeld, worden hierbij vastgesteld als volgt:

   aard van het preparaat: lokaas

werkzame stof:	*gehalte:*
indoxacarb	0,5 %

   letterlijk en zonder enige aanvulling:

   andere zeer giftige, giftige, bijtende of schadelijke stof(fen): -

gevaarsymbool:	*aanduiding:*
Xi	Irritant

   Waarschuwingszinnen:

R43	-Kan overgevoeligheid veroorzaken bij contact met de huid.
R52/53	-Schadelijk voor in het water levende organismen; kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.

   Veiligheidsaanbevelingen:

S37	-Draag geschikte handschoenen.

   Specifieke vermeldingen: -

2. Behalve de onder 1. bedoelde en de overige bij de Wet Milieugevaarlijke Stoffen en Nadere regels verpakking en aanduiding milieugevaarlijke stoffen en preparaten voorgeschreven aanduidingen en vermeldingen moeten op de verpakking voorkomen:

   a. letterlijk en zonder enige aanvulling:
   het wettelijk gebruiksvoorschrift
   De tekst van het wettelijk gebruiksvoorschrift is opgenomen in Bijlage I, onder A.

b. hetzij letterlijk, hetzij naar zakelijke inhoud:
de gebruiksaanwijzing
De tekst van de gebruiksaanwijzing is opgenomen in Bijlage I, onder B.
De tekst mag worden aangevuld met technische aanwijzingen voor een goede bestrijding mits deze niet met die tekst in strijd zijn.

2 DETAILS VAN DE AANVRAAG

Het betreft een aanvraag tot verkrijging van een toelating van het middel Raid Cockroach Bait (13674 N), een middel op basis van de werkzame stof indoxacarb. Het middel wordt aangevraagd als middel ter bestrijding van kakkerlakken binnenshuis.

2.2 Informatie met betrekking tot de stof

Er zijn in Nederland reeds andere middelen op basis van de werkzame stof indoxacarb toegelaten.
De werkzame stof indoxacarb is bij Richtlijn 2009/87/EC dd. 29 juli 2009 van de Europese Commissie van de Europese Gemeenschappen opgenomen in Bijlage I van Richtlijn 98/8/EG.

2.3 Karakterisering van het middel

Raid Cockroach Bait is an insecticide based on the active substance indoxacarb. Indoxacarb is a pro-insecticide – it is not toxic to insects until it goes through an activation process. Upon ingestion by the insect, the indoxacarb is rapidly converted to DPX-JT333 by enzymatic cleavage of the N-carbomethoxy group in the insect mid-gut. DPX-JT333 binds to the sodium channels within the insect, thus blocking sodium movement into the cell, resulting in mild convulsions, paralysis and ultimately death.
There is a time delay to permit the insect to return to the nest, thus infecting more insects. This time delay is due to the time taken for the insect to ingest the indoxacarb and then to metabolise it to DPX-JT333, which is toxic and can bind to the sodium channels. The delay varies slightly across species and is also influenced somewhat by the formulation and manner in which the insect is exposed/dosed. Generally, the conversion process begins shortly after ingestion with mortality beginning within hours after ingestion.

2.4 Voorgeschiedenis

De aanvraag is op 20 mei 2010 ontvangen; op 22 juli 2010 zijn de verschuldigde aanvraagkosten ontvangen. Bij brief d.d. 8 november 2010 is de aanvraag in behandeling genomen. De aanvraag is geschorst om de aanvrager in de gelegenheid te stellen ontbrekende studies mbt het aspect werkzaamheid te leveren. Na levering van deze gegevens d.d. 1 februari 2012 is de beoordeling afgerond.

2.5 Eindconclusie

Bij gebruik volgens het Wettelijk Gebruiksvoorschrift/Gebruiksaanwijzing is het middel Raid Cockroach Bait op basis van de werkzame stof indoxacarb voldoende werkzaam en heeft het geen schadelijke uitwerking op de gezondheid van de mens en het milieu (artikel 49, Wet gewasbeschermingsmiddelen en biociden).

Degene wiens belang rechtstreeks bij dit besluit is betrokken kan gelet op artikel 119, eerste lid, Wet gewasbeschermingsmiddelen en biociden en artikel 7:1, eerste lid, van de Algemene wet bestuursrecht, binnen zes weken na de dag waarop dit besluit bekend is gemaakt een bezwaarschrift indienen bij: het College voor de toelating van gewasbeschermingsmiddelen en biociden (Ctgb), Postbus 217, 6700 AE WAGENINGEN. Het Ctgb heeft niet de mogelijkheid van het elektronisch indienen van een bezwaarschrift opengesteld.

Wageningen, 4 mei 2012

HET COLLEGE VOOR DE TOELATING VAN

GEWASBESCHERMINGSMIDDELEN EN BIOCIDEN,

ir. J.F. de Leeuw

Voorzitter

HET COLLEGE VOOR DE TOELATING VAN GEWASBESCHERMINGSMIDDELEN EN BIOCIDEN

BIJLAGE I bij het besluit d.d. 4 mei 2012 tot toelating van het middel Raid Cockroach Bait, toelatingnummer 13674 N

A.
WETTELIJK GEBRUIKSVOORSCHRI FT

Toegestaan is uitsluitend het gebruik als middel ter bestrijding van kleine kakkerlakken (tot 1,5 cm exclusief antennes) binnenshuis.

De dosering zoals aangegeven in de gebruiksaanwijzing moet worden aangehouden.

Enkel gebruiken zoals aangegeven. Buiten bereik van kinderen en huisdieren bewaren en toepassen. Kinderen nooit met de lokdoos laten spelen. Dagelijks de dode kakkerlakken verwijderen.

Lokdozen niet plaatsen op oppervlakken die in aanraking kunnen komen met voedsel. Lokdozen niet plaatsen op plekken die nat worden.

Dit middel is bestemd voor niet-professioneel gebruik.

B.
GEBRUIKSAANWIJZING

Dit middel is werkzaam tegen Duitse kakkerlakken (kleine kakkerlakken tot 1,5 cm exclusief antennes), de meest voorkomende soort in woningen in Nederland.

Dit product alleen gebruiken indien er sprake is van een kakkerlakkenplaag en op plaatsen waar kakkerlakken zijn gezien. Plaats de lokdozen alleen op locaties waar zich in de directe nabijheid kakkerlakken bevinden, bijvoorbeeld achter een koelkast, in de keukenkastjes, bij doorvoeropeningen van leidingen, enz. Vermijd plaatsing van de lokdozen op open plaatsen. De resten van het lokaas verzamelen en in plastic verpakt aanbieden bij het Klein Chemisch Afval (KCA) depot.

Om voldoende bestrijdingseffect te halen, is het noodzakelijk een goede hygiëne in acht te nemen, zodat – afgezien van het lokaas – zo weinig mogelijk voedsel voor de kakkerlakken beschikbaar is. Onderzoek waar de bron van besmetting is en neem voorzorgsmaatregelen om herbesmetting met kakkerlakken te voorkomen (gaten afdichten, mogelijk voedsel verwijderen, etc.).

Gebruik alle 6 lokdozen tegelijk. In geval van een ernstige plaag, niet meer dan 12 lokdozen tegelijk gebruiken, anders een professionele plaagdierbestrijder inschakelen.

De lokdoos niet toepassen op plaatsen waar de temperatuur boven de 50 ºC kan komen.

Indien 3 maanden na start van de bestrijding nog kakkerlakken worden aangetroffen, dient een professionele plaagdierbestrijder ingeschakeld te worden.

HET COLLEGE VOOR DE TOELATING VAN GEWASBESCHERMINGSMIDDELEN EN BIOCIDEN

BIJLAGE II bij het besluit d.d. 4 mei 2012 tot toelating van het middel Raid Cockroach Bait, toelatingnummer 13674 N

Product Assessment Report

Raid Cockroach Bait

10-4-2011

Internal registration/file no:	20100576
Authorisation/Registration no:	13674 N
Granting date/entry into force of authorisation/ registration:	04-05-2012
Expiry date of authorisation/ registration:	31-12-2019
Active ingredient:	Indoxacarb
Product type:	PT 18

Biocidal product assessment report related to product authorisation under Directive 98/8/EC

Contents

1 General information about the product application

1.1 Applicant

Company Name:	SCJ EurAFNE Ltd
Address:	Frimley Green Road
City:	Camberley, Surrey
Postal Code:	GU16 7 AJ
Country:	United Kingdom
Telephone:	+44 (0) 1276 852 000
Fax:	-
E-mail address:	-

1.1.1 Person authorised for communication on behalf of the applicant

Name:	Vicki Batten
Function:	Senior Registration Specialist
Address:	Frimley Green Road
City:	Camberley
Postal Code:	GU16 7AJ
Country:	UK
Telephone:	+44 (0) 1276 852 000
Fax:	+44 (0) 1276 852 734
E-mail address:	VFBatten@scj.com

1.2 Current authorisation holder[1]

Not applicable

1.3 Proposed authorisation holder

Company Name:	SCJ EurAFNE Ltd
Address:	Frimley Green Road
City:	Camberley, Surrey
Postal Code:	GU16 7 AJ
Country:	United Kingdom
Telephone:	+44 (0) 1276 852 000
Fax:	-
E-mail address:	-
Letter of appointment for the applicant to	Not applicable

[1] Applies only to existing authorisations

represent the authorisation holder provided (yes/no):	

1.4 Information about the product application

Application received:	22-07-2010
Application reported complete:	07-02-2012
Type of application:	Application for first authorisation

1.5 Information about the biocidal product

1.5.1 General information

Trade name:	Raid Cockroach Bait
Manufacturer's development code number(s), if appropriate:	Raid JWY
Product type:	PT18
Composition of the product (identity and content of active substance(s) and substances of concern; full composition see confidential annex):	0.5% pure indoxacarb For information on the co-formulants please refer to the confidential annex.
Formulation type:	Bait (RB)
Ready to use product (yes/no):	Yes
Is the product the very same (identity and content) to another product already authorised under the regime of directive 98/8/EC (yes/no); If yes: authorisation/registration no. and product name: or Has the product the same identity and composition like the product evaluated in connection with the approval for listing of active substance(s) on to Annex I to directive 98/8/EC (yes/no):	No The product is largely comparable to Raid PDQ (same co-formulants), included in the Indoxacarb CA Report by RMS UK. The difference is the content active substance.

1.5.2 Information on the intended use(s)

Overall use pattern (manner and area of use):	Ready-to-use baits to kill cockroaches, for indoor use only.
Target organisms:	Cockroaches
Category of users:	Non-professionals
Directions for use including minimum and maximum application rates, application rates per time unit (e.g.	Place all six bait stations. For severe infestations, it is recommended to use no more than 12 baits at any one time.

number of treatments per day), typical size of application area:	
Potential for release into the environment (yes/no):	Yes
Potential for contamination of food/feedingstuff (yes/no)	No
Proposed Label:	For use against *B. germanica*. For indoor use only. For use by non-professionals. Use only as directed. Keep and place away from children and pets. Never let children play with the bait station. Remove dead cockroaches daily. Do not apply in places that may come into contact with food or that become wet. Use this product only if there is a cockroach infestation and in areas where cockroaches are seen. Place the bait stations only at locations where cockroaches are in the direct vicinity, such as behind a refrigerator, in the kitchen cabinets, near pipe shafts, etc. Avoid placing the bait stations in open places. Gather the remains of the unused bait, wrap in plastic and hand in at the Chemical Waste Depot. In order to achieve sufficient control effect, good hygiene is necessary, so that - apart from the bait - as little food as possible is available for the cockroaches. Investigate the source of infection and take precautions to prevent recontamination with cockroaches (sealing holes, removing possible food, etc.). Place all six bait stations. For severe infestations, it is recommended to use no more than 12 baits at any one time, or else contact a professional pest controller. Do not use in places where the temperature exceeds 50 ° C. If 3 months after the start of the treatment the infestations continues, a professional pest controller should be contacted.
Use Restrictions:	See above

1.5.3 Information on active substance

Active substance chemical name:	IUPAC: methyl (S)-7-chloro-2,3,4a,5-tetrahydro-2-[methoxycarbonyl-(4-trifluoromethoxyphenyl)carbamoyl]indeno[1,2-e][1,3,4]oxadiazine-4a-carboxylate
CAS No:	173584-44-6
EC No:	Not available
Purity (minimum, g/kg or g/l):	796 g/kg
Inclusion directive:	2009/87/EC (29 July 2009)
Date of inclusion:	1 January 2010
Is the active substance equivalent to the active substance listed in Annex I to 98/8/EC (yes/no):	Yes (same source)
Manufacturer of active substance(s) used in the biocidal product:	
Company Name:	The manufacturing site of the active substance is considered confidential information. Please refer to the SPC.

1.5.4 Information on the substance(s) of concern

Substance chemical name	Not applicable: the formulation Raid Cockroach Bait does not contain any substances of concern. The substance relevant to the risk assessment is indoxacarb, the active substance.

1.6 Documentation

1.6.1 Data submitted in relation to product application

Fourteen additional studies related to the biocidal product have been submitted with the application. Five relate to the physical chemical properties of Raid Cockroach Bait, see physical chemical properties section (§2.3) and nine for the efficacy section, see §2.5.

The studies are listed in Annex 2A 'List of studies reviewed'. The study summaries are included in the separate pdf file 'Study summaries Raid Cockroach Bait'.

1.6.2 Access to documentation

The applicant (SCJ Johnson) has submitted a letter of access (10-05-2010) to the data owned by DuPont International. In this letter DuPont authorises the applicant to refer to all study reports and documents originally submitted by DuPont for the listing of Indoxacarb on the Annex I of the Biocidal Products Directive (98/8/EC).

2 Summary of the product assessment

2.1 Identity related issues

The applicant has a letter of access (LoA) for the dossier as evaluated in the Competent Authority Report (CAR) by Rapporteur Member State (RMS) UK, using the same source for the active substance as included in the CAR. Therefore, the source is considered equivalent to that evaluated for inclusion of indoxacarb in annex I of Directive 98/8/EC because it is identical.

The formulation does not contain any substances which should be regarded as relevant for the risk assessment. No substance of concern is present in the biocidal product.

The formulation was not included in the CAR of indoxacarb. For detailed information on the composition of the product, please refer to annex I. The product is manufactured outside the EU.

2.2 Classification, labelling and packaging

2.2.1 Harmonised classification of the biocidal product

Physical-chemical properties:
No labelling is required concerning the physical-chemical properties of the product.
Supported shelf life of the formulation: 3 years.

Human toxicology: Proposed classification based on Directive 1999/45/EC

Symbol:	Xi	
Indication of danger:	Irritant	
R-phrases:	R43	May cause sensitization by skin contact.
S-phrases:	S37*	Wear suitable protective gloves.

* S36 (wear suitable clothing) is not assigned as the product is a bait station, therefore no direct exposure to the body is expected.

Human toxicology: Proposed classification based on Regulation EC 1272/2008

Signal word:	Warning		
Pictogram:	GHS07		
	Hazard class-and-Category	**Code**	**Hazard statement**
Hazard statements:	Skin Sens. 1	H317	May cause an allergic skin reaction.
Precautionary statements:		P280a*	Wear protective gloves.

* P280a (Wear protective gloves) is assigned instead of P280c (Wear protective gloves and clothing), as the product is a bait station, therefore no direct exposure to the body is expected.

Environment:Proposed classification based on Directive 1999/45/EC

Symbol:	-	
Indication of danger:	-	
R-phrases:	R52/53	Harmful to aquatic organisms, may cause long-term adverse

		effects in the aquatic environment.
S-phrases:	-	-

Environment:Proposed classification based on Regulation EC 1272/2008

Signal word:	-		
Pictogram:	-		
	Hazard class-and-Category	**Code**	**Hazard statement**
Hazard statements:	Aquat.chron.3	H412	Harmful to aquatic life with long lasting effects.
Precautionary statements:	-	-	-

2.2.2 Packaging of the biocidal product

The bait station is prepared using polystyrene.
Contents: 2.6g formulation per bait station.

Detailed description:

Type	**Measure**		**Measure Plus**		**Measure Minus**	**Unit**
Roll Width	325	+	328	-	322	mm
Core Inside Diameter	76	+		-		mm
Maximum Roll Outside Diameter	800	+		-		mm
Core Offset	0	+	3	-	0	mm
Thickness	0.5	+	0.025	-	0.025	mm

Outer packaging (Box)
Component Type : Chipboard
Specification Style : cardboard white/grey
length : 145.000 mm
width : 70.000 mm
height : 92.000 mm
board weight : 350.000 g /m^2 W/G

Bait Container
Component Type : Flexible Material
Component Description. : wrap film
roll width 230.000 mm
thickness 45.000 mu total thickness
maximum roll O.D. 350.000 mm
core i.d. 76.000 mm

2.3 Physico/chemical properties and analytical methods

The formulation Raid Cockroach bait is not explosive, oxidising or (highly) flammable. It is not expected to self-ignite. Corrosive behaviour to metals is not expected as a 1% dispersion has a pH of 6.1. Based on the data presented, no classification based on physical or chemical hazards is required.

In the proposed commercial packaging the formulation is expected to be stable and palatable for at least 3 years. The pH, active substance content and density did not significantly change during storage periods of 4 years at 20 °C and 25 °C (60%RH) in the proposed commercial packaging, and 2 weeks at 54 °C.

An analytical method for determination of the active substance in the formulation was provided, based on HPLC-UV with detection at 310nm.

Relevant residue analytical methods were evaluated by Rapporteur Member State (RMS) UK in the Competent Authority Report (CAR) and are considered acceptable.

2.3.1 Physico-chemical properties

A Letter of Access was provided, which allows the applicant to refer to data included in the CAR of indoxacarb. Table 1 is therefore removed from this section.

Table 2: Physico-chemical properties of the biocidal product:
The data on physical and chemical properties was extracted from the summary dossier provided by applicant SC Johnson (refer to separate document 'study summaries'). The Reference Member State has made some modifications where those were considered necessary.

	Method	Purity/Specification	Results	Reference
Physical state and nature	Visual	0.50% Indoxacarb (DPX-KN128) Batch No. 571D3	Paste	Garcia M.T. (2010a)
Colour	Visual	0.50% Indoxacarb (DPX-KN128) Batch No. 571D3	Brown	
Odour		0.50% Indoxacarb (DPX-KN128) Batch No. 571D3	Peanut butter	
Explosive properties	EC Method A.14	1.00% Indoxacarb Batch No. 15374E170	No danger of explosion.	Franke, J. (2006)*
Oxidizing properties	EC Method A.21	1.00% Indoxacarb Batch No. 15374E170	No oxidising potential.	
Flash point	EC Method A.9	1.00% Indoxacarb Batch No. 15374E170	247.5ºC	
Autoflammability	-	-	As none of the components of the formulation are self-igniting, the formulation itself is not expected to be self-igniting.	-
Other indications of flammability	EC Method A.10	1.00% Indoxacarb Batch No. 15374E170	Not highly flammable.	Franke, J. (2006)*
	EC Method A.13	1.00% Indoxacarb Batch No. 15374E170	No ignition was observed.	
Acidity / Alkalinity	CIPAC MT 75	1.00% Indoxacarb Batch No. 15374E170	pH = 6.1 (1%)	Garcia M.T. (2010a)
			Acidity not determined based on the pH.	

	Method	Purity/Specification	Results	Reference
Relative density / bulk density	EC Method A.3 (OECD 109)	0.50% Indoxacarb Batch No. 571D3	1.11 g/cm^3 at 22.5ºC±0.2 ºC	Smeykal H. (2010)
Storage stability – stability and shelf life				
Effects of temperature	FAO/WHO	0.50% Indoxacarb (Raid JWY formula number 15342P45-I) Batch No. batch 571D2	Stable at 54°C±3°C for 2 weeks.	Smith G.A. (2007)
	FAO/WHO pH testing performed according to CIPAC guideline MT 75.3	1.00% Indoxacarb (Batch No. 15374E170)	Stable after storage for 48 months at 20°C ± 2°C and at 25°C ± 2°C (60% rel. humidity ±10%) and 12 months at 40°C ± 2°C. pH 6.6 and 6.4 for the 48 month (20°C) and 48 month (25°C / 60% rel. humidity) samples, respectively	Garcia M.T. (2010b)
Effects of light		The baits were stored in the intended commercial packaging i.e. blister packaging in an air-tight bag made of plastic film. Storage was found to be acceptable under these conditions, therefore it can be concluded that light did not affect storage stability, when stored in the commercial bait stations.		
Reactivity towards container material		Packaging -Sample in sound condition; sealed without leakages.		
Technical characteristics in dependence of the formulation type			As the formulation is a ready to use paste bait, technical properties are not considered relevant.	
Compatibility with other products			The product is not intended for mixing with other	

	Method	Purity/Specification	Results	Reference
			products.	
Surface tension			A test is not considered required for this type of formulation.	
Viscosity			Not applicable	
Particle size distribution			Not relevant, the formulation is not a powder or granule.	

** Study was already evaluated in the CAR on indoxacarb by RMS UK*

Data from study Franke, J. (2006) and Garcia, M.T. (2010a) were generated using Raid PDQ Cockroach bait containing 1.0% indoxacarb. The products Raid PDQ and Raid JWY, the latter being a development code for Raid Cockroach Bait, are highly similar, the only major difference being the content active substance (1% for Raid PDQ and 0.5% for Raid JWY). It is therefore considered acceptable to read-across data to support a 3 year shelf-life in commercial packaging (polystyrene bait station). The packaging for both products is comparable. Additionally, an accelerated storage study at elevated temperatures was provided, which was conducted using Raid JWY.

No data on low temperature stability was provided (CIPAC MT39). Considering the product is a ready for use bait and not sprayed or diluted for use, any influence of low temperatures are expected to be minor.

Palatability
Efficacy data was provided to show that aged samples were still attractive to the target organisms after three years storage.

2.3.2 Analytical methods

A Letter of Access was provided, which allows the applicant to refer to data included in the CAR of indoxacarb.

	Principle of method
Technical active substance as manufactured:	Please refer to the CAR by RMS UK
Impurities in technical active substance:	Please refer to the CAR by RMS UK
active substance in the formulation:	HPLC-UV, detection at 310nm

2.4 Risk assessment for Physico-chemical properties

Raid Cockroach Raid is not hazardous based on its physical and chemical properties. The product is not explosive, is not oxidising, not (highly) flammable, does not self-ignite and is not considered corrosive to metals.

2.5 Effectiveness against target organisms

2.5.1 Function

Raid Cockroach Baits is an insecticide (PT18) based on Indoxacarb (0.5% w/w).

2.5.2 Organisms to be controlled and products, organisms or objects to be protected

This product is aimed to kill cockroaches indoors.

2.5.3 Effects on target organisms

As the concentration of the active substance in Raid Cockroach Baits is lower (Indoxacarb 0.5% w/w) compared to the product used in the CAR, new efficacy studies were provided.

Nine efficacy studies were provided; seven laboratory tests and two field tests. The study summaries of the relevant studies can be found in the separate file 'Study summaries Raid Cockroach Bait'.
Four free-choice laboratory tests (B5.10(1), B5.10(4), B5.10(5) and B5.10(7)) were provided with product 15342P45-1, which is identical to Raid Cockroach Baits (0,5% w/w Indoxacarb). In these free choice laboratory studies the palatability and efficacy of both fresh and aged product against German cockroaches (*Blatella germanica*), American cockroaches (*Periplaneta americana*), and Oriental cockroaches (*Blatta orientalis*) is tested. In these tests a mortality >95% on fresh bait was reached after 7 days for *B. germanica*, after 10-14 days for *B. orientalis* and after 14 days for *P. americana* (not demonstrated in all tests). In the free-choice test on 35 months aged bait, mortality >95% was reached after 7 days for *B. germanica* and *P. americana*, and after 14 days for *B. orientalis.* It is therefore concluded that under laboratory conditions the palatability and mortality of 15342P45-1 in standard bait stations is shown to be sufficient for all three species of cockroaches and that the palatability and mortality is shown to be sufficient after 35 months of storage.

Besides these free choice studies, three laboratory studies with 15342P45-1 were provided in which the secondary kill resulting from coprophagy, necrophagy or contact with oral/anal secretions (study B5.10(2) on *P. americana* and B5.10(6) on *B. germanica*) and killing of eggs in formation (study B5.10(3) on *P. americana*) were tested. Results showed that mortality among 2-week old nymphs of *P. americana* due to secondary kill was 82-84% (control group 7-8%) and 92% among 2-week old nymphs of *B. germanica* (control group 19%, net mortality 73%). A 76-100% reduction in the number of nymphs hatching from second and third egg capsules was shown. Since secondary kill and killing of eggs in formation are not specifically claimed, study summaries of B5.10(2), B5.10(3), and B5.10(6) are not included.

Two field studies were conducted in which Raid Cockroach Baits was applied to *B. germanica* infestations in apartments, one in the Netherlands (B5.10(8)) and one in Czech Republic (B5.10(9)).
In the field trial in the Netherlands efficacy in low up to high level hygiene apartments was shown to be 87-100%. In the two apartments with a very low hygiene efficacy was much lower (36 and 61%). In this study efficacy was shown to be sufficient (>80%) provided that a sufficient level of hygiene is reached during treatment.
In the field trial in Czech Republic efficacy ranged from 93.7 % to 100 %. Although raw data on number of cockroaches caught in the glue traps are given in the study report, it is not entirely clear how the reported efficacy numbers were reached as the duration of pre- and post-treatment intervals for which the results were adjusted and the method for adjustment are not described. However, a clear reduction of the number of cockroaches in the more severely infested apartments was seen, hence efficacy in this study seems to be sufficient against *B. germanica*.

It is therefore concluded that the efficacy of Raid Cockroach Baits (Indoxacarb 0.50%) is sufficient against *B. germanica*, provided that the bait is applied in premises with a sufficient level of hygiene.
Field tests against the larger cockroaches *P. americana* and *B. orientalis* were not provided. The applicant informed us that suitable test locations could not be identified in Europe. The TNsG on Product Evaluation for PT18-19 requires field trials for all claimed species when a bait product is used, due to the specificity of baits. Therefore, efficacy against these larger cockroach species has not been proven.

Table 2.5.3.0: Efficacy of the active substance from its use in the biocidal product

Test substance	Test organism(s)	Test system/concentrations applied/exposure time	Test results*: effects, mode of action, resistance	Reference
15342P 45-1	*P. americana*, *B. germanica*, *B. orientalis*	Free-choice laboratory test 5 treatment arenas and 3 control arenas per species Fresh and aged bait (6 months old) (OPPTS 810.3500)	*B. germanica* - Fresh Bait – dying from day 1, after 7 days 98% mortality. *B. germanica* - Aged Bait - dying from day 1, after 7 days 90% mortality. *P. americana* – Fresh Bait – dying from day 2, after 18 days 92% mortality. *P. americana* – Aged Bait – dying from day 2, after 18 days 96% mortality. *B. orientalis* – Fresh Bait – dying from day 2 days, after 14 days 97% mortality. *B. orientalis* – Aged Bait – dying from day 2, after 14 days 98% mortality.	B5.10(1)
15342P 45-1	*P. americana*	Laboratory test 5 treatment and 2 control arenas Bait was offered to either 5 adult male cockroaches or 40, 4-week old nymphs. After 5 days, the harborages from the adult males and the harborages and 15 corpses from the 4-week old nymphs were transferred to secondary kill arenas containing 30 2-week old nymphs. Mortality was recorded over time. (OPPTS 810.3500)	Primary kill: Adult Males dying after 4 days, by 5 days 100% mortality. Primary kill: Nymphs dying after 4 days, by 7 days 83% mortality. Secondary Kill: 2-wk old nymphs matched to adult males dying after 2 days and by day 10, 82% mortality (8% mortality at matched controls). Secondary Kill: 2-wk old nymphs matched to 4 week old nymphs dying after 2 days and by day 10, 84% mortality (7% mortality at the matched controls).	B5.10(2)
15342P 45-1	*P. americana*	Laboratory test 10 treatment and	Adults were observed to die after 3 days, by 5 days 100% of the	B5.10(3)

		10 control arenas Single gravid female cockroaches in individual arenas with standard laboratory chow. First egg capsule removed and destroyed and the chow removed and replaced with a bait station. Mortality was recorded and the second and third egg capsules were collected and incubated. Egg hatch and subsequent mortality was recorded over time. (OPPTS 810.3500)	cockroaches were dead. Hatch of first egg capsules following test substance application was reduced with 76%. No hatch was observed from the second egg capsule (100% reduction).	
15342P 45-1	*P. americana*	Free-choice laboratory test 5 treatment and 2 control arenas Fresh and aged bait (3 months old).	Fresh Bait - Cockroaches were dying after 2 days, by 14 days 99% mortality. Aged Bait - Cockroaches dying after 2 days, by 21 days 93.2% mortality.	B5.10(4)
15342P 45-1	*B. orientalis*	Free-choice laboratory test 5 treatment and 2 control arenas Fresh and aged bait (3 months old).	Fresh Bait - Cockroaches dying after 2 days and by 14 days 100% mortality. Aged Bait - Cockroaches were dying after 2 days, by 10 days 100% mortality.	B5.10(5)
15342P 45-1	*B. germanica*	Laboratory test 5 treatment and 2 control arenas Bait was offered to 30, 4-week old nymphs per arena. After one day, 5 corpses from the treated 4-week old nymphs were transferred to secondary kill arenas containing 300 2-week old nymphs. After	Primary kill: 4-week old nymphs were dying after 1 day (82.7%). Secondary kill: 2-week old nymphs were dying after 34 days, by 9 days 91.9% mortality.	B5.10(6)

		introduction of the corpses mortality was recorded over time. (OPPTS 810.3500)		
15342P 45-1	*P. americana*, *B. germanica*, *B. orientalis*	Free-choice laboratory test 5 treatment and 2 control arenas per species Aged bait (35 months old). (OPPTS 810.3500)	*B. germanica* - Aged Bait - dying from day 1, after 7 days 95% mortality. *P. americana* – Aged Bait – dying from day 2, after 14 days 97% mortality. *B. orientalis* – Aged Bait – dying from day 2, after 7 days 98% mortality.	B5.10(7)
Raid Cockroach Bait (Indoxacarb 0.50%)	*B. germanica*	Field study in seven rental apartments infested with German cockroaches in a large apartment block in the Netherlands	Efficacy after 8 wks: one apartment 100%, four apartments efficacy 87 – 95%, two apartments 36% and 61%. The latter two apartments were classified beforehand as having a very low level of hygiene.	B5.10(8)
Raid Cockroach Bait (Indoxacarb 0.50%)	*B. germanica*	Field trial on eight test sites infested with German cockroaches in Czech Republic.	The treatment resulted in significant efficacy ranging from 93.7 % to 100 % compared with the pre-treatment assessment at all test sites.	B5.10(9)

* Efficacy (t) in field tests = 100%- Activity, where Activity (t) = (number of cockroaches counted in glue traps on t days after initial treatment / number of cockroaches counted in glue traps on day 0) * 100%

2.5.3.1 Dose

The active substance is incorporated in a ready for use bait at a concentration of 0.5% and is used by the general public (non-professional users). All six bait stations should be placed. For more severe infestations, it is recommended to use no more than 12 baits at any one time. The stations should be checked regularly whether the bait has been finished, if this is the case, the bait station should be replaced.

2.5.3.2 Mode of action

Indoxacarb is a pro-insecticide – it is not toxic to insects until it goes through an activation process. Upon ingestion by the insect, the indoxacarb is rapidly converted to DPX-JT333 by enzymatic cleavage of the N-carbomethoxy group in the insect mid-gut. DPX-JT333 binds to the sodium channels within the insect, thus blocking sodium movement into the cell, resulting in mild convulsions, paralysis and ultimately death.
There is a time delay to permit the insect to return to the nest, thus infecting more insects. This time delay is due to the time taken for the insect to ingest the indoxacarb and then to metabolise it to DPX-JT333, which is toxic and can bind to the sodium channels. The delay varies slightly across species and is also influenced somewhat by the formulation and manner in which the insect is exposed/dosed. Generally, the conversion process begins shortly after ingestion with mortality beginning within hours after ingestion.

2.5.3.3 Limitations

No limitations for efficacy are mentioned.

2.5.3.4 Resistance

There are no reported cases of resistance developing. The baits are only used where cockroaches are observed and are placed in locations likely to be a harbourage or run. The results of a literature search using the key words indoxacarb and resistance revealed no reported instance of resistance. The results indicated that no evidence of resistance has been observed. Resistance is an issue however, with other common classes of insecticide, used for cockroach control.
The development of resistance to insecticides in cockroaches is increasing. To date, only *B. germanica* have developed a degree of resistance that presents control problems in the USA. Resistance to all the major groups of insecticide (pyrethroids, organochlorines, organophosphates and carbamates) have been reported in the USA. In the UK, cockroach resistance is known to the pyrethroids and organophosphates but the issue of resistance has not been as extensively studied as it has in the USA.

Resistance management strategy

Raid Cockroach Baits is meant for non-professional use only. It cannot be expected that non-professional users can apply detailed resistance management strategies. If 3 months after the start of the treatment the infestation is not controlled, the user should seek help of a professional pest controller. Precautionary measures should be taken to prevent recontamination with cockroaches.

2.5.4 Evaluation of the label claim

Field tests against the larger cockroaches *P. americana* and *B. orientalis* were not provided, hence efficacy against the larger cockroach species has not been proven in field tests. In the Netherlands, *B. germanica* (a smaller species up to 1.5 cm long excl. antenna) is the main cockroach species. As it cannot be expected that consumers can discriminate between cockroach species, the Dutch label will therefore state ‘for use against smaller cockroaches (up to 1.5 cm excluding antenna)’. The RMS does not approve a general cockroach label claim, because field tests are not submitted for the larger species.
Efficacy of Raid Cockroach Baits (Indoxacarb 0.50%) was shown to be sufficient against *B. germanica*, provided that the bait is applied in premises with a sufficient level of hygiene. The label instructions should therefore emphasise that in order to achieve sufficient control effect, good hygiene is necessary, so that - apart from the bait - as little food as possible is available for the cockroaches.
A minimum of 6 baits and maximum of 12 baits should be applied; baits should be placed on locations in the direct vicinity of cockroaches, such as behind a refrigerator in the kitchen cabinets, near pipe shafts, etc. Placing the bait stations in open places should be avoided.
With regard to the resistance management strategy, if 3 months after the start of the treatment the infestation is not controlled, baits should not be replaced, but the user should seek help of a professional pest controller.

2.6 Exposure assessment

2.6.1 Description of the intended use(s)

Raid Cockroach Baits is a ready-to-use cockroach bait based on Indoxacarb (0.5% w/w) in peanut butter (2.6 g bait per bait station). This product is for indoor use only; it should only be used in case of infestations and at places where cockroaches are seen. All six bait stations should be placed; for heavy infestations, it is recommended to use no more than 12 baits at any one time. The intended use of Raid Cockroach Baits is similar to that of the cockroach bait product used as guide formulation in the CAR.

2.6.2 Assessment of exposure to humans and the environment

For the product Raid Cockroach Bait to be used indoors by non-professionals no new studies have been provided. The environmental exposure and risk assessment of the biocidal product Raid Cockroach Bait from the applicant was examined appropriately according to standard requirements. The product was not a reference product in the EU-review program for inclusion of the active substance in Annex I of Directive 98/8/EC. For the environmental exposure and risk assessment of Raid Cockroach Bait, the applicant refers to the reference product Raid PDQ with identical intended use (i.e. 12 bait stations per household for a heavy infestation). Raid PDQ contains 1.9 % (w/w) DPX-MP062-MUP which is equivalent to 1.33 % (w/w) DPX-MP062 (which is equivalent to 1.0% w/w indoxacarb), for use as an insecticide. From an environmental point of view, Raid PDQ differs from Raid Cockroach Bait only in concentration indoxacarb (0.5% in Raid Cockroach Bait vs. 1% in Raid PDQ). As the concentration of indoxacarb in Raid Cockroach Bait is lower, the results for Raid PDQ are considered worst-case for Raid Cockroach Bait and therefore no new data/information is required.

The applicant has submitted an effect and exposure assessment for Raid Cockroach Bait. The RMS NL has approved this risk assessment. For national authorisation purposes the risk assessment of Raid Cockroach Bait performed by the applicant are included in this Product Authorisation Report as the assumption that 5.5% of the 4000 houses in the catchment area of a STP, are using bait stations (maximum of 12 bait stations per household for a heavy infestation) seems to be more realistic than the assumption that the reference product is used at 25 % of households (at any one time) connected to a single STP stated in the final CAR for inoxacarb (May 2010).

Environmental exposure occurs when Raid Cockroach Bait is emitted during service life from cleaning events. See for more detail section 2.8 below.

2.7 Risk assessment for human health

For the product Raid Cockroach Bait no new studies have been provided. Raid Cockroach Bait is not a reference product of the CAR for indoxacarb, however the risk assessment in the CAR is performed for a comparable product (i.e. Raid PDQ) with identical intended use. However the concentration of indoxacarb in the two products is different (0.5% in Raid Cockroach Bait vs. 1% in Raid PDQ). As the concentration of indoxacarb in Raid Cockroach Bait is lower, the results for Raid PDQ are considered worst-case for Raid Cockroach Bait and therefore no new data/information is required.

2.7.1 Hazard potential

2.7.1.1 Toxicology of the active substance

The toxicology of the active substance was examined extensively according to standard requirements. The results of this toxicological assessment can be found in the CAR. The threshold limits and labelling regarding human health risks listed in Annex 4 „Toxicology and metabolism" must be taken into consideration.

2.7.1.2 Toxicology of the substance(s) of concern

The biocidal product does not contain substances of concern.

2.7.1.3 Toxicology of the biocidal product

For the toxicology of Raid Cockroach Bait, the applicant submitted data of the comparable product Raid PDQ, which was evaluated in the CAR. Raid PDQ contains 1.9 % (w/w) DPX-MP062-MUP which is equivalent to 1.33 % (w/w) DPX-MP062 (which is equivalent to 1.0% w/w indoxacarb), for use as an insecticide. From a toxicological view, Raid PDQ differs from Raid Cockroach Bait only in concentration indoxacarb, 0.5% in Raid Cockroach Bait vs. 1% in Raid PDQ, all other co-formulants are not classified for toxicological properties. As the concentration of indoxacarb in Raid Cockroach Bait is lower, the results for Raid PDQ are considered worst-case for Raid Cockroach Bait and therefore the no new data/information is required.
The basis for the health assessment of the biocidal product is laid out in Annex 5 ”Toxicology – biocidal product”

2.7.2 Exposure

The biocidal product Raid Cockroach Bait contains 0.5% w/w indoxacarb (pure active substance). For the exposure assessment we refer to the exposure assessment for Raid PDQ in the CAR. The results for the exposure of Raid PDQ are considered worst-case for Raid Cockroach Bait.

2.7.2.1 Exposure of professional users

Raid Cockroach Bait is intended for non-professional use only.

2.7.2.2 Exposure of non-professional users and the general public

In Annex 6 “Safety for non-professional operators and the general public”, the results of the exposure calculations for the active substance and the substance of concern for the non-professional user and the general public are laid out.

2.7.2.3 Exposure to residues in food

The intended use descriptions of the indoxacarb containing biocidal product Raid Cockroach Bait for which authorisation is sought indicate that these uses are not relevant in terms of residues in food and feed. The product is to be used for the control of cockroaches (PT18) does not come in direct contact with food and feedstuff. No further data are required concerning the residue behaviour.

2.7.3 Risk Characterisation

With proper use in accordance with regulations harmful effects on the health of users and third parties are not expected. The estimated exposures for the intended use are compared to the respective systemic AEL.

2.7.3.1 Risk for Professional Users

Not applicable: Raid Cockroach Bait is intended for non-professional use only.

2.7.3.2 Risk for non-professional users and the general public

The direct exposure, exposure via the environment or to other residues resulting from the intended use is unlikely to cause any unacceptable acute or chronic risk to consumers (non-professionals, bystanders and residents). Regarding consumer health protection, there are no objections against the intended use of Raid Cockroach Bait.

2.7.3.3 Risk for consumers via residues

The acute or chronic exposure to residues in food resulting from the intended uses is unlikely. Therefore the risk for consumers to residues from food is considered negligible.

2.8 Risk assessment for the environment

Raid Cockroach Bait is a ready-for-use solid bait product sold in a bait station intended for use by non-professionals indoors only [household use] against cockroaches. The following major environmental exposure scenario has been identified (see also Table 2.8.-1):

1. Emissions from bait washed off/from treated hard surfaces (indoors) as a result of wet cleaning resulting in:
    a. direct exposure to the sewage treatment plant (STP) compartment via drains,
    b. indirect exposure to surface waters (including sediment) via STP effluent,
    c. indirect exposure to soil compartment (including groundwater) via STP sludge application to land and
    d. indirect exposure to biota via surface waters (bioconcentration in fish → secondary poisoning of fish eating birds).

Indirect environmental exposure via domestic waste [as a result of dry disposal] to landfill has not been considered, since this is likely to be much less of a concern when compared to the direct exposure via the STP and soil compartments. In addition, the effect of its dilution with other wastes, biodegradation of the active substance (a.s.) and the significant containment measures at landfill sites according to European Union (EU) waste regulations (EU Directive 99/31/EC) reduces the concerns further.
Similarly regional predicted environmental concentrations (PECs) have not been considered as part of this assessment, as it was agreed at TMI06 that local PECs should be sufficiently protective when based on reasonable worst-case assumptions. The emissions and/or local concentrations have been determined for the environmental compartments of concern shown in Table 2.8.-1.

Table 2.8-1 Environmental compartments predicted to be exposed during the use of Raid Cockroach Bait

	Environmental compartments of concern						
	Air	**STP**	**Surface waters**	**Sediment**	**Soil**	**Groundwater**	**Biota**
Indoors (wet cleaning)	**(+)**	++	+	+	+	+	+

It is assumed that no release will occur during the service life (cleaning) stage for baits deployed in bait stations (ESD page 64). ESD page 80, however, contradicts this view by stating, "....it might be considered that for some insects, releases might be possible. For example, for cockroaches, the product is found in the faeces that could be deposited in areas available to cleaning events. Moreover it is not excluded that a fraction of the product applied could be eliminated through a cleaning event." To be very conservative the possibility of emissions from cleaning will therefore be addressed.

No new information related to the environment have been submitted by the applicant, except for a proposal to change the simultaneous use of the product against cockroaches. Although the applicant did not substantiate this change, we consider that for the use of baits against cockroaches in the Netherlands a simultanuous use of 25% of the households is an overestimation. The proposal to apply a simultaneous use 5.5% seems to be reasonable.

No studies were submitted with the product authorisation application for the active substance or for the product that were not already evaluated during the Annex I active review stage or studies. Detailed data on the fate and distribution of indoxacarb in the

environment and the effect of the active substance on environmental organisms can be consulted in Doc IIA of the final CAR for indoxacarb (PT18).

2.8.1 Exposure Assessment

Tier 1 Assessment

The following input values were used in the assessment:

Table 2.8.1-1: Inputs used in Exposure Assessment

Input	Value	Source
Number of houses per catchment	4000	ESD Section 2.7, page 40
Maximum fraction of total houses treated (Simultaneity Factor – indoors)	0.055	ESD Section 2.7, page 40
Weight of bait in bait station (g)	2.6	Applicant
Percentage DPX-MP062 in the bait (%)	0.67	Applicant
Amount of bait transported out of the bait station by cockroaches (%)	1.0	Used in the UK CAR May 2008
Residual time for bait station (days)	90	Applicant

It is assumed that there are 4000 houses in the catchment area of a STP, that 5.5% of these houses are using bait stations (maximum of 12 bait stations per household for a heavy infestation) containing 2.6 g Raid Cockroach Bait (0.67% DPX-MP062) and that 1% of the bait is transported via cockroaches out of the bait station onto the floor. The floor is then cleaned and the waste water produced is directed to the STP. The bait stations are intended to be in situ for up to 3 months therefore the amount of bait released from the bait station can be divided by the number of days in situ. To be conservative, 1 month (30 days) has been used in this assessment to obtain the concentration of DPX-MP062 estimated to enter the STP per day.
No. of houses x weight of bait x No. of bait stations per household x % bait transported out of bait station x simultaneity factor x % active ingredient / 30 days
= 4000 x 2.6 x 12 x 0.01 x 0.055 x 0.0067 / 30 = **1.53E-02 g/d a.i.**

Tier 2 Assessment (Reverse Reference Scenario)
Using a reverse reference scenario the maximum number of baits which can safely be used in each house (assuming 4000 houses in the catchment area and a simultaneity factor of 0.055) without exceeding the PEC/PNEC ratio of 1 for all of the key environmental compartments is 267 bait stations per household. Based on this number of bait stations, the concentration of DPX-MP062 estimated to enter the STP per day is calculated as follows:-
No. of houses x weight of bait x number of bait stations per household x % transported out of bait station x simultaneity factor x % active / 30 days
= 4000 x 2.6 x 267 x 0.01 x 0.055 x 0.0067 / 30 = **0.341 g/d a.i.**

2.8.1.1 PEC in surface water and sediment

The calculated emission to waste water from Tiers 1 and 2 can be inserted into EUSES Version 2.1.1 using the following input values, and the PEC in surface water (due to indirect exposure from an STP, as no direct exposure is anticipated) and sediment can be calculated.

Table 2.8.1.1-1: Inputs used in EUSES Version 2.1.1

Input	Value	Source

Molecular weight	527.84	-
Vapour pressure at 25°C (minimum value)	2.5E-08	Reported for DPX-KN128 at 25°C
Log Octanol/water partition coefficient	4.65	Reported for DPX-KN128 at 25°C
Water solubility at 25°C (mg/L)	0.225	Reported for DPX-MP062 at 20°C.
Organic carbon/water partition coefficient (L/kg)	5125	Mean value (2500-9600) for DPX-JW062.
Henry's Law Constant ($Pa/m^3/mol$)	5.86E-05	Calculated using the vapour pressure of DPX-KN128 and water solubility of DPX-MP062.
Rate constant for hydrolysis in surface water	DT_{50} 22 days @ 25°C, pH7	Lentz. N., 2002a
Rate constant for photolysis in surface water (t½)	3 days	Lentz. N.R., 2002b
Local population in catchment area of STP	1E+04	TGD Part II Table 9 page 62
Daily wastewater flow per inhabitant (L/d)	200	TGD Part II Table 9 page 62
Effluent discharge rate of STP (L/d)	2E+06	TGD Part II Table 9 page 62
Number of houses per catchment	4000	ESD Section 2.7, page 40

Local PEC outputs for STP micro-organisms, surface waters and sediment are as follows:

Tier 1 Assessment - Indoxacarb

Table 2.8.1.1-2: Local Aquatic PEC Outputs for Indoxacarb – Tier 1

Analyte	Compartment	PEC (12 Baits per household)
Indoxacarb	PEC for micro-organisms in the STP (mg/l)	4.75E-06
	Local PEC in surface water during emission episode (dissolved) (mg/l)	4.72E-07
	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	5.29E-05

Tier 2 Assessment (Reverse Reference Scenario) - Indoxacarb

Table 2.8.1.1-3: Local Aquatic PEC Outputs for Indoxacarb – Tier 2 (Reverse Reference Scenario)

Analyte	Compartment	PEC (267 Baits per household)
Indoxacarb	PEC for micro-organisms in the STP (mg/l)	1.06E-04
	Local PEC in surface water during emission episode (dissolved) (mg/l)	1.05E-05
	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	1.18E-03

No assessment of the exposure to groundwater has been performed as it is considered that exposure will be negligible based on the proposed use of Raid Cockroach Bait. In addition, the available Koc data (mean value of 5125 l/kg for DPX-JW062; see CAR UK, May 2008, Document II-A, Section 4.1.2.1) suggests that DPX-MP062 is likely to have very low potential for mobility in the soil compartment, and the low water solubility for DPX-

MP062 (0.225 mg/l at 20°C) and its degradation in soil (mean DT_{50} of 18 days) support this view.
PEC's for IN-JT333 and IN-KT413 have been derived from the PEC's for Indoxacarb using the following calculations:
IN-JT333
Concentration of IN-JT333 in sediment (mg/kg wwt) =
Concentration of Indoxacarb sediment * Molecular weight of IN-JT333 (469.8) * % metabolite in sediment (0.209) / Molecular weight of Indoxacarb (527.84)
IN-KT413
Concentration of IN-KT413 in surface water (mg/l) =
Concentration of Indoxacarb in surface water * Molecular weight of IN-KT413 (512.8) * % metabolite in surface water (0.138) / Molecular weight of Indoxacarb (527.84)
Concentration of IN-KT413 in sediment (mg/kg wwt) =
Concentration of Indoxacarb in sediment * Molecular weight of IN-KT413 (512.8) * % metabolite in sediment (0.11) / Molecular weight of Indoxacarb (527.84)

Tier 1 Assessment - Metabolites

Table 2.8.1.1-4: Local Aquatic PEC Outputs for IN-JT333 and IN-KT413 – Tier 1

Analyte	Compartment	PEC (12 Baits per household)
IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	1.59E-06
IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	1.58E-07
	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	1.77E-05

Tier 2 Assessment (Reverse Reference Scenario) - Metabolites

Table 2.8.1.1-5: Local Aquatic PEC Outputs for IN-JT333 and IN-KT413 – Tier 2 (Reverse Reference Scenario)

Analyte	Compartment	PEC (267 Baits per household)
IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	9.84E-06
IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	6.33E-08
	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	5.65E-06

2.8.1.2 PEC in Air - Indoxacarb

Indoxacarb has a very low predicted vapour pressure (DPX-KN128 with 2.5 x 10^{-8} Pa at 20°C and DPX-JW062 with 1.3 x 10^{-10} Pa at 20°C). Based on the Atkinson method, the predicted half-life of DPX-JW062 after reaction with average daily air concentrations of hydroxyl radicals (12 hour day, 1.5 x 10^{6} OH radicals per cm^3) is predicted to be 3.4 h. It is therefore expected that exposure to the air compartment will be negligible.
Using EUSES Version 2.1.1 the emissions to air from the Tier 1 and Tier 2 assessments are shown below:-

Table 2.8.1.2-1: Local Atmospheric PEC Outputs for Indoxacarb

Analyte	Compartment	PEC (12 Baits per household) Tier 1	PEC (267 Baits per household) Tier 2
Indoxacarb	Annual Average Local PEC in Air (total) (mg/m^3)	3.6E-18	8.02E-17

2.8.1.3 PEC in Soil - Indoxacarb

The bait will not come into direct contact with soil at any point during normal usage. However, in the event that material enters the waste water system, there is the potential for contaminated sewage sludge from an STP to subsequently be spread on agricultural land. In view of this possibility, the following PEC values for soil have been extracted from the outputs contained in Section 2.7.1.1.

Tier 1 Assessment

Table 2.8.1.3-1: Local Terrestrial PEC Outputs for Indoxacarb – Tier 1

Outputs	PEC (12 Baits per household)
Local PEC in agricultural soil (total) averaged over 30 days (mg/kg wwt)	6.39E-06
Local PEC in agricultural soil (total) averaged over 180 days (mg/kg wwt)	1.55E-06

Tier 2 Assessment (Reverse Reference Scenario)

Table 2.8.1.3-2: Local Terrestrial PEC Outputs for Indoxacarb – Tier 2

Outputs	PEC (267 Baits per household)
Local PEC in agricultural soil (total) averaged over 30 days (mg/kg wwt)	1.42E-04
Local PEC in agricultural soil (total) averaged over 180 days (mg/kg wwt)	3.46E-05

2.8.1.4 Non compartment specific exposure relevant to the food chain (secondary poisoning)

The physico-chemical properties of the active substance suggest that it may theoretically be subject to bioaccumulative processes. The results of a fish bioaccumulation study (Premkumar, et al (1997)) initially support this conclusion (BCF for whole fish averaged 1053 and 847 at Day 21 and Day 28 of the exposure phase, respectively). However, given a depuration rate of 90% after 21 days during the post-exposure phase of this study, coupled with the fact that the pattern of use indicates that both the frequency and extent of exposure from the proposed use are very low, it is concluded that there is no practical potential for bioaccumulation (and hence secondary poisoning) to occur in practice. Abiotic degradation processes will further act to reduce the environmental residence time of the active substance.

2.8.1.5 Summary of the Environmental Exposure Assessment

Table 2.8.1.5-1: Summary of Local PECs

Tier	Assessment		PEC
Tier 1 Assessment (12 Baits per	Indoxacarb	PEC for micro-organisms in the STP	4.75E-06
		Local PEC in surface water during emission episode (dissolved)	4.72E-07

Tier	Assessment		PEC
household)		Local PEC in fresh-water sediment during emission episode	5.29E-05
		Annual average local PEC in air (total)	3.6E-18
		Local PEC in agricultural soil (total) averaged over 30 days (mg/kg/wwt)	6.39E-06
		Local PEC in agricultural soil (total) averaged over 180 days (mg/kg/wwt)	1.55E-06
	IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	9.84E-06
	IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	6.33E-08
		Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	5.65E-06
Tier 2 Assessment (Reverse Reference) (267 Baits per household)	Indoxacarb	PEC for micro-organisms in the STP	1.06E-04
		Local PEC in surface water during emission episode (dissolved)	1.05E-05
		Local PEC in fresh-water sediment during emission episode	1.18E-03
		Annual average local PEC in air (total)	8.02E-17
		Local PEC in agricultural soil (total) averaged over 30 days (mg/kg/wwt)	1.42E-04
		Local PEC in agricultural soil (total) averaged over 180 days (mg/kg/wwt)	3.46E-05
	IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	2.20E-04
	IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	1.41E-06
		Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	1.26E-04

The full printouts obtained from the EUSES Version 2.1.1 modelling described above are included in Appendix 1.

2.8.2 Risk Assessment

Predicted No Effect Concentrations (PNECs)

Indoxacarb

Table 2.8.2-1: PNECs for Indoxacarb

PNEC	Value
$PNEC_{STP}$	10 mg/l
$PNEC_{freshwater}$	0.009 mg/l
$PNEC_{sediment,freshwater}$	1.01 mg/kg wwt
$PNEC_{soil}$	0.0056 mg/kg wwt
$PNEC_{oral}$	4.8 mg/kg food

IN-JT333

Table 2.8.2-2: PNECs for IN-JT333

PNEC	Value
$PNEC_{sediment,freshwater}$	0.00022 mg/kg wwt (0.00096 mg/kg dwt)

IN-KT413

Table 2.8.2-3: PNECs for IN-KT413

PNEC	Value
$PNEC_{freshwater}$	0.039 mg/l
$PNEC_{sediment,freshwater}$	0.322 mg/kg wwt

The PNEC values were calculated as described in the Competent Authority Report; UK, May 2008, Section 4.3.

2.8.2.1 Aquatic compartment (incl. sediment)

The risk characterisation step is carried out by comparing the PEC derived for each exposure scenario (as set out in Section 2.8.1.5 above) with the relevant PNEC value. This results in a PEC/PNEC ratio for each scenario. Scenarios for which the PEC/PNEC value is <1.0 are considered to pose no unacceptable risk to the aquatic environment. The PEC/PNEC ratios determined for Raid Cockroach Bait in the aquatic compartment are set out below.

Table 2.8.2.1-1: Aquatic PEC/PNEC Values – Tiers 1 and 2

Tier	Assessment		PEC	PNEC	PEC/PNEC
Tier 1 Assessment (12 Baits per household)	Indoxacarb	PEC for micro-organisms in the STP	4.75E-06	10	0.0000005
		Local PEC in surface water during emission episode (dissolved)	4.72E-07	0.009	0.00005
		Local PEC in fresh-water sediment during emission episode	5.29E-05	1.01	0.00005
	IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	9.84E-06	2.20E-04	0.04
	IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	6.33E-08	3.90E-02	0.000002
		Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	5.65E-06	0.322	0.00002
Tier 2 Assessment (Reverse Reference) (267 Baits per household)	Indoxacarb	PEC for micro-organisms in the STP	1.06E-04	10	0.00001
		Local PEC in surface water during emission episode (dissolved)	1.05E-05	0.009	0.001
		Local PEC in fresh-water sediment during emission episode	1.18E-03	1.01	0.001
	IN-JT333	Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	2.20E-04	2.20E-04	**0.998**
	IN-KT413	Local PEC in surface water during emission episode (dissolved) (mg/l)	1.41E-06	3.90E-02	0.00004
		Local PEC in fresh-water sediment during emission episode (mg/kg wwt)	1.26E-04	0.322	0.0004

It is considered that there is no realistic potential for migration of Indoxacarb through the soil into groundwater. This view is supported by the extremely low mobility demonstrated in a field soil dissipation study. It is, therefore, not considered necessary to determine a PEC/PNEC ratio for Indoxacarb in groundwater following use of Raid Cockroach Bait.
The PEC/PNEC ratios indicate that there is no cause for concern. The maximum number of baits that can be used per household within a sewage treatment catchment area is calculated to be 267 bait stations.
The assessments made are considered to be very conservative for a number of reasons:-

1. The ESD (OECD, 17th July 08), states that it is assumed that no release will occur during the service life (cleaning) stage for baits deployed in bait stations (page 64). However as there is some ambiguity in the guidance, ESD page 80, states, "...it might be considered that for some insects, releases might be possible. For example, for cockroaches, the product is found in the faeces that could be deposited in areas available to cleaning events. Moreover it is not excluded that a fraction of the product applied could be eliminated through a cleaning event." The possibilities of emissions from cleaning have therefore been addressed.
2. The Tier 1 assessment is based on 12 bait stations per household which is the maximum number of bait stations recommended for a heavy infestation. Typically a consumer would use 6 bait stations.
3. The residual bait claim is for 3 months, however to be conservative a value of 1 month has been used in this assessment as the time period for 1% of the bait to be removed from the bait station.
4. The label instructions for use should also restrict emissions of Raid Cockroach Bait to the STP:-
    - Products shall be positioned away from external drains.
    - Unused products shall be disposed of properly and not washed down the drain.

Overall it is considered that there is no significant concern to the aquatic environment from indoor use of Raid Cockroach Bait.

2.8.2.2 Atmosphere

Indoxacarb has a very low predicted vapour pressure (DPX-KN128 with 2.5 x 10^{-8} Pa at 20°C and DPX-JW062 with 1.3 x 10^{-10} Pa at 20°C). Based on the Atkinson method, the predicted half-life of DPX-JW062 after reaction with average daily air concentrations of hydroxyl radicals (12 hour day, 1.5 x 10^{6} OH radicals per cm^3) is predicted to be 3.4 h, therefore, it is expected that exposure to the air compartment will be negligible.

2.8.2.3 Terrestrial compartment

The risk characterisation step is carried out by comparing the PEC derived for each exposure scenario (as set out in section 2.8.1.5) with the relevant PNEC value (as set out in Table 2.8.2-1). This results in a PEC/PNEC ratio for each scenario. Scenarios for which the PEC/PNEC value is <1.0 are considered to pose no unacceptable risk to the terrestrial environment. The PEC/PNEC ratios determined for Raid Cockroach Bait in the terrestrial compartment are set out below.

Table 2.8.2.3-1: Terrestrial PEC/PNEC Values – Tiers 1 and 2

Tier	Assessment		PEC	PNEC	PEC/PNEC
Tier 1 Assessment (12 Baits per household)	Indoxacarb	Local PEC in agricultural soil (total) averaged over 30 days (mg/kg wwt)	6.39E-06	0.0056	0.0011
		Local PEC in agricultural soil (total) averaged over 180 days (mg/kg wwt)	1.55E-06	0.0056	0.0003

Tier 2 Assessment (Reverse Reference) (267 Baits per household)	Indoxacarb	Local PEC in agricultural soil (total) averaged over 30 days (mg/kg wwt)	1.42E-04	0.0056	0.0254
		Local PEC in agricultural soil (total) averaged over 180 days (mg/kg wwt)	3.46E-05	0.0056	0.0062

2.8.2.4 Conclusion

Overall it is considered that there is no significant concern to the environment from use of Raid Cockroach Bait.

2.8.2.5 Non compartment specific effects relevant to the food chain

Primary Poisoning

It is considered that the possibility of primary poisoning is very unlikely as the bait is placed by professionals indoors in inaccessible places. Even if a wild bird or mammal did gain access to the bait the exposure would only be localised and would not result in widespread (population level) exposure.

Secondary Poisoning

Aquatic compartment

The log octanol/water partition coefficient of Indoxacarb (4.65) suggests that it may have significant potential for bioconcentration in the aquatic environment, with the possibility of bioaccumulation leading to secondary poisoning. This theoretical potential is further reflected in a calculated bioconcentration factor (BCF) for fish of 1788 (estimated using the QSAR method of Vieth et al 1979, as presented in the Technical Guidance Document on Risk Assessment (TGD, 2003)) and a default biomagnification factor (BMF) of 2 (determined as set out in TGD, 2003).

The results of a bioconcentration study with DPX-JW062 (comprising 50:50 IN-KN127:DPK-KN128) in bluegill sunfish initially support the theoretical indications of secondary poisoning potential, with average steady-state BCF values of 1053 and 847 for both radiolabels at Days 21 and 28 of the exposure phase, respectively. However, data obtained during the subsequent depuration phase indicate removal of residues from whole fish, with times to 50%, 90% and 95% depuration of 7.0, 21.8 and 30.3 days, respectively. This rate of depuration demonstrates that, in practice, any Indoxacarb taken up by an aquatic organism will be rapidly eliminated once exposure ceases, thereby mitigating any perceived potential for biomagnification through the food chain that may otherwise lead to secondary poisoning.

Calculated Risk to Fish Eating Predators

The risk to the fish-eating predators (mammals and/or birds) is calculated as the ratio between the concentration in their food (PECoral, predator) and the no-effect-concentration for oral intake (PNECoral). The concentration in fish is a result of uptake from the aqueous phase and intake of contaminated food (aquatic organisms). Thus, PECoral, predator is calculated from the bioconcentration factor (BCF) and a biomagnification factor (BMF).

The concentration of contaminant in food (fish) of fish-eating predators (PECoral, predator) is calculated from the PEC for surface water (1.05E-05mg/l, Table 2.8.1.1-3), the measured or estimated BCF for fish (950.3 measured DPX-JW062) and the BMF (1 based on measured BCF).

PECoral, predator = PECwater * BCFfish * BMF

PECoral, predator = 1.05E-05 mg/l * 950.3 * 1

PECoral, predator = 9.98E-03 mg/kg wet fish

A predicted no effect oral concentration (PNECoral) can be calculated based on the results of the avian repeat dose toxicity tests. The result of this calculation gives a predicted no-effect concentration in food that should be protective to other avian species.

A predicted no effect oral concentration (PNECoral) can be calculated based on the results of the toxicity data for birds (LC50 dietary). The result of this calculation gives a predicted no-effect concentration in food that should be protective to other avian species.
According to the Technical Guidance Document on Risk Assessment Part II (page 128), secondary poisoning effects on bird populations rarely occurs over the short-term. Therefore, results from long-term studies are strongly preferred, such as NOECs for mortality, reproduction or growth. Considering a one-generation study with the Northern Bobwhite (Colinus virginianus) (Frey et al 1997) performed to GLP standards according to OECD 206 and FIFRA guideline 71-4, the lowest NOEC was 144 ppm. Taking into account a safety factor of 30 (as indicated in Table 23 of the TGD on Risk Assessment Part II, page 130), a PNECbird of 4.80 mg/kg food is obtained.
Comparing this value to the calculated PECoral, predator 9.98E-03 mg/kgwet fish it can be determined that that there is no unacceptable risk from fish eating birds (PEC/PNEC = 7.40E-02 /4.80 = 0.002).

2.8.2.6 Terrestrial compartment

In the terrestrial compartment it is not expected that earthworms are at risk from exposure to Indoxacarb. Therefore, biomagnification through the food chain through predation is considered unlikely.
The CAR UK May 2008, Document IIC, considered that there was no significant food chain concern via the ingestion of earthworms by birds.

None of the co-formulants in the Raid Cockroach Bait are considered to be substances of concern with regard to the environment.

2.9 Measures to protect man, animals and the environment

The instructions for use must contain the following indications in the Netherlands:

- To be used by non-professionals as an insecticide (PT18) against *B. germanica*
- For indoor use only
- Keep and place away from children and pets
- Remove dead cockroaches daily.
- Do not apply in places that may come into contact with food or that become wet.
- Use this product only if there is a cockroach infestation and in areas where cockroaches are seen.
- Place the bait stations only at locations where cockroaches are in the direct vicinity, such as behind a refrigerator, in the kitchen cabinets, near pipe shafts, etc.
- Avoid placing the bait stations in open places.
- Gather the remains of the unused bait, wrap in plastic and hand in at the Chemical Waste Depot.
- In order to achieve sufficient control effect, good hygiene is necessary, so that - apart from the bait - as little food as possible is available for the cockroaches.
- Investigate the source of infection and take precautions to prevent recontamination with cockroaches (sealing holes, removing possible food, etc.).
- Place all six bait stations. For severe infestations, it is recommended to use no more than 12 baits at any one time, or else contact a professional pest controller.
- Do not use in places where the temperature exceeds 50 º C.
- If 3 months after the start of the treatment the infestations continues, a professional pest controller should be contacted.

3 Proposal for decision

The RMS NL considers that sufficient data have been provided to verify the outcome and conclusions, and permits the authorisation of Raid Cockroach Bait.

Proposed classification based on Directive 1999/45/EC:

Symbol:	Xi	
Indication of danger:	Irritant	
R-phrases:	R43	May cause sensitization by skin contact.
	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	S37*	Wear suitable gloves.

* S36 (wear suitable clothing) is not assigned as the product is a bait station, therefore no direct exposure to the body is expected.

Proposed classification based on Regulation EC 1272/2008:

Signal word:	Warning		
Pictogram:	GHS07		
	Hazard class-and-Category	**Code**	**Hazard statement**
Hazard statements:	Skin Sens. 1	H317	May cause an allergic skin reaction.
	Aquat.chron.3	H412	Harmful to aquatic life with long lasting effects.
Precautionary statements:		P280a*	Wear protective gloves.

* P280a (Wear protective gloves) is assigned instead of P280c (Wear protective gloves and clothing), as the product is a bait station, therefore no direct exposure to the body is expected.

4 Annexes:

1. **Summary of product characteristics [CONFIDENTIAL]**
2. **List of studies reviewed**
3. **Analytical methods residues – active substance**
4. **Toxicology and metabolism –active substance**
5. **Toxicology – biocidal product**
6. **Safety for non-professional operators and the general public**
7. **Residue behaviour**
8. **Calculation sheets EUSES**

Annex 1: Summary of product characteristics - CONFIDENTIAL

(a) Product trade name: Raid Cockroach Bait

(b) (i) Qualitative and quantitative information on the composition of the biocidal product

NB: This information is confidential and should not be disclosed to third parties

Active substance(s)				**Contents**				
Common name	**IUPAC name**	**CAS number**	**EC number**	**Concentration**	**Unit[2]**	**w/w (%)**	**Minimum purity (% w/w)**	**Same source as for Annex I inclusion**
Indoxacarb (formulated as DPX-062 MUP 52% technical concentrate)	methyl (S)-7-chloro-2,3,4a,5-tetrahydro-2-[methoxycarbonyl-(4-trifluoromethoxyphenyl)carbamoyl]indeno[1,2-e][1,3,4]oxadiazine-4a-carboxylate	173584-44-6 (TK) 173584-44-7 (PAI)	N/A N/A	9.62 5.0	g/kg g/kg	0.962 (TK) 0.50 (PAI)	46.7	 yes

Co-formulants					**Contents**				
Common name	**IUPAC name**	**Function**	**CAS number**	**EC number**	**Concentration**	**Unit**	**w/w (%)**	**Classification**	**Substance of concern**
Peanut Butter		**Bait**	**N/A**				**76.5380**	**None**	**No**
Peanut Oil		**Bait**	**8002-03-7**	**232-296-4**			**5.00**	**None**	**No**
Sucrose		**Bait**	**57-50-1**	**200-334-9**			**5.00**	**None**	**No**
Oils vegetable hydrogenated		**Binder**	**68334-28-1**	**269-820-6**			**7.50**	**None**	**No**
Paraffin waxes and hydrocarbon waxes, microcryst		**Binder**	**63231-60-7**	**264-038-1**			**5.00**	**None**	**No**
				Sum			**100.0**		

2 g/l, g/kg, other. For biological products, the concentration should state the number of activity units/units of potency (as appropriate) per defined unit of formulation (e.g. per gram or per litre).

(b) (ii) Is the product identical to the representative product, assessed for the purpose of the Annex I inclusion?

no

If not, briefly describe the difference.

The formulation is not identical to those assessed in the Competent Authority Report by RMS UK. One of the three formulations included in the report, Raid PDQ, is highly similar. Read-across will be possible in some cases.

(b) (iii) Does the biocidal product contain or consist of Genetically Modified Organisms (GMOs) within the meaning of Directive 2001/18/EC?

No

(c) Manufacturer(s) of the active substance(s) (name(s) and address(es) including location of plant(s))

Name of the active substance: Indoxacarb

Manufacturer

Company Name: E.I. Du Pont de Nemours and Company
Address: DuPont Professional Products
DuPont International Operations Sarl, PO Box 50
Le Grand-Saconnex
City: Geneva Postal Code: CH-1218 Country: Switzerland
Telephone: +41 22 717 57 37 Fax: +41 22 580 26 62 E-Mail: rodney.bell@che.dupont.com

Intra-Community VAT number: CH552 524

Manufacturing site(s) (if different)

Company Name: E.I. Du Pont de Nemours and Company
Address: DuPont Crop Protection Products, Chestnut Run Plaza-Bldg 705, 4417 Lancaster Pike
City: Wilmington Postal Code: DE 19805 Country: USA
Telephone: 800-441-7515 Fax: 302-999-4197 E-Mail: N/A

Company registration number: N/A

(d) Formulator(s) of the biocidal product (name(s) and address(es) including location of plant(s))[Fout! Bladwijzer niet gedefinieerd.]

Formulator (Formula Intermediate made at):

Company Name: Tumblar Prooducts Limited
Address: 179 Pages Road,Wainoni
City: Christchurch Postal Code: 8061 Country: New Zealand
Telephone: +64 3 3842562 Fax: N/A E-Mail: johnsmith@tumblar.co.nz

Company registration number: 141026

Formulation site (Baits filled & assembled at):

Company Name: Packaging Imolese S.p.A

Address: Via F.Turati 22
City: Imola (BO) Postal Code: 40026 Country: Italy
Telephone: +39 0542 689 112 Fax: +39 0542 642 250 E-Mail: info@packagingimolese.com

Intra-Community VAT number: DGFDM 0003391 D-29/01/2009

Physical state and nature of the biocidal product:

(e) Type of formulation: ready to use bait (RB)

(f) Ready-to-use product: yes

Classification and labelling statements of the biocidal product:

(g) Product classification: Xi, irritant

(h) Risk and Safety Phrases:

Symbol:	Xi	
Indication of danger:	Irritant	
R-phrases:	R43	May cause sensitization by skin contact.
	R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S-phrases:	S37*	Wear suitable protective clothing and gloves.

* S36 (wear suitable clothing) is not assigned as the product is a bait station, therefore no direct exposure to the body is expected.

(i) Product classification according to GHS: GHS07, Warning

(j) Hazard statement according to GHS:

Signal word:	Warning		
Pictogram:	GHS07		
	Hazard class-and-Category	**Code**	**Hazard statement**
Hazard statements:	Skin Sens. 1	H317	May cause an allergic skin reaction.
	Aquat.chron.3	H412	Harmful to aquatic life with long lasting effects.
Precautionary statements:		P280a*	Wear protective gloves.

* P280a (Wear protective gloves) is assigned instead of P280c (Wear protective gloves and clothing), as the product is a bait station, therefore no direct exposure to the body is expected.

Intended uses and efficacy:

(k)	PT:	18
(l)	Target harmful organisms:	cockroaches
(m)	Development stage of target organisms:	nymphs - adults
(n)	Function/mode of action:	insecticide
(o)	Field of use:	indoor
(p)	Application aim:	killing cockroaches
(q)	User category	non-professionals
(r)	Application method:	bait

Directions for use:

(s) Manner and area of use:

The product is used to kill cockroaches. Bait stations are placed indoors in the direct vicinity of cockroaches, such as behind a refrigerator in the kitchen cabinets, near pipe shafts, etc. Placing the bait stations in open places should be avoided.
Mode of action: pro-insecticide. Upon ingestion by the insect, the indoxacarb is rapidly converted to DPX-JT333, which binds to the sodium channels within the insect, thus blocking sodium movement into the cell, resulting in mild convulsions, paralysis and ultimately death within hours after ingestion.

(t) Conditions of use:

Place all six bait stations. For heavy infestations, it is recommended to use no more than 12 baits at any one time

(u) Instructions for safe use of the product: See Table 1.5.2 of the PAR

(v) Particulars of likely direct or indirect adverse effects and first aid instructions

First aid meaures (copied from CAR)

Inhalation: Move to fresh air. Oxygen or artificial respiration if needed. Call a physician or Poison control centre immediately.

Skin contact: Wash off immediately with soap and plenty of water.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Consult a physician if necessary.

Ingestion: Drink 1 or 2 glasses of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

(w) Instructions for safe disposal of the product and its packaging:

MSDS instructions:

Product	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Disposal should be in accordance with local, state or national legislation. Please recycle empty packaging.
Contaminated packaging	Do not re-use empty containers.

(x) Conditions of storage and shelf-life of the product under normal conditions of storage

MSDS instructions:

Storage conditions	Keep out of the reach of children.
Storage stability	No decomposition if stored and applied as directed.

Annex 2: List of studies reviewed

No new data was submitted in support of the evaluation of the active substance

List of <u>new data</u> submitted in support of the evaluation of the biocidal product

Section No	Reference No	Author	Year	Title	Owner of data	Letter of Access		Data protection claimed	
						Yes	No	Yes	No
B3.1.1, B3.1.2, B3.1.3, B3.5	01	Garcia M.T.	2010a	Determination of the content of active substance, appearance and pH-value for Raid JWY (0.5% Indoxacarb) BioGenius GmbH, 51429 Bergisch Gladbach, Germany Report No. Mo3808	S C Johnson & Son, Inc			Y	
B3.6	02	Smeykal H.	2010	Relative Density A.3.(OECD 109) Siemens, Prozess-Sicherheit, D-65926, Frankfurt am Main Report No. 20091154.01	S C Johnson & Son, Inc			Y	
B3.7	03	Smith G.A.	2007	Two Week 54°C Storage - Stability Study For Raid JWY Formula Number 15342P45-1-A3 S. C. Johnson & Son, Inc.,1525 Howe St., Racine, WI 53403 Report No. 15342P45-1-A3	S C Johnson & Son, Inc			Y	
B3.7	04	Garcia M.T.	2010b	48 months at RT, 25°C (60% rel. humidity) and 12 months at 40°C stability study, Roach Bait SOF# 34319 RM Code 353105 BioGenius GmbH, 51429 Bergisch Gladbach, Germany Study No. Mo3012	S C Johnson & Son, Inc			Y	

Section No	Reference No	Author	Year	Title	Owner of data	Letter of Access		Data protection claimed	
B4.1	05	Garcia M.T.	2010c	Validation of method MV029: Determination of Indoxacarb (DPX-KN128) in Bait Formulations BioGenius GmbH, Analytics, 51429 Bergisch Gladbach, Germany Study No. Mo3807	S C Johnson & Son, Inc			Y	
B5.10(1)	06	Yonker J.W.	2007a	Efficacy of a 0.5% Indoxacarb Cockroach Bait against Laboratory Strains of the American Cockroach (Periplaneta americana), German Cockroach (Blatella germanica), and Oriental Cockroach (Blatta orientalis) S C Johnson & Son, Inc Project ID. WR342710	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(2)	07	Yonker J.W.	2007b	Efficacy of a Test Substance15342P45-1, against a Laboratory Strain of the American Cockroach S C Johnson & Son, Inc Project ID. 73016-1-000983-01	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(3)	08	Yonker J.W.	2008a	Efficacy of Test Substance 15342P45-1 against females of a Laboratory Strain of the American Cockroach (*Periplaneta americana*) S C Johnson & Son, Inc Project ID. 73016-1-000983-01	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(4)	09	Yonker J.W.	2008b	Efficacy of 15342P45-1, RAID JWY Against a Laboratory Strain of the American Cockroach (*Periplaneta americana)* (571E1) S C Johnson & Son, Inc Report WR213554	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(5)	10	Yonker J.W.	2008c	Efficacy of a 15342P45-1, Raid JWY against a Laboratory Strain of the Oriental Cockroach (*Blatta orientalis*) S C Johnson & Son, Inc Report WR213554	S C Johnson & Son, Inc	☐	☐	☒	☐

Section No	Reference No	Author	Year	Title	Owner of data	Letter of Access		Data protection claimed	
B5.10(6)	11	Talbert C.J.	2009a	Efficacy of a 0.5% Indoxacarb Bait against Laboratory Strains of German Cockroach (*Blattella germanica*) S C Johnson & Son, Inc	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(7)	12	Talbert C.J.	2009c	Efficacy of Test Substance 15342P45-1 against Laboratory Strains of the American Cockroach (Periplaneta americana), German Cockroach (Blattella germanica), and Oriental Cockroach (Blatta orientalis) after a thirty-five month aging period, S. C. Johnson & Son, Inc., Racine, WI 53403-2236, , 22 October 2009 S C Johnson & Son, Inc Report No. 27-09	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(8)	13	Brooks M.D.	2011	Field trial to support label claims, palatability, mortality, and use directions of Raid Cockroach Bait (Indoxacarb 0.50%) bait station for consumer use against the German cockroach (*Blattella germanica* L.). Kenniscentrum Dierplagen (KAD), Costerweg 5, 6702 AA Wageningen. KAD/2011/0280/MB/WB	S C Johnson & Son, Inc	☐	☐	☒	☐
B5.10(9)	14	Foltan P.	2012	Field trial to support label claims, palatability, mortality and use directions for Raid Cockroach Bait (Indoxacarb 0.50%) bait station for consumer use against the German cockroach, *Blattella* *Germanica*. i2LResearch Ltd Capital Business Park, Wentloog Cardiff CF3 2PX, UK. i2LResearch Ltd Study code: 11/119A.	S C Johnson & Son, Inc	☐	☐	☒	☐

Annex 3: Analytical methods residues – active substance

Residue analytical methods are included in the CAR. A letter of access was provided, which gives the applicant SC Johnson access to the data of DuPont submitted for annex I inclusion of indoxacarb. Please refer to the CAR, finalised by RMS UK, for detailed information.

Annex 4: Toxicology and metabolism –active substance

Threshold Limits and other Values for Human Health Risk Assessment

Summary			
	Value	Study	SF
AEL long-term	0.006 mg/kg bw/day	2-year rat study	100
AEL medium-term	0.021 mg/kg bw/day	90 day rat study	100
AEL acute	0.125 mg/kg bw/day	Rat acute neurotoxicity study	100

Inhalative absorption	100%
Oral absorption	100%
Dermal absorption	0.3% for aqueous dilution, negligible to concentrate[11].

Classification	
with regard to toxicological data (according to the criteria in Dir. 67/548/EEC)	**Indoxacarb CAS: 173584-44-6** T R: 20-25-43-48/22-50/53 S: (2-) 24-37-46-60-61 **Indoxacarb (enantiomeric reaction mass 75:25)** there is no CAS-number assigned to this substance Xn R: 20/22-43-48/22-50/53 S: (2-) 24-37-46-60-61
with regard to toxicological data (according to the criteria in Reg. 1272/2008)	**Indoxacarb CAS : 173584-44-6 and Indoxacarb (enantiomeric reaction mass 75:25)** there is no CAS-number assigned to this substance Pictogram : GHS06, GHS08, GHS09 Signal word : Danger Hazard statement codes : H301, H317, H332, H372, H400, H410

[11] The available data for dermal absorption in the CAR are based on water-based formulations. Raid Cockroach Bait is a predominantly oil-based formulation. It is expected that this will cause greater absorption through the skin, thereby enhancing the dermal uptake of indoxacarb. Therefore, the available data from the CAR is inappropriate to make a prediction on dermal absorption for the absorption of indoxacarb for Raid Cockroach Bait and for the risk assessment a dermal absorption value of 100% will be used. The same approach for the reference product Raid PDQ is used.

Annex 5: Toxicology – biocidal product

General information

Formulation Type	Bait station
Active substance(s) (incl. content)	0.5% w/w indoxacarb
Category	PT18

Acute toxicity, irritancy and skin sensitisation of the preparation (Annex IIIB, point 6.1, 6.2, 6.3)	
Rat LD50 oral (OECD 420)	>5000 mg/kg
Rat LD50 dermal (OECD 402)	>5000 mg/kg
Rat LC50 inhalation (OECD 403)	No classification*
Skin irritation (OECD 404)	Not irritating
Eye irritation (OECD 405)	Not irritating
Skin sensitisation (OECD 429; LLNA)	Sensitising (modified Buehler test)

*With regards to toxicity following single inhalation exposure, no specific study has been conducted with Raid PDQ. However, low toxicity was observed with DPX-MP062-MUP following acute inhalation exposure to rats (LC50 > 5.5 mg/l, Section 3.2, Document IIA); while an acute rat inhalation test on DPX-JW062 showed moderate toxicity (LC50 values of 4.2 mg/l and > 5.4 mg/l reported in females and males, respectively, Section 3.2, Document IIA), meeting the EU classification criteria for Xn; R20. Given that the co-formulants in Raid PDQ are not classified for acute inhalation toxicity and the low acute inhalation toxicity demonstrated by DPX-MP062 MUP (the technical material to be used in formulating the product), it is predicted it will have low acute toxicity following inhalation exposure.

Overall, the UK CA considers that Raid PDQ does not meet the EU criteria for classification following a single exposure. Furthermore, there is no specific information on the respiratory tract irritation potential of Raid PDQ, but this does not constitute a data gap. No evidence of an irritant effect on the respiratory tract was observed in acute inhalation toxicity studies with DPX-MP062-MUP, although nasal discharge was seen with DPX-JW062. Given the lack of an effect on the respiratory tract in an acute inhalation study with DPX-MP062-MUP and considering that the co-formulants were either not classified for respiratory irritants or not present at concentration giving rise to concern, it is predicted that Raid PDQ have a low potential to cause respiratory tract irritation. Therefore, the UK CA concluded that Raid PDQ does not meet the EU criteria for classification as a respiratory irritant.

Additional toxicological information (e.g. Annex IIIB, point 6.5, 6.7)	
Short-term toxicity studies	Not determined
Toxicological data on active substance(s) (not tested with the preparation)	See CAR
Toxicological data on non-active substance(s) (not tested with the preparation)	Not determined, information from MSDS
Further toxicological information	Not necessary

Classification and labelling proposed for the preparation with regard to toxicological properties (Annex IIIB, point 9)	
Directive 1999/45/EC	Xi, R43
Regulation 1272/2008/EC	GHS07, Warning Skin Sens. 1, H317

Annex 6: Safety for non-professional operators and the general public

General information	
Formulation Type	Bait station
Active substance(s) (incl. content)	Indoxacarb (0.5% w/w)
Category	PT18
Authorisation number	13674N

Indoxacarb

Data base for exposure estimation

according to Appendix: Toxicology and metabolism – active substance/CAR

Exposure scenarios for intended uses (Annex IIIB, point 6.6)[3]

Primary exposure (table 3.2.2 is copied from CAR_DocIIB)

Table 3.2.2: Summary of primary exposure for the non-professional user Exposure assessment for the non-professional user	Default values used in exposure calculations	Exposure
Tier 1	No PPE 100 % dermal penetration No assessment factor applied	Systemic exposure = 0.5767 mg DPX-MP062/kg bw
Tier 2 (reverse reference scenario)*	No PPE 100 % dermal penetration No assessment factor applied	To achieve NOAEL, the amount of DPX-MP062 required to fall on skin and be absorbed = 126 mg/d (equivalent to 9.47 g of bait or the contents of 3.6 stations)

[3] The biocidal product contains 0.5% w/w indoxacarb (pure active substance). For the exposure assessment we refer to the exposure assessment for Raid PDQ in the CAR. The results for the exposure of Raid PDQ are considered worst-case for Raid Cockroach Bait. The product, Raid PDQ, is a ready-for-use- bait contained in a sealed, child-resisitant bait station. Each bait contains 2.6g of bait containing 1.9% (w/w) DPX-MP062-MUP which equates to 1.33 % (w/w) DPX-MP062, equates 1.0% (w/w) indoxacarb.

Exposure scenarios for intended uses (Annex IIIB, point 6.6)[3]		
Tier 3 **(reverse reference scenario)***	No PPE 100 % dermal penetration 100-fold assessment factor	To achieve 5000mg/kg, the amount of Raid PDQ required to fall on skin and be absorbed = 3.00 g bait (or the contents of 1.15 bait stations)

Table 1.1 Summary of risk characterisation – primary exposure to the non-professional user Scenario exposure assessment	**Default values**	**Systemic short-term NOAEL mg/kg/day**	**Systemic dose mg/kg/day**	**MOE**
Tier 1	No PPE 100 % dermal penetration	2.1	0.5767	3.64

The MOE in the Tier 1 assessment is < 100 and the Exposure/AOEL is >1 (Table 1.1, copied from CAR Doc IIC). This would indicate cause for concern. However, the reverse reference scenarios (depicted under Tier 2 and Tier 3, Table 3.2.2) demonstrate that an unrealistic amount of bait would need to be dermally absorbed in both reverse reference scenarios (more information in CAR DocIIB). The resulting amounts are considered to be unrealistic as it is considered that the products is to be contained within the child-resistant bait station and the adult will not attempt to gain access to the contents of the bait station.

Secondary exposure, acute

Reverse reference scenarios have been undertaken examining the risk from dermal and oral exposure scenarios. For the product under consideration, Raid PDQ (worst-case for Raid Cockroach Bait), the following potential secondary exposure scenarios are considered possible:

- short-term dermal exposure – infant, child or adult comes into contact with the bait and is dermally exposed

Exposure scenarios for secondary (indirect) exposure	**Default values**	**Exposures** **Infant** (bw = 10 kg)	**Child** (bw = 34.4 kg)	**Adult** (bw = 60 kg)
		Dermal exposure		
Tier 2 Assessment (dermal exposure to the bait) - reverse reference scenario*	100 % dermal absorption. 100-fold assessment factor applied	to achieve the NOAEL, the amount of DPX-MP062 required to be in contact with skin = **0.21 mg** (0.016 g bait equivalent to 0.6 % of the contents of a bait station)	to achieve the NOAEL, the amount of DPX-MP062 required to be in contact with skin = **0.72 mg** (0.054g bait equivalent to 2.1 % of the contents of a bait station)	to achieve the NOAEL, the amount of DPX-MP062 required to be in contact with skin = **1.26 mg** (0.095 g bait equivalent to 3.6 % of the contents of a bait station.
Tier 2 Assessment (dermal	100 % dermal absorption. 100-fold assessment factor	to achieve a dose level of 5000mg/kg, the	to achieve a dose level of 5000mg/kg, the	to achieve a dose level of 5000mg/kg, the

Exposure scenarios for intended uses (Annex IIIB, point 6.6)[3]				
exposure to the bait) - reverse reference scenario**	applied	amount of Raid PDQ required to be in contact with skin = **0.5 g bait** (equivalent to the contents of 19 % of a bait station)	amount of Raid PDQ required to be in contact with skin = **1.72 g bait** (equivalent the contents of 66 % of a bait station)	amount of Raid PDQ required to be in contact with skin = **3 g bait** (equivalent to the contents of 1.15 bait stations)

(combined table copied from the CAR, *shaded rows Table 1.4, DocIIC (comparable to approach reverse reference scenario used as Tier 2 for non-professional user) and **shaded rows Table 1.7, DocIIC (Comparable to approach reverse reference scenario used as Tier 3 for non-professional user))

• short-term oral exposure – infant comes into contact with the bait and ingests the bait; and

Copied from the CAR, shaded rows indicate the most relevant scenario on which to consider the risk assessment outcome.

Exposure scenarios for secondary (indirect) exposure	**Default values**	**Exposures** **Infant** (bw = 10 kg)	**Child** (bw = 34.4 kg)	**Adult** (bw = 60 kg)
		Oral exposure		
Tier 2 Assessment (ingestion of bait) - reverse reference scenario *	100 % absorption via oral route. 100-fold assessment factor applied	to achieve the NOAEL, the amount of DPX-MP062 required to be ingested = **0.21 mg** (0.016 g bait equivalent to 0.6 % of the contents of a bait station)	not applicable	not applicable
Tier 2 Assessment (ingestion of bait) - reverse reference scenario**	100 % absorption via oral route. 100-fold assessment factor applied	to achieve a dose level of 5000mg/kg, the amount of DPX-MP062 required to be ingested = **0.5 g bait** (equivalent to the contents of 19 % of a bait station)	not applicable	not applicable

(combined table copied from the CAR, *shaded rows Table 1.4, DocIIC (comparable to approach reverse reference scenario used as Tier 2 for non-professional user) and **shaded rows Table 1.7, DocIIC (Comparable to approach reverse reference scenario used as Tier 3 for non-professional user))

• short-term oral exposure of companion animal – kitten or puppy comes into contact with the applied bait and consumes the bait.

Exposure scenarios for secondary (indirect) exposure	**Default Values**	**Exposures** **Kitten** (bw = 0.5 kg)	**Puppy** (bw = 5 kg)
	Oral exposure		
Ingestion of bait- reverse reference scenario *	**100 % absorption via oral route. No assessment factor applied**	to achieve the NOAEL the amount of DPX-MP062 required to be ingested = 1.05 mg	to achieve the NOAEL the amount of DPX-MP062 required to be ingested = 10.5 mg

Exposure scenarios for intended uses (Annex IIIB, point 6.6)[3]			
		(0.08 g bait equivalent to 3 % of the contents of a bait station)	(0.79 g bait equivalent to 30.4 % of the contents of a bait station)
Ingestion of bait- reverse reference scenario **	**100 % absorption via oral route. No assessment factor applied**	to achieve a dose level of 5000mg/kg ,the amount Raid PDQ required to be ingested = **2.5g bait** (equivalent to 96 % of the contents of a bait station)	to achieve a dose level of 5000mg/kg ,the amount of DPX-MP062 required to be ingested = **25 g bait** (equivalent to the contents in 9.62 bait stations)

(combined table copied from the CAR, *Table 1.5, DocIIC (comparable to approach reverse reference scenario used as Tier 2 for non-professional user) and **shaded rows Table 1.8, DocIIC (Comparable to approach reverse reference scenario used as Tier 3 for non-professional user))

Secondary exposure, chronic

Reverse reference scenarios have been undertaken examining the risk from dermal and oral exposure scenarios. For the product under consideration, Raid PDQ (worst-case for Raid Cockroach Bait), the following potential secondary exposure scenario is considered possible:

- long-term inhalation exposure – occupants (infants, children or adults) in enclosed, unventilated spaces inhale the vapours of DPX-KN128 and DPX-JW062 volatilised from the bait. In a worst-case situation, occupiers could be exposed to air saturated with these vapours for 24 hours per day

	DPX-KN128: inhalation of vapour (100 % absorption via inhalation) Systemic dose mg/kg bw/d	**Systemic NOAEL mg/kg/day**	**MOE**	**DPX-JW062: inhalation of vapour (100 % absorption via inhalation) mg/kg bw/d**	**MOE**
Inhalation Exposure Infant (10 kg)	2.3966×10^{-6}	0.55	2.29×10^{5}	3.8346×10^{-8}	1.43×10^{7}
Inhalation Exposure Child (34.4 kg)	2.1675×10^{-6}	0.55	2.54×10^{5}	3.4680×10^{-8}	1.59×10^{7}
Inhalation Exposure Adult (60 kg)	1.3492×10^{-6}	0.55	4.08×10^{5}	2.1588×10^{-8}	2.56×10^{7}

Overall conclusions for risks from secondary exposure:

The risks to infants and older children from secondary exposure via the dermal route following application and to infants and companion animals via the oral route appear to be of concern. For the adult, the resulting amounts are considered to be unrealistic as it is considered that the products is to be contained within the child-resistant bait station and the adult will not attempt to

Exposure scenarios for intended uses (Annex IIIB, point 6.6)[3]
gain access to the contents of the bait station Leading to the following instruction included in the CAR to be assessed at product authorisation by Member States: *The robustness of the non-professional use bait stations will need to be assessed at product authorisation by Member States to ensure that they are child-resistant and exposure to the active substance will not occur.* Studying the informations submitted for Raid Cockroach Bait (and discussed in Chapter 2 on "Packaging of the biocidal product") the bait stations is deemed robust child-resistant. Furthermore, in the label of the product the following restrictions are included on the outer package/carton of the product: "KEEP OUT OF THE REACH OF CHILDREN", "Keep out of the reach of pets", and "Do not allow children to play with this unit". In addition, at the underside of the bait station the following restriction is included: "KEEP OUT OF THE REACH OF CHILDREN AND PETS", and the additional sentence "Retain the outer carton for full use and safety instructions". Considering the above mentioned, it is very unlikely that secondary exposure of children or pets will occur.

Conclusion:
Based on the worst-case exposure of non-professionals and the general public to Raid PDQ, the biocidal product Raid Cockroach Bait, containing 0.5% w/w indoxacarb as active substance is considered acceptable, if the biocidal product is used as intended and all safety advice is followed. Raid Cockroach Bait is a child-resistant bait station and is placed in areas inaccessible to infants, children and companion animals to minimise potential exposure.

Annex 7: Residue behaviour

The intended use descriptions of the indoxacarb containing biocidal product Raid Cockroach Bait for which authorisation is sought indicate that these uses are not relevant in terms of residues in food and feed. The product is to be used for the control of cockroaches (PT18) does not come in direct contact with food and feedstuff. No further data are required concerning the residue behaviour

Annex 8: Calculation sheet EUSES

Appendix 1 EUSES 2.1.1 calculations Tier 1

STUDY
STUDY IDENTIFICATION

Study name	Raid Cockroach Bait-T1 (12)	S
Study description	Raid Cockroach Bait-T1(12)	S
Author	Alison McGuire	S
Institute	CSI-Europe	S
Address	Pentlands Scienc Park	S
Zip code	EH26 0PZ	S
City	Penicuik	S
Country	UK	S
Telephone	0131 445 6083	S
Telefax	0131 445 6085	S
Email	amcguire@complianceservices.com	S
Calculations checksum	02956163	S

DEFAULTS
DEFAULT IDENTIFICATION

General name	Standard Euses 2.1		D
Description	According to TGDs		D

CHARACTERISTICS OF COMPARTMENTS
GENERAL

Density of solid phase	2.5	[kg.l-1]	D
Density of water phase	1	[kg.l-1]	D
Density of air phase	1.3E-03	[kg.l-1]	D
Environmental temperature	12	[oC]	D
Standard temperature for Vp and Sol	25	[oC]	D
Temperature correction method	Temperature correction for local distribution		D
Constant of Junge equation	0.01	[Pa.m]	D
Surface area of aerosol particles	0.01	[m2.m-3]	D
Gas constant (8.314)	8.314	[Pa.m3.mol-1.K-1]	D

SUSPENDED MATTER

Volume fraction solids in suspended matter	0.1	[m3.m-3]	D
Volume fraction water in suspended matter	0.9	[m3.m-3]	D
Weight fraction of organic carbon in suspended matter	0.1	[kg.kg-1]	D
Bulk density of suspended matter	1.15E+03	[kgwwt.m-3]	O
Conversion factor wet-dry suspened matter	4.6	[kgwwt.kgdwt-1]	O

SEDIMENT

Volume fraction solids in sediment	0.2	[m3.m-3]	D
Volume fraction water in sediment	0.8	[m3.m-3]	D
Weight fraction of organic carbon in sediment	0.05	[kg.kg-1]	D

SOIL

Volume fraction solids in soil	0.6	[m3.m-3]	D
Volume fraction water in soil	0.2	[m3.m-3]	D
Volume fraction air in soil	0.2	[m3.m-3]	D
Weight fraction of organic carbon in soil	0.02	[kg.kg-1]	D
Weight fraction of organic matter in soil	0.034	[kg.kg-1]	O
Bulk density of soil	1.7E+03	[kgwwt.m-3]	O
Conversion factor wet-dry soil	1.13	[kgwwt.kgdwt-1]	O

STP SLUDGE

Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D

DEGRADATION AND TRANSFORMATION RATES

Rate constant for abiotic degradation in STP	0	[d-1]	D
Rate constant for abiotic degradation in bulk sediment	0	[d-1] (12[oC])	D
Rate constant for anaerobic biodegradation in sediment	0	[d-1] (12[oC])	D
Fraction of sediment compartment that is aerated	0.1	[m3.m-3]	D
Concentration of OH-radicals in atmosphere	5E+05	[molec.cm-3]	D
Rate constant for abiotic degradation in bulk soil	0	[d-1] (12[oC])	D

RELEASE ESTIMATION

Fraction of EU production volume for region	100	[%]	D
Fraction of EU tonnage for region (private use)	10	[%]	D
Fraction connected to sewer systems	80	[%]	D

SEWAGE TREATMENT
GENERAL

Number of inhabitants feeding one STP	1E+04	[eq]	D
Sewage flow	200	[l.eq-1.d-1]	D
Effluent discharge rate of local STP	2E+06	[l.d-1]	O
Temperature correction for STP degradation	No		D
Temperature of air above aeration tank	15	[oC]	D
Temperature of water in aeration tank	15	[oC]	D
Height of air column above STP	10	[m]	D
Number of inhabitants of region	2E+07	[eq]	D
Number of inhabitants of continental system	3.5E+08	[eq]	O
Windspeed in the system	3	[m.s-1]	D

RAW SEWAGE

Mass of O2 binding material per person per day	54	[g.eq-1.d-1]	D
Dry weight solids produced per person per day	0.09	[kg.eq-1.d-1]	D
Density solids in raw sewage	1.5	[kg.l-1]	D
Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D

PRIMARY SETTLER			
Depth of primary settler	4	[m]	D
Hydraulic retention time of primary settler	2	[hr]	D
Density suspended and settled solids in primary settler	1.5	[kg.l-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
ACTIVATED SLUDGE TANK			
Depth of aeration tank	3	[m]	D
Density solids of activated sludge	1.3	[kg.l-1]	D
Concentration solids of activated sludge	4	[kg.m-3]	D
Steady state O2 concentration in activated sludge	2E-03	[kg.m-3]	D
Mode of aeration	Surface		D
Aeration rate of bubble aeration	1.31E-05	[m3.s-1.eq-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Sludge loading rate	0.15	[kg.kg-1.d-1]	D
Hydraulic retention time in aerator (9-box STP)	6.9	[hr]	O
Hydraulic retention time in aerator (6-box STP)	10.8	[hr]	O
Sludge retention time of aeration tank	9.2	[d]	O
SOLIDS-LIQUIDS SEPARATOR			
Depth of solids-liquid separator	3	[m]	D
Density suspended and settled solids in solids-liquid separator	1.3	[kg.l-1]	D
Concentration solids in effluent	30	[mg.l-1]	D
Hydraulic retention time of solids-liquid separator	6	[hr]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D
LOCAL DISTRIBUTION			
AIR AND SURFACE WATER			
Concentration in air at source strength 1 [kg.d-1]	2.78E-04	[mg.m-3]	D
Standard deposition flux of aerosol-bound compounds	0.01	[mg.m-2.d-1]	D
Standard deposition flux of gaseous compounds	5E-04	[mg.m-2.d-1]	O
Suspended solids concentration in STP effluent water	15	[mg.l-1]	D
Dilution factor (rivers)	10	[-]	D
Flow rate of the river	1.8E+04	[m3.d-1]	D
Calculate dilution from river flow rate	No		D
Dilution factor (coastal areas)	100	[-]	D
SOIL			
Mixing depth of grassland soil	0.1	[m]	D
Dry sludge application rate on agricultural soil	5E+03	[kg.ha-1.yr-1]	D
Dry sludge application rate on grassland	1000	[kg.ha-1.yr-1]	D
Averaging time soil (for terrestrial ecosystem)	30	[d]	D
Averaging time agricultural soil	180	[d]	D
Averaging time grassland	180	[d]	D
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Mixing depth agricultural soil	0.2	[m]	D
Fraction of rain water infiltrating soil	0.25	[-]	D
Average annual precipitation	700	[mm.yr-1]	D
REGIONAL AND CONTINENTAL DISTRIBUTION			
CONFIGURATION			
Fraction of direct regional emissions to seawater	1	[%]	D
Fraction of direct continental emissions to seawater	0	[%]	D
Fraction of regional STP effluent to seawater	0	[%]	D
Fraction of continental STP effluent to seawater	0	[%]	D
Fraction of flow from continental rivers to regional rivers	0.034	[-]	D
Fraction of flow from continental rivers to regional sea	0	[-]	D
Fraction of flow from continental rivers to continental sea	0.966	[-]	O
Number of inhabitants of region	2E+07	[eq]	D
Number of inhabitants in the EU	3.7E+08	[eq]	D
Number of inhabitants of continental system	3.5E+08	[eq]	O

AREAS

REGIONAL

Area (land+rivers) of regional system	4E+04	[km2]	D
Area fraction of freshwater, region (excl. sea)	0.03	[-]	D
Area fraction of natural soil, region (excl. sea)	0.27	[-]	D
Area fraction of agricultural soil, region (excl. sea)	0.6	[-]	D
Area fraction of industrial/urban soil, region (excl. sea)	0.1	[-]	D
Length of regional seawater	40	[km]	D
Width of regional seawater	10	[km]	D
Area of regional seawater	400	[km2]	O
Area (land+rivers+sea) of regional system	4.04E+04	[km2]	O
Area fraction of freshwater, region (total)	0.0297	[-]	O
Area fraction of seawater, region (total)	9.9E-03	[-]	O
Area fraction of natural soil, region (total)	0.267	[-]	O
Area fraction of agricultural soil, region (total)	0.594	[-]	O
Area fraction of industrial/urban soil, region (total)	0.099	[-]	O

CONTINENTAL

Total area of EU (continent+region, incl. sea)	7.04E+06	[km2]	D
Area (land+rivers+sea) of continental system	7E+06	[km2]	O
Area (land+rivers) of continental system	3.5E+06	[km2]	O
Area fraction of freshwater, continent (excl. sea)	0.03	[-]	D
Area fraction of natural soil, continent (excl. sea)	0.27	[-]	D
Area fraction of agricultural soil, continent (excl. sea)	0.6	[-]	D
Area fraction of industrial/urban soil, continent (excl. sea)	0.1	[-]	D
Area fraction of freshwater, continent (total)	0.015	[-]	O
Area fraction of seawater, continent (total)	0.5	[-]	D
Area fraction of natural soil, continent (total)	0.135	[-]	O
Area fraction of agricultural soil, continent (total)	0.3	[-]	O
Area fraction of industrial/urban soil, continent (total)	0.05	[-]	O

MODERATE

Area of moderate system (incl.continent,region)	8.5E+07	[km2]	D
Area of moderate system (excl.continent, region)	7.8E+07	[km2]	O
Area fraction of water, moderate system	0.5	[-]	D

ARCTIC

Area of arctic system	4.25E+07	[km2]	D
Area fraction of water, arctic system	0.6	[-]	D

TROPIC

Area of tropic system	1.275E+08	[km2]	D
Area fraction of water, tropic system	0.7	[-]	D

TEMPERATURE

Environmental temperature, regional scale	12	[oC]	D
Environmental temperature, continental scale	12	[oC]	D
Environmental temperature, moderate scale	12	[oC]	D
Environmental temperature, arctic scale	-10	[oC]	D
Environmental temperature, tropic scale	25	[oC]	D
Enthalpy of vaporisation	50	[kJ.mol-1]	D
Enthalpy of solution	10	[kJ.mol-1]	D

MASS TRANSFER

Air-film PMTC (air-water interface)	2.9E-03	[m.s-1]	O
Water-film PMTC (air-water interface)	3.77E-06	[m.s-1]	O
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
PMTC, soil side of air-soil interface	2.23E-09	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Water-film PMTC (sediment-water interface)	2.78E-06	[m.s-1]	D
Pore water PMTC (sediment-water interface)	2.78E-08	[m.s-1]	D

AIR

GENERAL

Atmospheric mixing height	1000	[m]	D
Windspeed in the system	3	[m.s-1]	D
Aerosol deposition velocity	1E-03	[m.s-1]	D
Aerosol collection efficiency	2E+05	[-]	D

RAIN

Average precipitation, regional system	700	[mm.yr-1]	D
Average precipitation, continental system	700	[mm.yr-1]	D
Average precipitation, moderate system	700	[mm.yr-1]	D
Average precipitation, arctic system	250	[mm.yr-1]	D
Average precipitation, tropic system	1.3E+03	[mm.yr-1]	D

RESIDENCE TIMES

Residence time of air, regional	0.687	[d]	O
Residence time of air, continental	9.05	[d]	O
Residence time of air, moderate	30.2	[d]	O
Residence time of air, arctic	22.3	[d]	O
Residence time of air, tropic	38.6	[d]	O

WATER

DEPTH

Water depth of freshwater, regional system	3	[m]	D
Water depth of seawater, regional system	10	[m]	D
Water depth of freshwater, continental system	3	[m]	D
Water depth of seawater, continental system	200	[m]	D
Water depth, moderate system	1000	[m]	D
Water depth, arctic system	1000	[m]	D
Water depth, tropic system	1000	[m]	D

SUSPENDED SOLIDS

Suspended solids conc. freshwater, regional	15	[mg.l-1]	D
Suspended solids conc. seawater, regional	5	[mg.l-1]	D
Suspended solids conc. freshwater, continental	15	[mg.l-1]	D
Suspended solids conc. seawater, continental	5	[mg.l-1]	D
Suspended solids conc. seawater, moderate	5	[mg.l-1]	D
Suspended solids conc. seawater, arctic	5	[mg.l-1]	D
Suspended solids conc. seawater, tropic	5	[mg.l-1]	D
Concentration solids in effluent, regional	30	[mg.l-1]	D
Concentration solids in effluent, continental	30	[mg.l-1]	D
Concentration biota	1	[mgwwt.l-1]	D

RESIDENCE TIMES

Residence time of freshwater, regional	43.3	[d]	O
Residence time of seawater, regional	4.64	[d]	O
Residence time of freshwater, continental	172	[d]	O
Residence time of seawater, continental	365	[d]	O
Residence time of water, moderate	2.69E+03	[d]	O
Residence time of water, arctic	5.84E+03	[d]	O
Residence time of water, tropic	1.09E+04	[d]	O

SEDIMENT

DEPTH

Sediment mixing depth	0.03	[m]	D

SUSPENDED SOLIDS

(Biogenic) prod. susp. solids in freshwater, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in seawater, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in freshwater, cont	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in seawater, cont	5	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, moderate	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, arctic	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, tropic	1	[g.m-2.yr-1]	D

SEDIMENTATION RATES

Settling velocity of suspended solids	2.5	[m.d-1]	D
Net sedimentation rate, freshwater, regional	2.8	[mm.yr-1]	O
Net sedimentation rate, seawater, regional	1.53	[mm.yr-1]	O
Net sedimentation rate, freshwater, continental	2.75	[mm.yr-1]	O
Net sedimentation rate, seawater, continental	6.69E-03	[mm.yr-1]	O
Net sedimentation rate, moderate	2.8E-03	[mm.yr-1]	O
Net sedimentation rate, arctic	2E-03	[mm.yr-1]	O
Net sedimentation rate, tropic	2E-03	[mm.yr-1]	O

SOIL

GENERAL

Fraction of rain water infiltrating soil	0.25	[-]	D
Fraction of rain water running off soil	0.25	[-]	D

DEPTH			
Chemical-dependent soil depth	No		D
Mixing depth natural soil	0.05	[m]	D
Mixing depth agricultural soil	0.2	[m]	D
Mixing depth industrial/urban soil	0.05	[m]	D
Mixing depth of soil, moderate system	0.05	[m]	D
Mixing depth of soil, arctic system	0.05	[m]	D
Mixing depth of soil, tropic system	0.05	[m]	D
EROSION			
Soil erosion rate, regional system	0.03	[mm.yr-1]	D
Soil erosion rate, continental system	0.03	[mm.yr-1]	D
Soil erosion rate, moderate system	0.03	[mm.yr-1]	D
Soil erosion rate, arctic system	0.03	[mm.yr-1]	D
Soil erosion rate, tropic system	0.03	[mm.yr-1]	D
CHARACTERISTICS OF PLANTS, WORMS AND CATTLE			
PLANTS			
Volume fraction of water in plant tissue	0.65	[m3.m-3]	D
Volume fraction of lipids in plant tissue	0.01	[m3.m-3]	D
Volume fraction of air in plant tissue	0.3	[m3.m-3]	D
Correction for differences between plant lipids and octanol	0.95	[-]	D
Bulk density of plant tissue (wet weight)	0.7	[kg.l-1]	D
Rate constant for metabolism in plants	0	[d-1]	D
Rate constant for photolysis in plants	0	[d-1]	D
Leaf surface area	5	[m2]	D
Conductance	1E-03	[m.s-1]	D
Shoot volume	2	[l]	D
Rate constant for dilution by growth	0.035	[d-1]	D
Transpiration stream	1	[l.d-1]	D
WORMS			
Volume fraction of water inside a worm	0.84	[m3.m-3]	D
Volume fraction of lipids inside a worm	0.012	[m3.m-3]	D
Density of earthworms	1	[kgwwt.l-1]	D
Fraction of gut loading in worm	0.1	[kg.kg-1]	D
CATTLE			
Daily intake for cattle of grass (dryweight)	16.9	[kg.d-1]	D
Conversion factor grass from dryweight to wetweight	4	[kg.kg-1]	D
Daily intake of soil (dryweight)	0.41	[kg.d-1]	D
Daily inhalation rate for cattle	122	[m3.d-1]	D
Daily intake of drinking water for cattle	55	[l.d-1]	D

SUBSTANCE
SUBSTANCE IDENTIFICATION

General name	Raid Cockroach Bait-Indoor		S
Description	Indoxacarb		S
CAS-No	173584-44-6		S
EC-notification no.	None assigned		S
EINECS no.	None assigned		S

PHYSICO-CHEMICAL PROPERTIES

Molecular weight	527.84	[g.mol-1]	S
Melting point	87.1	[oC]	S
Boiling point	??	[oC]	D
Vapour pressure at test temperature	2.5E-08	[Pa]	S
Temperature at which vapour pressure was measured	25	[oC]	D
Vapour pressure at 25 [oC]	2.5E-08	[Pa]	O
Octanol-water partition coefficient	4.65	[log10]	S
Water solubility at test temperature	0.225	[mg.l-1]	S
Temperature at which solubility was measured	20	[oC]	S
Water solubility at 25 [oC]	0.241	[mg.l-1]	O

PARTITION COEFFICIENTS AND BIOCONCENTRATION FACTORS
SOLIDS-WATER

Chemical class for Koc-QSAR	Non-hydrophobics (default QSAR)		D
Organic carbon-water partition coefficient	5.125E+03	[l.kg-1]	S
Solids-water partition coefficient in soil	102	[l.kg-1]	O
Solids-water partition coefficient in sediment	256	[l.kg-1]	O
Solids-water partition coefficient suspended matter	512	[l.kg-1]	O
Solids-water partition coefficient in raw sewage sludge	1.54E+03	[l.kg-1]	O
Solids-water partition coefficient in settled sewage sludge	1.54E+03	[l.kg-1]	O
Solids-water partition coefficient in activated sewage sludge	1.9E+03	[l.kg-1]	O
Solids-water partition coefficient in effluent sewage sludge	1.9E+03	[l.kg-1]	O
Soil-water partition coefficient	154	[m3.m-3]	O
Suspended matter-water partition coefficient	129	[m3.m-3]	O
Sediment-water partition coefficient	129	[m3.m-3]	O

AIR-WATER

Environmental temperature	12	[oC]	D
Water solubility at environmental temperature	0.201	[mg.l-1]	O
Vapour pressure at environmental temperature	9.96E-09	[Pa]	O
Sub-cooled liquid vapour pressure	5.96E-08	[Pa]	O
Fraction of chemical associated with aerosol particles	0.999	[-]	O
Henry's law constant at 25 [oC]	5.86E-05	[Pa.m3.mol-1]	S
Henry's law constant at enviromental temparature	2.62E-05	[Pa.m3.mol-1]	O
Air-water partitioning coefficient	1.11E-08	[m3.m-3]	O

BIOCONCENTRATION FACTORS
PREDATOR EXPOSURE

Bioconcentration factor for earthworms	537	[l.kgwwt-1]	O

HUMAN AND PREDATOR EXPOSURE

Bioconcentration factor for fish	950.3	[l.kgwwt-1]	S
QSAR valid for calculation of BCF-Fish	Yes		O
Biomagnification factor in fish	1	[-]	O
Biomagnification factor in predator	1	[-]	O

HUMAN EXPOSURE

Partition coefficient between leaves and air	2.37E+10	[m3.m-3]	O
Partition coefficient between plant tissue and water	262	[m3.m-3]	O
Transpiration-stream concentration factor	0.0378	[-]	O
Bioaccumulation factor for meat	1.12E-03	[d.kg-1]	O
Bioaccumulation factor for milk	3.55E-04	[d.kg-1]	O
Purification factor for surface water	0.25	[-]	O

BIOTA-WATER
FOR REGIONAL/CONTINENTAL DISTRIBUTION

Bioconcentration factor for aquatic biota	950	[l.kgwwt-1]	O

DEGRADATION AND TRANSFORMATION RATES
CHARACTARIZATION

Characterization of biodegradability	Not biodegradable	S

STP

Degradation calculation method in STP	First order, standard OECD/EU tests		D
Rate constant for biodegradation in STP	0	[d-1]	O
Total rate constant for degradation in STP	0	[d-1]	O
Maximum growth rate of specific microorganisms	2	[d-1]	D
Half saturation concentration	0.5	[g.m-3]	D

WATER/SEDIMENT

WATER

Rate constant for hydrolysis in surface water	22	[d] (DT50,25[oC])	S
Rate constant for photolysis in surface water	3	[d] (DT50)	S
Rate constant for biodegradation in surface water	1.89648	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk surface water	0.608	[d-1] (12[oC])	O
Rate constant for biodegradation in saltwater	0	[d-1] (12[oC])	O
Total rate constant for degradation in bulk saltwater	0.242	[d-1] (12[oC])	O

SEDIMENT

Rate constant for biodegradation in aerated sediment	9.4824	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk sediment	7.31E-03	[d-1] (12[oC])	O

AIR

Specific degradation rate constant with OH-radicals	0	[cm3.molec-1.s-1]	D
Rate constant for degradation in air	0	[d-1]	O

SOIL

Rate constant for biodegradation in bulk soil	18	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk soil	0.0385	[d-1] (12[oC])	O

REMOVAL RATE CONSTANTS SOIL

Total rate constant for degradation in bulk soil	0.0385	[d-1] (12[oC])	O
Rate constant for volatilisation from agricultural soil	3.25E-08	[d-1]	O
Rate constant for leaching from agricultural soil	1.56E-05	[d-1]	O
Total rate constant for removal from agricultural top soil	0.0385	[d-1]	O
Rate constant for volatilisation from grassland soil	6.5E-08	[d-1]	O
Rate constant for leaching from grassland soil	3.11E-05	[d-1]	O
Total rate constant for removal from grassland top soil	0.0385	[d-1]	O
Rate constant for volatilisation from industrial soil	1.3E-07	[d-1]	O
Rate constant for leaching from industrial soil	6.23E-05	[d-1]	O
Total rate constant for removal from industrial soil	0.0386	[d-1]	O

RELEASE ESTIMATION
CHARACTERIZATION AND TONNAGE

High Production Volume Chemical	No		D
Production volume of chemical in EU	0[tonnes.yr-1]		D
Fraction of EU production volume for region	100[%]		D
Regional production volume of substance	0[tonnes.yr-1]		O
Continental production volume of substance	0[tonnes.yr-1]		O
Volume of chemical imported to EU	0[tonnes.yr-1]		D
Volume of chemical exported from EU	0[tonnes.yr-1]		D
Tonnage of substance in Europe	0[tonnes.yr-1]		O

USE PATTERNS
PRODUCTION STEPS
OTHER LIFE CYCLE STEPS
EMISSION INPUT DATA

Usage/production title	Professional use		S

USE PATTERN

Industry category	15/0 Others		D
Use category	39 Biocides, non-agricultural		S
Extra details on use category	No extra details necessary		D
Extra details on use category	No extra details necessary		D
Scenario choice for biocides	(18) Insecticides		S
Additional scenario information	(18.2.2) Indoor, gel application		S

PRIVATE USE

Use specific emission scenario	No		D
Emission scenario	no special scenario selected/available		S

TONNAGE

Fraction of tonnage for application	1	[-]	O
Fraction of chemical in formulation	1	[-]	D
Tonnage of formulated product	0 [tonnes.yr-1]		O
Relevant tonnage for application	0 [tonnes.yr-1]		O
Regional tonnage of substance	0 [tonnes.yr-1]		O
Tonnage of formulated product	0 [tonnes.yr-1]		O
Regional tonnage of substance (private use step)	0 [tonnes.yr-1]		O
Continental tonnage of substance (private use step)	0 [tonnes.yr-1]		O
Total of fractions for all applications	1 [-]		O

INTERMEDIATE RESULTS
INTERMEDIATE
RELEASE FRACTIONS AND EMISSION DAYS
PRIVATE USE

Emission tables	No applicable A-table, B4.5 (specific uses)		S

RELEASE FRACTIONS

Fraction of tonnage released to air	0	[-]	O
Fraction of tonnage released to wastewater	0	[-]	O
Fraction of tonnage released to surface water	0	[-]	O
Fraction of tonnage released to industrial soil	0	[-]	O
Fraction of tonnage released to agricultural soil	0	[-]	O
Emission fractions determined by special scenario	No		O

EMISSION DAYS

Fraction of the main local source	0	[-]	O
Number of emission days per year	1	[-]	O
Release to wastewater only	Yes		O
Emission days determined by special scenario	No		O

REGIONAL AND CONTINENTAL RELEASES
PRIVATE USE
REGIONAL

Regional release to air	0	[kg.d-1]	O
Regional release to wastewater	0	[kg.d-1]	O
Regional release to surface water	0	[kg.d-1]	O
Regional release to industrial soil	0	[kg.d-1]	O
Regional release to agricultural soil	0	[kg.d-1]	O

CONTINENTAL

Continental release to air	0	[kg.d-1]	O
Continental release to wastewater	0	[kg.d-1]	O
Continental release to surface water	0	[kg.d-1]	O
Continental release to industrial soil	0	[kg.d-1]	O
Continental release to agricultural soil	0	[kg.d-1]	O

REGIONAL AND CONTINENTAL TOTAL EMISSIONS

Total regional emission to air	0	[kg.d-1]	O
Total regional emission to wastewater	0	[kg.d-1]	O
Total regional emission to surface water	0	[kg.d-1]	O
Total regional emission to industrial soil	0	[kg.d-1]	O
Total regional emission to agricultural soil	0	[kg.d-1]	O
Total continental emission to air	0	[kg.d-1]	O
Total continental emission to wastewater	0	[kg.d-1]	O
Total continental emission to surface water	0	[kg.d-1]	O
Total continental emission to industrial soil	0	[kg.d-1]	O
Total continental emission to agricultural soil	0	[kg.d-1]	O

LOCAL

[PRIVATE USE]

Local emission to air during episode	0	[kg.d-1]	O
Emission to air calculated by special scenario	No		O
Local emission to wastewater during episode	1.53E-05	[kg.d-1]	S
Emission to water calculated by special scenario	No		O
Show this step in further calculations	Yes		O
Intermittent release	No		S

DISTRIBUTION
SEWAGE TREATMENT
CONTINENTAL

Fraction of emission directed to air	0	[%]	O
Fraction of emission directed to water	0	[%]	O
Fraction of emission directed to sludge	0	[%]	O
Fraction of the emission degraded	0	[%]	O
Total of fractions	0	[%]	O
Indirect emission to air	0	[kg.d-1]	O
Indirect emission to surface water	0	[kg.d-1]	O
Indirect emission to agricultural soil	0	[kg.d-1]	O

REGIONAL

Fraction of emission directed to air	0	[%]	O
Fraction of emission directed to water	0	[%]	O
Fraction of emission directed to sludge	0	[%]	O
Fraction of the emission degraded	0	[%]	O
Total of fractions	0	[%]	O
Indirect emission to air	0	[kg.d-1]	O
Indirect emission to surface water	0	[kg.d-1]	O
Indirect emission to agricultural soil	0	[kg.d-1]	O

LOCAL
[PRIVATE USE]
INPUT AND CONFIGURATION [PRIVATE USE]
INPUT

Use or bypass STP (local freshwater assessment)	Use STP		D
Use or bypass STP (local marine assessment)	Bypass STP		D
Local emission to wastewater during episode	1.53E-05	[kg.d-1]	S
Concentration in untreated wastewater	7.65E-06	[mg.l-1]	O
Local emission entering the STP	1.53E-05	[kg.d-1]	O

CONFIGURATION

Type of local STP	With primary settler (9-box)		D
Number of inhabitants feeding this STP	1E+04	[eq]	O
Effluent discharge rate of this STP	2E+06	[l.d-1]	O
Calculate dilution from river flow rate	No		O
Flow rate of the river	1.8E+04	[m3.d-1]	O
Dilution factor (rivers)	10	[-]	O
Dilution factor (coastal areas)	100	[-]	O

OUTPUT [PRIVATE USE]

Fraction of emission directed to air by STP	3.09E-05	[%]	O
Fraction of emission directed to water by STP	62.1	[%]	O
Fraction of emission directed to sludge by STP	37.9	[%]	O
Fraction of the emission degraded in STP	0	[%]	O
Total of fractions	100	[%]	O
Local indirect emission to air from STP during episode	4.73E-12	[kg.d-1]	O
Concentration in untreated wastewater	7.65E-06	[mg.l-1]	O
Concentration of chemical (total) in the STP-effluent	4.75E-06	[mg.l-1]	O
Concentration in effluent exceeds solubility	No		O
Concentration in dry sewage sludge	7.33E-03	[mg.kg-1]	O
PEC for micro-organisms in the STP	4.75E-06	[mg.l-1]	O

LOCAL
[PRIVATE USE]
LOCAL CONCENTRATIONS AND DEPOSITIONS [PRIVATE USE]
AIR

Concentration in air during emission episode	1.31E-15	[mg.m-3]	O
Annual average concentration in air, 100 m from point source	3.6E-18	[mg.m-3]	O
Total deposition flux during emission episode	4.72E-14	[mg.m-2.d-1]	O
Annual average total deposition flux	1.29E-16	[mg.m-2.d-1]	O

WATER, SEDIMENT

Concentration in surface water during emission episode (diss)	4.72E-07	[mg.l-1]	O
Concentration in surface water exceeds solubility	No		O
Annual average concentration in surface water (dissolved)	1.29E-09	[mg.l-1]	O
Concentration in seawater during emission episode (dissolved)	7.59E-08	[mg.l-1]	O
Annual average concentration in seawater (dissolved)	2.08E-10	[mg.l-1]	O

SOIL, GROUNDWATER

Concentration in agric. soil averaged over 30 days	6.39E-06	[mg.kgwwt-1]	O
Concentration in agric. soil averaged over 180 days	1.55E-06	[mg.kgwwt-1]	O
Concentration in grassland averaged over 180 days	6.21E-07	[mg.kgwwt-1]	O
Fraction of steady-state (agricultural soil)	1	[-]	O
Fraction of steady-state (grassland soil)	1	[-]	O

LOCAL PECS [PRIVATE USE]

AIR

Annual average local PEC in air (total)	3.6E-18	[mg.m-3]	O

WATER, SEDIMENT

Local PEC in surface water during emission episode (diss)	4.72E-07	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in surface water (dissolved)	1.29E-09	[mg.l-1]	O
Local PEC in fresh-water sediment during emission episode	5.29E-05	[mg.kgwwt-1]	O
Local PEC in seawater during emission episode (dissolved)	7.59E-08	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in seawater (dissolved)	2.08E-10	[mg.l-1]	O
Local PEC in marine sediment during emission episode	8.52E-06	[mg.kgwwt-1]	O

SOIL, GROUNDWATER

Local PEC in agric. soil (total) averaged over 30 days	6.39E-06	[mg.kgwwt-1]	O
Local PEC in agric. soil (total) averaged over 180 days	1.55E-06	[mg.kgwwt-1]	O
Local PEC in grassland (total) averaged over 180 days	6.21E-07	[mg.kgwwt-1]	O
Local PEC in pore water of agricultural soil	1.72E-08	[mg.l-1]	O
Local PEC in pore water of grassland	6.86E-09	[mg.l-1]	O
Local PEC in groundwater under agricultural soil	1.72E-08	[mg.l-1]	O

EXPOSURE
SECONDARY POISONING
SECONDARY POISONING [PRIVATE USE]

Concentration in fish for secondary poisoning (freshwater)	6.14E-07	[mg.kgwwt-1]	O
Concentration in earthworms from agricultural soil	4.21E-06	[mg.kg-1]	O
Concentration in fish for secondary poisoning (marine)	9.88E-08	[mg.kgwwt-1]	O
Concentration in fish-eating marine top-predators	1.98E-08	[mg.kgwwt-1]	O

EFFECTS
INPUT OF EFFECTS DATA
MICRO-ORGANISMS

Test system	Respiration inhibition, EU Annex V C.11, OECD 209		D
EC50 for micro-organisms in a STP	1000	[mg.l-1]	S
EC10 for micro-organisms in a STP	??	[mg.l-1]	D
NOEC for micro-organisms in a STP	??	[mg.l-1]	D

AQUATIC ORGANISMS
FRESH WATER
L(E)C50 SHORT-TERM TESTS

LC50 for fish	0.65	[mg.l-1]	S
L(E)C50 for Daphnia	0.6	[mg.l-1]	S
EC50 for algae	0.77	[mg.l-1]	S
LC50 for additional taxonomic group	??	[mg.l-1]	D
Aquatic species	other		D

NOEC LONG-TERM TESTS

NOEC for fish	0.15	[mg.l-1]	S
NOEC for Daphnia	0.09	[mg.l-1]	S
NOEC for algae	0.46	[mg.l-1]	S
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D

MARINE
L(E)C50 SHORT-TERM TESTS

LC50 for fish (marine)	??	[mg.l-1]	D
L(E)C50 for crustaceans (marine)	??	[mg.l-1]	D
EC50 for algae (marine)	??	[mg.l-1]	D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D

NOEC LONG-TERM TESTS

NOEC for fish (marine)	??	[mg.l-1]	D
NOEC for crustaceans (marine)	??	[mg.l-1]	D
NOEC for algae (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D

FRESH WATER SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS

EC10 for fresh-water sediment organism	0.0208696	[mg.kgwwt-1]	S
Weight fraction of organic carbon in tested sediment	1.9	[%]	S
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

MARINE SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS			
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
TERRESTRIAL ORGANISMS			
L(E)C50 SHORT-TERM TESTS			
LC50 for plants	150	[mg.kgwwt-1]	S
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for earthworms	1.25E+03	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	2	[%]	D
EC50 for microorganisms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for other terrestrial species	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC LONG-TERM TESTS			
NOEC for plants	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for earthworms	39	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for microorganisms	1.334	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	1.01	[%]	S
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
BIRDS			
LC50 in avian dietary study (5 days)	??	[mg.kg-1]	D
NOEC via food (birds)	1.15E+03	[mg.kg-1]	O
NOAEL (birds)	144	[mg.kg-1.d-1]	S
Conversion factor NOAEL to NOEC (birds)	8	[kg.d.kg-1]	D
MAMMALS			
REPEATED DOSE			
ORAL			
Oral NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Oral LOAEL (repdose)	??	[mg.kg-1.d-1]	D
Oral CED (repdose)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (repdose)	??	[mg.kg-1]	D
LOEC via food (repdose)	??	[mg.kg-1]	D
CED via food (repdose)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (repdose)	??	[mg.m-3]	D
Inhalatory LOAEL (repdose)	??	[mg.m-3]	D
Inhalatory CED (repdose)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (repdose)	??	[mg.kg-1.d-1]	D
Dermal CED (repdose)	??	[mg.kg-1.d-1]	D

FERTILITY

ORAL

Oral NOAEL (fert)	??	[mg.kg-1.d-1]	D
Oral LOAEL (fert)	??	[mg.kg-1.d-1]	D
Oral CED (fert)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (fert)	??	[mg.kg-1]	D
LOEC via food (fert)	??	[mg.kg-1]	D
CED via food (fert)	??	[mg.kgfood-1]	D

INHALATORY

Inhalatory NOAEL (fert)	??	[mg.m-3]	D
Inhalatory LOAEL (fert)	??	[mg.m-3]	D
Inhalatory CED (fert)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D

DERMAL

Dermal NOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (fert)	??	[mg.kg-1.d-1]	D
Dermal CED (fert)	??	[mg.kg-1.d-1]	D

MATERNAL-TOX

ORAL

Oral NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (mattox)	??	[mg.kg-1.d-1]	D
Oral CED (mattox)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (mattox)	??	[mg.kg-1]	D
LOEC via food (mattox)	??	[mg.kg-1]	D
CED via food (mattox)	??	[mg.kgfood-1]	D

INHALATORY

Inhalatory NOAEL (mattox)	??	[mg.m-3]	D
Inhalatory LOAEL (mattox)	??	[mg.m-3]	D
Inhalatory CED (mattox)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D

DERMAL

Dermal NOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (mattox)	??	[mg.kg-1.d-1]	D
Dermal CED (mattox)	??	[mg.kg-1.d-1]	D

DEVELOPMENT-TOX

ORAL

Oral NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Oral LOAEL (devtox)	??	[mg.kg-1.d-1]	D
Oral CED (devtox)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (devtox)	??	[mg.kg-1]	D
LOEC via food (devtox)	??	[mg.kg-1]	D
CED via food (devtox)	??	[mg.kgfood-1]	D

INHALATORY

Inhalatory NOAEL (devtox)	??	[mg.m-3]	D
Inhalatory LOAEL (devtox)	??	[mg.m-3]	D
Inhalatory CED (devtox)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D

DERMAL

Dermal NOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (devtox)	??	[mg.kg-1.d-1]	D
Dermal CED (devtox)	??	[mg.kg-1.d-1]	D

CARC (THRESHOLD)			
ORAL			
Oral NOAEL (carc)	??	[mg.kg-1.d-1]	D
Oral LOAEL (carc)	??	[mg.kg-1.d-1]	D
Oral CED (carc)	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
NOEC via food (carc)	??	[mg.kg-1]	D
LOEC via food (carc)	??	[mg.kg-1]	D
CED via food (carc)	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory NOAEL (carc)	??	[mg.m-3]	D
Inhalatory LOAEL (carc)	??	[mg.m-3]	D
Inhalatory CED (carc)	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal NOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal LOAEL (carc)	??	[mg.kg-1.d-1]	D
Dermal CED (carc)	??	[mg.kg-1.d-1]	D
CARC (NON-THRESHOLD)			
ORAL			
Oral T25 for non-threshold effects	??	[mg.kg-1.d-1]	D
Oral CED for non-threshold effects	??	[mg.kg-1.d-1]	D
Species for conversion of NOAEL to NOEC	Rattus norvegicus (<=6 weeks)		D
Conversion factor NOAEL to NOEC	10	[kg.d.kg-1]	O
T25 via food for non-threshold effects	??	[mg.kgfood-1]	D
CED via food for non-threshold effects	??	[mg.kgfood-1]	D
INHALATORY			
Inhalatory T25 for non-threshold effects	??	[mg.m-3]	D
Inhalatory CED for non-threshold effects	??	[mg.m-3]	D
Correction factor for allometric scaling	1	[-]	D
DERMAL			
Dermal T25 for non-threshold effects	??	[mg.kg-1.d-1]	D
Dermal CED for non-threshold effects	??	[mg.kg-1.d-1]	D
ACUTE			
Oral LD50	??	[mg.kg-1]	D
Oral Discriminatory Dose	??	[mg.kg-1]	D
Inhalatory LC50	??	[mg.m-3]	D
Dermal LD50	??	[mg.kg-1]	D
PREDATOR			
Duration of (sub-)chronic oral test	28 days		D
NOEC via food for secondary poisoning	??	[mg.kg-1]	O
Source for NOEC-via-food data	No data available, enter manually		S
BIO-AVAILIBILITY			
Bioavailability for oral uptake (oral to inhalation)	0.5	[-]	D
Bioavailability for oral uptake (oral to dermal)	1	[-]	D
Bioavailability for oral uptake (route to oral)	1	[-]	D
Bioavailability for inhalation (route from inhalation)	1	[-]	D
Bioavailability for inhalation (route to inhalation)	1	[-]	D
Bioavailability for dermal uptake (route from dermal)	0.1	[-]	O
Bioavailability for dermal uptake (route to dermal)	0.1	[-]	O
ENVIRONMENTAL EFFECTS ASSESSMENT			
ENVIRONMENTAL PNECS			
FRESH WATER			
Same taxonomic group for LC50 and NOEC	Yes		O
Toxicological data used for extrapolation to PNEC Aqua	0.09	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	10	[-]	O
PNEC for aquatic organisms	9E-03	[mg.l-1]	O
INTERMITTENT RELEASES			
Toxicological data used for extrapolation to PNEC Aqua	0.6	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	100	[-]	O
PNEC for aquatic organisms, intermittent releases	6E-03	[mg.l-1]	O
STATISTICAL			
PNEC for aquatic organisms with statistical method	??	[mg.l-1]	D

MARINE

Same taxonomic group for marine LC50 and NOEC	Yes		O
Toxicological data used for extrapolation to PNEC Marine	0.09	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Marine	100	[-]	O
PNEC for marine organisms	9E-04	[mg.l-1]	O

STATISTICAL

PNEC for marine organisms with statistical method	??	[mg.l-1]	D

FRESH WATER SEDIMENT

Toxicological data used for extrapolation to PNEC sed (fr)	0.0549	[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sed (fresh)	100	[-]	O
PNEC for fresh-water sediment organisms (from toxic data)	5.49E-04	[mg.kgwwt-1]	O
PNEC for fresh-water sediment organisms (eq.partitioning)	1.01	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in fresh-water sed?	No		O
PNEC for fresh-water sediment-dwelling organisms	5.49E-04	[mg.kgwwt-1]	O

MARINE SEDIMENT

Toxicological data used for extrapolation to PNEC sed (marine)	0.0549	[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sed (mar)	1000	[-]	O
PNEC for marine sediment organisms (from toxicological data)	5.49E-05	[mg.kgwwt-1]	O
PNEC for marine sediment organisms (equilibrium partitioning)	0.101	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in marine sediment?	No		O
PNEC for marine sediment organisms	5.49E-05	[mg.kgwwt-1]	O

TERRESTRIAL

Same taxonomic group for LC50 and NOEC	No		O
Toxicological data used for extrapolation to PNEC Terr	2.33	[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC Terr	50	[-]	O
PNEC for terrestrial organisms (from toxicological data)	0.0466	[mg.kgwwt-1]	O
PNEC for terrestrial organisms (equilibrium partitioning)	0.815	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in soil?	No		O
PNEC for terrestrial organisms	0.0466	[mg.kgwwt-1]	O

STATISTICAL

PNEC for terrestrial organisms with statistical method	??	[mg.kgwwt-1]	D

SECONDARY POISONING

Toxicological data used for extrapolation to PNEC oral	1.15E+03	[mg.kg-1]	O
Assessment factor applied in extrapolation to PNEC oral	30	[-]	O
PNEC for secondary poisoning of birds and mammals	38.4	[mg.kg-1]	O

STP

Toxicological data used for extrapolation to PNEC micro	1000	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC micro	100	[-]	O
PNEC for micro-organisms in a STP	10	[mg.l-1]	O

RISK CHARACTERIZATION
ENVIRONMENTAL EXPOSURE
LOCAL
RISK CHARACTERIZATION OF [PRIVATE USE]
WATER

RCR for the local fresh-water compartment	5.24E-05	[-]	O
Intermittent release	No		S
RCR for the local marine compartment	8.44E-05	[-]	O
RCR for the local fresh-water compartment, statistical method	??	[-]	O
RCR for the local marine compartment, statistical method	??	[-]	O

SEDIMENT

RCR for the local fresh-water sediment compartment	0.0964	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the local marine sediment compartment	0.155	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O

SOIL

RCR for the local soil compartment	1.37E-04	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the local soil compartment, statistical method	??	[-]	O

STP

RCR for the sewage treatment plant	4.75E-07	[-]	O

PREDATORS

RCR for fish-eating birds and mammals (fresh-water)	1.6E-08	[-]	O
RCR for fish-eating birds and mammals (marine)	2.57E-09	[-]	O
RCR for top predators (marine)	5.15E-10	[-]	O
RCR for worm-eating birds and mammals	1.1E-07	[-]	O

REGIONAL
WATER

RCR for the regional fresh-water compartment	0	[-]	O
RCR for the regional marine compartment	0	[-]	O
RCR for the regional fresh-water compartment, statistical method	??	[-]	O
RCR for the regional marine compartment, statistical method	??	[-]	O

SEDIMENT

RCR for the regional fresh-water sediment compartment	0	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the regional marine sediment compartment	0	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O

SOIL

RCR for the regional soil compartment	0	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the regional soil compartment, statistical method	??	[-]	O

EUSES 2.1.1 calculations Tier 2

STUDY
STUDY IDENTIFICATION

Study name	Raid Cockroach Bait-T2(reverse)	S
Study description	Raid Cockroach Bait-T2(reverse)	S
Author	Alison McGuire	S
Institute	CSI-Europe	S
Address	Pentlands Science Park	S
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Telefax	0131 445 6085	S
Email	amcguire@complianceservices.com	S
Calculations checksum	DAEAC8C6	S

DEFAULTS
DEFAULT IDENTIFICATION

General name	Standard Euses 2.1		D
Description	According to TGDs		D

CHARACTERISTICS OF COMPARTMENTS
GENERAL

Density of solid phase	2.5	[kg.l-1]	D
Density of water phase	1	[kg.l-1]	D
Density of air phase	1.3E-03	[kg.l-1]	D
Environmental temperature	12	[oC]	D
Standard temperature for Vp and Sol	25	[oC]	D
Temperature correction method	Temperature correction for local distribution		D
Constant of Junge equation	0.01	[Pa.m]	D
Surface area of aerosol particles	0.01	[m2.m-3]	D
Gas constant (8.314)	8.314	[Pa.m3.mol-1.K-1]	D

SUSPENDED MATTER

Volume fraction solids in suspended matter	0.1	[m3.m-3]	D
Volume fraction water in suspended matter	0.9	[m3.m-3]	D
Weight fraction of organic carbon in suspended matter	0.1	[kg.kg-1]	D
Bulk density of suspended matter	1.15E+03	[kgwwt.m-3]	O
Conversion factor wet-dry suspened matter	4.6	[kgwwt.kgdwt-1]	O

SEDIMENT

Volume fraction solids in sediment	0.2	[m3.m-3]	D
Volume fraction water in sediment	0.8	[m3.m-3]	D
Weight fraction of organic carbon in sediment	0.05	[kg.kg-1]	D

SOIL

Volume fraction solids in soil	0.6	[m3.m-3]	D
Volume fraction water in soil	0.2	[m3.m-3]	D
Volume fraction air in soil	0.2	[m3.m-3]	D
Weight fraction of organic carbon in soil	0.02	[kg.kg-1]	D
Weight fraction of organic matter in soil	0.034	[kg.kg-1]	O
Bulk density of soil	1.7E+03	[kgwwt.m-3]	O
Conversion factor wet-dry soil	1.13	[kgwwt.kgdwt-1]	O

STP SLUDGE

Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D

DEGRADATION AND TRANSFORMATION RATES

Rate constant for abiotic degradation in STP	0	[d-1]	D
Rate constant for abiotic degradation in bulk sediment	0	[d-1] (12[oC])	D
Rate constant for anaerobic biodegradation in sediment	0	[d-1] (12[oC])	D
Fraction of sediment compartment that is aerated	0.1	[m3.m-3]	D
Concentration of OH-radicals in atmosphere	5E+05	[molec.cm-3]	D
Rate constant for abiotic degradation in bulk soil	0	[d-1] (12[oC])	D

RELEASE ESTIMATION

Fraction of EU production volume for region	100	[%]	D
Fraction of EU tonnage for region (private use)	10	[%]	D
Fraction connected to sewer systems	80	[%]	D

SEWAGE TREATMENT
GENERAL

Number of inhabitants feeding one STP	1E+04	[eq]	D
Sewage flow	200	[l.eq-1.d-1]	D
Effluent discharge rate of local STP	2E+06	[l.d-1]	O
Temperature correction for STP degradation	No		D
Temperature of air above aeration tank	15	[oC]	D
Temperature of water in aeration tank	15	[oC]	D
Height of air column above STP	10	[m]	D
Number of inhabitants of region	2E+07	[eq]	D
Number of inhabitants of continental system	3.5E+08	[eq]	O
Windspeed in the system	3	[m.s-1]	D

RAW SEWAGE

Mass of O2 binding material per person per day	54	[g.eq-1.d-1]	D
Dry weight solids produced per person per day	0.09	[kg.eq-1.d-1]	D
Density solids in raw sewage	1.5	[kg.l-1]	D
Fraction of organic carbon in raw sewage sludge	0.3	[kg.kg-1]	D

PRIMARY SETTLER			
Depth of primary settler	4	[m]	D
Hydraulic retention time of primary settler	2	[hr]	D
Density suspended and settled solids in primary settler	1.5	[kg.l-1]	D
Fraction of organic carbon in settled sewage sludge	0.3	[kg.kg-1]	D
ACTIVATED SLUDGE TANK			
Depth of aeration tank	3	[m]	D
Density solids of activated sludge	1.3	[kg.l-1]	D
Concentration solids of activated sludge	4	[kg.m-3]	D
Steady state O2 concentration in activated sludge	2E-03	[kg.m-3]	D
Mode of aeration	Surface		D
Aeration rate of bubble aeration	1.31E-05	[m3.s-1.eq-1]	D
Fraction of organic carbon in activated sewage sludge	0.37	[kg.kg-1]	D
Sludge loading rate	0.15	[kg.kg-1.d-1]	D
Hydraulic retention time in aerator (9-box STP)	6.9	[hr]	O
Hydraulic retention time in aerator (6-box STP)	10.8	[hr]	O
Sludge retention time of aeration tank	9.2	[d]	O
SOLIDS-LIQUIDS SEPARATOR			
Depth of solids-liquid separator	3	[m]	D
Density suspended and settled solids in solids-liquid separator	1.3	[kg.l-1]	D
Concentration solids in effluent	30	[mg.l-1]	D
Hydraulic retention time of solids-liquid separator	6	[hr]	D
Fraction of organic carbon in effluent sewage sludge	0.37	[kg.kg-1]	D
LOCAL DISTRIBUTION			
AIR AND SURFACE WATER			
Concentration in air at source strength 1 [kg.d-1]	2.78E-04	[mg.m-3]	D
Standard deposition flux of aerosol-bound compounds	0.01	[mg.m-2.d-1]	D
Standard deposition flux of gaseous compounds	5E-04	[mg.m-2.d-1]	O
Suspended solids concentration in STP effluent water	15	[mg.l-1]	D
Dilution factor (rivers)	10	[-]	D
Flow rate of the river	1.8E+04	[m3.d-1]	D
Calculate dilution from river flow rate	No		D
Dilution factor (coastal areas)	100	[-]	D
SOIL			
Mixing depth of grassland soil	0.1	[m]	D
Dry sludge application rate on agricultural soil	5E+03	[kg.ha-1.yr-1]	D
Dry sludge application rate on grassland	1000	[kg.ha-1.yr-1]	D
Averaging time soil (for terrestrial ecosystem)	30	[d]	D
Averaging time agricultural soil	180	[d]	D
Averaging time grassland	180	[d]	D
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Mixing depth agricultural soil	0.2	[m]	D
Fraction of rain water infiltrating soil	0.25	[-]	D
Average annual precipitation	700	[mm.yr-1]	D
REGIONAL AND CONTINENTAL DISTRIBUTION			
CONFIGURATION			
Fraction of direct regional emissions to seawater	1	[%]	D
Fraction of direct continental emissions to seawater	0	[%]	D
Fraction of regional STP effluent to seawater	0	[%]	D
Fraction of continental STP effluent to seawater	0	[%]	D
Fraction of flow from continental rivers to regional rivers	0.034	[-]	D
Fraction of flow from continental rivers to regional sea	0	[-]	D
Fraction of flow from continental rivers to continental sea	0.966	[-]	O
Number of inhabitants of region	2E+07	[eq]	D
Number of inhabitants in the EU	3.7E+08	[eq]	D
Number of inhabitants of continental system	3.5E+08	[eq]	O

AREAS

REGIONAL

Area (land+rivers) of regional system	4E+04	[km2]	D
Area fraction of freshwater, region (excl. sea)	0.03	[-]	D
Area fraction of natural soil, region (excl. sea)	0.27	[-]	D
Area fraction of agricultural soil, region (excl. sea)	0.6	[-]	D
Area fraction of industrial/urban soil, region (excl. sea)	0.1	[-]	D
Length of regional seawater	40	[km]	D
Width of regional seawater	10	[km]	D
Area of regional seawater	400	[km2]	O
Area (land+rivers+sea) of regional system	4.04E+04	[km2]	O
Area fraction of freshwater, region (total)	0.0297	[-]	O
Area fraction of seawater, region (total)	9.9E-03	[-]	O
Area fraction of natural soil, region (total)	0.267	[-]	O
Area fraction of agricultural soil, region (total)	0.594	[-]	O
Area fraction of industrial/urban soil, region (total)	0.099	[-]	O

CONTINENTAL

Total area of EU (continent+region, incl. sea)	7.04E+06	[km2]	D
Area (land+rivers+sea) of continental system	7E+06	[km2]	O
Area (land+rivers) of continental system	3.5E+06	[km2]	O
Area fraction of freshwater, continent (excl. sea)	0.03	[-]	D
Area fraction of natural soil, continent (excl. sea)	0.27	[-]	D
Area fraction of agricultural soil, continent (excl. sea)	0.6	[-]	D
Area fraction of industrial/urban soil, continent (excl. sea)	0.1	[-]	D
Area fraction of freshwater, continent (total)	0.015	[-]	O
Area fraction of seawater, continent (total)	0.5	[-]	D
Area fraction of natural soil, continent (total)	0.135	[-]	O
Area fraction of agricultural soil, continent (total)	0.3	[-]	O
Area fraction of industrial/urban soil, continent (total)	0.05	[-]	O

MODERATE

Area of moderate system (incl.continent,region)	8.5E+07	[km2]	D
Area of moderate system (excl.continent, region)	7.8E+07	[km2]	O
Area fraction of water, moderate system	0.5	[-]	D

ARCTIC

Area of arctic system	4.25E+07	[km2]	D
Area fraction of water, arctic system	0.6	[-]	D

TROPIC

Area of tropic system	1.275E+08	[km2]	D
Area fraction of water, tropic system	0.7	[-]	D

TEMPERATURE

Environmental temperature, regional scale	12	[oC]	D
Environmental temperature, continental scale	12	[oC]	D
Environmental temperature, moderate scale	12	[oC]	D
Environmental temperature, arctic scale	-10	[oC]	D
Environmental temperature, tropic scale	25	[oC]	D
Enthalpy of vaporisation	50	[kJ.mol-1]	D
Enthalpy of solution	10	[kJ.mol-1]	D

MASS TRANSFER

Air-film PMTC (air-water interface)	2.9E-03	[m.s-1]	O
Water-film PMTC (air-water interface)	3.77E-06	[m.s-1]	O
PMTC, air side of air-soil interface	1.05E-03	[m.s-1]	O
PMTC, soil side of air-soil interface	2.23E-09	[m.s-1]	O
Soil-air PMTC (air-soil interface)	5.56E-06	[m.s-1]	D
Soil-water film PMTC (air-soil interface)	5.56E-10	[m.s-1]	D
Water-film PMTC (sediment-water interface)	2.78E-06	[m.s-1]	D
Pore water PMTC (sediment-water interface)	2.78E-08	[m.s-1]	D

AIR

GENERAL

Atmospheric mixing height	1000	[m]	D
Windspeed in the system	3	[m.s-1]	D
Aerosol deposition velocity	1E-03	[m.s-1]	D
Aerosol collection efficiency	2E+05	[-]	D

RAIN

Average precipitation, regional system	700	[mm.yr-1]	D
Average precipitation, continental system	700	[mm.yr-1]	D
Average precipitation, moderate system	700	[mm.yr-1]	D
Average precipitation, arctic system	250	[mm.yr-1]	D
Average precipitation, tropic system	1.3E+03	[mm.yr-1]	D

RESIDENCE TIMES

Residence time of air, regional	0.687	[d]	O
Residence time of air, continental	9.05	[d]	O
Residence time of air, moderate	30.2	[d]	O
Residence time of air, arctic	22.3	[d]	O
Residence time of air, tropic	38.6	[d]	O

WATER

DEPTH

Water depth of freshwater, regional system	3	[m]	D
Water depth of seawater, regional system	10	[m]	D
Water depth of freshwater, continental system	3	[m]	D
Water depth of seawater, continental system	200	[m]	D
Water depth, moderate system	1000	[m]	D
Water depth, arctic system	1000	[m]	D
Water depth, tropic system	1000	[m]	D

SUSPENDED SOLIDS

Suspended solids conc. freshwater, regional	15	[mg.l-1]	D
Suspended solids conc. seawater, regional	5	[mg.l-1]	D
Suspended solids conc. freshwater, continental	15	[mg.l-1]	D
Suspended solids conc. seawater, continental	5	[mg.l-1]	D
Suspended solids conc. seawater, moderate	5	[mg.l-1]	D
Suspended solids conc. seawater, arctic	5	[mg.l-1]	D
Suspended solids conc. seawater, tropic	5	[mg.l-1]	D
Concentration solids in effluent, regional	30	[mg.l-1]	D
Concentration solids in effluent, continental	30	[mg.l-1]	D
Concentration biota	1	[mgwwt.l-1]	D

RESIDENCE TIMES

Residence time of freshwater, regional	43.3	[d]	O
Residence time of seawater, regional	4.64	[d]	O
Residence time of freshwater, continental	172	[d]	O
Residence time of seawater, continental	365	[d]	O
Residence time of water, moderate	2.69E+03	[d]	O
Residence time of water, arctic	5.84E+03	[d]	O
Residence time of water, tropic	1.09E+04	[d]	O

SEDIMENT

DEPTH

Sediment mixing depth	0.03	[m]	D

SUSPENDED SOLIDS

(Biogenic) prod. susp. solids in freshwater, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in seawater, reg	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in freshwater, cont	10	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in seawater, cont	5	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, moderate	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, arctic	1	[g.m-2.yr-1]	D
(Biogenic) prod. susp. solids in water, tropic	1	[g.m-2.yr-1]	D

SEDIMENTATION RATES

Settling velocity of suspended solids	2.5	[m.d-1]	D
Net sedimentation rate, freshwater, regional	2.8	[mm.yr-1]	O
Net sedimentation rate, seawater, regional	1.53	[mm.yr-1]	O
Net sedimentation rate, freshwater, continental	2.75	[mm.yr-1]	O
Net sedimentation rate, seawater, continental	6.69E-03	[mm.yr-1]	O
Net sedimentation rate, moderate	2.8E-03	[mm.yr-1]	O
Net sedimentation rate, arctic	2E-03	[mm.yr-1]	O
Net sedimentation rate, tropic	2E-03	[mm.yr-1]	O

SOIL

GENERAL

Fraction of rain water infiltrating soil	0.25	[-]	D
Fraction of rain water running off soil	0.25	[-]	D

DEPTH

Chemical-dependent soil depth	No		D
Mixing depth natural soil	0.05	[m]	D
Mixing depth agricultural soil	0.2	[m]	D
Mixing depth industrial/urban soil	0.05	[m]	D
Mixing depth of soil, moderate system	0.05	[m]	D
Mixing depth of soil, arctic system	0.05	[m]	D
Mixing depth of soil, tropic system	0.05	[m]	D

EROSION

Soil erosion rate, regional system	0.03	[mm.yr-1]	D
Soil erosion rate, continental system	0.03	[mm.yr-1]	D
Soil erosion rate, moderate system	0.03	[mm.yr-1]	D
Soil erosion rate, arctic system	0.03	[mm.yr-1]	D
Soil erosion rate, tropic system	0.03	[mm.yr-1]	D

SUBSTANCE

SUBSTANCE IDENTIFICATION

General name	Raid Cockroach Bait-Indoor S		
Description	Indoxacarb		S
CAS-No	173584-44-6		S
EC-notification no.	None assigned		S
EINECS no.	None assigned		S

PHYSICO-CHEMICAL PROPERTIES

Molecular weight	527.84	[g.mol-1]	S
Melting point	87.1	[oC]	S
Boiling point	??	[oC]	D
Vapour pressure at test temperature	2.5E-08	[Pa]	S
Temperature at which vapour pressure was measured	25	[oC]	D
Vapour pressure at 25 [oC]	2.5E-08	[Pa]	O
Octanol-water partition coefficient	4.65	[log10]	S
Water solubility at test temperature	0.225	[mg.l-1]	S
Temperature at which solubility was measured	20	[oC]	S
Water solubility at 25 [oC]	0.241	[mg.l-1]	O

PARTITION COEFFICIENTS AND BIOCONCENTRATION FACTORS

SOLIDS-WATER

Chemical class for Koc-QSAR	Non-hydrophobics (default QSAR)		D
Organic carbon-water partition coefficient	5.125E+03	[l.kg-1]	S
Solids-water partition coefficient in soil	102	[l.kg-1]	O
Solids-water partition coefficient in sediment	256	[l.kg-1]	O
Solids-water partition coefficient suspended matter	512	[l.kg-1]	O
Solids-water partition coefficient in raw sewage sludge	1.54E+03	[l.kg-1]	O
Solids-water partition coefficient in settled sewage sludge	1.54E+03	[l.kg-1]	O
Solids-water partition coefficient in activated sewage sludge	1.9E+03	[l.kg-1]	O
Solids-water partition coefficient in effluent sewage sludge	1.9E+03	[l.kg-1]	O
Soil-water partition coefficient	154	[m3.m-3]	O
Suspended matter-water partition coefficient	129	[m3.m-3]	O
Sediment-water partition coefficient	129	[m3.m-3]	O

AIR-WATER

Environmental temperature	12	[oC]	D
Water solubility at environmental temperature	0.201	[mg.l-1]	O
Vapour pressure at environmental temperature	9.96E-09	[Pa]	O
Sub-cooled liquid vapour pressure	5.96E-08	[Pa]	O
Fraction of chemical associated with aerosol particles	0.999	[-]	O
Henry's law constant at 25 [oC]	5.86E-05	[Pa.m3.mol-1]	S
Henry's law constant at enviromental temparature	2.62E-05	[Pa.m3.mol-1]	O
Air-water partitioning coefficient	1.11E-08	[m3.m-3]	O

BIOCONCENTRATION FACTORS

PREDATOR EXPOSURE

Bioconcentration factor for earthworms	537	[l.kgwwt-1]	O

HUMAN AND PREDATOR EXPOSURE

Bioconcentration factor for fish	950.3	[l.kgwwt-1]	S
QSAR valid for calculation of BCF-Fish	Yes		O
Biomagnification factor in fish	1	[-]	O
Biomagnification factor in predator	1	[-]	O

HUMAN EXPOSURE

Partition coefficient between leaves and air	2.37E+10	[m3.m-3]	O
Partition coefficient between plant tissue and water	262	[m3.m-3]	O
Transpiration-stream concentration factor	0.0378	[-]	O
Bioaccumulation factor for meat	1.12E-03	[d.kg-1]	O
Bioaccumulation factor for milk	3.55E-04	[d.kg-1]	O
Purification factor for surface water	0.25	[-]	O

DEGRADATION AND TRANSFORMATION RATES

CHARACTARIZATION

Characterization of biodegradability	Not biodegradable S		

STP

Degradation calculation method in STP	First order, standard OECD/EU tests		D
Rate constant for biodegradation in STP	0	[d-1]	O
Total rate constant for degradation in STP	0	[d-1]	O
Maximum growth rate of specific microorganisms	2	[d-1]	D
Half saturation concentration	0.5	[g.m-3]	D

WATER/SEDIMENT

WATER

Rate constant for hydrolysis in surface water	22	[d] (DT50,25[oC])	S
Rate constant for photolysis in surface water	3	[d] (DT50)	S
Rate constant for biodegradation in surface water	1.89648	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk surface water	0.608	[d-1] (12[oC])	O
Rate constant for biodegradation in saltwater	0	[d-1] (12[oC])	O
Total rate constant for degradation in bulk saltwater	0.242	[d-1] (12[oC])	O

SEDIMENT

Rate constant for biodegradation in aerated sediment	9.4824	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk sediment	7.31E-03	[d-1] (12[oC])	O

AIR

Specific degradation rate constant with OH-radicals	0	[cm3.molec-1.s-1]	D
Rate constant for degradation in air	0	[d-1]	O

SOIL

Rate constant for biodegradation in bulk soil	18	[d] (DT50,12[oC])	S
Total rate constant for degradation in bulk soil	0.0385	[d-1] (12[oC])	O

REMOVAL RATE CONSTANTS SOIL

Total rate constant for degradation in bulk soil	0.0385	[d-1] (12[oC])	O
Rate constant for volatilisation from agricultural soil	3.25E-08	[d-1]	O
Rate constant for leaching from agricultural soil	1.56E-05	[d-1]	O
Total rate constant for removal from agricultural top soil	0.0385	[d-1]	O
Rate constant for volatilisation from grassland soil	6.5E-08	[d-1]	O
Rate constant for leaching from grassland soil	3.11E-05	[d-1]	O
Total rate constant for removal from grassland top soil	0.0385	[d-1]	O
Rate constant for volatilisation from industrial soil	1.3E-07	[d-1]	O
Rate constant for leaching from industrial soil	6.23E-05	[d-1]	O
Total rate constant for removal from industrial soil	0.0386	[d-1]	O

RELEASE ESTIMATION
CHARACTERIZATION AND TONNAGE

High Production Volume Chemical	No		D
Production volume of chemical in EU	0	[tonnes.yr-1]	D
Fraction of EU production volume for region	100	[%]	D
Regional production volume of substance	0	[tonnes.yr-1]	O
Continental production volume of substance	0	[tonnes.yr-1]	O
Volume of chemical imported to EU	0	[tonnes.yr-1]	D
Volume of chemical exported from EU	0	[tonnes.yr-1]	D
Tonnage of substance in Europe	0	[tonnes.yr-1]	O

USE PATTERNS
PRODUCTION STEPS
OTHER LIFE CYCLE STEPS
EMISSION INPUT DATA

Usage/production title	Professional use S	

USE PATTERN

Industry category	15/0 Others	D
Use category	39 Biocides, non-agricultural	S
Extra details on use category	No extra details necessary D	
Extra details on use category	No extra details necessary D	
Scenario choice for biocides	(18) Insecticides S	
Additional scenario information	(18.2.2) Indoor, gel application	S

PRIVATE USE

Use specific emission scenario	No	D
Emission scenario	no special scenario selected/available	S

TONNAGE

Fraction of tonnage for application	1	[-]	O
Fraction of chemical in formulation	1	[-]	D
Tonnage of formulated product	0	[tonnes.yr-1]	O
Relevant tonnage for application	0	[tonnes.yr-1]	O
Regional tonnage of substance	0	[tonnes.yr-1]	O
Tonnage of formulated product	0	[tonnes.yr-1]	O
Regional tonnage of substance (private use step)	0	[tonnes.yr-1]	O
Continental tonnage of substance (private use step)	0	[tonnes.yr-1]	O
Total of fractions for all applications	1	[-]	O

INTERMEDIATE RESULTS
INTERMEDIATE
RELEASE FRACTIONS AND EMISSION DAYS
PRIVATE USE

Emission tables	No applicable A-table, B4.5 (specific uses)	S

RELEASE FRACTIONS

Fraction of tonnage released to air	0	[-]	O
Fraction of tonnage released to wastewater	0	[-]	O
Fraction of tonnage released to surface water	0	[-]	O
Fraction of tonnage released to industrial soil	0	[-]	O
Fraction of tonnage released to agricultural soil	0	[-]	O
Emission fractions determined by special scenario	No		O

EMISSION DAYS

Fraction of the main local source	0	[-]	O
Number of emission days per year	1	[-]	O
Release to wastewater only	Yes		O
Emission days determined by special scenario	No		O

LOCAL
[PRIVATE USE]

Local emission to air during episode	0	[kg.d-1]	O
Emission to air calculated by special scenario	No		O
Local emission to wastewater during episode	3.41E-04	[kg.d-1]	S
Emission to water calculated by special scenario	No		O
Show this step in further calculations	Yes		O
Intermittent release	No		S

DISTRIBUTION
SEWAGE TREATMENT
LOCAL
[PRIVATE USE]
INPUT AND CONFIGURATION [PRIVATE USE]
INPUT

Use or bypass STP (local freshwater assessment)	Use STP		D
Use or bypass STP (local marine assessment)	Bypass STP		D
Local emission to wastewater during episode	3.41E-04	[kg.d-1]	S
Concentration in untreated wastewater	1.71E-04	[mg.l-1]	O
Local emission entering the STP	3.41E-04	[kg.d-1]	O

CONFIGURATION

Type of local STP	With primary settler (9-box)		D
Number of inhabitants feeding this STP	1E+04	[eq]	O
Effluent discharge rate of this STP	2E+06	[l.d-1]	O
Calculate dilution from river flow rate	No		O
Flow rate of the river	1.8E+04	[m3.d-1]	O
Dilution factor (rivers)	10	[-]	O
Dilution factor (coastal areas)	100	[-]	O

OUTPUT [PRIVATE USE]

Fraction of emission directed to air by STP	3.09E-05	[%]	O
Fraction of emission directed to water by STP	62.1	[%]	O
Fraction of emission directed to sludge by STP	37.9	[%]	O
Fraction of the emission degraded in STP	0	[%]	O
Total of fractions	100	[%]	O
Local indirect emission to air from STP during episode	1.05E-10	[kg.d-1]	O
Concentration in untreated wastewater	1.71E-04	[mg.l-1]	O
Concentration of chemical (total) in the STP-effluent	1.06E-04	[mg.l-1]	O
Concentration in effluent exceeds solubility	No		O
Concentration in dry sewage sludge	0.163	[mg.kg-1]	O
PEC for micro-organisms in the STP	1.06E-04	[mg.l-1]	O

LOCAL
[PRIVATE USE]
LOCAL CONCENTRATIONS AND DEPOSITIONS [PRIVATE USE]
AIR

Concentration in air during emission episode	2.93E-14	[mg.m-3]	O
Annual average concentration in air, 100 m from point source	8.02E-17	[mg.m-3]	O
Total deposition flux during emission episode	1.05E-12	[mg.m-2.d-1]	O
Annual average total deposition flux	2.88E-15	[mg.m-2.d-1]	O

WATER, SEDIMENT

Concentration in surface water during emission episode (dissolved)		1.05E-05	[mg.l-1] O
Concentration in surface water exceeds solubility	No		O
Annual average concentration in surface water (dissolved)	2.88E-08	[mg.l-1]	O
Concentration in seawater during emission episode (dissolved)	1.69E-06	[mg.l-1]	O
Annual average concentration in seawater (dissolved)	4.64E-09	[mg.l-1]	O

SOIL, GROUNDWATER

Concentration in agric. soil averaged over 30 days	1.42E-04	[mg.kgwwt-1]	O
Concentration in agric. soil averaged over 180 days	3.46E-05	[mg.kgwwt-1]	O
Concentration in grassland averaged over 180 days	1.38E-05	[mg.kgwwt-1]	O
Fraction of steady-state (agricultural soil)	1	[-]	O
Fraction of steady-state (grassland soil)	1	[-]	O

LOCAL PECS [PRIVATE USE]
AIR

Annual average local PEC in air (total)	8.02E-17	[mg.m-3]	O

WATER, SEDIMENT

Local PEC in surface water during emission episode (dissolved)		1.05E-05	[mg.l-1] O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in surface water (dissolved)	2.88E-08	[mg.l-1]	O
Local PEC in fresh-water sediment during emission episode	1.18E-03	[mg.kgwwt-1]	O
Local PEC in seawater during emission episode (dissolved)	1.69E-06	[mg.l-1]	O
Qualitative assessment might be needed (TGD Part II, 5.6)	No		O
Annual average local PEC in seawater (dissolved)	4.64E-09	[mg.l-1]	O
Local PEC in marine sediment during emission episode	1.9E-04	[mg.kgwwt-1]	O

SOIL, GROUNDWATER

Local PEC in agric. soil (total) averaged over 30 days	1.42E-04	[mg.kgwwt-1]	O
Local PEC in agric. soil (total) averaged over 180 days	3.46E-05	[mg.kgwwt-1]	O
Local PEC in grassland (total) averaged over 180 days	1.38E-05	[mg.kgwwt-1]	O
Local PEC in pore water of agricultural soil	3.82E-07	[mg.l-1]	O
Local PEC in pore water of grassland	1.53E-07	[mg.l-1]	O
Local PEC in groundwater under agricultural soil	3.82E-07	[mg.l-1]	O

EXPOSURE
EFFECTS
INPUT OF EFFECTS DATA
MICRO-ORGANISMS

Test system	Respiration inhibition, EU Annex V C.11, OECD 209		D
EC50 for micro-organisms in a STP	1000	[mg.l-1]	S
EC10 for micro-organisms in a STP	??	[mg.l-1]	D
NOEC for micro-organisms in a STP	??	[mg.l-1]	D

AQUATIC ORGANISMS
FRESH WATER
L(E)C50 SHORT-TERM TESTS

LC50 for fish	0.65	[mg.l-1]	S
L(E)C50 for Daphnia	0.6	[mg.l-1]	S
EC50 for algae	0.77	[mg.l-1]	S
LC50 for additional taxonomic group	??	[mg.l-1]	D
Aquatic species	other		D

NOEC LONG-TERM TESTS

NOEC for fish	0.15	[mg.l-1]	S
NOEC for Daphnia	0.09	[mg.l-1]	S
NOEC for algae	0.46	[mg.l-1]	S
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D
NOEC for additional taxonomic group	??	[mg.l-1]	D

MARINE
L(E)C50 SHORT-TERM TESTS

LC50 for fish (marine)	??	[mg.l-1]	D
L(E)C50 for crustaceans (marine)	??	[mg.l-1]	D
EC50 for algae (marine)	??	[mg.l-1]	D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D
LC50 for additional taxonomic group (marine)	??	[mg.l-1]	D
Marine species	other		D

NOEC LONG-TERM TESTS

NOEC for fish (marine)	??	[mg.l-1]	D
NOEC for crustaceans (marine)	??	[mg.l-1]	D
NOEC for algae (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D
NOEC for additional taxonomic group (marine)	??	[mg.l-1]	D

FRESH WATER SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS

EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	5	[%]	D
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for fresh-water sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

MARINE SEDIMENT
L(E)C50 SHORT-TERM TESTS

LC50 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

EC10/NOEC LONG-TERM TESTS

EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
EC10 for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D
NOEC for marine sediment organism	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested sediment	0.05	[kg.kg-1]	D

TERRESTRIAL ORGANISMS
L(E)C50 SHORT-TERM TESTS

LC50 for plants	150	[mg.kgwwt-1]	S
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for earthworms	1.25E+03	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	2	[%]	D
EC50 for microorganisms	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
LC50 for other terrestrial species	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D

NOEC LONG-TERM TESTS

NOEC for plants	??	[mg.kgwwt-1]	D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for earthworms	39	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for microorganisms	1.334	[mg.kgdwt-1]	S
Weight fraction of organic carbon in tested soil	1.01	[%]	S
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D
NOEC for additional taxonomic group	??	[mg.kgwwt-1]	D
Terrestrial species	other		D
Weight fraction of organic carbon in tested soil	0.02	[kg.kg-1]	D

ENVIRONMENTAL EFFECTS ASSESSMENT
ENVIRONMENTAL PNECS
FRESH WATER

Same taxonomic group for LC50 and NOEC	Yes		O
Toxicological data used for extrapolation to PNEC Aqua	0.09	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	10	[-]	O
PNEC for aquatic organisms	9E-03	[mg.l-1]	O

INTERMITTENT RELEASES

Toxicological data used for extrapolation to PNEC Aqua	0.6	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Aqua	100	[-]	O
PNEC for aquatic organisms, intermittent releases	6E-03	[mg.l-1]	O

STATISTICAL

PNEC for aquatic organisms with statistical method	??	[mg.l-1]	D

MARINE

Same taxonomic group for marine LC50 and NOEC	Yes		O
Toxicological data used for extrapolation to PNEC Marine	0.09	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC Marine	100	[-]	O
PNEC for marine organisms	9E-04	[mg.l-1]	O

STATISTICAL

PNEC for marine organisms with statistical method	??	[mg.l-1]	D

FRESH WATER SEDIMENT

Toxicological data used for extrapolation to PNEC sediment (fresh)		??	
		[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sediment (fresh)		??	[-]
		O	
PNEC for fresh-water sediment organisms (from toxicological data)		??	
		[mg.kgwwt-1]	O
PNEC for fresh-water sediment organisms (equilibrium partitioning)		1.01	
		[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in fresh-water sediment?		Yes	
		O	
PNEC for fresh-water sediment-dwelling organisms	1.01	[mg.kgwwt-1]	O

MARINE SEDIMENT

Toxicological data used for extrapolation to PNEC sediment (marine)		??	
		[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC sediment (marine)		??	[-]
		O	
PNEC for marine sediment organisms (from toxicological data)	??	[mg.kgwwt-1]	O
PNEC for marine sediment organisms (equilibrium partitioning)	0.101	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in marine sediment?	Yes		O
PNEC for marine sediment organisms	0.101	[mg.kgwwt-1]	O

TERRESTRIAL

Same taxonomic group for LC50 and NOEC	No		O
Toxicological data used for extrapolation to PNEC Terr	2.33	[mg.kgwwt-1]	O
Assessment factor applied in extrapolation to PNEC Terr	50	[-]	O
PNEC for terrestrial organisms (from toxicological data)	0.0466	[mg.kgwwt-1]	O
PNEC for terrestrial organisms (equilibrium partitioning)	0.815	[mg.kgwwt-1]	O
Equilibrium partitioning used for PNEC in soil?	No		O
PNEC for terrestrial organisms	0.0466	[mg.kgwwt-1]	O

STATISTICAL

PNEC for terrestrial organisms with statistical method	??	[mg.kgwwt-1]	D

STP

Toxicological data used for extrapolation to PNEC micro	1000	[mg.l-1]	O
Assessment factor applied in extrapolation to PNEC micro	100	[-]	O
PNEC for micro-organisms in a STP	10	[mg.l-1]	O

RISK CHARACTERIZATION
ENVIRONMENTAL EXPOSURE
LOCAL
RISK CHARACTERIZATION OF [PRIVATE USE]
WATER

RCR for the local fresh-water compartment	1.17E-03	[-]	O
Intermittent release	No		S
RCR for the local marine compartment	1.88E-03	[-]	O
RCR for the local fresh-water compartment, statistical method	??	[-]	O
RCR for the local marine compartment, statistical method	??	[-]	O

SEDIMENT

RCR for the local fresh-water sediment compartment	1.17E-03	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the local marine sediment compartment	1.88E-03	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O

SOIL

RCR for the local soil compartment	3.06E-03	[-]	O
Extra factor 10 applied to PEC/PNEC	No		O
RCR for the local soil compartment, statistical method	??	[-]	O

STP

RCR for the sewage treatment plant	1.06E-05	[-]	O