SAFETY DATA SHEET

Based upon Regulation (EC) No. 1907/2006, as amended by Regulation (EC) No. 453/2010

EPOK 600 EC

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

1.1 Product identifier:

Product name : EPOK 600 EC
Registration number REACH : Not applicable (mixture)
Product type REACH : Mixture

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

1.2.1 Relevant identified uses

Fungicide

1.2.2 Uses advised against

No uses advised against known

1.3 Details of the supplier of the safety data sheet:

Supplier of the safety data sheet

ISK Biosciences Europe N.V.
Pegasus Park, De Kleetlaan 12B - box 9
B-1831 Diegem, Belgium
☎ +32 2 627 86 11
🖷 +32 2 627 86 00
isk-msds@isk.be

1.4 Emergency telephone number:

24h/24h (Telephone advice: English, French, German, Dutch):

+32 14 58 45 45 (BIG)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture:

2.1.1 Classification according to Regulation EC No 1272/2008

Classified as dangerous according to the criteria of Regulation (EC) No 1272/2008

Class	Category	Hazard statements
Carc.	category 2	H351: Suspected of causing cancer.
Repr.	category 2	H361d: Suspected of damaging the unborn child.
Acute Tox.	category 4	H332: Harmful if inhaled.
Asp. Tox.	category 1	H304: May be fatal if swallowed and enters airways.
STOT RE	category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Eye Irrit.	category 2	H319: Causes serious eye irritation.
Skin Irrit.	category 2	H315: Causes skin irritation.
Skin Sens.	category 1	H317: May cause an allergic skin reaction.
Aquatic Chronic	category 1	H410: Very toxic to aquatic life with long lasting effects.

2.1.2 Classification according to Directive 67/548/EEC-1999/45/EC

Classified as dangerous in accordance with the criteria of Directives 67/548/EEC and 1999/45/EC

Carc. Cat. 3; R40 - Limited evidence of a carcinogenic effect

Xn; R20 - Harmful by inhalation.

Xi; R36/38 - Irritating to eyes and skin.

R43 - May cause sensitisation by skin contact.

N; R50-53 - Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

2.2 Label elements:

Labelling according to Regulation EC No 1272/2008 (CLP)

Contains: fluazinam; naphthalene; solvent naphtha (petroleum), heavy arom..

© BIG vzw

Signal word Danger

H-statements

H351	Suspected of causing cancer.
H361d	Suspected of damaging the unborn child.
H332	Harmful if inhaled.
H304	May be fatal if swallowed and enters airways.
H373	May cause damage to organs through prolonged or repeated exposure.
H319	Causes serious eye irritation.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P102	Keep out of reach of children.
P201	Obtain special instructions before use.
P280	Wear protective gloves, protective clothing and eye protection/face protection.
P260	Do not breathe vapours/mist.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P312	Call a POISON CENTER/doctor if you feel unwell.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P302 + P352	IF ON SKIN: Wash with plenty of water and soap.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
P363	Wash contaminated clothing before reuse.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P391	Collect spillage.
P501	Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste

Supplemental information

EUH210	Safety data sheet available on request.
EUH401	To avoid risks to human health and the environment, comply with the instructions for use.

2.3 Other hazards:

CLP

Material presenting a fire hazard

SECTION 3: Composition/information on ingredients

3.1 Substances:

Not applicable

3.2 Mixtures:

Name REACH Registration No	CAS No EC No	Conc. (C)	Classification according to DSD/DPD	Classification according to CLP	Note	Remark
fluazinam	79622-59-6	C=33.1 %	R43 N; R50-53 Repr. Cat. 3; R63 Xn; R20 Xi; R38 - 41	Repr. 2; H361d Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(9)	Constituent
metalaxyl-M	70630-17-0	C=16.5%	Xn; R22 Xi; R41	Acute Tox. 4; H302 Eye Dam. 1; H318	(1)	Constituent
2-methylnaphthalene	91-57-6 202-078-3	C<10%	Xn; R22 Xi; R36/38 N; R51-53	Acute Tox. 4; H302 Eye Irrit. 2; H319 Skin Irrit. 2; H315 Aquatic Chronic 2; H411	(1)	Constituent
1-methylnaphthalene	90-12-0 201-966-8	C<5%	Xn; R22 N; R51-53	Acute Tox. 4; H302 Aquatic Chronic 2; H411	(1)(2)(10)	Constituent

naphthalene	91-20-3 202-049-5	C<1%	Carc. Cat. 3; R40 Xn; R22 N; R50-53	Carc. 2; H351 Acute Tox. 4; H302 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	(1)(2)	Constituent
gamma-butyrolactone	96-48-0 202-509-5	C<25%	Xn; R22 Xi; R41 R67	Acute Tox. 4; H302 Eye Dam. 1; H318 STOT SE 3; H336	(1)(10)	Constituent
isotridecanol, ethoxylated (>1 < 2,5 mol EO)	9043-30-5 500-027-2	C<5%	Xn; R22 Xi; R41 N; R51-53	Acute Tox. 4; H302 Eye Dam. 1; H318 Aquatic Chronic 2; H411	(1)	Constituent
solvent naphtha (petroleum), heavy arom.	64742-94-5 265-198-5	C>20%	Xn; R65 Xi; R38 N; R51-53	Asp. Tox. 1; H304 Skin Irrit. 2; H315 Aquatic Chronic 2; H411	(1)(10)	Constituent
calcium dodecylbenzenesulphonate	26264-06-2 247-557-8	C<20%	Xi; R38 - 41	Skin Irrit. 2; H315 Eye Dam. 1; H318	(1)	Constituent

(1) For R-phrases and H-statements in full: see heading 16
(2) Substance with a Community workplace exposure limit
(9) M-factor, see heading 16
(10) Subject to restrictions of Annex XVII of Regulation (EC) No. 1907/2006

SECTION 4: First aid measures

4.1 Description of first aid measures:

General:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

After inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

After skin contact:

Wash immediately with lots of water. Soap may be used. Take victim to a doctor if irritation persists.

After eye contact:

Rinse immediately with plenty of water. Take victim to an ophthalmologist if irritation persists.

After ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Consult a doctor/medical service if you feel unwell.

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

4.2.1 Acute symptoms

After inhalation:

No effects known.

After skin contact:

Tingling/irritation of the skin. ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

After eye contact:

Irritation of the eye tissue.

After ingestion:

No effects known.

4.2.2 Delayed symptoms

No effects known.

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

If applicable and available it will be listed below.

SECTION 5: Firefighting measures

5.1 Extinguishing media:

5.1.1 Suitable extinguishing media:

Water spray. Polyvalent foam. BC powder. Carbon dioxide.

5.1.2 Unsuitable extinguishing media:

Container may slop over if solid jet (water/foam) is applied.

5.2 Special hazards arising from the substance or mixture:

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, hydrogen chloride, hydrofluoric acid, carbon monoxide - carbon dioxide).

5.3 Advice for firefighters:

5.3.1 Instructions:

Dilute toxic gases with water spray. Take account of environmentally hazardous firefighting water. Use water moderately and if possible collect or contain it.

5.3.2 Special protective equipment for fire-fighters:

Gloves. Face-shield. Protective clothing. Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

No naked flames.

6.1.1 Protective equipment for non-emergency personnel

See heading 8.2

6.1.2 Protective equipment for emergency responders

Gloves. Face-shield. Protective clothing.

Suitable protective clothing

See heading 8.2

6.2 Environmental precautions:

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Prevent soil and water pollution. Prevent spreading in sewers.

6.3 Methods and material for containment and cleaning up:

Take up liquid spill into absorbent material, e.g.: sand/kieselguhr. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4 Reference to other sections:

See heading 13.

SECTION 7: Handling and storage

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

7.1 Precautions for safe handling:

Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Gas/vapour heavier than air at 20°C. Observe very strict hygiene - avoid contact. Keep container tightly closed. Remove contaminated clothing immediately. Do not discharge the waste into the drain.

7.2 Conditions for safe storage, including any incompatibilities:

7.2.1 Safe storage requirements:

Storage temperature: < 30 °C. Store in a dry area. Store in a dark area. Provide for a tub to collect spills. Keep only in the original container. Meet the legal requirements.

7.2.2 Keep away from:

Heat sources.

7.2.3 Suitable packaging material:

No data available

7.2.4 Non suitable packaging material:

No data available

7.3 Specific end use(s):

If applicable and available, exposure scenarios are attached in annex. See information supplied by the manufacturer.
The product will only be used as fungicide.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters:

8.1.1 Occupational exposure

a) Occupational exposure limit values

If limit values are applicable and available these will be listed below.

The Netherlands

Naftaleen	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	9.4 ppm
	Time-weighted average exposure limit 8 h (Public occupational exposure limit value)	50 mg/m³
	Short time value (Public occupational exposure limit value)	15 ppm
	Short time value (Public occupational exposure limit value)	80 mg/m³

EU

Naphtalene	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	10 ppm
	Time-weighted average exposure limit 8 h (Indicative occupational exposure limit value)	50 mg/m³

Belgium

1-Méthylnaphtalène	Time-weighted average exposure limit 8 h	0.5 ppm
	Time-weighted average exposure limit 8 h	3 mg/m³
Naphtalène	Time-weighted average exposure limit 8 h	10 ppm
	Time-weighted average exposure limit 8 h	53 mg/m³
	Short time value	15 ppm
	Short time value	80 mg/m³

USA (TLV-ACGIH)

1-methylnaphthalene	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.5 ppm
2-methylnaphthalene	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	0.5 ppm
Naphthalene	Time-weighted average exposure limit 8 h (TLV - Adopted Value)	10 ppm

France

Naphtalène	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	10 ppm
	Time-weighted average exposure limit 8 h (VL: Valeur non réglementaire indicative)	50 mg/m³

b) National biological limit values

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods

If applicable and available it will be listed below.

Naphthalene (Polynuclear aromatic hydrocarbons)	NIOSH	5506
Naphthalene (Polynuclear aromatic hydrocarbons)	NIOSH	5515
Naphthalene	OSHA	35
Petroleum Distillate (Naphthas)	NIOSH	1550
Petroleum Distillates fractions	OSHA	48

8.1.3 Applicable limit values when using the substance or mixture as intended

If limit values are applicable and available these will be listed below.

8.1.4 DNEL/PNEC values

DNEL - Workers

naphthalene

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	25 mg/m³	
	Long-term local effects inhalation	25 mg/m³	
	Long-term systemic effects dermal	3.57 mg/kg bw/day	

gamma-butyrolactone

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	130 mg/m³	
	Acute systemic effects inhalation	958 mg/m³	
	Long-term systemic effects dermal	19 mg/kg bw/day	

DNEL - General population

gamma-butyrolactone

Effect level (DNEL/DMEL)	Type	Value	Remark
DNEL	Long-term systemic effects inhalation	28 mg/m³	
	Acute systemic effects inhalation	340 mg/m³	
	Long-term systemic effects dermal	8 mg/kg bw/day	
	Long-term systemic effects oral	8 mg/kg bw/day	

PNEC

naphthalene

Compartments	Value	Remark
Fresh water	2.4 µg/l	
Marine water	2.4 µg/l	
Aqua (intermittent releases)	20 µg/l	
STP	2.9 mg/l	
Fresh water sediment	67.2 µg/kg sediment dw	
Marine water sediment	67.2 µg/kg sediment dw	
Soil	53.3 µg/kg soil dw	

8.1.5 Control banding

If applicable and available it will be listed below.

8.2 Exposure controls:

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

8.2.1 Appropriate engineering controls

Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

8.2.2 Individual protection measures, such as personal protective equipment

Observe very strict hygiene - avoid contact. Keep container tightly closed. Do not eat, drink or smoke during work.

a) Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit.

b) Hand protection:

Gloves.

- materials (good resistance)

Synthetic rubber, natural fibres.

c) Eye protection:

Face shield.

d) Skin protection:

Protective clothing.

8.2.3 Environmental exposure controls:

See headings 6.2, 6.3 and 13

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties:

Physical form	Liquid
Odour	No data available
Odour threshold	No data available
Colour	Red to dark brown
Particle size	No data available
Explosion limits	No data available
Flammability	Material presenting a fire hazard
Log Kow	Not applicable (mixture)
Dynamic viscosity	0.022 Pa.s ; 40 °C
Kinematic viscosity	Not determined
Melting point	No data available
Boiling point	No data available
Flash point	81 °C
Evaporation rate	No data available
Relative vapour density	> 2
Vapour pressure	No data available
Solubility	water ; emulsifiable
Relative density	1.2 ; 20 °C
Decomposition temperature	No data available
Auto-ignition temperature	No data available
Explosive properties	No chemical group associated with explosive properties
Oxidising properties	No chemical group associated with oxidising properties
pH	3 - 7 ; 1 %

9.2 Other information:

Absolute density	1190 kg/m³ - 1230 kg/m³ ; 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity:

Temperature above flashpoint: higher fire/explosion hazard.

10.2 Chemical stability:

Stable under normal conditions.

10.3 Possibility of hazardous reactions:

No data available.

10.4 Conditions to avoid:

Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks.

10.5 Incompatible materials:

No data available.

10.6 Hazardous decomposition products:

On burning: release of toxic and corrosive gases/vapours (nitrous vapours, hydrogen chloride, hydrofluoric acid, carbon monoxide - carbon dioxide).

SECTION 11: Toxicological information

11.1 Information on toxicological effects:

11.1.1 Test results

Acute toxicity

EPOK 600 EC

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	OECD 401	2000 mg/kg - 3000 mg/kg		Rat	Experimental value	
Dermal	LD50	OECD 402	> 4000 mg/kg		Rat	Experimental value	
Inhalation	LC50		2.9 mg/l	4 h	Rat	Experimental value	

fluazinam

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 4100 mg/kg		Rat	Experimental value	
Dermal	LD50		> 2000 mg/kg		Rat	Experimental value	
Inhalation	LC50	Equivalent to OECD 403	1.1 mg/l	4 h	Rat (male/female)	Experimental value	

2-methylnaphthalene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1630 mg/kg		Rat		

1-methylnaphthalene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		1840 mg/kg		Rat	Literature study	
Dermal	LD50		> 5000 mg/kg		Rabbit	Literature study	

naphthalene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	533 mg/kg bw		Mouse (male)	Experimental value	
Oral	LD50	Equivalent to OECD 401	710 mg/kg bw		Mouse (female)	Experimental value	
Dermal	LD50		> 2500 mg/kg		Rat		

gamma-butyrolactone

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50	Equivalent to OECD 401	1582 mg/kg bw		Rat (male/female)	Experimental value	
Inhalation (vapours)	LC50	Equivalent to OECD 403	> 5.1 mg/l	4 h	Rat (male/female)	Experimental value	

solvent naphtha (petroleum), heavy arom.

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Remark
Oral	LD50		> 5000 mg/kg		Rat		
Dermal	LD50		> 2000 mg/kg		Rabbit		
Inhalation	LC50		> 5 mg/l	4 h	Rat		

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Harmful if inhaled.

Harmful if swallowed.

Corrosion/irritation

EPOK 600 EC

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Irritating	OECD 405			Rabbit	Experimental value	
Skin	Irritating	OECD 404			Rabbit	Experimental value	

fluazinam

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage				Rabbit	Experimental value	
Skin	Moderately irritating				Rat	Experimental value	

gamma-butyrolactone

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	Serious eye damage	OECD 405		24; 48; 72 hours	Rabbit	Experimental value	Single exposure

calcium dodecylbenzenesulphonate

Route of exposure	Result	Method	Exposure time	Time point	Species	Value determination	Remark
Eye	category 1					Literature study	
Skin	category 2					Literature study	

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Causes skin irritation.

Causes serious eye irritation.

Respiratory or skin sensitisation

EPOK 600 EC

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing	OECD 406			Guinea pig	Experimental value	

fluazinam

Route of exposure	Result	Method	Exposure time	Observation time point	Species	Value determination	Remark
Skin	Sensitizing					Experimental value	

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

May cause an allergic skin reaction.

Specific target organ toxicity

EPOK 600 EC

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Oral			STOT RE cat.2					Literature study

gamma-butyrolactone

Route of exposure	Parameter	Method	Value	Organ	Effect	Exposure time	Species	Value determination
Inhalation (vapours)				Central nervous system	Loss of weight			Literature study

Classification is based on the relevant ingredients

Conclusion

May cause damage to organs through prolonged or repeated exposure.

Mutagenicity (in vitro)

EPOK 600 EC

No (test)data on the mixture available

Mutagenicity (in vivo)

EPOK 600 EC

No (test)data on the mixture available

Carcinogenicity

EPOK 600 EC

No (test)data on the mixture available

naphthalene

Route of exposure	Parameter	Method	Value	Exposure time	Species	Value determination	Organ	Effect
Inhalation (vapours)			category 2	105 week(s)	Rat (male/female)	Experimental value	Nose	

Reproductive toxicity

EPOK 600 EC

No (test)data on the mixture available

fluazinam

	Parameter	Method	Value	Exposure time	Species	Effect	Organ	Value determination
Developmental toxicity	NOAEL	Equivalent to OECD 414	10 mg/kg bw/day		Rat	Fetotoxicity, teratogenicity, maternal toxicity		Experimental value
	LOAEL	Equivalent to OECD 414	250 mg/kg bw/day		Rat	Slowing ossification		Experimental value
Maternal toxicity	NOAEL	Equivalent to OECD 414	10 mg/kg bw/day		Rat			Experimental value

Classification of the mixture is based on the relevant ingredients

Conclusion CMR

Suspected of causing cancer.

Suspected of damaging the unborn child.

Not classified for mutagenic or genotoxic toxicity

Aspiration hazard

Classification of the mixture is based on test data on the mixture as a whole

May be fatal if swallowed and enters airways.

Toxicity other effects

EPOK 600 EC

No (test)data on the mixture available

Chronic effects from short and long-term exposure

EPOK 600 EC

No effects known.

SECTION 12: Ecological information

12.1 Toxicity:

EPOK 600 EC

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	OECD 203	0.22 mg/l	96 h	Salmo trutta			Experimental value
Acute toxicity invertebrates	EC50	OECD 202	0.84 mg/l	48 h	Daphnia magna			Experimental value
Toxicity algae and other aquatic plants	ErC50	OECD 201	2.6 mg/l	72 h	Selenastrum capricornutum			Experimental value

fluazinam

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		0.036 mg/l	96 h	Oncorhynchus mykiss			Experimental value
Acute toxicity invertebrates	EC50		0.19 mg/l	48 h	Daphnia magna			Experimental value
Toxicity algae and other aquatic plants	EC50		0.16 mg/l	96 h	Selenastrum capricornutum			Experimental value

2-methylnaphthalene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		8 mg/l	96 h	Oncorhynchus mykiss			

1-methylnaphthalene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		9 mg/l	96 h	Pimephales promelas	Static system		
Acute toxicity invertebrates	EC50		1.2 mg/l	48 h	Daphnia magna			
Toxicity algae and other aquatic plants	EC50		1.71 mg/l - 5.12 mg/l	3 h	Chlorophyta			
	EC50		1200 µg/l	14 day(s)	Selenastrum capricornutum			Growth

naphthalene

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		0.11 mg/l	96 h	Oncorhynchus mykiss			Literature study; Similar product
Acute toxicity invertebrates	EC50		2.16 mg/l	48 h	Daphnia magna			Literature study
Toxicity algae and other aquatic plants	EC50		0.4 mg/l	72 h	Skeletonema costatum			Literature study; Growth rate
Long-term toxicity fish	EC0		0.12 mg/l	6 week(s)	Oncorhynchus gorbuscha			Literature study

gamma-butyrolactone

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50	Equivalent to OECD 203	56 mg/l	96 h	Lepomis macrochirus	Static system	Fresh water	Experimental value; GLP
Acute toxicity invertebrates	EC50	EU Method C.2	> 500 mg/l	48 h	Daphnia magna	Static system	Fresh water	Experimental value; Nominal concentration
Toxicity algae and other aquatic plants	ErC50	DIN 38412-9	> 1000 mg/l	72 h	Desmodesmus subspicatus	Static system	Fresh water	Experimental value
Toxicity aquatic micro-organisms	EC50		> 10000 mg/l	17 h	Pseudomonas putida			Literature study

solvent naphtha (petroleum), heavy arom.

	Parameter	Method	Value	Duration	Species	Test design	Fresh/salt water	Value determination
Acute toxicity fishes	LC50		2.34 mg/l	96 h	Oncorhynchus mykiss		Fresh water	
Acute toxicity invertebrates	EC50		0.95 mg/l	48 h	Daphnia magna			
Toxicity algae and other aquatic plants	EC50		2.5 mg/l	72 h	Skeletonema costatum			Growth

Classification of the mixture is based on test data on the mixture as a whole

Conclusion

Highly toxic to fishes

Very toxic to invertebrates (Daphnia)

Toxic to algae

Very toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability:

fluazinam

Half-life soil (t1/2 soil)

Method	Value	Primary degradation/mineralisation	Value determination
	16.4 day(s)		Calculated value

2-methylnaphthalene

Biodegradation water

Method	Value	Duration	Value determination
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	72 %	28 day(s)	Experimental value

1-methylnaphthalene

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	< 5 %	28 day(s)	Experimental value
OECD 302C: Inherent Biodegradability: Modified MITI Test (II)	49 %	28 day(s)	Experimental value

Phototransformation air (DT50 air)

Method	Value	Conc. OH-radicals	Value determination
	7.3 h	5x10+5 /cm³	Experimental value

naphthalene

Biodegradation water

Method	Value	Duration	Value determination
	100 %	7 day(s)	Literature study

gamma-butyrolactone

Biodegradation water

Method	Value	Duration	Value determination
OECD 301C: Modified MITI Test (I)	77 % - 95 %	14 day(s)	Experimental value

solvent naphtha (petroleum), heavy arom.

Biodegradation water

Method	Value	Duration	Value determination
OECD 301D: Closed Bottle Test	39 %	28 day(s)	Experimental value

Conclusion

Contains non readily biodegradable component(s)

12.3 Bioaccumulative potential:

EPOK 600 EC

Log Kow

Method	Remark	Value	Temperature	Value determination
	Not applicable (mixture)			

fluazinam

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		1090		Lepomis macrochirus	Calculated value

Log Kow

Method	Remark	Value	Temperature	Value determination
		4.03		

2-methylnaphthalene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		407	624 h	Lepomis macrochirus	
		190	840 h	Oncorhynchus kisutch	

Log Kow

Method	Remark	Value	Temperature	Value determination
		3.86		Experimental value

1-methylnaphthalene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		20	5 week(s)	Oncorhynchus kisutch	
		113 - 2000	1 - 2 week(s)	Platichthys stellatus	

Log Kow

Method	Remark	Value	Temperature	Value determination
		3.87		Experimental value

naphthalene

BCF fishes

Parameter	Method	Value	Duration	Species	Value determination
BCF		23 - 168	8 week(s)	Cyprinus carpio	Literature study

Log Kow

Method	Remark	Value	Temperature	Value determination
		3.30		Experimental value

gamma-butyrolactone

BCF other aquatic organisms

Parameter	Method	Value	Duration	Species	Value determination
BCF	BCFBAF v3.00	3.16			Calculated value

Log Kow

Method	Remark	Value	Temperature	Value determination
OECD 107		-0.566	25 °C	Experimental value

isotridecanol, ethoxylated (>1 < 2,5 mol EO)

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

solvent naphtha (petroleum), heavy arom.

Log Kow

Method	Remark	Value	Temperature	Value determination
		2.9 - 6.1		

calcium dodecylbenzenesulphonate

Log Kow

Method	Remark	Value	Temperature	Value determination
	No data available			

Conclusion

Contains bioaccumulative component(s)

12.4 Mobility in soil:

EPOK 600 EC

(log) Koc

Parameter	Method	Value	Value determination
No data available			

fluazinam

(log) Koc

Parameter	Method	Value	Value determination
Koc		1958 l/kg	Experimental value

metalaxyl-M

(log) Koc

Parameter	Method	Value	Value determination
Koc		39.9 l/kg	Experimental value

1-methylnaphthalene

(log) Koc

Parameter	Method	Value	Value determination
Koc		2300	

Volatility (Henry's Law constant H)

Value	Method	Temperature	Remark	Value determination
0.000514 atm m³/mol		25 °C		Experimental value

gamma-butyrolactone

(log) Koc

Parameter	Method	Value	Value determination
log Koc	Other	0.54 - 0.81	Calculated value

Conclusion

No straightforward conclusion can be drawn based upon the available numerical values

12.5 Results of PBT and vPvB assessment:

Due to insufficient data no statement can be made whether the component(s) fulfil(s) the criteria of PBT and vPvB according to Annex XIII of Regulation (EC) No 1907/2006.

12.6 Other adverse effects:

EPOK 600 EC

Global warming potential (GWP)

None of the known components is included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ozone-depleting potential (ODP)

Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009)

fluazinam

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

1-methylnaphthalene

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

Ground water

Ground water pollutant

naphthalene

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

gamma-butyrolactone

Global warming potential (GWP)

Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 517/2014)

SECTION 13: Disposal considerations

The information in this section is a general description. If applicable and available, exposure scenarios are attached in annex. Always use the relevant exposure scenarios that correspond to your identified use.

13.1 Waste treatment methods:

13.1.1 Provisions relating to waste

Waste material code (Directive 2008/98/EC, Decision 2000/0532/EC).
02 01 08* (wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing: agrochemical waste containing dangerous substances).
Hazardous waste according to Directive 2008/98/EC.

13.1.2 Disposal methods

Remove to an incinerator for chlorinated waste materials with energy recovery. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Do not discharge into surface water (Directive 2000/60/EC, Council Decision 2455/2001/EC). Do not discharge into drains or the environment.

13.1.3 Packaging/Container

Waste material code packaging (Directive 2008/98/EC).
15 01 10* (packaging containing residues of or contaminated by dangerous substances).

SECTION 14: Transport information

Road (ADR)

14.1 UN number:

UN number	3082

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9

Classification code	M6

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Rail (RID)

14.1 UN number:

UN number	3082

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

14.3 Transport hazard class(es):

Hazard identification number	90
Class	9
Classification code	M6

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Inland waterways (ADN)

14.1 UN number:

UN number	3082

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

14.3 Transport hazard class(es):

Class	9
Classification code	M6

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	375
Special provisions	601
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

Sea (IMDG/IMSBC)

14.1 UN number:

UN number	3082

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

14.3 Transport hazard class(es):

Class	9

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Marine pollutant	P
Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	274
Special provisions	335
Special provisions	969
Limited quantities	Combination packagings: not more than 5 liters per inner packaging for liquids. A package shall not weigh more than 30 kg. (gross mass)

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

Annex II of MARPOL 73/78	Not applicable, based on available data

Air (ICAO-TI/IATA-DGR)

14.1 UN number:

UN number	3082

14.2 UN proper shipping name:

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (fluazinam)

14.3 Transport hazard class(es):

Class	9

14.4 Packing group:

Packing group	III
Labels	9

14.5 Environmental hazards:

Environmentally hazardous substance mark	yes

14.6 Special precautions for user:

Special provisions	A97
Special provisions	A158
Special provisions	A197
Passenger and cargo transport: limited quantities: maximum net quantity per packaging	30 kg G

SECTION 15: Regulatory information

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

See column 1: 3.

The identified uses are not covered by restrictions of Annex XVII of Regulation (EC) No 1907/2006

National legislation The Netherlands

EPOK 600 EC

Waste identification (the Netherlands)	LWCA (the Netherlands): KGA category 03
Waterbezwaarlijkheid	1

fluazinam

SZW - List of reprotoxic substances (development)	Possibly hazardous to the foetus

solvent naphtha (petroleum), heavy arom.

SZW - List of carcinogenic substances	Listed in SZW-list of carcinogenic substances
SZW - List of mutagenic substances	Listed in SZW-list of mutagenic substances

National legislation Germany

EPOK 600 EC

WGK	3; Classification water polluting based on the components in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 4)

2-methylnaphthalene

TA-Luft	5.2.5; I

naphthalene

MAK - Krebserzeugend Kategorie	2
MAK - Keimzellmutagen Kategorie	3B
TA-Luft	5.2.5; I

gamma-butyrolactone

TA-Luft	5.2.5

National legislation France

EPOK 600 EC

No data available

naphthalene

Catégorie cancérogène	C2

National legislation Belgium

EPOK 600 EC

No data available

Other relevant data

EPOK 600 EC

No data available

2-methylnaphthalene

TLV - Carcinogen	2-methylnaphthalene; A4

1-methylnaphthalene

TLV - Carcinogen	1-methylnaphthalene; A4

naphthalene

IARC - classification	2B; Naphthalene
TLV - Carcinogen	Naphthalene; A3

gamma-butyrolactone

IARC - classification	3; Gamma-butyrolactone

15.2 Chemical safety assessment:

No chemical safety assessment has been conducted.

SECTION 16: Other information

Labelling according to Directive 67/548/EEC-1999/45/EC (DSD/DPD)

Labels

Harmful

Dangerous for the environment

Contains: fluazinam; naphthalene; solvent naphtha (petroleum), heavy arom..

R-phrases

20	Harmful by inhalation
36/38	Irritating to eyes and skin
40	Limited evidence of a carcinogenic effect
43	May cause sensitisation by skin contact
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
63	Possible risk of harm to the unborn child

S-phrases

(02)	(Keep out of the reach of children)
13	Keep away from food, drink and animal feeding stuffs
20/21	When using do not eat, drink or smoke
23	Do not breathe vapour
26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
35	This material and its container must be disposed of in a safe way
36/37	Wear suitable protective clothing and gloves
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
61	Avoid release to the environment. Refer to special instructions/safety data sheets.
SPe 3	To protect aquatic organisms respect an unsprayed buffer zone of 5 m to surface water bodies

Full text of any R-phrases referred to under headings 2 and 3:

R20 Harmful by inhalation
R22 Harmful if swallowed
R36/38 Irritating to eyes and skin
R38 Irritating to skin
R40 Limited evidence of a carcinogenic effect
R41 Risk of serious damage to eyes
R43 May cause sensitisation by skin contact
R50 Very toxic to aquatic organisms
R51 Toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment
R63 Possible risk of harm to the unborn child
R65 Harmful: may cause lung damage if swallowed
R67 Vapours may cause drowsiness and dizziness

Full text of any H-statements referred to under headings 2 and 3:

H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H411 Toxic to aquatic life with long lasting effects.

(*) = INTERNAL CLASSIFICATION BY BIG

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

M-factor

fluazinam	10		BIG

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question. Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided and cannot be held liable for any changes by third parties. This safety data sheet is only to be used within the European Union, Switzerland, Iceland, Norway and Liechtenstein. Any use outside of this area is at your own risk. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement or when this is failing the general conditions of BIG. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult the mentioned agreement/conditions for details.