

Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

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

· 1.1 Product identifier

PEROXAN BU · Trade name:

· CAS Number: 3457-61-2 222-389-8 · EC number: · Index number: 617-007-00-5 · Registration number: 01-2119969063-35

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

No further relevant information available.

· Application of the substance /

the mixture Reaction initiator

For industrial use

· 1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: PERGAN GmbH

Hilfsstoffe für industrielle Prozesse

Schlavenhorst 71 D-46395 Bocholt Tel: +49 2871 9902-0 Fax: +49 2871 9902-50

· Further information obtainable

from:

Qualified person: E-mail: msds@pergan.com

1.4 Emergency telephone

- Tel: +49 2871 9902-0 number:

#### **SECTION 2: Hazards identification**

· 2.1 Classification of the substance or mixture

· Classification according to Regulation (EC) No 1272/2008

Org. Perox. F H242 Heating may cause a fire. Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction. Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to

Regulation (EC) No 1272/2008

The substance is classified and labelled according to the CLP regulation.

· Hazard pictograms



· Signal word Warning

· Hazard-determining

components of labelling:

tert-butyl alpha, alpha-dimethylbenzyl peroxide

Hazard statements H242 Heating may cause a fire. H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H411 Toxic to aquatic life with long lasting effects.

P220

· Precautionary statements Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No P210

Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy metal compounds and amines). P234

Keep only in original packaging. P264 Wash thoroughly after handling. P273 Avoid release to the environment

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.

P410 Protect from sunlight.

P411+P235 Store at temperatures not exceeding +30°C. Keep cool.

P420 Store separately.

P501 Dispose of contents/container in accordance with local/regional/national/international

· 2.3 Other hazards

Results of PBT and vPvB assessment

· PBT: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII. vPvB: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

**Determination of endocrine-**

disrupting properties The product does not contain substances with endocrine disrupting properties.



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

# Trade name: PEROXAN BU

(Contd. of page 1)

### **SECTION 3: Composition/information on ingredients**

· 3.1 Substances

· CAS No. Description 3457-61-2 tert-butyl alpha, alpha-dimethylbenzyl peroxide

Identification number(s)

· EC number: 222-389-8 · Index number: 617-007-00-5

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· Dangerous components:		
CAS: 3457-61-2 EINECS: 222-389-8 Index number: 617-007-00-5 Reg-No.: 01-2119969063-35	tert-butyl alpha,alpha-dimethylbenzyl peroxide Org. Perox. E, H242; Aquatic Chronic 2, H411; Skin Irrit. 2, H315	90-100%
CAS: 98-83-9 EINECS: 202-705-0 Index number: 601-027-00-6	2-phenylpropene Flam. Liq. 3, H226; Aquatic Chronic 2, H411; Eye Irrit. 2, H319; STOT SE 3, H335 Specific concentration limit: STOT SE 3; H335: C ≥ 25 %	1-2,5%
CAS: 98-86-2 EINECS: 202-708-7 Index number: 606-042-00-1	acetophenone Acute Tox. 4, H302; Eye Irrit. 2, H319	1-2,5%
CAS: 75-91-2 EINECS: 200-915-7 Reg-No.: 01-2119446670-40	tert-butyl hydroperoxide Flam. Liq. 3, H226; Org. Perox. F, H242; Acute Tox. 3, H311; Acute Tox. 2, H330; Muta. 2, H341; Carc. 2, H351; Skin Corr. 1C, H314; Eye Dam. 1, H318; Aquatic Chronic 2, H411; Acute Tox. 4, H302; Skin Sens. 1, H317; STOT SE 3, H335 Specific concentration limits: Eye Dam. 1; H318: C ≥ 1 % Skin Sens. 1; H317: C ≥ 0,1 % STOT SE 3; H335: C ≥ 5 %	0-1%
CAS: 80-43-3 EINECS: 201-279-3 Index number: 617-006-00-X Reg-No.: 01-2119541688-27	bis(a,a-dimethylbenzyl) peroxide Org. Perox. F, H242; Repr. 1B, H360D; Aquatic Chronic 2, H411; Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1B, H317	0,1-1%

# **SECTION 4: First aid measures**

· 4.1 Description of first aid measures

· General information:

Take care of personal protection for the first aider.

· After inhalation: In case of unconsciousness place patient stably in side position for transportation.

Take affected persons into fresh air and keep quiet. · After skin contact:

Immediately wash with water and soap and rinse thoroughly.

Immediately remove contaminated clothing.

· After eye contact: Rinse opened eye for several minutes under running water.

· After swallowing: If symptoms persist consult doctor.

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

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available

# **SECTION 5: Firefighting measures**

· 5.1 Extinguishing media

· Suitable extinguishing agents: CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from

the substance or mixture Under certain fire conditions, traces of other toxic gases cannot be excluded.

Hydrocarbons, carbondioxide and -monoxid.

5.3 Advice for firefighters

Do not inhale explosion gases or combustion gases. · Protective equipment: Additional information Cool endangered receptacles with water spray. Self-protection first!

### **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Keep away from ignition sources.

(Contd. on page 3)



(Contd. of page 2)

Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

Trade name: PEROXAN BU

In case of further temperature should be cooled with waterspray from a safe distance.

Wear breathing apparatus with filter A during decomposition of materials.

Wear protective equipment. Keep unprotected persons away.

• 6.2 Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Large quantities should be diluted with suitable desensitation agent to a concentration below 10 % before

disposal.

Soak up with absorbant material (e. g. Vermiculit) and dispose of in accordance with government

regulations.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

In case of large spillage the environmental authority should be informed.

# **SECTION 7: Handling and storage**

7.1 Precautions for safe handling

Keep receptacles tightly sealed.

Store in cool, dry place in tightly closed receptacles.

Keep away from heat and direct sunlight.

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.

Do not refill residue into storage receptacles. Restrict the quantity stored at the work place.

Use only in well ventilated areas.

Before break and at the end of work hands should be thoroughly washed. Only use tools made of suitable materials (e. g. polyethylene or stainless steel).

Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-

metal compounds and amines). While using do not eat, drink or smoke.

Avoid shock and friction.



Do not smoke.

Information about fire - and explosion protection:

Protect from heat.

Prevent impact and friction.

Fumes can combine with air to form an explosive mixture.



Wear shoes with conductive soles.



Avoid open flames, sparks, direct sunlight and other sources of ignition.

· 7.2 Conditions for safe storage, including any incompatibilities · Storage:

Pay attention to the special requ

Requirements to be met by

Pay attention to the special requirements of your local autorithies for storing dangerous goods.

storerooms and receptacles:

Store in a cool location.

Store only in the original receptacle. Prevent any seepage into the ground.

Use only receptacles specifically permitted for this substance/product.

Information about storage in one common storage facility:

Do not store or park organic peroxide together with heavy metal compounds and amines.

Store away from foodstuffs, drinks and feeding stuffs.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

Protect from contamination. Store in a cool place.

Storage in a collecting room is required.

 Recommended storage temperature (To maintain quality):

+15 .... +30 °C

Storage class:

5.2

(Contd. on page 4)



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

Trade name: PEROXAN BU

· 7.3 Specific end use(s) No further relevant information available (Contd. of page 3)

### **SECTION 8: Exposure controls/personal protection**

#### · 8.1 Control parameters

· Ingredients with limit values that require monitoring at the workplace:			
98-83-9 2-phenylp	98-83-9 2-phenylpropene		
IOELV (EU)	Short-term value: 492 mg/m³, 100 ppm Long-term value: 246 mg/m³, 50 ppm		
WEL (Great Britain	Short-term value: 491 mg/m³, 100 ppm Long-term value: 246 mg/m³, 50 ppm		

### ·DNELs

### 98-86-2 acetophenone

DNEL Longterm System 0,35 mg/kg bw/day (Worker) Inhalative DNEL Longterm System 1,23 mg/m3 (Worker)

### 75-91-2 tert-butyl hydroperoxide

Dermal	DNEL Longterm System	0,21 mg/kg bw/day (Worker)
Inhalative	DNEL Acute Systemic	85,2 mg/m3 (Worker)
	DNEL Acute Local	28,4 mg/m3 (Worker)
	DNEL Longterm System	2,2 mg/m3 (Worker)
	DNEL Longterm Local	0,58 mg/m3 (Worker)

80-43-3 bi	80-43-3 bis(a,a-dimethylbenzyl) peroxide		
Oral	DNEL Longterm System	0,4 mg/kg bw/day (General population)	
Dermal	<b>DNEL Longterm System</b>	0,8 mg/kg bw/day (Worker)	
		0,4 mg/kg bw/day (General population)	
Inhalative	DNEL Longterm System	5,6 mg/m3 (Worker)	
		1,4 mg/m3 (General population)	

# ·PNECs

# 98-86-2 acetophenone

PNEC Marinewater sed	0,113 mg/kg sed dw (-)
PNEC Freshwater	0,086 mg/l (AF 1.000)
PNEC Freshwater sed	1,13 mg/kg sed dw (-)
PNEC Soil	0,175 mg/kg soil dw (-)
PNEC STP	34,6 mg/l (AF 10)
PNEC Marinewater	0,009 mg/l (AF 10.000)

# 75-91-2 tert-butyl hydroperoxide

PNEC Marinewater sed	0,001 mg/kg sed dw
PNEC Freshwater	0,002 mg/l (AF 1.000)
PNEC Seawater	0 mg/l (AF 10.000)
PNEC Freshwater sed	0,006 mg/kg sed dw (-)
PNEC Soil	0,166 mg/kg soil dw (AF 1.000)
PNEC STP	0,17 mg/l (AF 100)

### 80-43-3 bis(a,a-dimethylbenzyl) peroxide

PNEC Freshwater	0,00234 mg/l (AF 50)
PNEC Freshwater sed	2,24 mg/kg sed dw (-)
PNEC Soil	0,447 mg/kg soil dw (-)
PNEC STP	100 mg/l (AF 10)

Additional information:

The lists valid during the making were used as basis.

# · 8.2 Exposure controls

Appropriate engineering

controls

No further data; see section 7.

Individual protection measures, such as personal protective equipment

General protective and

hygienic measures:

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid close or long term contact with the skin.

(Contd. on page 5)



(Contd. of page 4)

Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

Trade name: PEROXAN BU

Avoid contact with the eyes and skin.

Do not eat, drink, smoke or sniff while working. Use skin protection cream for skin protection.

Be sure to clean skin thoroughly after work and before breaks.

Respiratory protection: In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer

exposure use self-contained respiratory protective device.

(P)

Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.

Filter A2

· Hand protection Only use chemical-protective gloves with CE-labelling of category III.

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

• Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of

Light yellow

Not determined.

Not applicable.

Not applicable.

Not determined.

Not determined.

ca. +90 °C (SADT)

Not determined.

Not determined.

Not determined.

Undetermined.

not determined Not determined.

4 mPas

Aromatic

<15 °C Not applicable.

quality and varies from manufacturer to manufacturer.

Butyl rubber, BR

Fluorocarbon rubber (Viton) Nitrile rubber, NBR

Neoprene

Penetration time of glove

material

· Eye/face protection

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be

observed.

Tightly sealed goggles

· Body protection:



Protective work clothing

### **SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties

· General Information

· Colour:
· Odour:
· Odour threshold:

Melting point/freezing point:

· Boiling point or initial boiling point and boiling range · Flammability

Lower and upper explosion limit

· Lower:
· Upper:
· Flash point:

Decomposition temperature:

· pH

Viscosity:

Kinematic viscosity
 Dynamic at 20 °C:

Solubility

water:
Partition coefficient n-octanol/water (log value)

· Vapour pressure:

· Density and/or relative density

Density at 20 °C:
Relative density
Vapour density

0,94 g/cm<sup>3</sup> Not determined. Not determined.

· 9.2 Other information

· Appearance:

· Form:

Important information on protection of health and environment, and on safety.

 $\cdot \ Ignition \ temperature:$ 

· Explosive properties:

Fluid

Product is not explosive. However, formation of explosive air/vapour

mixtures are possible.

Not determined.

(Contd. on page 6)



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

# Trade name: PEROXAN BU

(Contd. of page 5)

Change in condition		
· Evaporation rate	Not determined.	
Information with regard to physical hazard classes		
Explosives	Void	
· Flammable gases	Void	
Aerosols	Void	
· Oxidising gases	Void	
Gases under pressure	Void	
Flammable liquids	Void	
Flammable solids	Void	
Self-reactive substances and mixtures	Void	
· Pyrophoric liquids	Void	
Pyrophoric solids	Void	
Self-heating substances and mixtures	Void	
· Substances and mixtures, which emit flammable ga	ases in	
contact with water	Void	
· Oxidising liquids	Void	
· Oxidising solids	Void	
· Organic peroxides	Heating may cause a fire.	
· Corrosive to metals	Void	
· Desensitised explosives	Void	
Other safety characteristics		
Active oxygen	> 6,9 %	

# **SECTION 10: Stability and reactivity**

· 10.1 Reactivity

· 10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No further relevant information available.

SADT (Self Accelerating Decomposition Temperature) is the lowest temperature at which self accelerating decomposition may occur with substance in the packaging as used in transport. A dangerous selfaccelerating decomposition reaction and, under certain circumstances, explosion or fire can be cause

decomposition at and above the temperature. Contact with incompatible substances can cause

decomposition at or below the SADT.

No decomposition if used and stored according to specifications.

To avoid thermal decomposition do not overheat.

· 10.3 Possibility of hazardous

reactions

Self-accelerating decomposition at SADT. No further relevant information available.

· 10.4 Conditions to avoid

· 10.5 Incompatible materials:

Rapid decomposition by dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g.

heavy-metal compounds and amines).

· 10.6 Hazardous decomposition

products:

Hydrocarbons, carbondioxide and -monoxid.

No hazardous decomposition products if used and stored according to specifications.

· Additional information: Emergency procedures will vary depending on conditions. The customer should have an emergency

response plane in place.

### **SECTION 11: Toxicological information**

· 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

· Acute toxicity Based on available data, the classification criteria are not met

Acute to	ricity	based on available data, the classification official are not met.	
· LD/LC50	) values	relevant for classification:	
3457-61-2	tert-buty	yl alpha,alpha-dimethylbenzyl peroxide	
Oral	LD50	4.700 mg/kg (rattus)	
Dermal	LD50	>2.000 mg/kg (rattus)	
Inhalative	LC50	>1,2 mg/l (rattus)	
98-83-9 2-	phenylpi	ropene	
Oral	LD50	4.900 mg/kg (rattus)	
98-86-2 ad	cetophen	none	
Oral	LD50	2.081 mg/kg (rattus)	
75-91-2 te	rt-butyl h	hydroperoxide	
Oral	LD50	805 mg/kg /(70%) (rattus)	
Dermal	LD50	633 mg/kg /(70%) (rabbit)	
		(Contd on	nage 7



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

# Trade name: PEROXAN BU

· Skin corrosion/irritation Causes skin irritation.

· Serious eye damage/irritation Based on available data, the classification criteria are not met.

Respiratory or skin

sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity Based on available data, the classif

Germ cell mutagenicity
Carcinogenicity
Reproductive toxicity
STOT-single exposure
STOT-repeated exposure
Aspiration hazard

Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.
Based on available data, the classification criteria are not met.

11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

### **SECTION 12: Ecological information**

#### · 12.1 Toxicity

- Aquatic	tox	icity:	
-----------	-----	--------	--

#### 75-91-2 tert-butyl hydroperoxide

EC50 / 72h | 2,1 mg/l /(70%) (selenastrum capricornutum) LC50 / 96h | 42,3 mg/l /(70%) (pimephales promelas) EC50 | 24,3 mg/l /(70%) (activa sludge) EC50 / 48h | 20 mg/l /(70%) (daphnia)

80-43-3 bis(a,a-dimethylbenzyl) peroxide

EC50 / 72h | >20 mg/l (algae)

EC50 >1.000 mg/l (activa sludge)

- 12.2 Persistence and degradability
- Degree of elimination:

#### · Classification:

### 3457-61-2 tert-butyl alpha,alpha-dimethylbenzyl peroxide

Degradation (Not readily biodegradable) (OECD 301 F)

### 98-86-2 acetophenone

Degradation (Readily biodegradable) (OECD 301 C)

# 75-91-2 tert-butyl hydroperoxide

Degradation (Not readily biodegradable) (OECD 301 D)

### 80-43-3 bis(a,a-dimethylbenzyl) peroxide

Degradation (Not readily biodegradable) (OECD 301 F)

### · 12.3 Bioaccumulative potential

· Partition	coefficient: nOctanol/water: [Log Kow]	
3457-61-2	tert-butyl alpha,alpha-dimethylbenzyl peroxide	4,4 (25°C)
98-86-2	acetophenone	1,65 (20°C)
75-91-2	tert-butyl hydroperoxide	0,85 (30 °C)
80-43-3	bis(a,a-dimethylbenzyl) peroxide	5,6 (25°C)

### · Bioconcentration factor (BCF)

# 80-43-3 bis(a,a-dimethylbenzyl) peroxide

BCF 747

• 12.4 Mobility in soil No further relevant information available.

12.5 Results of PBT and vPvB assessment

PBT: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.
 vPvB: This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

· 12.6 Endocrine disrupting

**properties**The product does not contain substances with endocrine disrupting properties.

12.7 Other adverse effects

· Remark: Toxic for fish

Additional ecological information:

• General notes: Toxic for aquatic organisms

(Contd. on page 8)



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

# Trade name: PEROXAN BU

(Contd. of page 7)

Also poisonous for fish and plankton in water bodies.

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

### **SECTION 13: Disposal considerations**

- · 13.1 Waste treatment methods
- · Recommendation



After diluting with a suitable desentisation agent to 10 %, the solution must be supplied to a special treatment (e. g. thermal utilization) under observance of all official regulations.

Must not be disposed together with household garbage. Do not allow product to reach sewage

· Waste disposal key: Please contact your hazardous waste disposers to assign the right EWC-(European waste catalog)-

number.

· Uncleaned packaging: Recommendation:

This material and its container must be disposed of as hazardous waste.

### **SECTION 14: Transport information**

· 14.1 UN number or ID number · ADR, IMDG, IATA	UN3109
· 14.2 UN proper shipping name · ADR	UN3109 ORGANIC PEROXIDE TYPE F, LIQUID (tert-BUTYL CUMYL PEROXIDE), ENVIRONMENTALLY HAZARDOUS
· IMDG	ORGANIC PEROXIDE TYPE F, LIQUID (tert-BUTYL CUMYL PEROXIDE), MARINE POLLUTANT
· IATA	ORGANIC PEROXIDE TYPE F. LIQUID (tert-BUTYL CUMYL PEROXIDE)

· 14.3 Transport hazard class(es)

· ADR





· Class 5.2 (P1) Organic peroxides. Label

· IMDG





· Class 5.2 Organic peroxides. Label

· IATA



· Class 5.2 Organic peroxides. · Label 5.2

· 14.4 Packing group

· ADR, IMDG Void

· 14.5 Environmental hazards:

· Marine pollutant: Symbol (fish and tree) Symbol (fish and tree) · Special marking (ADR): Warning: Organic peroxides.

· 14.6 Special precautions for user

· Hazard identification number (Kemler code): · EMS Number: F-J,S-R

· Stowage Category D · Stowage Code

SW1 Protected from sources of heat. · Segregation Code SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.

SG72 See 7.2.6.3.2.

(Contd. on page 9)



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

Trade name: PEROXAN BU

(Contd. of page 8)

· 14.7 Maritime transport in bulk according to IMO instruments Not applicable

· Transport/Additional information:

· Limited quantities (LQ) 125 ml Excepted quantities (EQ) Code: E0

 Transport category D · Tunnel restriction code

· RID / GGVSEB: like ADR

· IMDG

· Limited quantities (LQ) 125 ml · Excepted quantities (EQ) Code: E0

Not permitted as Excepted Quantity

Not permitted as Excepted Quantity

### **SECTION 15: Regulatory information**

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

· Directive 2012/18/FU

Named dangerous substances

- ANNEX I Substance is not listed.

P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES · Seveso category

E2 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier

requirements 50 t Qualifying quantity (tonnes) for the application of upper-tier 200 t

requirements **REGULATION (EC) No** 

1907/2006 ANNEX XVII Conditions of restriction: 3

DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex

None of the ingredients is listed.

· REGULATION (EU) 2019/1148

Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))

None of the ingredients is listed.

· Annex II - REPORTABLE EXPLOSIVES PRECURSORS

None of the ingredients is listed.

· Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

· Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug

precursors

None of the ingredients is listed.

### **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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11

· Version number of previous

version:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Abbreviations and acronyms:

Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent LD50: Lethal dose, 50 percent

(Contd. on page 10)



Printing date 04.04.2024 Version: 12 (replaces version 11) Revision: 14.12.2023

Trade name: PEROXAN BU

(Contd. of page 9)

PBT: Persistent, Bioaccumulative and Toxic vPVB: very Persistent and very Bioaccumulative Flam. Liq. 3: Flammable liquids – Category 3 Org. Perox. E: Organic peroxides – Type E/F Org. Perox. F: Organic peroxides – Type E/F Org. Perox. F: Organic peroxides – Type E/F Acute Tox. 4: Acute toxicity – Category 4 Acute Tox. 3: Acute toxicity – Category 3 Acute Tox. 2: Acute toxicity – Category 2 Skin Corr. 1C: Skin corrosion/irritation – Category 1C Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Dam. 1: Serious eye damage/eye irritation – Category 1 Eye Irrit. 2: Serious eye damage/eye irritation – Category 1 Skin Sens. 1: Skin sensitisation – Category 1 Skin Sens. 1B: Skin sensitisation – Category 1 Skin Sens. 1B: Skin sensitisation – Category 1 B Muta. 2: Germ cell mutagenicity – Category 2 Carc. 2: Carcinogenicity – Category 2 Repr. 1B: Reproductive toxicity – Category 1 B STOT SE 3: Specific target organ toxicity (single exposure) – Category 3 Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

\* Data compared to the previous version altered.

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