





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

- **1.1 Product identifier**
- **Trade name:** PEROXAN PO
- **CAS Number:** 3006-82-4
- **EC number:** 221-110-7
- **Registration number:** 01-2119498310-40
- **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:** Environment protection / Security of labour
Qualified person: E-mail: msds@pergan.com
- **1.4 Emergency telephone number:** - Tel: +49 2871 9902-0

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

Org. Perox. C	H242	Heating may cause a fire.
Skin Sens. 1	H317	May cause an allergic skin reaction.
Repr. 1B	H360F	May damage fertility.
Aquatic Acute 1	H400	Very toxic to aquatic life.
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 GB CLP regulation.
- **Hazard pictograms**

GHS02 GHS07 GHS08 GHS09
- **Signal word** Danger
- **Hazard-determining components of labelling:** tert-butyl 2-ethylperoxyhexanoate
- **Hazard statements**

H242	Heating may cause a fire.
H317	May cause an allergic skin reaction.
H360F	May damage fertility.
H410	Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220	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.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P370+P378	In case of fire: Use CO ₂ , powder or water spray to extinguish.
P401	Store in accordance with local/regional/national/international regulations.
P410	Protect from sunlight.
P411+P235	Store at temperatures not exceeding +20°C. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Additional information:** Restricted to professional users.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** This substance does not meet the PBT/vPvB criteria of UK REACH, Annex XIII.
- **vPvB:** This substance does not meet the PBT/vPvB criteria of UK REACH, Annex XIII.

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SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description** 3006-82-4 tert-butyl 2-ethylperoxyhexanoate
- **Identification number(s)**
- **EC number:** 221-110-7

· **Dangerous components:**

CAS: 3006-82-4	tert-butyl 2-ethylperoxyhexanoate	90-100%
EINECS: 221-110-7	Org. Perox. C, H242; Repr. 1B, H360F; Aquatic Acute 1, H400; Aquatic Chronic 2, H411; Skin Sens. 1, H317	
Reg-No.: 01-2119498310-40		

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:** Take affected persons into fresh air and keep quiet.
- **After skin contact:** Immediately remove contaminated clothing.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **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, carbon dioxide and -monoxid.
- **5.3 Advice for firefighters**
- **Protective equipment:** Do not inhale explosion gases or combustion gases.
- **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**

Remove persons from danger area.
Keep away from ignition sources.
After exceeding the emergency temperature must be diluted with a suitable desensitisation agent to < 10 %.
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:**

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 desensitisation 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.

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SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Keep receptacles tightly sealed.
 Keep away from heat and direct sunlight.
 Open and handle receptacle with care.
 Prevent formation of aerosols.
 Wear suitable respiratory protective device when decanting larger quantities without extractor facilities.
 Handle with care. Avoid jolting, friction and impact.
 Do not refill residue into storage receptacles.
 Restrict the quantity stored at the work place.
 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).
 The product must be preserved, stored and transported continuously cool.
 Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
 Avoid contact with skin and eyes.
 While using do not eat, drink or smoke.
 Do not generate flames or sparks.
 Keep product and emptied container away from heat and sources of ignition.
 Avoid shock and friction.
 Take precautionary measures against static discharges.



Do not smoke.

Information about fire - and explosion protection:

Protect from heat.
 Protect against electrostatic charges.
 Prevent impact and friction.
 Use explosion-proof apparatus / fittings and spark-proof tools.
 Fumes can combine with air to form an explosive mixture.



Wear shoes with conductive soles.

Formation of flammable or explosive gas/air-mixtures is possible.



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

Keep ignition sources away - Do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Pay attention to the special requirements of your local authorities for storing dangerous goods.

Requirements to be met by storerooms and receptacles:

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.
 Protect from heat and direct sunlight.
 Protect from contamination.
 Store under lock and key and with access restricted to technical experts or their assistants only.

Maximum storage temperature:

+15 °C
 15 °C

Minimum storage temperature:

-25 °C
 -25 °C

Storage class:

4.1A

7.3 Specific end use(s)

No further relevant information available.





SECTION 8: Exposure controls/personal protection**8.1 Control parameters****Ingredients with limit values that require monitoring at the workplace:**

Not required.

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· DNELs	
3006-82-4 tert-butyl 2-ethylperoxyhexanoate	
Dermal	DNEL Longterm System 5.6 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System 9.8 mg/m ³ (Worker)
· PNECs	
3006-82-4 tert-butyl 2-ethylperoxyhexanoate	
PNEC Marinewater sed	0.0622 mg/kg sed dw
PNEC Freshwater	0.002 mg/l (AF 50)
PNEC Freshwater sed	0.622 mg/kg sed dw
PNEC STP	0.64 mg/l (AF 100)
PNEC Marinewater	0 mg/l (AF 500)
· 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 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:	Not necessary if room is well-ventilated.
	 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.
	 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
	Protective gloves
· Material of gloves	The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. Butyl rubber, BR Fluorocarbon rubber (Viton) Nitrile rubber, NBR Neoprene
· Penetration time of glove material	The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· Eye/face protection	 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:	Colourless
· Odour:	Characteristic
· Melting point/freezing point:	Not applicable.
· Boiling point or initial boiling point and boiling range	Not applicable.
· Flash point:	> SADT
· Decomposition temperature:	+35 °C (SADT)
· Viscosity:	
· Dynamic at 20 °C:	4 mPas
· Solubility	
· water:	Undetermined.

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· Partition coefficient n-octanol/water (log value)	not determined
· Density and/or relative density	
· Density at 20 °C:	0.9 g/cm ³
· 9.2 Other information	
· Appearance:	
· Form:	Fluid
· Important information on protection of health and environment, and on safety.	
· Explosive properties:	Risk of explosion by shock, friction, fire or other sources of ignition.
· 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 gases 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	> 7.2 %

SECTION 10: Stability and reactivity

· 10.1 Reactivity	No further relevant information available.
· 10.2 Chemical stability	
· Thermal decomposition / conditions to be avoided:	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 self-accelerating 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.
· 10.4 Conditions to avoid	No further relevant information available.
· 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.

· LD/LC50 values relevant for classification:

3006-82-4 tert-butyl 2-ethylperoxyhexanoate

Oral	LD50	>10,000 mg/kg (rattus)
Dermal	LD50	14,142-20,000 mg/kg (rabbit)
Inhalative	LC50 / 4h	42.2 mg/l (rattus)

· Skin corrosion/irritation	Low irritant effect
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- **Serious eye damage/irritation** Low irritant effect
- **Respiratory or skin sensitisation** May cause an allergic skin reaction.
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** May damage fertility.
- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.
- **11.2 Information on other hazards**

· **Endocrine disrupting properties**

Substance is not listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

3006-82-4 tert-butyl 2-ethylperoxyhexanoate

EC50 / 72h 0.44 mg/l (alga (Süßwasser))

LC50 / 96h 8.66 mg/l (poecilia reticulata)

EC50 / 48h 7.5 mg/l (daphnia)

· **12.2 Persistence and degradability**

· **Degree of elimination:**

· **Classification:**

3006-82-4 tert-butyl 2-ethylperoxyhexanoate

Degradation (Readily biodegradable) (OECD 301 D)

· **12.3 Bioaccumulative potential**

· **Partition coefficient: nOctanol/water: [Log Kow]**

4,79 (20°C)

· **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 UK REACH, Annex XIII.

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

· **12.6 Endocrine disrupting properties**

The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects**

· **Additional ecological information:**

- **General notes:** Water hazard class 3 (German Regulation) (Assessment by list): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**



After diluting with a suitable desensitisation 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 system.

· **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**

UN3113

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<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG 	<p>UN3113 ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED (tert-BUTYLPEROXY-2-ETHYLHEXANOATE), ENVIRONMENTALLY HAZARDOUS</p> <p>ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED (tert-BUTYLPEROXY-2-ETHYLHEXANOATE), MARINE POLLUTANT</p>
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR <ul style="list-style-type: none"> · Class · Label 	<p>5.2 (P2) Organic peroxides. 5.2</p>
<ul style="list-style-type: none"> · IMDG <ul style="list-style-type: none"> · Class · Label 	<p>5.2 Organic peroxides. 5.2</p>
<ul style="list-style-type: none"> · IATA · Class · Label 	<p>X X</p>
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG 	<p>Void</p>
<ul style="list-style-type: none"> · 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR): 	<p>Product contains environmentally hazardous substances: tert-BUTYLPEROXY-2-ETHYLHEXANOATE</p> <p>Symbol (fish and tree) Symbol (fish and tree)</p>
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Hazard identification number (Kemler code): · Stowage Category · Stowage Code · Segregation Code 	<p>Warning: Organic peroxides.</p> <p>- D SW1 Protected from sources of heat. SW3 Shall be transported under temperature control. SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.</p>
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) · Transport category · Tunnel restriction code 	<p>0 Code: E0 Not permitted as Excepted Quantity 1 D</p>
<ul style="list-style-type: none"> · RID / GGVSEB: 	<p>no admission</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>0 Code: E0 Not permitted as Excepted Quantity</p>
<ul style="list-style-type: none"> · IATA · Remarks: 	<p>no admission</p>
<ul style="list-style-type: none"> · Control temperature: · Emergency temperature: 	<p>+20 °C +25 °C</p>

Trade name: **PEROXAN PO**

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SECTION 15: Regulatory information· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Poisons Act**· **Regulated explosives precursors**

Substance is not listed.

· **Regulated poisons**

Substance is not listed.

· **Reportable explosives precursors**

Substance is not listed.

· **Reportable poisons**

Substance is not listed.

· **Directive 2012/18/EU**· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 50 t· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

Substance is not listed.

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

Substance is not listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

Substance is not listed.

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

Substance is not listed.

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

Substance is not listed.

· **National regulations:**· **Other regulations, limitations and prohibitive regulations**· **Please note:** Take care of the respective local regulations.**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.

· **Relevant phrases**

H242 Heating may cause a fire.
H317 May cause an allergic skin reaction.
H360F May damage fertility.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

· **Department issuing SDS:**

Environment protection / Security of labour

· **Contact:**

Tel: +49 2871 9902-0

E-mail: mail@pergan.com

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International 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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (UK REACH)
PNEC: Predicted No-Effect Concentration (UK REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Org. Perox. C: Organic peroxides – Type C/D
Skin Sens. 1: Skin sensitisation – Category 1
Repr. 1B: Reproductive toxicity – Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

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* Data compared to the
previous version altered.