


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

- **1.1 Product identifier**
- **Trade name:** PEROXAN PB
- **CAS Number:** 614-45-9
- **EC number:** 210-382-2
- **Registration number:** 01-2119513317-46
- **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
Competent person:
* Sales Manager Germany: Mr. Ansgar Pappenheim, e-mail: a.pappenheim@pergan.com
* Export Sales Manager: Mr. Dr. Thomas Philipps, e-mail: dr.philipps@pergan.com
* Environment protection / : Mr. Christoph Wilting, e-mail: c.wilting@pergan.com
Security of labour
- **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.
- Acute Tox. 4 H332 Harmful if inhaled.
- Skin Irrit. 2 H315 Causes skin irritation.
- Skin Sens. 1 H317 May cause an allergic skin reaction.
- Aquatic Acute 1 H400 Very toxic to aquatic life.
- Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**
- 

GHS02 GHS07 GHS09
- **Signal word**
- Danger
- **Hazard-determining components of labelling:**
- tert-butyl perbenzoate
- **Hazard statements**
- H242 Heating may cause a fire.
H332 Harmful if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
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.
- P264 Wash thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
- P362 Take off contaminated clothing.
- P410 Protect from sunlight.
- P411+P235 Store at temperatures not exceeding +30°C. Keep cool.
- P420 Do not mix with peroxide-accelerators or reducing agents.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** This substance does not meet the PBT/vPvB criteria of REACH, Annex XIII.

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

SECTION 3: Composition/information on ingredients

- 3.1 Substances
- CAS No. Description 614-45-9 tert-butyl perbenzoate
- Identification number(s)
- EC number: 210-382-2

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: Use fire extinguishing methods suitable to surrounding conditions.

· 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

· 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. 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

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.

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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).
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 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 under lock and key and with access restricted to technical experts or their assistants only.
Store in a cool place.
Storage in a collecting room is required.

· **Recommended storage temperature (To maintain quality):** +10 +30°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.

· **DNELs**





614-45-9 tert-butyl perbenzoate

Dermal	DNEL Longterm System	17,5 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	24,7 mg/m3 (Worker)

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· PNECs	
614-45-9 tert-butyl perbenzoate	
PNEC Marinewater sed	0,028 mg/kg sed dw
PNEC Freshwater	0,01 mg/l (AF 10)
PNEC Freshwater sed	0,28 mg/kg sed dw
PNEC Soil	0,049 mg/kg soil dw
PNEC STP	0,6 mg/l (AF 10)
PNEC Marinewater	0,00101 mg/l (AF 100)
· Additional information:	The lists valid during the making were used as basis.
· 8.2 Exposure controls	
· Appropriate engineering controls	No further data; see item 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. 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:	+60 °C (SADT)
· Viscosity:	
· Dynamic at 20 °C:	7 mPas
· Solubility	
· water:	Not miscible or difficult to mix.
· Partition coefficient n-octanol/water (log value)	not determined

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· Density and/or relative density	
· Density at 20 °C:	1,04 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	> 8,1 %

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, carbon dioxide 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	Harmful if inhaled.

· LD/LC50 values relevant for classification:		
614-45-9 tert-butyl perbenzoate		
Oral	LD50	4.838 mg/kg (rattus)
Dermal	LD50	3.817 mg/kg (rattus)

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Inhalative	LC100 4h	4,9 mg/l (rattus)
	LC0 / 4h	1,01 mg/l (rattus)
<ul style="list-style-type: none"> · 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 classification criteria are not met. · Carcinogenicity Based on available data, the classification criteria are not met. · Reproductive toxicity Based on available data, the classification criteria are not met. · 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. 		
<ul style="list-style-type: none"> · 11.2 Information on other hazards 		
<ul style="list-style-type: none"> · Endocrine disrupting properties 		
Substance is not listed.		

SECTION 12: Ecological information

<ul style="list-style-type: none"> · 12.1 Toxicity · Aquatic toxicity: No further relevant information available. · 12.2 Persistence and degradability · Degree of elimination: 	
<ul style="list-style-type: none"> · Classification: 	
614-45-9 tert-butyl perbenzoate	
Degradation	(Readily biodegradable) (OECD 301 D)
<ul style="list-style-type: none"> · 12.3 Bioaccumulative potential 	
<ul style="list-style-type: none"> · Partition coefficient: nOctanol/water: [Log Kow] 	
3 (25°C)	
<ul style="list-style-type: none"> · 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 · Additional ecological information: · General notes: 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

<ul style="list-style-type: none"> · 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.	
<ul style="list-style-type: none"> · 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

<ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA 	
UN3103	
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR 	
UN3103 ORGANIC PEROXIDE TYPE C, LIQUID (tert-BUTYL PEROXYBENZOATE), ENVIRONMENTALLY HAZARDOUS	

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· IMDG	ORGANIC PEROXIDE TYPE C, LIQUID (tert-BUTYL PEROXYBENZOATE), MARINE POLLUTANT
· IATA	ORGANIC PEROXIDE TYPE C, LIQUID (tert-BUTYL PEROXYBENZOATE)
· 14.3 Transport hazard class(es)	
· ADR	
	
· Class	5.2 (P1) Organic peroxides.
· Label	5.2
· IMDG	
	
· Class	5.2 Organic peroxides.
· Label	5.2
· IATA	
	
· Class	5.2 Organic peroxides.
· Label	5.2
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: tert-BUTYL PEROXYBENZOATE
· Marine pollutant:	Yes Symbol (fish and tree)
· Special marking (ADR):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Organic peroxides.
· 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.
· 14.7 Maritime transport in bulk according to IMO instruments	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	25 ml
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· Transport category	1
· Tunnel restriction code	D
· RID / GGVSEB:	like ADR
· IMDG	
· Limited quantities (LQ)	25 ml
· Excepted quantities (EQ)	Code: E0 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/EU**· **Named dangerous substances**- **ANNEX I**

Substance is not listed.

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IE

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- **Seveso category** P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES
E1 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 requirements** 200 t
- **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 II

Substance is not listed.

REGULATION (EU) 2019/1148

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.

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.

- **Department issuing SDS:** Environment protection / Security of labour
- **Contact:** Tel: +49 2871 9902-0
E-mail: mail@pergan.com
- **Version number of previous version:** 9
- **Abbreviations and acronyms:** 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 (REACH)
PNEC: Predicted No-Effect Concentration (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
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

- *** Data compared to the previous version altered.**