



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

- **1.1 Product identifier**
- **Trade name:** PEROXAN PK295
- **CAS Number:** 6731-36-8
- **EC number:** 229-782-3
- **Registration number:** 01-2119735694-30
- **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. B H241 Heating may cause a fire or explosion.
- **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**

GHS01 GHS02
- **Signal word** Danger
- **Hazard-determining components of labelling:** di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide
- **Hazard statements** H241 Heating may cause a fire or explosion.
- **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 Store separately.
 - 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 UK REACH, Annex XIII.
- **vPvB:** This substance does not meet the PBT/vPvB criteria of UK REACH, Annex XIII.

SECTION 3: Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description** 6731-36-8 di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide
- **Identification number(s)**
- **EC number:** 229-782-3

· **Dangerous components:**

CAS: 6731-36-8 EINECS: 229-782-3 Reg-No.: 01-2119735694-30	di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	Org. Perox. B, H241	90-100%
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Trade name: **PEROXAN PK295**

(Contd. of page 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:

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.

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. 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 desensitization 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 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).

(Contd. on page 3)

— GB —

Trade name: **PEROXAN PK295**

(Contd. of page 2)

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:** 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.
Storage in a collecting room is required.

· **Recommended storage temperature (To maintain quality):** max.: +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**

6731-36-8 di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide

Dermal	DNEL Longterm System	2 mg/kg bw/day (Worker)
Inhalative	DNEL Longterm System	1.4 mg/m3 (Worker)

· **PNECs**

6731-36-8 di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide

PNEC Marinewater sed	0.01 mg/kg sed dw (AF 500)
PNEC Freshwater sed	0.102 mg/kg sed dw (AF 50)
PNEC Soil	5.29 mg/kg soil dw (AF 10)
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.

(Contd. on page 4)

Trade name: **PEROXAN PK295**

(Contd. of page 3)

<ul style="list-style-type: none"> · Respiratory protection: · Hand protection · Material of gloves · Penetration time of glove material · Eye/face protection · Body protection: 	<p>Immediately remove all soiled and contaminated clothing Wash hands before breaks and at the end of work. Store protective clothing separately. 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. Not necessary if room is well-ventilated.</p> <p> Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.</p> <p>Filter A2</p> <p> 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</p> <p>Protective gloves</p> <p>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</p> <p>The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.</p> <p> Tightly sealed goggles</p> <p> Protective work clothing</p>
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SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

<ul style="list-style-type: none"> · 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 	<p>Not determined. Characteristic Not determined. Not applicable. Not applicable. Not applicable. Not determined. Not determined. > SADT +60 °C (SADT) Not determined. Not determined. 36 mPas Undetermined. not determined Not determined. 0.91 g/cm³ Not determined. Not determined.</p>
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· **9.2 Other information**

<ul style="list-style-type: none"> · Appearance: · Form: · Important information on protection of health and environment, and on safety. · Ignition temperature: · Explosive properties: · Change in condition · Evaporation rate 	<p>No further relevant information available.</p> <p>Fluid</p> <p>Not determined. Risk of explosion by shock, friction, fire or other sources of ignition. Not determined.</p>
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(Contd. on page 5)

Trade name: **PEROXAN PK295**

(Contd. of page 4)

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 or explosion.
· Corrosive to metals	Void
· Desensitised explosives	Void
· Other safety characteristics	
· Active oxygen	> 10.0 %

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 caused by 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 -monoxide. 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 plan 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:

6731-36-8 di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide

Oral	LD50	>2,000 mg/kg (rattus)
Dermal	LD50	>2,000 mg/kg (rattus)

· Skin corrosion/irritation	Based on available data, the classification criteria are not met.
· Serious eye damage/irritation	Based on available data, the classification criteria are not met.
· Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
· 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.

(Contd. on page 6)
GB

Trade name: **PEROXAN PK295**

(Contd. of page 5)

· **11.2 Information on other hazards**

· **Endocrine disrupting properties**

Substance is not listed.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:** No further relevant information available.

· **12.2 Persistence and degradability**

· **Degree of elimination:**

· **Classification:**

6731-36-8 di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide

Degradation (Evidence for inherent biodegradability.) (OECD 301 D)

· **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**

No further relevant information available.

· **Remark:**

Very toxic for fish

· **Additional ecological information:**

· **General notes:**

Very toxic for aquatic organisms

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 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, IATA**

UN3101

· **14.2 UN proper shipping name**

· **ADR**

UN3101 ORGANIC PEROXIDE TYPE B, LIQUID (1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE)

· **IMDG, IATA**

ORGANIC PEROXIDE TYPE B, LIQUID (1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**

5.2 (P1) Organic peroxides.

· **Label**



5.2+1

(Contd. on page 7)

GB

Trade name: **PEROXAN PK295**

(Contd. of page 6)

· IMDG	
	
· Class	5.2 Organic peroxides.
· Label	5.2/1
· IATA	
	
· Class	5.2 Organic peroxides.
· Label	5.2 (1)
· 14.4 Packing group	
· ADR, IMDG	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	
· Hazard identification number (Kemler code):	Warning: Organic peroxides.
· Stowage Category	-
· Stowage Code	D
· Segregation Code	SW1 Protected from sources of heat. SG1 For packages carrying a subsidiary risk of class 1, segregation as for class 1, division 1.3. However, in relation to goods of class 1, segregation as for the primary hazard. 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	B
· RID / GGVSEB:	
	no admission
· IMDG	
· Limited quantities (LQ)	25 ml
· Excepted quantities (EQ)	Code: E0 Not permitted as Excepted Quantity
· IATA	
· Remarks:	no admission

* 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

· Named dangerous substances

- ANNEX I

Substance is not listed.

· Seveso category

P6a SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

(Contd. on page 8)

GB

Trade name: **PEROXAN PK295**

(Contd. of page 7)

- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 10 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50 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.

· 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** H241 Heating may cause a fire or explosion.
- **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. B: Organic peroxides – Type B

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