


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

- **1.1 Product identifier**
- **Trade name:** PEROXAN BIC
- **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**  
Flam. Liq. 3      H226 Flammable liquid and vapour.  
Org. Perox. CD    H242 Heating may cause a fire.  
Asp. Tox. 1      H304 May be fatal if swallowed and enters airways.  
Aquatic Acute 1    H400 Very toxic to aquatic life.  
Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.  
Skin Irrit. 2      H315 Causes skin irritation.  
Skin Sens. 1      H317 May cause an allergic skin reaction.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
Xn; Harmful  
R65:      Harmful: may cause lung damage if swallowed.  
Xi; Irritant  
R38:      Irritating to skin.  
Xi; Sensitising  
R43:      May cause sensitisation by skin contact.  
E; Explosive  
R2:      Risk of explosion by shock, friction, fire or other sources of ignition.  
O; Oxidising  
R7:      May cause fire.  
N; Dangerous for the environment  
R50/53:    Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- **Information concerning particular hazards for human and environment:** The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:** The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
- **Hazard pictograms**   
The product is classified and labelled according to the CLP regulation.  
GHS02 GHS07 GHS08 GHS09
- **Signal word** Danger
- **Hazard-determining components of labelling:** O,O-tert-butyl isopropyl monoperoxycarbonate  
Hydrocarbons, C4, 1,3-butadiene-free, polyimd., triisobutylene fraction, hydrogenated

Trade name: **PEROXAN BIC**

(Contd. of page 1)

- **Hazard statements**
  - H226 Flammable liquid and vapour.
  - H242 Heating may cause a fire.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H304 May be fatal if swallowed and enters airways.
  - H410 Very toxic to aquatic life with long lasting effects.
- **Precautionary statements**
  - P210 Keep away from heat/sparks/open flames/hot surfaces. - 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 container.
  - P243 Take precautionary measures against static discharge.
  - P264 Wash thoroughly after handling.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
  - P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
  - P405 Store locked up.
  - P410 Protect from sunlight.
  - P411+P235 Store at temperatures not exceeding +25°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:** Not applicable.
  - **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

#### 3.2 Chemical characterization: Mixtures

##### Dangerous components:

CAS: 2372-21-6 EINECS: 219-143-7	O,O-tert-butyl isopropyl monoperoxycarbonate Xi R38; Xi R43; E R2; O R7; N R50/53 Org. Perox. CD, H242; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Irrit. 2, H315; Skin Sens. 1, H317	70-80%
CAS: 93685-81-5 EINECS: 297-629-8 Reg-No.:01-2119490725-29	Hydrocarbons, C4, 1,3-butadiene-free, polymd., triisobutylene fraction, hydrogenated Xn R65 R10-53-66 Flam. Liq. 3, H226; Asp. Tox. 1, H304; Aquatic Chronic 4, H413	20-25%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

### 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:

Supply fresh air and to be sure call for a doctor.  
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:** CO<sub>2</sub>, 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.


(Contd. on page 3)

Trade name: **PEROXAN BIC**


(Contd. of page 2)

- 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:** 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:**
  - Dispose contaminated material as waste according to item 13.
  - 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 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.
  - Handle with care. Avoid jolting, friction and impact.
  - 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).
  - Oxidizing because of releasing oxygene.
  - 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.
- **Information about fire - and explosion protection:**
  -  Do not smoke.
  - 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.

(Contd. on page 4)

Trade name: **PEROXAN BIC**

(Contd. of page 3)



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.
- **Recommended storage temperature (To maintain quality):** 0 .... +25 °C
- **7.3 Specific end use(s):** No further relevant information available.

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

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
  - The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **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:**
  - 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.
  - Use suitable respiratory device when it exceed exposure limit and when insufficiently ventilated.
- **Protection of hands:**
  - Only use chemical-protective gloves with CE-labelling of category III.
- **Material of gloves:**
  - Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
  - Protective 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.

(Contd. on page 5)

Trade name: **PEROXAN BIC**

(Contd. of page 4)

· Eye 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

##### · Appearance:

· Form:	Fluid
· Colour:	Colourless
· Odour:	Characteristic
· Odour threshold:	Not determined.

· pH-value: Not determined.

##### · Change in condition

· Melting point/Melting range:	Not applicable.
· Boiling point/Boiling range:	Not applicable.

· Flash point: 50 °C

· Flammability (solid, gaseous): Not applicable.

· Decomposition temperature: ca. +60 °C (SADT)

· Self-igniting: Product is not selfigniting.

· Danger of explosion: Risk of explosion by shock, friction, fire or other sources of ignition.

##### · Explosion limits:

· Lower:	Not determined.
· Upper:	Not determined.

· Vapour pressure: Not determined.

· Density at 20 °C:	0.883 g/cm <sup>3</sup>
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with  
· water: Undetermined.

· Partition coefficient (n-octanol/water): not determined

##### · Viscosity:

· Dynamic at 20 °C:	2 mPas
· Kinematic:	Not determined.

· 9.2 Other information No further relevant information available.

· Active oxygen 6,7 - 6,9 %

## SECTION 10: Stability and reactivity

### · 10.1 Reactivity

### · 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.

(Contd. on page 6)

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Trade name: **PEROXAN BIC**

(Contd. of page 5)

- **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 toxicological effects**  
· **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

**2372-21-6 O,O-tert-butyl isopropyl monoperoxydicarbonate**

Oral	LD50	>2000 mg/kg (rattus)
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**93685-81-5 Hydrocarbons, C4, 1,3-butadiene-free, polyimd., triisobutylene fraction, hydrogenated**

Inhalative	LC0 / 4h	>15 mg/l (rattus)
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	LC50 / 1h	>21.4 mg/l (rattus)
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- **Primary irritant effect:**

- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** No irritant effect.
- **Sensitization:** Sensitization possible through skin contact.

- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
Harmful  
Irritant

**SECTION 12: Ecological information**

- **12.1 Toxicity**

- **Aquatic toxicity:**

**2372-21-6 O,O-tert-butyl isopropyl monoperoxydicarbonate**

EC50 / 48h	0.314 mg/l (daphnia magna)
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**93685-81-5 Hydrocarbons, C4, 1,3-butadiene-free, polyimd., triisobutylene fraction, hydrogenated**

EC50 / 48h	> 0.04 mg/l (daphnia magna)
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IC50 / 72h	> 0.04 mg/l (alga)
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- **12.2 Persistence and degradability**

No further relevant information available.

- **12.3 Bioaccumulative potential**

No further relevant information available.

- **12.4 Mobility in soil**

No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:** Very toxic for fish

- **Additional ecological information:**

- **General notes:** Water hazard class 2 (German Regulation) (Self-assessment): 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.  
Also poisonous for fish and plankton in water bodies.  
Very toxic for aquatic organisms

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects**

No further relevant information available.

**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.

Trade name: **PEROXAN BIC**

(Contd. of page 6)

**SECTION 14: Transport information**

· 14.1 UN-Number · ADR, IMDG, IATA	UN3103
· 14.2 UN proper shipping name · ADR · IMDG · IATA	3103 ORGANIC PEROXIDE TYPE C, LIQUID (tert.-BUTYLPEROXY ISOPROPYLCARBONATE), ENVIRONMENTALLY HAZARDOUS ORGANIC PEROXIDE TYPE C, LIQUID (tert.-BUTYLPEROXY ISOPROPYLCARBONATE), MARINE POLLUTANT ORGANIC PEROXIDE TYPE C, LIQUID (tert.-BUTYLPEROXY ISOPROPYLCARBONATE)
· 14.3 Transport hazard class(es) · ADR  · Class · Label	5.2 (P1) Organic peroxides. 5.2
· IMDG  · Class · Label	5.2 Organic peroxides. 5.2
· IATA  · Class · Label	5.2 Organic peroxides. 5.2
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.5 Environmental hazards: · Marine pollutant: · Special marking (ADR):	Product contains environmentally hazardous substances: tert.-BUTYLPEROXY ISOPROPYLCARBONATE Yes Symbol (fish and tree) Symbol (fish and tree)
· 14.6 Special precautions for user · Danger code (Kemler):	Warning: Organic peroxides. -
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information: · ADR · Limited quantities (LQ) · Transport category · Tunnel restriction code · RID / GGVSEB:	25 ml 1 D like ADR

**SECTION 15: Regulatory information**

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- National regulations:
- Other regulations, limitations and prohibitive regulations
  - Please note: Take care of the respective local regulations.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

Trade name: **PEROXAN BIC**

(Contd. of page 7)

**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**
  - H226 Flammable liquid and vapour.
  - H242 Heating may cause a fire.
  - H304 May be fatal if swallowed and enters airways.
  - H315 Causes skin irritation.
  - H317 May cause an allergic skin reaction.
  - H400 Very toxic to aquatic life.
  - H410 Very toxic to aquatic life with long lasting effects.
  - H413 May cause long lasting harmful effects to aquatic life.
  - R10 Flammable.
  - R2 Risk of explosion by shock, friction, fire or other sources of ignition.
  - R38 Irritating to skin.
  - R43 May cause sensitisation by skin contact.
  - R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
  - R53 May cause long-term adverse effects in the aquatic environment.
  - R65 Harmful: may cause lung damage if swallowed.
  - R66 Repeated exposure may cause skin dryness or cracking.
  - R7 May cause fire.
  
- **Department issuing MSDS:** 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)
  - ICAO: International Civil Aviation Organization
  - ADR: Accord européen sur le transport 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 Harmonized 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)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 3: Flammable liquids, Hazard Category 3
  - Org. Perox. CD: Organic Peroxides, Types C, D
  - Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
  - Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  - Asp. Tox. 1: Aspiration hazard, Hazard Category 1
  - Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
  - Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
  - Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4