

Printing date 07.05.2004

Version: 8

Reviewed on 07.05.2004

1 Identification of substance:

- **Product details:**
- **Trade name:** **PEROXAN BCC**
- **Chemical Indication:** Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate, techn. pure
- **Application of the substance / the preparation**
For industrial use
Reaction initiator
- **Manufacturer/Supplier:**
PERGAN GmbH
Hilfsstoffe für industrielle Prozesse
Schlavenhorst 71
D-46395 Bocholt
Phone-number: +49-2871-9902-0
Fax-number: +49-2871-9902-50
- **Information department:** Environment protection / Security of labour
- **Emergency information:** Phone-number: +49-2871-9902-0

2 Composition/Data on components:

· **Dangerous components:**

CAS: 15520-11-3	Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate	O; R 7	ca. 95%
EINECS: 239-557-1			

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

3 Hazards identification

· **Hazard description:**



O Oxidising

- **Information pertaining to particular dangers for man and environment**
R 7 May cause fire.
- **Classification system**
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.

4 First aid measures

- **General information**
Immediately remove any clothing soiled by the product.
Personal protection for the First Aider.
- **After inhalation**
Take affected persons into fresh air and keep quiet.
Call a doctor immediately.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water with full jet.
- **Special hazards caused by the material, its products of combustion or resulting gases:**
In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:
Carbon monoxide (CO)
Carbon dioxide, cracked hydrocarbons
- **Protective equipment:** Wear self-contained respiratory protective device.
- **Additional information** Cool endangered receptacles with water spray.

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* 6 Accidental release measures

· **Person-related safety precautions:**

After exceeding the emergency temperature of + 35 °C the peroxide must be diluted with a suitable desensitisation agent (e. g. water).

Remove persons from danger area.

Avoid formation of dust.

Keep away from ignition sources

Use respiratory protective device against the effects of fumes/dust/aerosol.

· **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.

· **Measures for cleaning/collecting:**

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

Moisten dust and collect in suitable receptacles.

· **Additional information:** In case of large spillage the environmental authority should be informed.

* 7 Handling and storage

· **Handling**

· **Information for safe handling:**

Do not refill residue into storage receptacles.

Restrict the quantity stored at the work place.

Avoid contact with skin and eyes.

Only use tools made of suitable materials (e. g. polyethylene or stainless steel).

The product must be preserved, stored and transported continuously cool.

Keep receptacles tightly sealed.

Prevent formation of dust.

Provide suction extractors if dust is formed.

· **Information about protection against explosions and fires:** Dust can combine with air to form an explosive mixture.

· **Storage**

· **Requirements to be met by storerooms and receptacles:**

Danger of explosion in closed containers.

Store only in the original receptacle.

· **Information about storage in one common storage facility:**

It is allowed to store organic peroxides together only with the following classes of the IMDG-Code:

Class 4.1 - Flammable solids

Class 5.2 - Organic peroxides

Class 9 - Miscellaneous dangerous substances and articles

Storage areas should be selected in accordance with all local laws.

· **Further information about storage conditions:**

Control temperature + 30 °C

Emergency temperature + 35 °C

Keep receptacle tightly sealed.

Storage areas should be selected in accordance with all local laws.

· **Recommended storage temperature (To maintain quality):** max. 15° C

· **Storage class** 5.2

* 8 Exposure controls and personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components 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 that were valid during the creation were used as basis.

· **Personal protective equipment**

· **General protective and hygienic measures**

Avoid contact with the eyes and skin.

Do not breathe dust.

If a contact with the eyes and skin is possible the specified protective measures has to be used. Use skin protection.

· **Breathing equipment:**

Not necessary if room is well-ventilated.

Use suitable respiratory protective device in case of insufficient ventilation.

Short term filter device:

Filter P2.



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**

Protective gloves.

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

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- **Material of gloves**
PVA gloves
Fluorocarbon rubber (Viton)
Butyl rubber, BR
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.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **As protection from splashes gloves made of the following materials are suitable:**
Neoprene gloves
Nitrile rubber, NBR
- **Eye protection:**
Safety glasses
Face protection
- **Body protection:** Protective suit

*** 9 Physical and chemical properties:**

· General Information	
Form:	Powder
Colour:	whitish
Odour:	characteristic
· Change in condition	
Melting point/Melting range:	undetermined
Boiling point/Boiling range:	undetermined
Flash point:	not applicable
· Ignition temperature:	
Decomposition temperature:	+ 40 °C (SADT)
Self igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	not determined
Upper:	not determined
Vapour pressure:	not applicable
Density:	not determined
Bulk density at 20°C:	ca. 340 kg/m ³
· Solubility in / Miscibility with	
Water:	insoluble
· Viscosity:	
dynamic:	not determined

*** 10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
No decomposition if used and stored according to specifications.
To avoid thermal decomposition do not overheat.
- **Materials to be avoided:**
Rapid decomposition by dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy-metal compounds and amines).
- **Dangerous reactions** Self accelerating decomposition above + 40 °C (SADT).
- **Dangerous products of decomposition:** No hazardous decomposition products if used and stored according to specifications.

*** 11 Toxicological information**

- **Acute toxicity:**

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

15520-11-3 Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate

Oral | LD50 | > 5000 mg/kg (Rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect
- **on the eye:** Low irritant effect

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· **Sensitization:** No sensitizing effects known.

***12 Ecological information:**

· **Ecotoxicological effects:**
· **Acquatic toxicity:**

Type of test	Effective concentration	Method	Assessment
15520-11-3 Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate			
LC50/96 h	704 mg/l	(Onchorhynchus mykiss)	

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

***13 Disposal considerations**

· **Product:**
· **Recommendation**



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

Must be specially treated adhering to official regulations.

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

· **Uncleaned packagings:**

· **Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

***14 Transport information**

· **Land transport ADR (cross-border):**



· **ADR/GGVS:** 5.2 (P2) Organic peroxides.

· **Danger code (Kemler):** -

· **UN-Number:** 3114

· **Packaging group:** -

· **Label:** 5.2

· **Description of goods:** 3114 ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED (Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate)

· **Remarks:** Control Temperature + 30 °C

Emergency Temperature + 35 °C

· **RID/GGVE:** no admission

· **Maritime transport IMDG:**



· **IMDG Class:** 5.2

· **UN Number:** 3114

· **Label:** 5.2

· **Packaging group:** -

· **Marine pollutant:** No

· **Propper shipping name:** ORGANIC PEROXIDE TYPE C, SOLID, TEMPERATURE CONTROLLED (Di-(4-tert.-butylcyclohexyl) peroxydicarbonate)

· **Remarks:** Control Temperature + 30 °C

Emergency Temperature + 35 °C

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- Air transport ICAO-TI and IATA-DGR:
- ICAO/IATA Class: no admission

*15 Regulations

- **Markings according to EU guidelines:**
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials
- **Code letter and hazard designation of product:**



O Oxidising

- **Hazard-determining components of labelling:**
Di-(4-tert.-butylcyclohexyl)-peroxydicarbonate
- **Risk phrases:**
7 May cause fire.
- **Safety phrases:**
7/147 Keep container tightly closed and at a temperature not exceeding + 30 °C.
14 Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e. g. heavy metal compounds and amines).
22 Do not breathe dust.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
60 This material and its container must be disposed of as hazardous waste.
- **National regulations: (german)**
- **Information about limitation of use:** Act on the safety of the working youth (12.04.1976).
- **Disturbance regulations:** Critical quantity values according to the regulations on accidents should be adhered to.
- **Technical instructions (air):**

Class	Share in %
III	80-100
NK	1-5

- **Water hazard class:** Water hazard class 1 (Self-assessment) (German regulation): slightly hazardous for water.
- **Other regulations, limitations and prohibitive regulations**
- **UVV: (german)**
"Grundsätze der Prävention" (BGV A1)
"Organische Peroxide" (BGV B4)
"Umgang mit Gefahrstoffen" (BGV B1)
- **BG-notice sheet: (german)**
Stoffmerkblätter der Berufsgenossenschaft:
BGR 104 - Richtlinie für die Vermeidung der Gefahren durch explosionsfähige Atmosphäre (EX-RL) (Berufsgenossenschaft).
BGR 132 - Richtlinien für die Vermeidung von Zündgefahren infolge elektrostatischer Aufladungen.
BGI 536 "Gefährliche chemische Stoffe"
BGI 660 "Arbeitsschutzmaßnahmen für den Umgang mit Gefahrstoffen"
BGI 752 "Organische Peroxide"
- **Law for explosives: (german)** not applicable
- **Storage classification/Classification of danger: (german)** Classification of danger Ib

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 R-phrases**
7 May cause fire.
- **Training hints**
Training on storage of organic Peroxides.
Training on handling of organic Peroxides.
Training on disposal of organic peroxides.
- **Department issuing MSDS:** Environment protection / Security of labour
- **Contact:**
Environment protection / Security of labour
Phone-number: +49-2871-9902-0
- * **Data compared to the previous version altered.**