

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

PERKADOX BC-FF (<200 kg packaging)

Version 5.2 Revision Date: 2023/07/04 CN / EN Date of last issue: 2023/03/22
Date of first issue: 2015/04/28

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : PERKADOX BC-FF (<200 kg packaging)
:

Manufacturer or supplier's details

Company : Nouryon Functional Chemicals B.V.
Haaksbergweg 88
NL 1101 BZ Amsterdam
Netherlands

Address : Haaksbergweg 88
Amsterdam 1101 BZ

Telephone : +31889840367

Emergency telephone number : 24 hours:+31 57 06 79211, US-CHEMTREC:1-800-424-9300,
CA-CANUTEC:1-613-996-6666, JP: +81 (836) 74 8810, CN: 化
学事故应急咨询电话 : +86 532 8388 9090

E-mail address : polymer.emeia@nouryon.com

Recommended use of the chemical and restrictions on use

Recommended use : Polymerization initiator
Flame retardants

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	: Crystalline solid
Colour	: white
Odour	: Faint.

Heating may cause a fire. Causes skin irritation. Causes serious eye irritation. Suspected of damaging fertility or the unborn child. Very toxic to aquatic life with long lasting effects.

GHS Classification

Organic peroxides : Type F
Skin corrosion/irritation : Category 2

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Serious eye damage/eye irritation : Category 2A

Reproductive toxicity : Category 2

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal word : Warning

Hazard statements : H242 Heating may cause a fire.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H361 Suspected of damaging fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P220 Keep/ Store away from clothing/ combustible materials.
P234 Keep only in original container.
P235 Keep cool.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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P308 + P313 IF exposed or concerned: Get medical advice/ attention.
 P332 + P313 If skin irritation occurs: Get medical advice/ attention.
 P337 + P313 If eye irritation persists: Get medical advice/ attention.
 P362 + P364 Take off contaminated clothing and wash it before reuse.
 P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
 P391 Collect spillage.

Storage:

P405 Store locked up.
 P410 Protect from sunlight.
 P420 Store away from other materials.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Heating may cause a fire.

Health hazards

Causes skin irritation. Causes serious eye irritation. Suspected of damaging fertility or the unborn child.

Environmental hazards

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	:	Substance
Substance name	:	Dicumyl peroxide
CAS-No.	:	80-43-3
Synonyms	:	Dicumyl peroxide

Components

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Chemical name	CAS-No.	Concentration (% w/w)
Dicumyl peroxide	80-43-3	>= 99 -<= 100

Dicumyl peroxide [52%<content≤100%]

4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
- If inhaled : Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash the skin immediately with soap and water.
If skin irritation persists, call a physician.
- In case of eye contact : Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Obtain medical attention.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Obtain medical attention.
- Most important symptoms and effects, both acute and delayed : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
- Notes to physician : Treat symptomatically.

5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- Unsuitable extinguishing media : High volume water jet

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- Specific hazards during firefighting : CAUTION: reignition may occur.
 Supports combustion.
 Do not use a solid water stream as it may scatter and spread fire.
 Water spray may be ineffective unless used by experienced firefighters.
 Do not allow run-off from fire fighting to enter drains or water courses.
 Hazardous decomposition products formed under fire conditions.

- Hazardous combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

- Specific extinguishing methods : Use water spray to cool unopened containers.
 Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
 Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Ensure adequate ventilation.
 Remove all sources of ignition.

- Environmental precautions : Prevent product from entering drains.
 Discharge into the environment must be avoided.

- Methods and materials for containment and cleaning up : Keep wetted with water.
 Confinement must be avoided.
 Pick up and arrange disposal without creating dust.
 Collect in plastic container for disposal as hazardous waste.
 Never return spills in original containers for re-use.

- Prevention of secondary hazards : Evacuate personnel to safe areas.
 Only qualified personnel equipped with suitable protective equipment may intervene.
 Prevent unauthorised persons entering the zone.

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7. HANDLING AND STORAGE

Handling

Advice on protection against fire and explosion : Use explosion protected equipment.
Provide appropriate exhaust ventilation at places where dust is formed.
Keep away from sources of ignition - No smoking.
No sparking tools should be used.
Keep away from reducing agents (e.g. amines), acids, alkalis and heavy metal compounds (e.g. accelerators, driers, metal soaps).
Do not cut or weld on or near this container even when empty.
Keep away from combustible material.

Advice on safe handling : For personal protection see section 8.
Avoid formation of respirable particles.
Smoking, eating and drinking should be prohibited in the application area.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.
Obtain special instructions before use.

Avoidance of contact : Contact with the following incompatible materials will result in hazardous decomposition:
Acids and bases
Iron
Copper
Reducing agents
Heavy metals
Rust
Do not mix with peroxide accelerators, unless under controlled processing.
Use only stainless steel 316, PP, polyethylene or glass-lined equipment.
For queries regarding the suitability of other materials please contact the supplier.

Storage

Conditions for safe storage : Prevent unauthorized access.
No smoking.
Keep in a well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

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Keep only in original container.
Store away from other materials.

Further information on storage stability : Maximum storage temperature is for quality only.

Maximum storage temperature: : 30 °C

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Acetophenone	98-86-2	TWA	10 ppm	ACGIH

Engineering measures : Explosion proof ventilation recommended.
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection : Handle in accordance with good industrial hygiene and safety practice.

Eye/face protection : Tightly fitting safety goggles

Skin and body protection : Protective suit

Hand protection

Material : Neoprene

Material : Nitrile rubber

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Crystalline solid
Colour	:	white
Odour	:	Faint.
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point	:	39.5 °C
Boiling point/boiling range	:	Decomposes below the boiling point.
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Decomposition products may be flammable.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	0.3 hPa (101 °C)
Relative vapour density	:	Not applicable
Relative density	:	ca. 1.1 (20 °C)
Bulk density	:	660 kg/m ³ (20 °C)
Solubility(ies)	:	
Water solubility	:	insoluble (20 °C)

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Solubility in other solvents	:	Description: Soluble in most organic solvents.
Partition coefficient: n-octanol/water	:	log Pow: 5.6 (25 °C)
Auto-ignition temperature	:	Test method not applicable
Decomposition temperature	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a 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 thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	:	75 °C
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidising.
Active Oxygen Content	:	5.86 %
Organic peroxides	:	99 %

10. STABILITY AND REACTIVITY

Reactivity	:	Stable under normal conditions.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	A high degree of confinement must be avoided.

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Method: OECD Test Guideline 401

Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
 Method: OECD Test Guideline 402
 Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Causes skin irritation.

Components:

Dicumyl peroxide:

Assessment : Irritating to skin.
 Remarks : Irritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Dicumyl peroxide:

Assessment : Mild eye irritation
 Remarks : Causes eye irritation.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Dicumyl peroxide:

Test Type : Local lymph node assay (LLNA)
 Species : Mouse
 Method : OECD Test Guideline 429
 Result : Not a skin sensitizer.

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Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Remarks: In vitro tests did not show mutagenic effects

Germ cell mutagenicity - Assessment : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Components:

Dicumyl peroxide:

Genotoxicity in vitro : Test Type: reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: In vitro cytogenicity study in mammalian cells
Test system: Chinese hamster lung cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung fibroblasts
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

Dicumyl peroxide:

Effects on foetal development : Species: Rat
General Toxicity Maternal: NOAEL: 150 mg/kg bw/day

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Developmental Toxicity: NOAEL: 150 mg/kg bw/day
 Method: OECD Test Guideline 414
 Remarks: Adverse developmental effects were observed

Species: Rabbit
 General Toxicity Maternal: NOAEL: 50 mg/kg bw/day
 Developmental Toxicity: NOAEL: 150 mg/kg bw/day
 Method: OECD Test Guideline 414
 Remarks: No significant adverse effects were reported

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

STOT - single exposure

Not classified based on available information.

Components:

Dicumyl peroxide:

Remarks : Not classified due to data which are conclusive although insufficient for classification.

STOT - repeated exposure

Not classified based on available information.

Components:

Dicumyl peroxide:

Remarks : Not classified due to data which are conclusive although insufficient for classification.

Repeated dose toxicity

Components:

Dicumyl peroxide:

Species : Rat
 NOAEL : 80 mg/kg bw/day
 Method : OECD Test Guideline 408

Aspiration toxicity

Not classified based on available information.

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Further information

Product:

Remarks : No further data available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Dicumyl peroxide:

- Toxicity to fish : LC50 (*Oryzias latipes* (Japanese medaka)): 0.469 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes
Remarks: No toxicity at the limit of solubility
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 0.397 mg/l
Exposure time: 48 h
Test Type: semi-static test
Method: OECD Test Guideline 202
GLP: yes
Remarks: No toxicity at the limit of solubility
- Toxicity to algae/aquatic plants : (*Pseudokirchneriella subcapitata* (green algae)): Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
GLP: yes
Remarks: No toxicity at the limit of solubility
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 0.117 mg/l
End point: reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211
GLP: yes
- Toxicity to microorganisms : NOEC (activated sludge): > 1,000 mg/l
Exposure time: 0.5 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

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Persistence and degradability

Components:

Dicumyl peroxide:

Biodegradability : Ready biodegradability
Inoculum: Activated sludge, domestic, non-adapted
Concentration: 20 mg/l
Result: Not readily biodegradable.
Biodegradation: 44 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

Bioaccumulative potential

Components:

Dicumyl peroxide:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 137 - 1,470
Exposure time: 56 d
Temperature: 25 °C
Concentration: 0.01 mg/l
Method: OECD Test Guideline 305C

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Components:

Dicumyl peroxide:

Results of PBT and vPvB assessment : Not classified as PBT or vPvB

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13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of contents/container in accordance with local regulation.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.
Due to the high risk of contamination recycling/recovery is not recommended.
Follow all warnings even after the container is emptied.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

- UN number : UN 3110
Proper shipping name : ORGANIC PEROXIDE TYPE F, SOLID
(Dicumyl peroxide, 99%)
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2
Environmentally hazardous : yes

IATA-DGR

- UN/ID No. : UN 3110
Proper shipping name : Organic peroxide type F, solid
(Dicumyl peroxide, 99%)
Class : 5.2
Packing group : Not assigned by regulation
Labels : Organic Peroxides, Keep Away From Heat
Packing instruction (cargo aircraft) : 570
Packing instruction (passenger aircraft) : 570
Environmentally hazardous : yes

IMDG-Code

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UN number : UN 3110
 Proper shipping name : ORGANIC PEROXIDE TYPE F, SOLID
 (Dicumyl peroxide, 99%, Dicumyl peroxide)
 Class : 5.2
 Packing group : Not assigned by regulation
 Labels : 5.2
 EmS Code : F-J, S-R
 Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

GB 6944/12268

UN number : UN 3110
 Proper shipping name : ORGANIC PEROXIDE TYPE F, SOLID
 (Dicumyl peroxide, 99%)
 Class : 5.2
 Packing group : Not assigned by regulation
 Labels : 5.2
 Marine pollutant : yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION

National regulatory information

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed

Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)

No. / Code	Chemical name / Category	Threshold quantity
W7.2	Organic peroxides	50 t

Yangtze River Protection Law

This product does not contain any dangerous chemicals prohibited for inland river transport.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

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TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI : On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Revision Date : 2023/07/04

Further information

Other information : This data sheet contains changes from the previous version in section(s):
Hazards identification
Composition/information on ingredients
Toxicological information
Ecological information

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

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AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CN / EN

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.