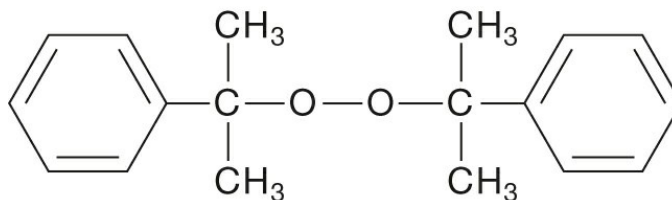


# Perkadox BC-FF

Dicumyl peroxide



Perkadox BC-FF is an initiator for (co)polymerization of styrene and synergist in flame-retardant polystyrene formulations.

**CAS number**  
80-43-3

**EINECS/ELINCS No.**  
201-279-3

**TSCA status**  
listed on inventory

**Molecular weight**  
270.4

**Active oxygen content peroxide**  
5.92%

**Concentration**  
5.86% min.

## Specifications

Appearance	White crystals
Assay	≥ 99.0 %

## Characteristics

Bulk density	660 (41.2 lb/ft <sup>3</sup> ) kg/m <sup>3</sup>
Density	1.11 g/cm <sup>3</sup>
Melting point	39.5 °C
Tapped bulk density	705 kg/m <sup>3</sup>

## Applications

For Polymer production: Polymerization of styrene: Perkadox BC-FF may be used for the (co)polymerization of styrene in the temperature range of 110-165°C. In a mass process Perkadox BC-FF can be advantageously used to increase polymerization rates. Coagent in flame-retardant polystyrene: Perkadox BC-FF may also be used as synergistic co-agent in combination with halogen containing flame retardants to produce flame-retardant expandable polystyrene. For Crosslinking: Perkadox BC-FF is a monofunctional peroxide which is used for the crosslinking of natural rubber and synthetic rubbers, as well as polyolefins. Rubber compounds containing Perkadox BC-FF have excellent scorch safety, and under certain conditions one step mixing is possible. Safe processing temperature: 130°C (rheometer ts<sub>2</sub> > 20 min.). Typical crosslinking temperature: 170°C (rheometer t<sub>90</sub> about 12 min.)

## Half-life data

The reactivity of an organic peroxide is usually given by its half-life ( $t_{1/2}$ ) at various temperatures. For Perkadox BC-FF in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 154°C (309°F)
1 hr	at 132°C (270°F)
10 hr	at 112°C (234°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	152.67 kJ/mole
A	9.24E+15 s <sup>-1</sup>
R	8.3142 J/mole·K
T	(273.15+°C) K

## Thermal stability

Organic peroxides are thermally unstable substances, which may undergo self-accelerating decomposition. The lowest temperature at which self-accelerating decomposition of a substance in the original packaging may occur is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	75°C (167°F)
Method	The Heat Accumulation Storage Test is a recognized test method for the determination of the SADT of organic peroxides (see Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria - United Nations, New York and Geneva).

## Storage

Due to the relatively unstable nature of organic peroxides a loss of quality can be detected over a period of time. To minimize the loss of quality, Nouryon recommends a maximum storage temperature ( $T_s$  max. ) for each organic peroxide product.

Ts Max.	30°C (86°F)
Note	When stored under the recommended storage conditions, Perkadox BC-FF will remain within the Nouryon specifications for a period of at least 12 months after delivery.

## Packaging and transport

In North America Perkadox BC-FF is packed in non-returnable cartons containing 55.1 lb net weight. In other regions the standard packaging is a non-returnable carton containing 5 x 5 kg peroxide. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox BC-FF is classified as Organic peroxide type F; solid, Division 5.2; UN 3110.

## Safety and handling

Keep containers tightly closed. Store and handle Perkadox BC-FF in a dry well-ventilated place away from sources of heat or ignition and direct sunlight. Never weigh out in the storage room. Avoid contact with reducing agents (e. g. amines), acids, alkalis and heavy metal compounds (e. g. accelerators, driers and metal soaps). Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Perkadox BC-FF. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at [nouryon.com/sds-search](http://nouryon.com/sds-search).

## Major decomposition products

Methane, Acetophenone, 2-Phenylisopropanol

All information concerning this product and/or suggestions for handling and use contained herein are offered in good faith and are believed to be reliable. Nouryon, however, makes no warranty as to accuracy and/or sufficiency of such information and/or suggestions, as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. Nouryon does not accept any liability whatsoever arising out of the use of or reliance on this information, or out of the use or the performance of the product. Nothing contained herein shall be construed as granting or extending any license under any patent. Customer must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes. The information contained herein supersedes all previously issued information on the subject matter covered. The customer may forward, distribute, and/or photocopy this document only if unaltered and complete, including all of its headers and footers, and should refrain from any unauthorized use. Don't copy this document to a website.

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The Nouryon logo consists of a stylized orange 'N' followed by the word 'ouryon' in a lowercase, sans-serif font, all in orange.