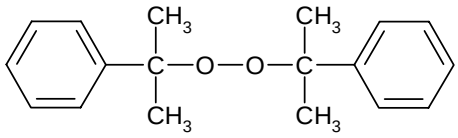
Product Data Sheet

Perkadox® BC-FF

Product description

Dicumyl peroxide



Molecular weight	: 270.4
Active oxygen content peroxide	: 5.92%
actual product	: 5.86% min.
CAS No.	: 80-43-3
EINECS/ELINCS No.	: 201-279-3
TSCA status	: listed on inventory

Specifications

Appearance	: White crystals
Assay	: 99.0% min.

Characteristics

Density	: 1.11 g/cm^3 (68.6 lb/ft^3)
Bulk density	: 660 kg/m^3 (41.2 lb/ft^3)
Tapped bulk density	: 705 kg/m^3 (44.0 lb/ft^3)
Melting point	: 39.5°C (103°F)

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:

0.1 hr	at 154°C (309°F)
1 hr	at 132°C (270°F)
10 hr	at 112°C (234°F)

The half-life at other temperatures can be calculated by using the following equations and constants:

$k_d = A \cdot e^{-Ea/RT}$

$t_{½} = (\ln 2)/k_d$

E_a = 152.67 kJ/mole
A = 9.24E+15 s^{-1}
R = 8.3142 J/mole·K
T = (273.15+°C) K

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, AkzoNobel recommends a maximum storage temperature (T_s max.) for each organic peroxide product.

For *Perkadox* BC-FF T_s max. = 30°C (86°F)

When stored under the recommended storage conditions, *Perkadox* BC-FF will remain within the AkzoNobel specifications for a period of at least 12 months after delivery.

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.

For *Perkadox* BC-FF SADT : 75°C (167°F)

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).

Major decomposition products

Acetophenone, Methane, 2-Phenylisopropanol

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 AkzoNobel 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 Material Safety Data Sheet (MSDS) 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 MSDS is available at www.akzonobel.com/polymer.

Applications

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.

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