

Perkadox 24-FL

Dicetyl peroxydicarbonate

Perkadox 24-FL is an initiator for (co)polymerization of vinyl chloride, vinylidene chloride, acrylates and methacrylates. Used to increase melt strength of polypropylene to make high melt strength polypropylene (HMS-PP) by reactive extrusion process.

CAS number
26322-14-5

EINECS/ELINCS No.
247-611-0

TSCA status
listed on inventory

Molecular weight
570.9

Specifications

Active oxygen	2.80 %
Active oxygen content	2.65 min. %
Assay	94.5 min. %
Inorganic + organic hydrolysable chloride	2000 mg/kg

Characteristics

Appearance	White flakes
Bulk density, 20 °C	400 kg/m ³
Density, 20 °C	1.03 g/cm ³
Melting point	52 °C
Tapped bulk density	465 kg/m ³

Applications

Perkadox 24-FL is used as an initiator for the suspension and mass polymerization of vinyl chloride in the temperature range between 40°C and 65°C. Perkadox 24-fl may be used in combination with other peroxides such as 1,1,3,3-Tetramethylbutyl peroxyneodecanoate (Trigonox 423), Cumyl peroxyneodecanoate (Trigonox 99) or Dilauroyl peroxide (Laurox), to increase reactor efficiency.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Perkadox 24-FL in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	84°C (183°F)
1 hr	65°C (149°F)
10 hr	48°C (118°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	124.30 kJ/mole
A	3.02E+15 s ⁻¹
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	40°C (104°F)
Emergency temperature (T _e)	35°C (95°F)
Control temperature (T _c)	30°C (86°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.

T _s Max.	20°C (68°F)
Note	When stored under these recommended storage conditions, Perkadox 24-FL will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

The standard packaging is a cardboard box for 20 kg peroxide. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox 24-FL is classified as Organic peroxide type F; solid, temperature controlled, Division 5.2; UN 3120.

Safety and handling

Keep containers tightly closed. Store and handle Perkadox 24-FL 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 24-FL. This information should be thoroughly reviewed prior to acceptance of this product. The MSDS is available at <https://polymerchemistry.nouryon.com>.

Major decomposition products

Carbon dioxide, Hexadecanol

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 the word "Nouryon" in a bold, orange, sans-serif font. The letter "N" is stylized with a vertical bar on its left side.