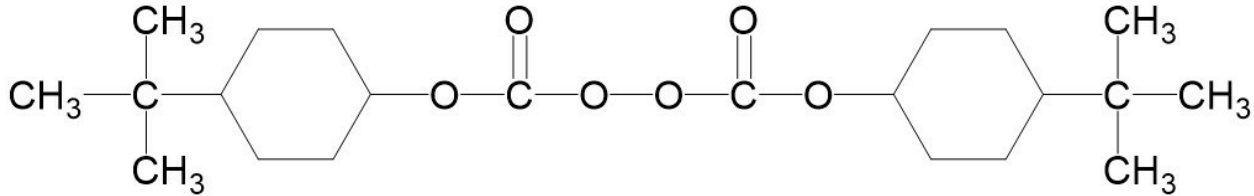


## Perkadox 16-40XPS

Di(4-tert-butylcyclohexyl) peroxydicarbonate



Perkadox® 16-40XPS is a peroxydicarbonate used for curing unsaturated polyester resins and methacrylic resins. The material is formulated to a pumpable suspension which allows continuous operation and safe handling.

**CAS number**  
15520-11-3

**EINECS/ELINCS No.**  
239-557-1

**TSCA status**  
listed on inventory

**Molecular weight**  
398.5

### Specifications

Appearance	White paste
Assay	37.5-40.0 %

### Characteristics

Average viscosity, 20 °C / 68 °F	2,000-10,000 mPa.s
Density, 20 °C / 68 °F	1.010 g/cm <sup>3</sup>

### Applications

Perkadox® 16-40XPS is a smooth peroxydicarbonate paste which is used for the curing of unsaturated polyester resins and methacrylic resins mainly in the temperature range of 60°C (140°F) and higher. The Perkadox® 16-40XPS paste dissolves readily in a resin formulation without the need for additional solvents. There is no need for extra handling or long mixing times.

## Half-life data

The reactivity of an organic peroxide is usually given by its half-life ( $t_{1/2}$ ) at various temperatures. For Perkadox® 16-40XPS in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 82°C (180°F)
1 hr	at 64°C (147°F)
10 hr	at 48°C (118°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
E <sub>a</sub>	126.39 kJ/mole
A	7.44E+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	45°C (113°F)
Emergency temperature (T <sub>e</sub> )	40°C (104°F)
Control temperature (T <sub>c</sub> )	35°C (95°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 <sub>s</sub> Max.	15°C (59°F)
Note	When stored under these recommended storage conditions, Perkadox® 16-40XPS will remain within the Nouryon specifications for a period of at least three months after delivery.

## Packaging and transport

The standard packaging is a 18.5 kg (40 lb) pail. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Perkadox® 16-40XPS is classified as Organic peroxide type E; solid, temperature controlled; Division 5.2; UN 3118.

## Safety and handling

Keep containers tightly closed. Store and handle Perkadox® 16-40XPS 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® 16-40XPS. 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

Carbon dioxide, 4-tert-Butyl-cyclohexanol, 4-tert-Butylcyclohexanone

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 blue 'N' followed by the word 'ouryon' in a lowercase, sans-serif font.