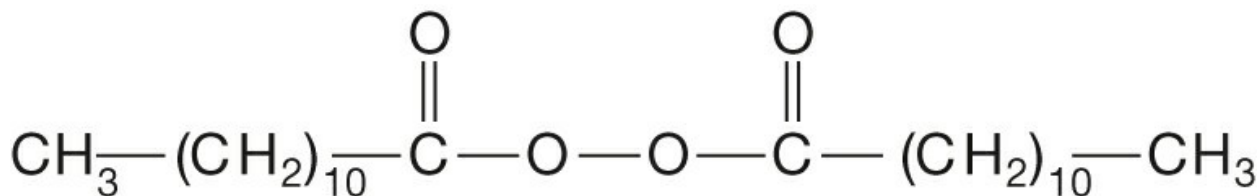


Laurox

Dilauroyl peroxide



Laurox is an initiator for the suspension and mass polymerization of vinyl chloride, vinylidene chloride, acrylates and methacrylates. Possible to store at ambient temperatures.

CAS number
105-74-8

EINECS/ELINCS No.
203-326-3

TSCA status
listed on inventory

Molecular weight
398.6

Active oxygen content peroxide
4.01%

Specifications

Active oxygen	3.97 – 4.01 %
Appearance	White flakes without any contamination
Assay	≥ 99.0 %

Characteristics

Bulk density, 20 °C	0.460 kg/m ³
Melting point	54 °C

Applications

Polymerization of vinyl chloride: Laurox is a widely used initiator for the suspension and mass polymerization of vinyl chloride between 60°C and 80°C. In many cases Laurox is combined with a more active initiator, such as a peroxydicarbonate (e.g. Perkadox 16) to increase reactor efficiency. **Polymerization of ethylene:** Laurox is used as an initiator for the high pressure polymerization of ethylene, but because of its poor solubility in most aliphatics, it is in many cases replaced by other peroxides such as Di(3,5,5-trimethylhexanoyl) peroxide (Trigonox 36). The advantage of Laurox is the possibility of storing at ambient temperature. **Polymerization of acrylates and methacrylates:** Laurox is also used as an initiator for the polymerization of methylmethacrylate at 60-90°C. Laurox is often applied as a replacement for 2,2'-Azobis(isobutyronitril) (Perkadox AIBN). **Thermoset:** Laurox is used as an initiator for curing acrylic solid surface at elevated temperatures.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Laurox in chlorobenzene:

0.1 hr	at 99°C
1 hr	at 79°C
10 hr	at 61°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
E _a	123.37 kJ/mole
A	3.92E+14 sP-1P
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	50°C
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.	30°C
Note	When stored under these recommended storage conditions, Laurox will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

The standard packaging is a cardboard box for 25 kg peroxide. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Laurox is classified as Organic peroxide type D; solid, Division 5.2; UN 3106.

Safety and handling

Keep containers tightly closed. Store and handle Laurox 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 Laurox. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at nouryon.com/sds-search.

Major decomposition products

Carbon dioxide, Docosane, Undecane, Undecyl dodecanoate

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.