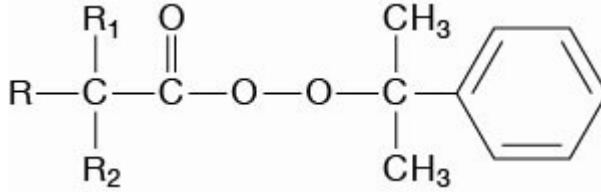


Trigonox 99-WE50

Cumyl peroxyneodecanoate



Initiator (75% active ingredient in water) for (co)polymerization of vinyl chloride and vinylidene chloride.

CAS number
26748-47-0

EINECS/ELINCS No.
247-956-7

TSCA status
listed on inventory

Molecular weight
306.4

Active oxygen content
peroxide
5.22%

Concentration
2.56-2.66%

Specifications

Appearance	White to off-white emulsion
Assay	49.0-51.0 %
Hydroperoxides as CHP	0.10 %
Inorganic + organic hydrolysable chloride	600 mg/kg
Viscosity, -10 °C	200-2000 mPa.s

Applications

Polymerization of vinyl chloride: Trigonox 99-WE50 is used as an initiator for the suspension and mass polymerization of vinyl chloride between 40°C and 65°C. Trigonox 99-WE50 is often combined with less active peroxides such as peroxydicarbonates (e.g. Perkadox 16) or diacylperoxides (e.g. Laurox) to increase reactor efficiency. Reasons to use a water-based peroxide emulsion instead of a solvent-based peroxide are the following: enhanced safety, easy to use (pumpable) in 'closed reactor technology', easy to dilute with water

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox 99-WE50 in chlorobenzene:

0.1 hr	75°C (167°F)
1 hr	56°C (133°F)
10 hr	38°C (100°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	114.59 kJ/mole
A	3.12E+14 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	5°C (41°F)
Emergency temperature (T_e)	-5°C (23°F)
Control temperature (T_c)	-15°C (5°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.	-20°C (-4°F)
Ts Min.	-25°C (-13°F)
Note	When stored under these recommended storage conditions, Trigonox 99-WE50 will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

The standard packaging is a 1250 l stainless steel Intermediate Bulk Container. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox 99-WE50 is classified as Organic peroxide type F; liquid, temperature controlled; Division 5.2; UN 3119.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox 99-WE50 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 Trigonox 99-WE50. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at <https://polymerchemistry.nouryon.com>

Major decomposition products

Carbon dioxide, 2-Phenylisopropanol, Isomers of neononane

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.