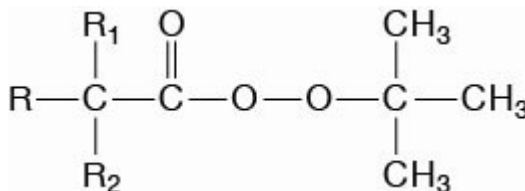


# Trigonox 23-W50

tert-Butyl peroxyneodecanoate



Initiator (50% emulsion in water and methol) for suspension (co)polymerization of vinyl chloride and vinylidene chloride.

CAS number  
26748-41-4

EINECS/ELINCS No.  
247-955-1

TSCA status  
listed on inventory

Molecular weight  
244.4

Active oxygen content  
peroxide  
6.55%

Concentration  
3.21-3.34%

## Specifications

Appearance	White to off-white emulsion
Assay	49.0-51.0 %
Viscosity, -10 °C	100-2000 mPa.s

## Applications

Polymerization of vinyl chloride: Trigonox 23-W50 has an activity in between peroxydicarbonates and tert-Butyl peroxyvalerate (Trigonox 25). Trigonox 23-W50 can be applied as an initiator for the suspension polymerization of vinyl chloride in the temperature range 50-65°C. The obtained polymer has a good thermal stability.

## Half-life data

The reactivity of an organic peroxide is usually given by its half-life ( $t_{1/2}$ ) at various temperatures. For Trigonox 23-W50 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 84°C
1 hr	at 64°C
10 hr	at 46°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	115.47 kJ/mole
A	1.52E+14 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	20°C (15°C for IBC)
Emergency temperature (T <sub>e</sub> )	10°C (5°C for IBC)
Control temperature (T <sub>c</sub> )	0°C (-5°C for IBC)
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. ) for each organic peroxide product.

T <sub>s</sub> Max.	-10°C
T <sub>s</sub> Min.	-25°C *
Note	* to prevent freezing. When stored according to these recommended storage conditions, Trigonox 23-W50 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

## Packaging and transport

The standard packaging is a 30-liter HDPE can (Nourytainer) for 25 kg peroxide emulsion. Delivery in a 1250 l stainless steel Intermediate Bulk Container is also possible in a number of countries. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox 23-W50 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 23-W50 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 23-W50. 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, tert-Butanol, 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, orange, sans-serif font.