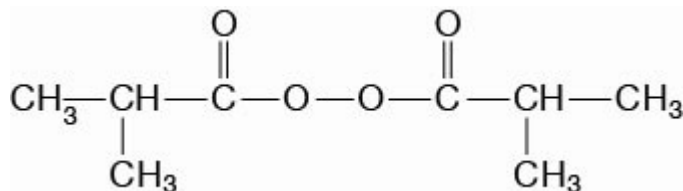


Trigonox 187-W40

Diisobutyryl peroxide



Trigonox 187-W40 is an initiator (40% water-based emulsion) for (co)polymerization of vinyl chloride and vinylidene chloride. Extremely active initiator developed for the low-temperature polymerization of vinyl chloride to produce high K-value PVC.

CAS number
3437-84-1

EINECS/ELINCS No.
222-340-0

TSCA status
listed on inventory

Molecular weight
174.2

Active oxygen content peroxide
9.18%

Concentration
3.58-3.77%

Specifications

Appearance	White emulsion
Assay	39.0-41.0 %
Inorganic + organic hydrolysable chloride	500 mg/kg
Viscosity, -10 °C (Brookfield LVT, spindle #3)	200-1000 mPa.s

Characteristics

Density, 0 °C	0.950 g/cm ³
---------------	-------------------------

Applications

Polymerization of vinyl chloride: Trigonox 187-W40 is a extremely active initiator especially developed for the low temperature polymerization of vinyl chloride to produce high K-value PVC. Trigonox 187-W40 can also be used in combination with other peroxides such as Di(2-ethylhexyl) peroxydicarbonate (Trigonox EHP) 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 Trigonox 187-W40 in chlorobenzene:

0.1 hr	57°C
1 hr	39°C
10 hr	23°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	109.06 kJ/mole
A	3.37E+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	0°C (-5°C for IBC)
Emergency temperature (T_e)	-10°C (-15°C for IBC)
Control temperature (T_c)	-20°C (-25°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_s max.) for each organic peroxide product.

T_s Max.	-25°C
T_s Min.	-30°C to prevent freezing
Note	When stored under these recommended storage conditions, Trigonox 187-W40 will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

The standard packaging is a 30 liter HDPE can (Nourytainer) for 25 kg peroxide solution or a 1250 l stainless steel Intermediate Bulk Container of 1000 kg net weight. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox 187-W40 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 187-W40 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 187-W40. 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, Propane, Propene

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.

Trigonox and Nourytainer are registered trademarks of Nouryon Chemicals B.V. or affiliates in one or more territories.

Contact Us

Europe, Middle East, India and Africa
polymerchemistry.nl@nouryon.com

Asia Pacific
polymerchemistry.ap@nouryon.com

Americas
polymerchemistry.na@nouryon.com

The Nouryon logo consists of a stylized orange 'N' followed by the word 'ouryon' in a lowercase, sans-serif font. The 'N' is significantly larger and more prominent than the rest of the text.