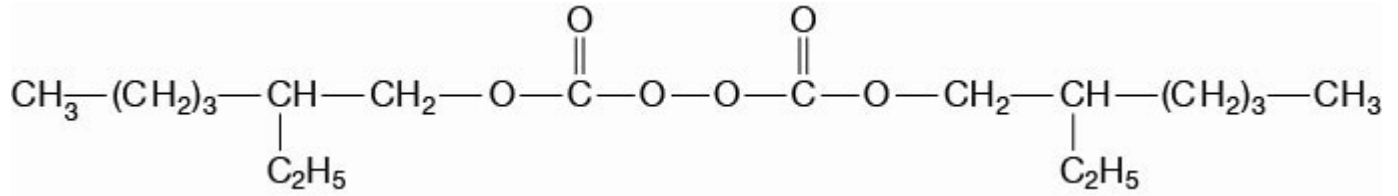


Trigonox EHP-W40S

Di(2-ethylhexyl) peroxydicarbonate



Initiator (40% frozen emulsion in water) for (co)polymerization of vinyl chloride and vinylidene chloride.

CAS number
16111-62-9

EINECS/ELINCS No.
240-282-4

TSCA status
listed on inventory

Molecular weight
346.5

Active oxygen content
peroxide
4.62%

Specifications

Appearance	White flakes
Inorganic + organic hydrolysable chloride	500 mg/kg

Characteristics

Bulk density	330 kg/m ³
Melting point	-1 to 0 °C
Viscosity, 0 °C	100 mPa.s

Applications

Polymerization of vinyl chloride: emulsions and suspension of peroxides are more and more accepted in the market. Why to use aqueous emulsions or suspensions? Safety reasons, Solvent free: no contamination of the VCM recycle stream, enhancement of PVC purity, easily to use (pumpable) in 'closed reactor technology' and easily to dilute with water.

Trigonox EHP-W40S can be diluted with water provided agitation is used to prevent possible phase separation. To melt the solid Trigonox EHP-W40S dilution with water is the most elegant way. Short term stability of Trigonox EHP-W40S or the dilution is sufficient enough to allow handling at temperatures up to 5°C for a short time. Trigonox EHP-W40S is used for the suspension polymerization of vinyl chloride in the temperature range 40-65°C. In practice, Trigonox EHP-W40S is often combined with other peroxides 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. The half-life of Trigonox EHP-W40S in chlorobenzene is:

0.1 hr	83°C
1 hr	64°C
10 hr	47°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	122.45 kJ/mole
A	1.83E+15 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
Emergency temperature (T_e)	-5°C
Control temperature (T_c)	-15°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.	-15°C
Note	When stored under these recommended storage conditions, Trigonox EHP-W40S will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

The standard packaging is a cardboard box for 25 kg peroxide formulation. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox EHP-W40S is classified as Organic peroxide type F; solid, temperature controlled, Division 5.2; UN 3120.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox EHP-W40S 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 EHP-W40S. 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, 2-Ethylhexanol

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.