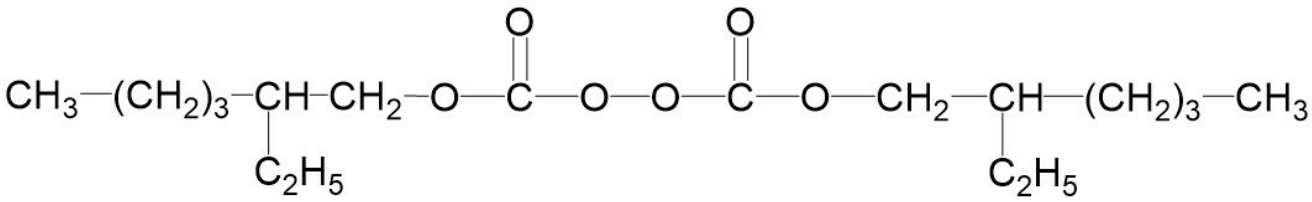
Trigonox EHP-W50

Di(2-ethylhexyl) peroxydicarbonate, 50% emulsion in water



Trigonox® EHP-W50 is a polymerization initiator (50% emulsion in water and methanol) 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%	Concentration 2.26-2.35%

Specifications

Appearance	White to off-white emulsion
Assay	49.0-51.0 %

Characteristics

Density, 0 °C	0.95 g/cm^3

Applications

Polymerization of vinyl chloride - Trigonox® EHP-W50 is applied as an initiator for the suspension polymerization of vinylchloride in the temperature range between 40°C and 65°C. Trigonox® EHP-W50 can be used in combination with other peroxides such as 1,1,3,3-Tetramethylbutyl peroxyneodecanoate (Trigonox® 423), Cumyl peroxyneodecanoate (Trigonox® 99) or Dilauroyl peroxide (Laurox) to increase reactor efficiency.Reasons to use a water-based peroxide emulsion instead of a solvent-based peroxide are the following:enhanced safetyeasy 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 (t1/2) at various temperatures. The half-life of Trigonox® EHP-W50 in chlorobenzene is:

0.1 hr	at 83°C
1 hr	at 64°C
10 hr	at 47°C
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
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 (0°C IBC)
Emergency temperature (T_e)	-5°C (-10°C IBC)
Control temperature (Tc)	-15°C (-20°C 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 (Ts max.) for each organic peroxide product.

Ts max.	-15°C (-20°C IBC)
Ts min.	-25°C (-25°C IBC)
Note	When stored under these recommended storage conditions, Trigonox® EHP-W50 will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

Trigonox® EHP-W50 is packed in non-returnable polyethylene containers of 55 lb net weight. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative.Trigonox® EHP-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® EHP-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® EHP-W50. 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, 2-Ethylhexanol

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