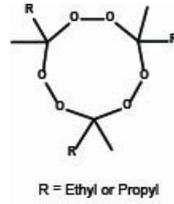


Trigonox 501-CS40

1,2,4,5,7,8-Hexoxonane, 3,6,9-trimethyl-3,6,9-tris(Et and Pr) derivs, 40% solution in odorless mineral spirits



Initiator for the production of controlled rheology polypropylene (CR-PP) and high-temperature polymerization of ethylene.

CAS number
1613243-54-1

EINECS/ELINCS No.
810-295-5

TSCA status
listed on inventory

Specifications

Appearance, 20-25 °C	Clear liquid
Color	50 Pt-Co/APHA max.
Total active oxygen	6.90-7.30 %

Characteristics

Density, 20 °C	0.88 g/cm ³
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Applications

Trigonox 501-CS40 is an efficient peroxide formulation for the production of controlled rheology polypropylene (CR-PP) in an extrusion process. Trigonox 501-CS40 allows polypropylene producers great flexibility in controlling a polymer's Melt Flow Index (MFI). Small changes in either peroxide concentration or process temperature can produce significantly different MFI's. An important advantage of Trigonox 501-CS40 is that the final CR-PP contains a low content of volatiles originating from peroxide decomposition products. Trigonox 501-CS40 forms no acetone and no tert-butanol.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox 501-CS40 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	170°C (338°F)
1 hr	146°C (295°F)
10 hr	125°C (257°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	150.60 kJ/mole
A	1.09E+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	110°C (230°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.	40°C (104°F)
Ts Min.	-25°C (-13°F)
Note	When stored under these recommended storage conditions, Trigonox 501-CS40 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 Nourytainer® for 25 kg peroxide formulation. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox 501-CS40 is classified as Organic peroxide type D; liquid, Division 5.2; UN 3105 for land and sea transport and classified as Organic peroxide type C; liquid, Division 5.2; UN 3103 for air transport.

Safety and handling

Keep away from open fire, sparks and other sources of heat or ignition. 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 501-CS40. 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, Methane, Ethane, Propane, Methyl ethyl ketone, Methyl propyl ketone, Methyl acetate, Ethyl acetate, Propyl acetate

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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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, all in orange.