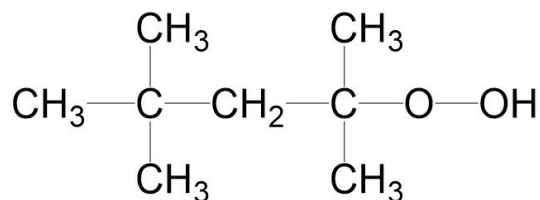


Trigonox TMBH-L

1,1,3,3-Tetramethylbutyl hydroperoxide, 90% solution in solvent mixture



Initiator (90% active ingredient in solvent mixture) for (co)polymerization of styrene and butadiene.

CAS number
5809-08-5

EINECS/ELINCS No.
227-369-2

TSCA status
listed on inventory

Molecular weight
146.2

Active oxygen content
peroxide
10.94%

Specifications

Active oxygen	9.85-10.40 %
Appearance	Clear liquid
Assay	90.0-95.0 %
Color	20 Pt-Co max.

Applications

Trigonox® TMBH-L may be used for the bulk and emulsion polymerization of vinyl monomers such as styrene, butadiene, acrylonitrile, acrylates and methacrylates. Trigonox® TMBH-L can be activated by organic-soluble or water-soluble reducing agents and by metal compounds to accelerate polymerization and/or to reduce polymerization temperature.

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® TMBH-L in chlorobenzene:

0.1 hr	180°C
1 hr	159°C
10 hr	144°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	181.99 kJ/mole
A	1.90E+18 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	60°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 (Ts max.) for each organic peroxide product.

Ts Max.	25°C
Ts Min.	-5°C to prevent crystallization
Note	When stored under these recommended storage conditions, Trigonox® TMBH-L will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

Trigonox® TMBH-L 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® TMBH-L is classified as Organic peroxide type D; liquid, Division 5.2; UN 3105.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® TMBH-L 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 Material Safety Data Sheet (MSDS) for further information on the safe storage, use and handling of Trigonox® TMBH-L. This information should be thoroughly reviewed prior to acceptance of this product. The MSDS is available at nouryon.com/sds-search

Major decomposition products

Acetone, Isobutene, 2,4,4-Trimethyl-1-pentene

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 blue '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.