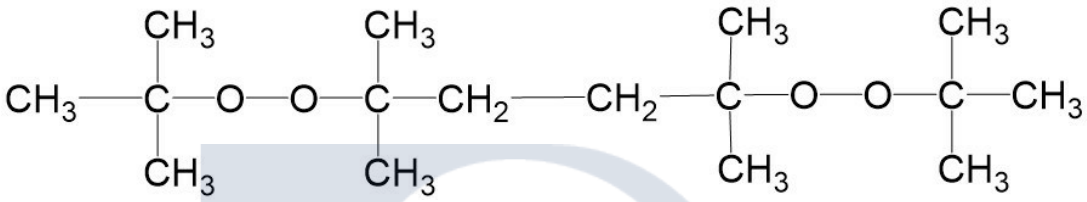
Trigonox 101

2,5-Dimethyl-2,5-di(tert-butylperoxy) hexane



Trigonox® 101 is an efficient peroxide for the degradation of polypropylene (CR-PP) in the temperature range of 200-250°C. Trigonox® 101 can also be used as chaser catalyst to reduce residual monomer in the mass polymerization of styrene.

CAS number
78-63-7

EINECS/ELINCS No.
201-128-1

TSCA status
listed on inventory

Molecular weight
290.4

Active oxygen content peroxide
11.02%

Specifications

2,5-dihydroperoxy-2,5-dimethylhexane	≤ 0.3 %
Active oxygen	≥ 10.14 %
Appearance	Clear liquid
Assay	≥ 92.0 %
Color	≤ 50 Pt-Co / APHA
Viscosity, 20°C	6.4 mPa.s

Characteristics

Density, 20 °C	0.872 g/cm³
Melting range	1-10 °C
Viscosity, 20 °C	6.4 mPa.s

RAJSHILA®

Applications

Trigonox® 101 (2,5-Dimethyl-2,5-di(tert-butylperoxy) hexane) can be used for the market segments: polymer production, polymer crosslinking and acrylics production with their different applications/functions. For more information please check our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t½) at various temperatures. For Trigonox® 101 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 156°C (313°F)
1 hr	at 134°C (273°F)
10 hr	at 115°C (239°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	155.49 kJ/mole
A	1.68E+16 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	80°C (176°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 (Ts max.) for each organic peroxide product.

Ts max.	40°C (104°F) and
Ts min.	10°C (50°F)
Note	When stored under strictly recommended storage conditions, Trigonox® 101 will remain within the Nouryon specifications for a period of at least 12 months after delivery.

Packaging and transport

In North America Trigonox® 101 is packed in non-returnable, 5 gallon polyethylene containers of 35 lb net weight. In other regions the standard packaging is a 30-liter HDPE can (Nourytainer®) for 25 kg peroxide solution. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox® 101 is classified as Organic peroxide type C; liquid, Division 5. 2; UN 3103.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 101 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® 101. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at nouryon.com/sds-search.

Major decomposition products

Acetone, Methane, tert-Amyl alcohol, tert-Butanol, Ethane

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 Functional Chemicals B.V. or affiliates in one or more territories.

RAJSHILA®

Nouryon

© 2022