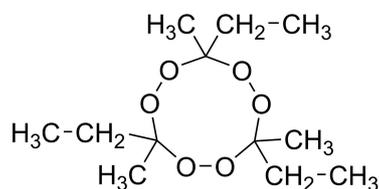


Trigonox 301-TF

3,6,9-triethyl-3,6,9-trimethyl-1,4,7-triperoxonane, solution in isoparaffinic hydrocarbons



Trigonox® 301-TF is an initiator for the production of controlled rheology polypropylene (CR-PP).

CAS number
24748-23-0

EINECS/ELINCS No.
429-320-2

TSCA status
listed on inventory

Molecular weight
264.3

Active oxygen content
peroxide
18.16%

Specifications

Appearance	Clear to slightly hazy liquid
Color, max. 40°C	≤ 50 Pt-Co
Total active oxygen	6.2 - 6.5 %

Characteristics

Density, 20 °C	0.841 g/cm ³
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Applications

Trigonox® 301-TF is an efficient peroxide formulation for the production of controlled rheology polypropylene (CR-PP) in an extrusion process. Trigonox® 301-TF 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.

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® 301-TF in chlorobenzene is:

0.1 hr	at 170°C
1 hr	at 146°C
10 hr	at 125°C
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
E _a	150.23 kJ/mole
A	1.02E+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 may occur with a substance in the packaging as used for transport is the Self-Accelerating Decomposition Temperature (SADT). The SADT is determined on the basis of the Heat Accumulation Storage Test.

SADT	90°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.	40°C
T _s Min.	10°C
Note	When stored according to these recommended storage conditions, Trigonox® 301-TF will remain within the Nouryon specifications for a period of at least 6 months after delivery.

Packaging and transport

The standard packaging is a 1000 l HDPE/steel Intermediate Bulk Container. Delivery in a 30-liter Nourytainer® is also possible in a number of countries. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox® 301-TF is classified as Organic peroxide type F; liquid, Division 5.2; UN 3109.

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 STORE Trigonox® 301-TF ABOVE 10°C! Please refer to the Safety Data Sheet (SDS) for further information on the safe storage, use and handling of Trigonox® 301-TF. 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, Ethane, Methane, Ethyl acetate, Methyl ethyl ketone, Methyl 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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The Nouryon logo consists of a stylized blue 'N' followed by the word 'ouryon' in a lowercase, sans-serif font.