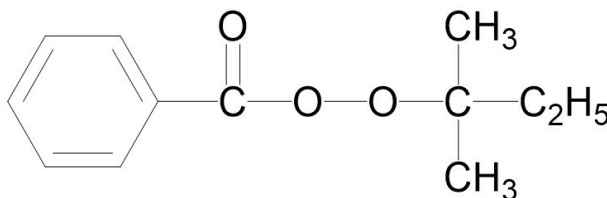


Trigonox 127

Tert-Amyl peroxybenzoate



Trigonox® 127 is a peroxide used for (co)polymerization of styrene in the temperature range of 100-135°C.

CAS number
4511-39-1

EINECS/ELINCS No.
224-831-5

TSCA status
listed on inventory

Molecular weight
208.3

**Active oxygen content
peroxide**
7.68%

Specifications

Active oxygen	≥ 7.22 %
Appearance, 10-15°C	Clear liquid
Assay	≥ 94.0 %

Characteristics

Density, 20 °C	1.010 g/cm ³
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Applications

Polymerization of styrene Trigonox® 127 may be used for the (co)polymerization of styrene in the temperature range of 100-135°C. In practice, combinations of two or more peroxides with diverging activities are used to reduce the residual monomer content in the final polymer and to increase reactor efficiency. During polymerization, the temperature is increased incrementally to insure that the temperature necessary to attain the optimum properties for each peroxide is reached. In this respect, Trigonox® 127 is often used with more active initiators, such as dibenzoyl peroxide (Perkadox L-W75) or tert-butyl peroxy-2-ethylhexanoate (Trigonox® 21S). In a mass process Trigonox® 127 may be used to increase the rate of polymerization.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox® 127 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 139°C (282°F)
1 hr	at 118°C (244°F)
10 hr	at 99°C (210°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
Ea	147.02 kJ/mole
A	8.38E+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	60°C (140°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.	20°C (68°F)
Note	When stored under these recommended storage conditions Trigonox® 127 will remain within the Nouryon specifications for a period of at least three months after delivery.

Packaging and transport

Trigonox® 127 is packed in non-returnable, one gallon polyethylene containers of 8 lb net weight (4 per case) and in 5 gallon polyethylene containers of 35 lb net weight. Both packaging and transport meet the international regulations. For the availability of other packed quantities contact your Nouryon representative. Trigonox® 127 is classified as Organic peroxide type C; liquid; Division 5. 2; UN 3103.

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® 127. 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, Benzene, Benzoic acid, tert-Amyl alcohol, Acetone, 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.

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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.