

Trigonox 42PR

tert-Butyl peroxy-3,5,5-trimethylhexanoate

Trigonox® 42PR is a promoted tert-butyl peroxy ester for the cure of unsaturated polyester and vinylester resins. Trigonox® 42PR can be used which is an aliphatic perester, alternatively Trigonox® 93 is based on an aromatic perester.

CAS number
13122-18-4

EINECS/ELINCS No.
236-050-7

TSCA status
listed on inventory

Specifications

Appearance	Clear liquid
Assay	87.5-91.0 %
Color	≤3 G

Characteristics

Density, 20 °C / 68 °F	0.900 g/cm ³
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Applications

Trigonox® 42PR is a peroxide formulation based on tert-butylperoxy-3,5,5-trimethylhexanoate. Trigonox® 42PR has been developed for the cure of unsaturated polyester resins in combination with a cobalt accelerator in the temperature range of 60°C and higher. Trigonox® 42PR plus a cobalt accelerator can effectively be used as a match for Trigonox® 21 in those areas where the use of Trigonox® 21 is restricted by its official transport and storage temperature of max. +20°C. Application area for the cure system Trigonox® 42PR plus a cobalt accelerator (e.g. Accelerator NL-53N, 10% cobalt) can be e.g.: artificial marble, polymer concrete, filament winding, air drying lacquers. The combination Trigonox® 42PR plus a cobalt accelerator and possibly an amine accelerator like Accelerator NL-63-100 (N,N-Dimethylaniline) is also very suitable for the ambient temperature cure of vinylester resins. Trigonox® 42PR gives in these resins a much faster cure than the commonly applied peroxides Butanox LPT and Trigonox® 239.

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	55°C (131°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.	25°C (77°F)
Ts Min.	-20°C (-4°F)
Note	When stored under these recommended storage conditions, Trigonox® 42PR will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

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® 42PR is classified as Organic peroxide type D; liquid, Division 5.2; UN 3105; PG

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 42PR 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® 42PR. 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, Methane, tert-Butanol, Acetone, 3,3,5-trimethylhexanoic acid

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.