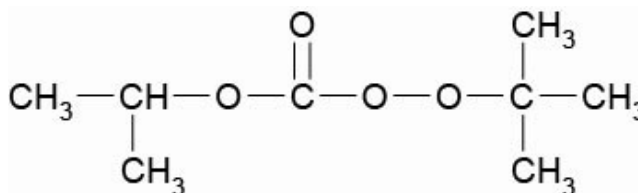


Trigonox BPIC-C75

tert-Butylperoxy isopropyl carbonate, 75% solution in isododecane



Trigonox BPIC-C75 is an aliphatic percarbonate (75% active ingredient in isododecane) used for curing unsaturated polyester resins at elevated temperatures. Specially developed for UP resin-based Hot Press Moulding formulations (SMC, DMC, BMC).

CAS number
2372-21-6

EINECS/ELINCS No.
219-143-7

TSCA status
listed on inventory

Molecular weight
176.2

Active oxygen content
peroxide
9.08%

Specifications

Active oxygen	6.72-6.90 %
Appearance	Clear liquid
Assay	74.0-76.0 %
Color	≤ 10 Pt-Co / APHA
Hydroperoxides as TBHP	≤ 0.10 %
Inorganic + organic hydrolysable chloride	≤ 150 mg/kg
Viscosity, 20°C	2.3 mPa.s

Characteristics

Density, 20 °C	0.900 g/cm ³
Viscosity, 20 °C	2.3 mPa.s

Applications

For Polymer Production: Polymerization of styrene: Trigonox BPIC-C75 can be used for the polymerization and copolymerization of styrene in the temperature range of 95-125°C. During polymerization the temperature is increased in steps. For Thermoset: Trigonox BPIC-C75, tert-butylperoxy isopropyl carbonate, is an aliphatic percarbonate, which is used for the curing of unsaturated polyester resins at elevated temperatures. Trigonox BPIC-C75 is especially developed for the curing of UP resin based Hot Press Moulding formulations (SMC, DMC, BMC etc) in the temperature range of 120 - 170°C. Trigonox BPIC-C75 gives a long shelf life stability of the compound. Trigonox BPIC-C75 can in comparison with Trigonox C, tert-butyl peroxybenzoate, be characterized as a faster and more efficient peroxide. This means a faster and more optimal cure with a lower residual styrene content of the moulded part. In combination with an optimal Low Profile or Low Shrink formulation a very smooth and regular surface of the moulded product can be achieved. The decomposition products of Trigonox BPIC-C75 are low volatile compounds, which makes the peroxide very suitable for the production of e.g. microwave cookware.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox BPIC-C75 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 137°C (279°F)
1 hr	at 117°C (243°C)
10 hr	at 98°C (208°F)
Formula 1	$k_d = A \cdot e^{-E_a/RT}$
Formula 2	$t_{1/2} = (\ln 2)/k_d$
E_a	150.15 kJ/mole
A	2.49E+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	70°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.	25°C (77°F)
T_s Min.	-20°C (-4°F) to prevent crystallization
Note	When stored according to these recommended storage conditions, Trigonox BPIC-C75 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 l HDPE can (Nourytainer) for 25 kg peroxide solution. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox BPIC-C75 is classified as Organic peroxide type C; liquid, Division 5. 2; UN 3103.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox BPIC-C75 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 BPIC-C75. 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, Acetone, tert-Butanol, Isopropanol

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.