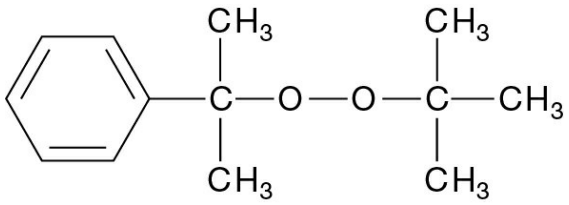
# Trigonox T

## tert-Butyl cumyl peroxide



Trigonox T is an initiator for (co)polymerization of acrylates and methacrylates.

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|---|---|
| CAS number<br>3457-61-2 | EINECS/ELINCS No.<br>222-389-8 |
| TSCA status<br>listed on inventory | Molecular weight<br>208.3 |
| Active oxygen content peroxide<br>7.68% | Concentration<br>7.22-7.37% |

## Specifications

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| Appearance | Clear liquid |
| Assay | 94.0-97.0 % |
| Hydroperoxides as TBHP | ≤ 0.5 % |
| Water | ≤ 0.05 % |

## Characteristics

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| Density, 20 °C | 0.940 g/cm$^3$ |
| Freezing point | 16 (61°F) °C |

## Applications

For Polymer Production the following applications: Polymerization of styrene: Trigonox T can be used for the polymerization and copolymerization of styrene in the temperature range of 95 -125°C. Polymerization of acrylates and methacrylates: Trigonox T can be used as initiator for the solution (co)polymerization of acrylates and methacrylates in the temperature range of 130 170°C, amongst others for the manufacture of coatings. Trigonox T can also be applied as an initiator for the bulk and suspension (co)polymerization of acrylates and methacrylates. For Crosslinking: Trigonox T is a monofunctional peroxide which is used for the crosslinking of natural rubber and synthetic rubbers, as well as polyolefins. Safe processing temperature: 135°C (rheometer ts2 > 20 min.). Typical crosslinking temperature: 175°C (rheometer t90 about 12 min.).

## Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Trigonox T in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

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| 0.1 hr | at 159°C (318°F) |
| 1 hr | at 136°C (277°F) |
| 10 hr | at 115°C (239°F) |
| Formula 1 | kd = A·e-Ea/RT |
| Formula 2 | t½ = (ln2)/kd |
| Ea | 146.98 kJ/mole |
| A | 1.17E+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.

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| SADT | 80°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 (Ts max. ) for each organic peroxide product.

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| Ts Max. | 40°C (104°F) |
| Ts Min. | 16°C (61°F) |
| Note | When stored according to these recommended storage conditions, Trigonox T will remain within the Nouryon specifications for a period of at least 3 months after delivery. |

## Packaging and transport

In North America Trigonox T is packed in non-returnable cartons of 55. 1 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 consult your Nouryon representative. Trigonox T is classified as Organic peroxide type F; liquid, Division 5. 2; UN 3109.

## Safety and handling

Keep containers tightly closed. Store and handle Trigonox T 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). If crystallization occurs, Trigonox T may be melted by indirect heating only. A water bath with a temperature of 30°C max. is recommended. The residence time of the melted peroxide in the water bath must not exceed 48 hours. Please refer to the Safety Data Sheet (SDS) for detailed information on the safe storage, use and handling of Trigonox T. 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, 2-Phenylisopropanol, tert-Butanol, Acetophenone

## Contact Us

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