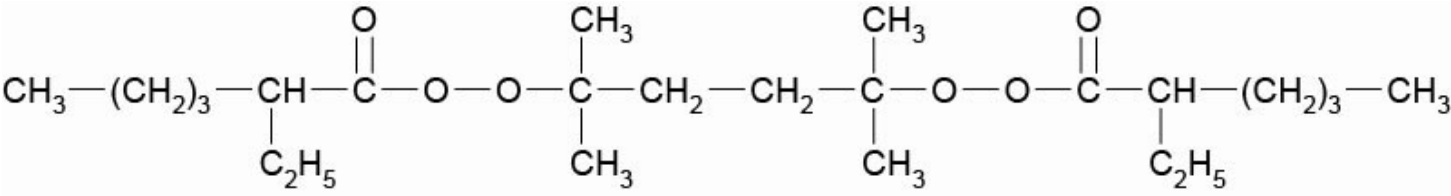
Trigonox 141

2,5-Dimethyl-2,5-di(2-ethylhexanoylperoxy) hexane



Trigonox 141 is a bi-functional perester used for curing unsaturated polyester and vinylester resins at high temperatures.

CAS number
13052-09-0

EINECS/ELINCS No.
235-935-5

TSCA status
listed on inventory

Specifications

Appearance	Clear liquid
Assay	92.0 %
Color	20 Pt-Co max.
Hydroperoxides (as 2,5-dihydroperoxy-2,5-dimethyl-3-hexyne)	2.2 %
Inorganic + organic hydrolysable chloride	100 mg/kg

Characteristics

Density, 20 °C	0.956 g/cm^3
Viscosity, 20 °C	80 mPa.s

Applications

Thermoset: Trigonox 141, 2,5-Dimethyl-2,5-di(2-ethylhexanoylperoxy)hexane, is a di-functional perester which is used for the curing of unsaturated polyester resins at high temperatures. Trigonox 141 is preferred for the curing of UP resin based Hot Press Molding formulations (such as DMC and BMC) in the temperature range of 120 - 160°C. Trigonox 141 is preferably used in combination with a low reactive peroxide like Trigonox C or Trigonox BPIC-C75 and an optimal low Profile SMC formulation for the production of HPM parts with a Class A surface at short molding times. Polymerization of styrene: In suspension polymerization processes, Trigonox 141 can be used for the polymerization of styrene at approximately 90°C. Trigonox 141 has an activity comparable with Dibenzoyl peroxide (Perkadox L-W75). However, the bifunctional Trigonox 141 gives higher molecular weights of the polymer. Applying the same molecular weights means a reduction of polymerization time. Polymerization of acrylates and methacrylates: Trigonox 141 can be used as initiator for the solution (co)polymerization of acrylates and methacrylates in the temperature range of 80-160°C, amongst others for the manufacture of coatings. Trigonox 141 can also be applied as an initiator for the bulk and suspension (co)polymerization of acrylates and methacrylates.

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	35°C (95°F)
Emergency temperature (T_e)	25°C (77°F)
Control temperature (Tc)	20°C (68°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.	15°C
Note	When stored according to these recommended storage conditions, Trigonox 141 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. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox 141 is classified as Organic peroxide type C; liquid, temperature controlled, Division 5. 2; UN 3113.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox 141 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 141. 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, Acetone, 2-Pentanone, Heptane, Heptenes, tert-Amyl alcohol, 2,5-Bis(1-ethylpentoxy)-2,5-dimethylhexane, 2,5-Dimethyl-2,5-hexanediol

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