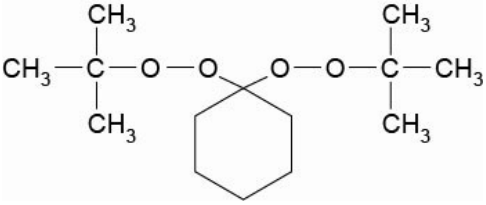
Trigonox 22-C80

1,1-Di(tert-butylperoxy) cyclohexane, 80% solution in isododecane



Trigonox 22-C80 is a highly efficient midrange initiator for curing unsaturated polyester and vinyl ester resins at elevated temperatures. Typical applications include prepreg, premix, BMC, TMC, SMC and pultrusion.

CAS number
3006-86-8

EINECS/ELINCS No.
221-111-2

TSCA status
listed on inventory

Molecular weight
260.4

Active oxygen content peroxide
12.29%

Specifications

Active oxygen	9.58-9.84 %
Appearance	Clear liquid
Assay	78.0-80.0 %
Color	≤ 30 Pt-Co / APHA
tert-Butyl hydroperoxide	≤ 1.0 %

Characteristics

Density, 0 °C	0.85 g/cm^3
Viscosity, 0 °C	2.6 mPa.s

Applications

Polymerization of styrene: Trigonox 22-C80 can be used for the bulk polymerization of styrene in the temperature range between 90 and 120°C. Other applications: Trigonox 22-C80 can also be used for the (co)polymerization of styrene, acrylonitrile, acrylates and methacrylates in the temperature range between 95°C and 125°C. For Thermoset: Trigonox 22-C80 is a highly efficient midrange initiator for curing unsaturated polyester and vinyl ester resins.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Trigonox 22-C80 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 134°C (273°F)
1 hr	at 113°C (235°F)
10 hr	at 94°C (201°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	142.40 kJ/mole
A	3.47E+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
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
Note	When stored under these recommended storage conditions, Trigonox 22-C80 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

Trigonox 22-C80 is packed in non-returnable one gallon polyethylene containers of 7 lb net weight (4 per case) and in five 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 22-C80 is classified as Organic peroxide type C; liquid, Division 5. 2; UN 3103.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox 22-C80 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 22-C80. 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, tert-Butanol, Isomers of isooctane

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