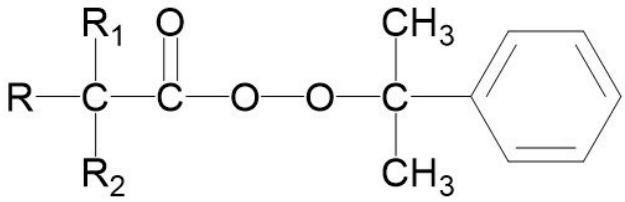
Trigonox 99-CL75

Cumyl peroxyneodecanoate, 75% solution in isoparrafin



Trigonox® 99-C75 is an initiator (75% active ingredient in Isopar L) for (co)polymerization of ethylene, vinyl chloride and vinylidine chloride.

CAS number
26748-47-0

EINECS/ELINCS No.
247-956-7

TSCA status
listed on inventory

Molecular weight
306.4

Active oxygen content peroxide
5.22%

Specifications

Active oxygen	3.86-3.97 %
Appearance	Clear liquid
Assay	74.0-76.0 %
Color	30 Pt-Co / APHA max.
Hydroperoxides as CHP	max. 0.15 %
Inorganic + organic hydrolysable chloride	max. 150 mg/kg

Characteristics

Density, -10 °C	0.962 g/cm^3
Viscosity, -10 °C	74.6 mPa.s

Applications

Polymerization of ethylene: Trigonox® 99-CL75 is an efficient initiator for the production of Low Density Polyethylene (LDPE). It is used both for tubular and autoclave processes. In most cases a combination with other peroxides is used to ensure a broad reactivity range. Polymerization of vinyl chloride: Trigonox® 99-CL75 is used as an initiator for the suspension and mass polymerization of vinyl chloride between 40°C and 65°C. Trigonox® 99-CL75 is often combined with less active peroxides such as peroxydicarbonates (e.g. Perkadox 16) or diacylperoxides (e.g. Laurox) to increase reactor efficiency.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Trigonox® 99-CL75 in chlorobenzene:

0.1 hr	75°C (167°F)
1 hr	56°C (133°F)
10 hr	38°C (100°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	114.59 kJ/mole
A	3.12E+14 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	10°C (50°F)
Emergency temperature (T_e)	0°C (32°F)
Control temperature (Tc)	-10°C (14°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.	-20°C (-4°F)
Note	When stored under these recommended storage conditions, Trigonox® 99-CL75 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

The standard packaging is 20 kg jerrycan. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox® 99-CL75 is classified as Organic peroxide type D; liquid, temperature controlled; Division 5.2; UN 3115.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 99-CL75 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® 99-CL75. 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, 2-Phenylisopropanol, Isomers of neonane

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