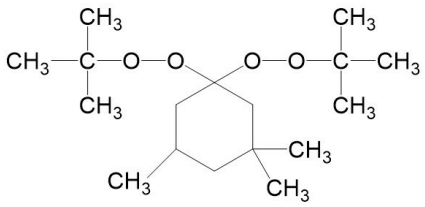
Trigonox 29-CL50

1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane, 50% solution in isoparaffin



Trigonox® 29-CL50 is a 50% formulation of the perketale 1,1-Di(tert-butyl peroxy)cyclohexane in isododecane which is used for the curing of unsaturated polyester resins at elevated temperatures. Trigonox® 29-CL50 is preferred for the curing of UP resin based Hot Press Molding formulations (SMC, DMC, BMC etc.) in the temperature range of 120-170°C. Trigonox® 29-CL50 can also be used in combination with high reactive peroxides like Perkadox® 16 as kicker in formulations for pultrusion in the temperature range of 100-150°C. As Trigonox® 29-CL50 is a perketale, the stability of this peroxide in an UP resin is hardly influenced by the presence of metal accelerators, pigments or fillers. Trigonox® 29-CL50 is therefore very suitable for pigmented and non-pigmented Hot Press Molding formulations where a long shelf life of the compound is required. Trigonox® 29-CL50 is restricted applicable for Low Shrink and Low Profile formulations in view of possible surface imperfections.

CAS number 6731-36-8	**EINECS/ELINCS No.** 229-782-3
TSCA status listed on inventory	**Molecular weight** 302.5
Active oxygen content peroxide 10.58%	**Concentration** 5.18-5.40%

Applications

Trigonox® 29-CL50 can be used in market segments: thermoset composites and acrylic resins with different applications/functions. For more information, please view our website and/or contact us.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Trigonox® 29-CL50 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 128°C (262°F)
1 hr	at 105°C (221°F)
10 hr	at 85°C (185°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	127.52 kJ/mole
A	7.59E+13 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® 29-CL50 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 solution. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox® 29-CL50 is classified as Organic peroxide type E; liquid, Division 5. 2; UN 3107

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 29-CL50 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® 29-CL50. 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, 3,3,5-Trimethylcyclohexanone, tert-Butanol, Acetone

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