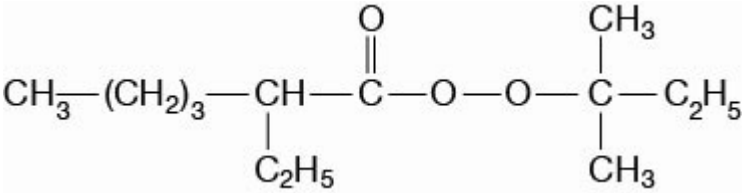
Trigonox 121-C75

tert-Amyl peroxy-2-ethylhexanoate



Trigonox 121-C75 is suitable for use in curing unsaturated polyester, vinyl ester and acrylic thermosetting resins in the temperature range of 80 – 130°C (176 – 266°F).

CAS number
686-31-7

EINECS/ELINCS No.
211-687-3

TSCA status
listed on inventory

Molecular weight
230.3

Active oxygen content peroxide
6.95%

Applications

Polymerization of ethylene: Trigonox 121-C75 may be used for the polymerization of ethylene at high pressure in both autoclave and tubular processes. To obtain a wide spectrum of polymerization temperatures, Trigonox 121-C75 may be used in combination with other peroxides. Trigonox 121-C75 is suitable for use in curing unsaturated polyester, vinyl ester and acrylic thermosetting resins in the temperature range of 80 – 130°C (176 – 266°F). Trigonox 121-C75 offers greater reactivity than Trigonox 21, and finds use in a variety of applications including pultrusion, molding compounds and cured-in-place pipe systems. It is also an effective finishing initiator for use in ambient cured systems to lower residual monomer content and improve cure.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life (t1/2) at various temperatures. For Trigonox 121-C75 in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	at 111°C (232°F)
1 hr	at 91°C (196°F)
10 hr	at 73°C (163°F)
Formula 1	kd = A·e-Ea/RT
Formula 2	t½ = (ln2)/kd
Ea	132.11 kJ/mole
A	1.77E+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	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.	10°C (50°F)
Note	When stored according to these recommended storage conditions, Trigonox 121-C75 will remain within the Nouryon specifications for a period of at least 3 months after delivery.

Packaging and transport

Trigonox 121-C75 is packed in non-returnable, one gallon polyethylene containers of 7 lb net weight. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox 121-C75 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 121-C75 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 121-C75. 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, tert-Amyl alcohol, Heptane, Ethane, Acetone,

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