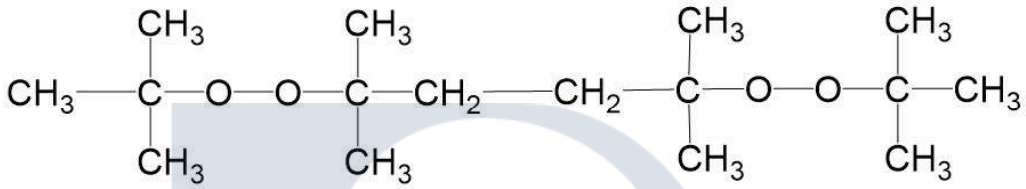
Trigonox 101-20PP

2,5-Dimethyl-2,5-di(tert-butylperoxy) hexane



Trigonox® 101-20PP is an initiator for the production of controlled rheology polypropylene (CR-PP) in the temperature range 200-250°C allowing polypropylene producers great flexibility in controlling a polymer's Melt Flow Index (MFI).

CAS number 78-63-7	EINECS/ELINCS No. 201-128-1
TSCA status listed on inventory	Molecular weight 290.4

Specifications

Active oxygen	1.98-2.42 %
Appearance	White beads
Assay	18-22 %

Characteristics

Bulk density	443 kg/m^3

Applications

Trigonox® 101-20PP is an efficient peroxide formulation for the production of controlled rheology polypropylene (CR-PP) in an extrusion process in the temperature range of 200-250°C. This beads form masterbatch of the liquid Trigonox® 101-20PP allows a more accurate dosage of the peroxide to the polymer. Also a more homogeneous distribution of the peroxide throughout the polymer is of advantage. Using the beads form formulation rather than the liquid form results in a better control of the visbreaking process.

Half-life data

The reactivity of an organic peroxide is usually given by its half-life ($t_{1/2}$) at various temperatures. For Trigonox® 101-20PP in chlorobenzene half-life at other temperatures can be calculated by using the equations and constants mentioned below:

0.1 hr	156°C
1 hr	134°C
10 hr	115°C
Formula 1	$kd = A \cdot e^{-Ea/RT}$
Formula 2	$t_{1/2} = (\ln 2)/kd$
Ea	155.49 kJ/mole
A	1.68E+16 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	80°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.	30°C
Note	When stored under these recommended storage conditions, Trigonox® 101-20PP will remain within the Nouryon specifications for a period of at least 12 months after delivery.

Packaging and transport

The standard packaging is a 15 kg cardboard box and a 110 lb drum. Both packaging and transport meet the international regulations. For the availability of other packed quantities consult your Nouryon representative. Trigonox® 101-20PP is classified as flammable solid, organic, n.o.s., Division 4.1; UN 1325, PG III.

Safety and handling

Keep containers tightly closed. Store and handle Trigonox® 101-20PP 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® 101-20PP. This information should be thoroughly reviewed prior to acceptance of this product. The SDS is available at nouryon.com/sds-search.

Major decomposition products

Acetone, tert-Amyl alcohol, Methane, Ethane, tert-Butanol

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