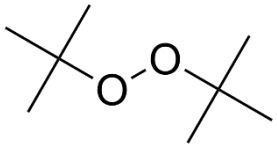
DTBP

Di-*tert*-butyl peroxide
CAS#110-05-4
Technically pure, liquid

Structural Formula



Description

Colourless, mobile liquid, consisting of technically pure di-*tert*-butyl peroxide. This highly volatile dialkyl peroxide is used as an initiator (radical source) in the polymerisation of monomers and crosslinking of polyethylene.

Technical Data

Appearance	colourless liquid
Assay (GC)	> 99 % w/w
Active oxygen (AO)	> 10.8 % w/w
Density at 20 °C	approx. 0.79 g/cm^3
Viscosity at 20 °C	approx. 0.8 mPa·s
Refractive index at 20 °C	approx. 1.389
Miscibility	not miscible with water, miscible with nonpolar organic solvents
Vapour pressure at 20 / 40 / 110 °C	25 / 75 / 1000 mbar
Critical temperature (SADT)	80 °C
Cold storage stability	liquid to below -25 °C
Recommended storage temperature	< 40 °C
Storage stability as from date of delivery	12 months

Standard Packaging

20 kg HDPE canister
160 kg metal drums

Half-life Data

10 h / 1 h / 1 min (benzene, 0.1 mol/L)	125 °C / 146 °C / 190 °C

Application

ETHYLENE:
Initiator for high-pressure polymerisation in combination with other peroxides of varying degrees of activity
Temperature range: 220 - 280 °C
Particular advantage: liquid even at low temperatures and under high pressure, high conversion rates

(METH-)ACRYLATES:
Initiator for the polymerisation of (meth-)acrylates
It can also be used in combination with more active peroxides (*e.g. tert*–butylperoxy-2-ethyl hexanoate, TBPEH).
Temperature range: 120 - 180 °C.
Usage level: 0.05 - 0.1 % as supplied

STYRENE:
Initiator for the polymerisation of styrene in mass and solvent
It can also be used in combination with more active peroxides or oxygen.
Temperature range: 140 – 180 °C
Usage level: 0.02 - 0.1 % as supplied
Particular advantage: reduction of residual monomer content in the polymer

GRAFT POLYMERISATION:
Standard initiator for the styrenisation of alkyd resins
Styrene is grafted onto the unsaturated chain of alkyd resin in order to approve the properties of the paint raw materials.
Temperature range: 140 -160 °C
Usage level: 0.5 - 2 % as supplied

Decomposition Products

Possible detectable decomposition products: *tert*-butyl alcohol, acetone, methane, ethane, methyl *tert*-butyl ether (MTBE)

Storage

Avoid any source of heat and light and protect the product from impurities. Keep within safe temperature limits.

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