Technical Data Sheet

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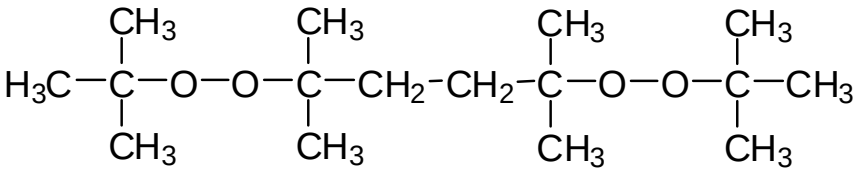
DHBP

2,5-Dimethyl-2,5-di (tert .butylperoxy) hexane
CAS#78-63-7
Liquid, techn. pure
Molar mass: 290.4 g/mol

Structural Formula



Description

Colourless, mobile liquid, consisting of technically pure 2 .5-Dimethyl 2 .5-di(tert .butyl peroxy) hexane .This bifunctional dialkyl peroxide is used as an initiator (radical source) in the crosslinking of polymers, and the rheology control of polypropylene.

Technical Data

Appearance	colourless liquid
Purity (GC)	approx. 94% w/w
Active oxygen (calculated)	approx. 10.4% w/w
De-sensitising agent	none
Density at 20 °C	approx. 0.87 g/cm^3
Viscosity at 20 °C	approx. 7 mPa.s
Refractive index at 20 °C	approx. 1.422
Colour index (Hazen)	approx. 50-80
Miscibility	not miscible with water, miscible with alcohols, esters
Vapour pressure at 50/80/110 °C	8/27/95 mbar
Critical temperature (SADT)	approx. 90 °C
Cold storage stability	freezing point below 10 °C
Recommended storage temperature	10 to 40 °C
Storage stability as from date of delivery	12 months

This product is in compliance with the ElektroG (E U-Directives: RoHS 2002/95/EG, WEEE 2002/96/EG)

Half-life-time

10 h/1 h/1 min (0.1 m/benzene): 120/142/190 °C

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Application

POLYMER CROSSLINKING:

A peroxidic crosslinking agent for many polymers, especially polyethylene (LDPE, HDPE), ethylene/vinyl acetate copolymer (EAM), ethylene/propylene/(diene) rubber (EPM, EPDM), silicone rubber (VMQ) and fluor elastomers. Crosslinking temperature: above 170°C. At below 140°C no premature crosslinking (scorch) occurs. Usage level: 0.5-3% w/w of product as supplied on material to be crosslinked. With a few unreactive polymers, crosslinking efficiency can be improved by the addition of 1-5% w/w of coagents (e.g. TAC or EDMA).

Special advantages:

Efficient and very versatile. Liquid, that means pumpable. So-called "direct dosing" possible within the extruder but also tumbling of polymer powder and liquid peroxide within a drum mixer. Volatile, odour free decomposition products, and no blooming of the vulcanisate surface.

Measurements - Crosslinking Performance

Crosslinking of LDPE (Lupolen 1810-H) within Monsanto rheometer 100-S (Torsion angle 3°, chamber volume 7.3 cm^3)						
Influence of temperature on crosslinking time, 1.5% DHBP						
Temperature [°C]	150	160	170	180	190	200
Scorch time [min]	8.5	4.5	2.3	2.1	1.3	1.0
Crosslinking time t_{50} [min]	-	20	7.0	5.1	2.9	1.9
Crosslinking time $t9_0$ [min]	-	60	21	11	5.5	3.3
Influence of peroxide level on degree of crosslinking						
DHBP-level [% AO]	0.06	0.09	0.12	0.15	0.18	0.21
DHBP-level [% w/w]	0.60	0.90	1.20	1.50	1.80	2.10
Crosslinking time $t9_0$ [min]	12	10	9.8	9.5	9.0	8.5
torque [Nm]	1.4	2.0	2.6	3.5	4.0	4.8
*) gel content [%]	83	86	89	92	93	94
*) swelling index	11	10	9.0	8.0	7.0	5.5

*) extraction in xylene: 6 h at 135°C

Further information on organic peroxides for polymer crosslinking can be found in our technical brochures on this subject.

Standard Packaging

25 kg (55,12 lb) in Polyethylene cans

Disclaimer

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