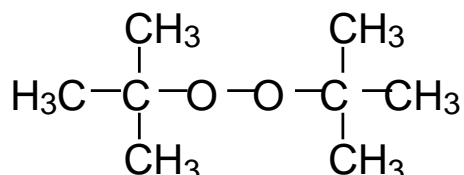


# Technical Data Sheet

## MATRINOX DTBP

Di(tert.-butyl)peroxide  
CAS#110-05-4  
Liquid, techn. pure  
Molar mass: 146.2 g/mol

### 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, crosslinking of polyethylene, and rheology control of polypropylene.

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Appearance	colourless liquid
Purity (GC)	>96-98%
Active oxygen (calculated)	> 10.8%
Density at 20 °C	approx. 0.79 g/cm <sup>3</sup>
Viscosity at 20 °C	approx. 0.8 mPa.s
Refractive index at 20 °C	approx. 1.389
Miscibility	immiscible with water, miscible with organic solvents
Vapour pressure at 20/40/110 °C	25/75/1000 mbar
Critical temperature (SADT)	above 80 °C
Cold storage stability	liquid to below -25 °C
Recommended storage temperature	below 40 °C
Storage stability as from date of delivery	12 months

### Half-life-time

10 h/1 h/1 min (0.1 m/benzene): 125/146/190 °C

### Application

#### POLYMER CROSSLINKING:

A peroxidic crosslinking agent for polyethylene (HDPE and LDPE). Crosslinking temperature: above 180°C. At below 150°C no premature crosslinking (scorch) occurs. Usage level: 0.5-2% w/w of product as

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supplied on the material to be crosslinked.

Special advantages: Extremely effective and relatively scorch free. Volatile, odour free decomposition products, and no blooming of the vulcanisate surface. The high volatility of the product demands that closed systems are applied during compounding and diffusion processes with polyethylene powder. MATRINOX DTBP is used especially in extrusion processes ( RAM-Extrusion for pressure pipes)

## CR-POLYPROPYLENE:

A radical source to control the rheology of polypropylene. Temperature range: 200°C - 220°C. Dosage level: 0.01% - 0.1% w/w of product as supplied, based on the polymer. This degradation (e.g. in an extruder) lowers the molecular weight mean, and permits easier (re-)processing of the polypropylene. The melt-flow index of the controlled rheology is dependent on the peroxide levels employed.

## Crosslinking properties of HDPE (LUpolen 4261A):

with Monsanto-Rheometer 100-S (torsionsangle 3°)

Temperature [°C]	150	160	170	180	190	200	210
Scorch-time [min]	10	4.5	2.5	1.8	1.4	1.0	0.7
Crosslinking time t <sub>50</sub> [min]	-	20	10	5.6	3.3	2.2	1.6
Crosslinking time t <sub>90</sub> [min]	-	60	25	12	6.5	3.8	2.5

MATRINOX DTBP [% AO]		0.03	0.06	0.09	0.12
MATRINOX DTBP [%w/w]		0.28	0.56	0.85	1.13
Crosslinking time t <sub>90</sub> [min]	4.4	4.0	3.7	3.4	3.2
Torque Tmax [Nm]	5.7	7.6	9.2	11	12
*) Gel content [%]	93	> 99	> 99	> 99	> 99
*) Swelling index	4.0	2.7	2.0	1.7	1.5

0.15  
1.41

\*) Extraction in xylene: 6 h at 135 °C

## “Vis-breaking”-Efficiency

% w/w usage level (as supplied)	MFI [g/10 min] at 230 °C /2,16		
	kg		
	MATRINOX DTBP	DHBP	
		DIPP-2	
-	2.7	2.7	2.7
0.02	19	22	19
0.04	32	38	33
0.06	66	62	45
0.08	90	79	75
0.10	160	105	102

## Standard Packaging

20kg/25 kgs in polyethylene cans

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