

NOROX[®]PULCAT S

Methyl isobutyl ketone peroxide
CAS#37206-20-5
Liquid mixture, high activity

Structural Formula

Description

Colourless, mobile liquid, consisting of peroxides based on methyl isobutyl ketone, de-sensitised with aliphatic hydrocarbons. This ketone peroxide is used as an initiator (radical source) in the curing of unsaturated polyester resins. Main application: curing of large moulded parts at elevated temperatures (60-120°C).

Technical Data

Appearance	colourless liquid
Active oxygen	approx. 10.5 % w/w
De-sensitising agent	aliphatic ester
Density at 20°C	approx. 0.89 g/cm ³
Viscosity at 20°C	approx. 5 mPas
Miscibility	immiscible with water, miscible with alcohols and phthalates
Critical temperature (SADT)	approx. 50 °C
Cold storage stability	liquid to below -25 °C
Kick-off temperature	approx 55 °C
Recommended storage temperature	below 25 °C
Maintenance of activity at 25°C as from date of delivery	6 months

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

Application

Application - Polyester curing

- Usage level:

Curing agent for UP resins, possibly in combination with cobalt accelerator. Temperature range: 60-120°C. Usage level: 1-2% as supplied with 0.1-0.5% Accelerator COB-1TX if required. Also curing at ambient temperature is possible.

"Shelf life" (gel time of resin + peroxide) usually 4-8 hours at ambient temperature. Prolongation can be achieved only by decreasing the storage temperature. "Pot life" (gel time of resin + peroxide + accelerator) usually 1-3 hours at ambient temperature. Prolongation is possible by addition of Inhibitor TC-510.

- Curing characteristics:

Relatively long gel time but short cure time at ambient temperature in combination with cobalt accelerators. Above approx. 55°C ("kick-off" temperature) relatively fast curing even without cobalt. Moderate evolution of heat, little internal stress. Moderate degree of cure, post-curing at 80-120°C therefore recommendable.

- Processing methods:

Specially developed to offer a relatively long shelf life combined with the lowest possible kick-off temperature. Thus suitable in particular for continuous impregnation of (corrugated) sheets and the applied gelcoats, as well as filament winding of pipes and tanks.

Measurements

Reactivity for the cold curing of polyester resins:

Resin: Orthophthalic polyester, medium reactive Temperature: 25°C
Method: DIN 16945 (20 g test tube). Formulation: parts by weight

Formulation						
OPA Resin	100	100	100	100	100	100
NOROX® PULCAT S	2	2	2	2	1	1
Co-1%	2	1	0.5	0.2	1	0.5
Gel time t _{gel} (min)	12.0	20.0	41.5	>90	48.5	>90
Curing time t _{max} (min)	29.0	38.5	67.5	-	90.0	-
Peaktemperature T _{max} (°C)	133	134	122	-	80	-

Reactivity for the curing of polyester resins at elevated temperatures:

Resin: Orthophthalic polyester, medium reactive
Method: DIN 16945 (20 g test tube) at different temperatures.
Formulation: parts by weight

Bath temperature (°C)	50	50	60	60	70	70	80	80
Formulation								
OPA Resin	100	100	100	100	100	100	100	100
NOROX® PULCAT S	2	2	2	2	2	2	2	2
Co-1%	-	0.5	-	0.5	-	0.5	-	0.5
Gel time t _{gel} (min)	35.0	16.0	23.0	13.0	17.5	10.5	14.0	9.0
Curing time t _{max} (min)	45.0	21.0	28.0	16.5	20.5	13.5	16.5	11.5
Peaktemperature T _{max} (°C)	176	174	193	183	201	188	206	193

Packaging

Standard packaging of NOROX®PULCAT S is 20 kg.

Disclaimer

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