

ISO 9002
All Production Sites
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Research and Headquarters

Curing Agents for Thermoset Resins

SALES AND TECHNICAL SERVICES

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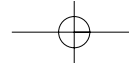


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CURING AGENTS FOR THERMOSET RESINS

Trade name	Features	Active Oxygen Content %	Delivery form	Ambient temperature										Elevated temperature			High temperature	Special Resins
				Hand lay-up and Spray-up	RTM	Polymer Concrete & Marble	Gelcoats	Body Fillers	Chemical Anchors & Mine bolts	Coatings	Buttons	Centrifugal Casting	Filament Winding	Continuous Laminating	Pultrusion	Hot Press Moulding	Vinylesters	Acrylics
KETONE PEROXIDES																		
Butanox 28	Very high reactive MEKP	9.0	liquid															
Butanox HBO-50	High reactive MEKP	9.9	liquid	●	●	●	●											
Butanox M-50	Standard, medium reactive MEKP	8.9	liquid	●	●	●	●											
Butanox M-50VR	Vanishing red version	8.9	liquid	●	●	●	●										○	
Butanox M-60	Standard, medium reactive MEKP	9.9	liquid	●	●	●	●											
Butanox M-60VRD	Vanishing red version	9.9	liquid	●	●	●	●										○	
Butanox LA	Low reactive MEKP	8.7	liquid	●	●	●	●											
Butanox LPT	Very low reactive MEKP	8.5	liquid	●	●	●	●											
Butanox LPT-IB-94	Very low reactive MEKP	8.0	liquid	●	●	●	●											
Butanox P-50	Fast cure MIPKP	6.4	liquid	●	●	●	●										○	
Trigonox 44B	Fast cure AAP	4.1	liquid	●	●	●	●											
Trigonox HM	Standard MIBKP	8.8	liquid															
Cyclonox 11	High reactive COX	4.8	liquid	●														
Cyclonox LE-50	Standard medium reactive COX	5.4	liquid	●														
Cyclonox LR	Low reactive COX	5.0	liquid	●														
Cyclonox LR-50EA	Diluted low reactive COX	2.5	liquid															
DIACYL PEROXIDES																		
Perkadox CH-50	BPO powder for standard applications	3.3	powder	●	●	●												
Perkadox CH-50L	BPO powder for transparant applications	3.3	powder	●	●	●												
Perkadox CH-50X	BPO powder for standard applications, 'free flowing'	3.3	powder	●	●	●												
Perkadox CH-34RP	BPO powder on filler	2.2	powder			●												
Perkadox BT-50	Standard BPO paste	3.3	paste															
Perkadox BTW-50	Phthalate free BPO paste	3.3	paste															
Perkadox BL-50	Very low water content BPO paste	3.3	paste															
Perkadox 40-E	Pumpable suspension BPO	2.6	suspens.	●	●	●												
Perkadox 33	BPO powder on filler	2.2	powder			●												
Perkadox 20S	20% BPO on filler	1.3	powder			●												
PERESTERS																		
Trigonox C	tert.butylperbenzoate	8.0	liquid															
Trigonox 93	tert.butylperbenzoate/promoter	6.5	liquid	●														
Trigonox 141	High reactive, efficient perester	6.7	liquid															
Trigonox 21	Standard tert.butylperoxoate	7.0	liquid															
Trigonox 21LS	Trigonox 21 for very long compound shelf life	6.6	liquid															
Trigonox 42S	tert.butylperoxyisononanoate	6.7	liquid															
Trigonox 42PR	tert.butylperoxyisononanoate/promoter	6.0	liquid	●														
PERKETALES																		
Trigonox 22-B50	Standard perketale for long compound shelf life	6.1	liquid															
Trigonox 29-B50	Standard perketale for long compound shelf life	5.3	liquid															
Trigonox 22-C50	Standard perketale for long compound shelf life	6.1	liquid															
Trigonox 29-C50	Standard perketale for long compound shelf life	5.3	liquid															
OTHERS																		
Trigonox K-90	Cumylhydroperoxide	9.3	liquid															
Trigonox 239	Cumylhydroperoxide/promoter	4.6	liquid															
Perkadox 16	High reactive percarbonate	3.9	powder															
Trigonox BPIC-C75	percarbonate, high efficiency	6.8	liquid															
Trigonox 117	percarbonate high efficiency	6.2	liquid															
PEROXIDE MIXTURES																		
Trigonox 51	AAP mixture with low peak exotherm	5.8	liquid	●	●	●												
Trigonox 61	Fast cure MEKP/AAP mixture	7.8	liquid	●	●	●	●											
Trigonox 63	Fast cure MEKP/AAP mixture	6.6	liquid	●	●	●												
Trigonox 71	Low reactive ketone peroxide mix, very low peak exotherm	9.9	liquid	●														
Trigonox 75	Medium reactive MEKP, with reduced peak exotherm	9.9	liquid	●	●	●												
Trigonox 82	Low reactive MEKP, with very low peak exotherm	8.5	liquid	●	●													
Trigonox 269	AAP/perester with efficient cure	3.5	liquid	○														
Trigonox 524	AAP/perester with efficient cure	4.8	liquid	○														

MEKP = Methyl ethyl ketone peroxide, AAP = Acetylacetone peroxide, COX = Cyclohexanone peroxide, MIBKP = Methyl isobutyl ketone peroxide, BPO = Dibenzoyl peroxide

○ for special applications

ACCELERATORS AND OTHER AUXILIARIES FOR THERMOSET RESINS

Chemical description	Trade name	Content %
COBALT ACCELERATORS		
Cobalt octoate in plasticizer	Accelerator NL-48P	0.5
Cobalt octoate in plasticizer	Accelerator NL-49P	1
Cobalt octoate in plasticizer	Accelerator NL-51P	6
Cobalt octoate in organic solvent	Accelerator NL-53	10
Cobalt/Amine mix	Accelerator NL-23	3
Metal Complex	Accelerator 383	4
Metal Complex	Accelerator 553	1.9
Cobalt Mix	Accelerator 55028	2.2

Mainly used in combination with ketone peroxides (e.g. Butanox) for the cure of unsaturated polyester resins at room temperature and elevated temperatures.

AMINE ACCELERATORS		
Dimethyl aniline, pure	Accelerator NL-63-100	99
ditto, in plasticizer	Accelerator NL-63-10P	10
Diethyl aniline, pure	Accelerator NL-64-100	99
ditto, in plasticizer	Accelerator NL-64-10P	10
Dimethyl-p-toluidine, pure	Accelerator NL-65-100	99
ditto, in plasticizer	Accelerator NL-65-10P	10

Mainly used in combination with dibenzoyl peroxide at room temperature.

INHIBITORS		
p-tert-Butyl catechol in styrene	Inhibitor NLC-1	1
p-tert-Butyl catechol in plasticizer	Inhibitor NLC-10	10
2,6-Di-tert-butyl-p-cresol in styrene	Inhibitor NLD-20	20

Inhibitors extend geltime and potlife of curing systems at room temperature and elevated temperatures.

RELEASE AGENTS	TYPE
Mixture of waxes	Release Agent NL-1
Polyvinylalcohol in ethanol	Release Agent NL-2

Improve the release of the moulded product from the mould.

PROMOTERS	
2,4-Pentanedione	Promoter C
Di-ethylacetoacetamide	Promoter D

Promoter C and Promoter D can be used as promoter for cobalt accelerator based cure systems.

UV-INITIATORS	
Benzoine ether	Trigonal 15

COLOURS	
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Coloured versions of peroxides are available for a limited number of ketone and diacyl peroxides.



Directives for the safe handling and storage of Akzo Nobel Peroxides

Storage

Organic peroxides should be stored in their original packings at 25 °C max., unless otherwise indicated on the label. Organic peroxides should be protected against all sources of heat, even direct sunlight. Storage together with other chemicals, especially ACCELERATORS, other reducing materials and inflammable products, must be avoided.

Handling - fire hazard

No smoking, no naked lights, no sparks or other sources of ignition.

Handling - explosion hazard

Avoid direct contact of organic peroxides with accelerators; add each component separately to the resin. Contamination with dust, heavy metals and their compounds, as well as chemicals in general, should be avoided.

Handling - eye and skin injury

Always wear safety goggles and protective gloves since organic peroxides have a corrosive effect on eyes and skin.