



UNITED INITIATORS

driving your success



Polymer Manufacturing

Product Range

Driving your Success

United Initiators ("UI") is the largest, focused global producer of specialty chemical initiators and the only player worldwide providing a full range of both organic peroxides and persulfates (inorganic peroxides). We are the leading manufacturer of persulfates and among the top three suppliers of organic peroxides worldwide. Our network allows us to serve our customers both on a local and global scale. Supply reliability and quality are critical when it comes to peroxides and this is one of the key factors why customers choose United Initiators.

Our products are essential ingredients for many applications and products in our daily life and are necessary to produce a large range of polymers and polymer-based materials. The application of our products goes well beyond polymers. They are used in consumer areas such as hair bleaching, disinfection, denture cleansing and tooth whitening. Industrial applications include etching of printed circuit boards, chemical synthesis, oil & gas exploration, soil remediation and many more. Continuous improvement and innovation on all levels enables us to effectively respond to changing and growing market needs.

Safety is a very crucial factor to be successful in our industry. United Initiators adheres to highest safety standards in production and the entire supply chain. We offer all our customers in-depth service and training to handle our products in a safe and efficient manner. In our daily global operations our continuous focus is on maintaining high environmental standards. Sustainability is another focal point within our organization and we are committed to optimizing our processes and enhancing our energy efficiency.

It is among our primary goals to serve our customers with products of consistent quality and highly reliable services. We continuously optimize our operations and supply chain to assure high safety and overall reliability. Our global footprint allows us to offer services both to regional and global customers in an effective manner.

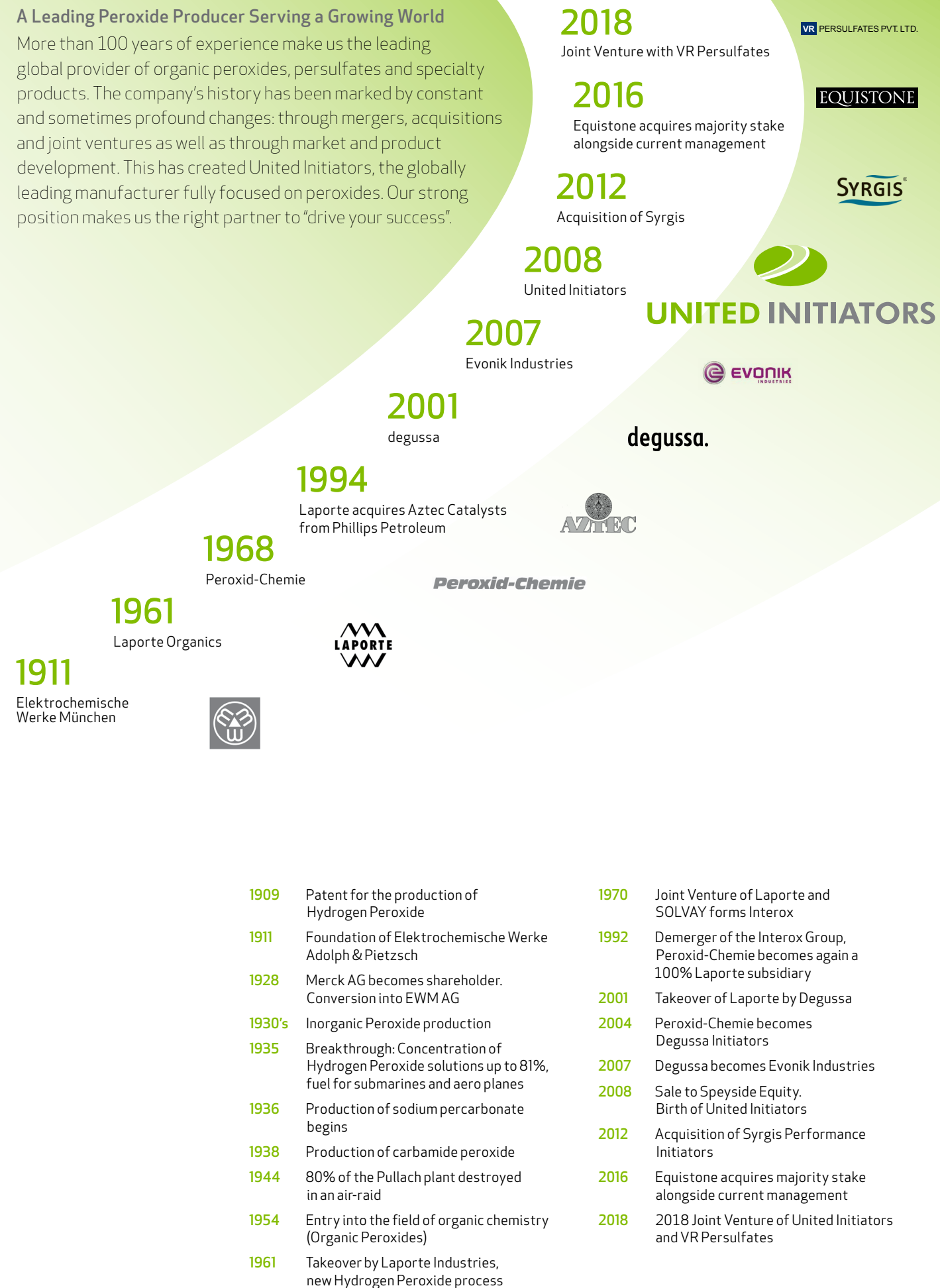
Locations

United Initiators is a global company with headquarters in Pullach/Germany and operations in various sites in North America, Asia and Australia.



A Leading Peroxide Producer Serving a Growing World

More than 100 years of experience make us the leading global provider of organic peroxides, persulfates and specialty products. The company's history has been marked by constant and sometimes profound changes: through mergers, acquisitions and joint ventures as well as through market and product development. This has created United Initiators, the globally leading manufacturer fully focused on peroxides. Our strong position makes us the right partner to "drive your success".

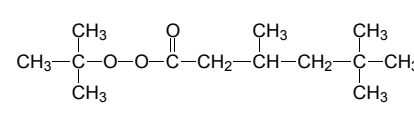
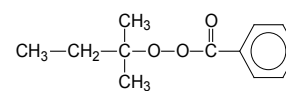
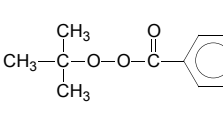
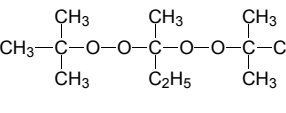
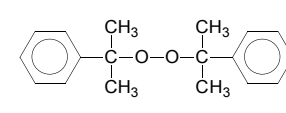
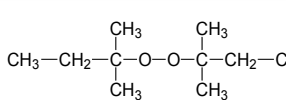


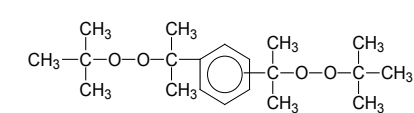
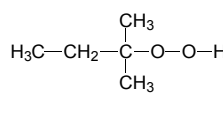
PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION				APPLICATION								
ORGANIC PEROXIDES			%	%		SADT	Tc (control temperature)	min. storage temperature*	max. storage temperature*	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others	
						°C/°F	°C/°F	°C/°F	°C/°F									
Cumylperoxyneodecanoate (CAS No. 26748-47-0)																		
CUPND-75-AL	$\text{C}_6\text{H}_5\text{-CH(CH}_3\text{)-O-O-C(=O)-C(CH}_3\text{)(R}_1\text{)-R}_2$ $\text{R}_1+\text{R}_2=\text{C}_7\text{H}_{16}$	75%, solution in aliphatics	75	3,9	HDPE canisters	15/59	-10/14	-	-15/5	●								
CUPND-50-ENF1		50%, non freezing emulsion	50	2,6	IBC	10/50	-10/14	-	-15/5	●								
1,1,3,3-Tetramethylbutyl peroxyneodecanoate (CAS No. 51240-95-0)																		
TOPND-70-AL	$\text{H}_3\text{C-C(CH}_3\text{)}_2\text{-CH}_2\text{-C(CH}_3\text{)}_2\text{-O-O-C(=O)-C(CH}_3\text{)(R}_1\text{)-R}_2$ $\text{R}_1+\text{R}_2=\text{C}_7\text{H}_{16}$	70%, solution in isododecane	70	3,7	HDPE canisters	15/59	-5/23	-	-15/5	●								
TOPND-50-ENF1		50%, non freezing emulsion	50	2,7	IBC	15/59	-5/23	-	-15/5	●								
tert.Amylperoxyneodecanoate (CAS No. 68299-16-1)																		
TAPND-75-AL	$\text{CH}_3\text{-CH}_2\text{-C(CH}_3\text{)}_2\text{-O-O-C(=O)-C(CH}_3\text{)(R}_1\text{)-R}_2$ $\text{R}_1+\text{R}_2=\text{C}_7\text{H}_{16}$	75%, solution in aliphatics	75	4,6	HDPE canisters	20/68	0/32	-	-15/5	●	●							
TAPND-75-AL1 (US)		75%, solution in aliphatics	75	4,6	HDPE canisters	20/68	0/32	-	-15/5	●	●							
Di(2-ethylhexyl)peroxydicarbonate (CAS No. 16111-62-9)																		
EHPC-75-AL	$\text{C}_2\text{H}_5\text{-CH(CH}_3\text{)-CH}_2\text{-O-C(=O)-O-O-C(=O)-O-CH}_2\text{-CH(CH}_3\text{)-C}_2\text{H}_5$	75%, solution in aliphatics	75	3,5	HDPE canisters	5/41	-15/5	-	-15/5	●	●							
EHPC-60-ENF1		60%, non freezing emulsion	60	2,8	IBC	5/41	-5/41	-	-15/5	●								
EHPC-50-ENF1		50%, non freezing emulsion	50	2,3	IBC	5/41	-15/5	-	-15/5	●								
Di(4-tert.butylcyclohexyl)peroxydicarbonate (CAS No. 15520-11-3)																		
BCHPC		powder, technically pure	95	3,8	cartons	45/113	30/86	-	20/68	●		●		●		●		
BCHPC-75-W		powder, water damped	75	3,0	cartons	45/113	30/86	5/41	20/68	●					●		●	
BCHPC-40-SAQ1		40%, aqueous suspension	40	1,6	IBC, canisters	40/104	30/86	0/32	20/68	●		●			●			
Dicetylperoxydicarbonate (CAS No. 26322-14-5)																		
CEPC	$\text{CH}_3\text{-(CH}_2\text{)}_{15}\text{-O-C(=O)-O-O-C(=O)-O-(CH}_2\text{)}_{15}\text{-CH}_3$	flakes, technically pure	96	2,7	cartons	40/104	30/86	-	20/68	●				●				
Dimyristylperoxydicarbonate (CAS No. 53220-22-7)																		
MYPC	$\text{CH}_3\text{-(CH}_2\text{)}_{13}\text{-O-C(=O)-O-O-C(=O)-O-(CH}_2\text{)}_{13}\text{-CH}_3$	flakes, technically pure	97	3,0	cartons	35/95	20/68	-	20/68	●			●		●			

PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT %	ACTIVE OXYGEN %	STANDARD PACKAGING	SAFETY INFORMATION SADT °C/°F	Tc (control temperature) °C/°F	min. storage temperature* °C/°F	max. storage temperature* °C/°F	APPLICATION	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others
ORGANIC PEROXIDES																		
tert. Butylperoxyneodecanoate (CAS No. 26748-41-4)																		
TBPND	 <p style="text-align: center;">$R_1+R_2=C_7H_{16}$</p>	liquid, technically pure	95	6,2	HDPE canisters	15/59	-5/23	-	-10/14	●	●		●		●			
TBPND-75-AL		75%, solution in isododecane	75	4,9	HDPE canisters	15/59	0/32	-	-10/14	●	●		●		●			
TBPND-75-AL1 (US)		75%, solution in OMS	75	4,9	HDPE canisters	15/59	0/32	-	-10/14	●	●		●					
TBPND-50-ENF1		50%, non freezing emulsion	50	3,3	IBC	15/59	0/32	-	-10/14	●								
TBPND-30-AL		30%, solution in isododecane	30	2,0	IBC	15/59	0/32	-	-10/14	●	●						●	
tert. Amylperoxypivalate (CAS No. 29240-17-3)																		
TAPPI-75-AL		75%, solution in isododecane	75	6,4	HDPE canisters	25/77	10/50	-	-5/23	●	●						●	
TAPPI-75-AL1 (US)		75%, solution in OMS	75	6,4	HDPE canisters	25/77	10/50	-	-5/23	●	●							
tert. Butylperoxypivalate (CAS No. 927-07-1)																		
TBPPI-75-AL		75%, solution in isododecane	75	6,9	HDPE canisters	20/68	0/32	-15/5	-5/23	●	●							
TBPPI-75-AL1 (US)		75%, solution in OMS	75	6,9	HDPE canisters	20/68	0/32	-15/5	-5/23	●	●							
TBPPI-25-AL		25%, solution in isododecane	25	2,3	IBC	25/77	10/55	-15/5	-5/23		●							
TBPPI-40-AL		40%, solution in isododecane	40	3,7	IBC	25/77	10/55	-15/5	-5/23		●							
Di(3,5,5-trimethylhexanoyl)peroxide (CAS No. 3851-87-4)																		
INP-75-AL		75%, solution in isododecane	75	3,8	HDPE canisters	20/68	0/32	-10/14	0/32	●	●						●	
Dilauroylperoxide (CAS No. 105-74-8)																		
LP		flakes, technically pure	99	4,0	cartons	50/122	-	-	30/86	●							●	
LP-40-SAQ		40%, aqueous suspension	40	1,6	IBC	50/122	-	0/32	30/86	●								
CUROX LP-CL2		80% powder, water damped	80	3,2	cartons	50/122	-	0/32	30/86	●			●					
Di(2,4-dichlorobenzoyl)peroxide (CAS No. 133-14-2)																		
DCLBP-50-PSI		50%, paste in silicone oil	50	2,1	HDPE drum	60/140	-	-	30/86				●					
Di(4-methylbenzoyl)peroxide (CAS No. 895-85-2)																		
PMBP-50-PSI		50%, paste in silicone oil	50	3,0	HDPE drum	90/194	-	-	25/77				●					

PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION	Tc (control temperature)	min. storage temperature*	max. storage temperature*	APPLICATION	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others
ORGANIC PEROXIDES			%	%		°C/°F	°C/°F	°C/°F	°C/°F									
Dibenzoylperoxide (CAS No. 94-36-0)																		
BENOX A-75		powder, water damped	75	4,95	cartons	70/158	-	5/41	30/86					●	●		●	
BP-50-FT		50%, powder with phthalate	50	3,3	cartons, minibags	60/140	-	-	30/86				●		●			
BP-30-FT1		30%, powder with phthalate, chalk	34	2,2	cartons, minibags	60/140	-	-	30/86				●		●			
BP-40-SAQ		40% aqueous suspension	40	2,7	IBC	80/176	-	0/32	30/86				●					●
tert.Amylperoxy-2-ethylhexanoate (CAS No. 686-31-7)																		
TAPEH		liquid, technically pure	99	6,9	HDPE canisters	40/104	20/68	-	10/50		●		●	●	●		●	
TAPEH-75-AL1 (US)		75%, solution in OMS	75	5,2	HDPE canisters	40/104	20/68	-	10/50		●				●			
TAPEH-75-FT (US)		75%, liquid in phthalate	75	5,2	HDPE canisters	40/104	20/68	-	10/50				●					
tert.Butylperoxy-2-ethylhexanoate (CAS No. 3006-82-4)																		
TBPEH		liquid, technically pure	>99	7,3	HDPE canisters	40/104	20/68	-	10/50		●		●	●	●		●	
TBPEH-50-AL		50%, solution in isododecane	50	3,7	IBC	40/104	30/86	-	15/59		●							
TBPEH-30-AL		30%, solution in isododecane	30	2,2	IBC	40/104	30/86	-	10/50		●							
TBPEH-50-AL1 (US)		50%, solution in OMS	50	3,7	HDPE canisters	40/104	30/86	-	15/59		●							
TBPEH-50-FT1 (US)		50%, liquid in phthalate	50	3,7	HDPE canisters	40/104	30/86	-	15/59				●					
TBPEH-LA-M3		liquid mixture	90	6,7	HDPE canisters	40/104	20/68	-	15/59				●					
tert.Butylperoxyisobutyrate (CAS No. 109-13-7)																		
TBPIB-75-AL		75%, solution in isododecane	75	7,5	HDPE canisters	30/86	15/59	-	10/50		●			●	●		●	
TBPIB-50-AL		50%, solution in isododecane	50	5,0	HDPE canisters	30/86	15/59	-	10/50		●			●	●			●
Tert-butyl monoperoxy maleate (CAS No. 1931-62-0)																		
CUROX TBPM		25% suspension in aliphatic ester	25	2,1	Pails	60/140			0/32	30/86				●		●		
Methylisobutylketoneperoxide (CAS No. 37206-20-5)																		
CUROX I		various grades see separate Thermoset brochures												●				
Methylethylketoneperoxide (CAS No. 1338-23-4)																		
CUROX M		various grades see separate Thermoset brochures												●				

PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION	Tc (control temperature)	min. storage temperature*	max. storage temperature*	APPLICATION	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others	
ORGANIC PEROXIDES			%	%		°C/°F	°C/°F	°C/°F	°C/°F										
Acetylacetonperoxide (CAS No. 37187-22-7)																			
CUROX A		various grades see separate Thermoset brochures												●					
Disuccinoylperoxide (CAS No. 123-23-9)																			
SUCP-70-W		frozen, water damped	70	4,8	HDPE boxes or cartons	30/86	10/50	-	-10/14									●	
tert.Amylperoxy-2-ethylhexylcarbonate (CAS No. 70833-40-8)																			
TAPEHC		liquid, technically pure	95	5,8	HDPE canisters	55/131	-	-	20/68				●	●	●				
1,1-Di(tert.butylperoxy)-3,3,5-trimethylcyclohexane (CAS No. 6731-36-8)																			
TMCH		liquid, technically pure	95	10,4	HDPE canisters	60/140	-	-	30/86			●							
TMCH-90-AL		90%, solution in isododecane	90	9,4	HDPE canisters	70/158	-	-	30/86			●	●	●	●		●		
TMCH-75-AL		75%, solution in isododecane	75	7,9	HDPE canisters	70/158	-	-	30/86			●	●	●	●		●		
TMCH-50-AL		50%, solution in isododecane	50	5,3	HDPE canisters	70/158	-	-	30/86			●	●	●	●		●		
TMCH-90-WO		90%, solution in white oil	90	9,4	HDPE canisters	70/158	-	-	30/86					●	●		●		
TMCH-HA-MI		liquid mixture	75	5,8	HDPE canisters	55/131	20/68	-	20/68					●					
TMCH-40-IC2		40%, powder with chalk and silica	40	4,3	cartons	60/140	-	-	30/86			●							
1,1-Di(tert.butylperoxy)cyclohexane (CAS No. 3006-86-8)																			
CH-80-AL (AL3)*		80%, solution in isododecane	80	9,8	HDPE canisters	60/140	-	-	30/86				●						
CH-80-WO		80%, solution in white oil	80	9,8	HDPE canisters	60/140	-	-	30/86					●					
CH-50-AL		50%, solution in isododecane	50	6,2	HDPE canisters	70/158	-	-	30/86				●						
CH-50-WO		50%, solution in white oil	50	6,2	HDPE canisters	70/158	-	-	30/86					●					
1,1-Di(tert.amylperoxy)cyclohexane (CAS No. 15667-10-4)																			
ACH-80-AL3		80%, solution in Isopar H (B)	80	8,8	HDPE canisters	55/131	-	-	30/86				●						

PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION				APPLICATION										
						SADT	Tc (control temperature)	min. storage temperature*	max. storage temperature*	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others			
ORGANIC PEROXIDES						%	%	°C/°F	°C/°F	°C/°F	°C/°F									
tert. Butylperoxy-3,5,5-trimethylhexanoate (CAS No. 13122-18-4)																				
TBPIN		liquid, technically pure	>99	6,9	HDPE canisters	60/140	-	-	25/77	●		●	●	●				●		
TBPIN-60-AL		60%, solution in isododecane	60	4,2	IBC	60/140	-	-	25/77	●										
TBPIN-30-AL		30%, solution in isododecane	30	2,1	IBC	60/140	-	-	25/77	●										
TBPIN-HA-M1		liquid mixture	90	6,2	HDPE canisters	60/140	-	-	30/86			●								
tert. Butylperoxy-2-ethylhexylcarbonate (CAS No. 34443-12-4)																				
TBPEHC		liquid, technically pure	>97	6,3	HDPE canisters	70/158	-	-	20/68	●		●	●	●						
CUROX SOLAR FCI		liquid, technically pure	>98	>6,4	HDPE canisters	70/158	-	-	20/68		●									
tert. Butylperoxyacetate (CAS No. 107-71-1)																				
TBPA-50-AL1 (US)		50%, solution in OMS	50	6,1	HDPE canisters	70/158	-	-	40/104	●			●	●						
TBPA-40-AL1 (US)		40%, solution in OMS	40	4,8	IBC	70/158	-	-	40/104	●										
tert. Amylperoxybenzoate (CAS No. 4511-39-1)																				
TAPB		liquid, technically pure	95	7,3	HDPE canisters	60/140	-	10/50	40/104	●				●						
tert. Butylperoxybenzoate (CAS No. 614-45-9)																				
TBPB		liquid, technically pure	>99	8,2	HDPE canisters	60/140	-	10/50	30/86	●		●	●	●				●		
TBPB-HA-M1		liquid mixture	90	7,4	HDPE canisters	60/140	-	10/50	30/86			●								
TBPB-HA-M3		liquid mixture	80	6,5	HDPE canisters	55/131	-	10/50	30/86			●								
2,2-Di(tert.butylperoxy)butane (CAS No. 2167-23-9)																				
BU-50-AL		50%, solution in isododecane	50	6,8	HDPE canisters	70/158	-	-15/5	30/86	●				●				●		
BU-50-WO		50%, solution in white oil	50	6,8	HDPE canisters	70/158	-	-15/5	30/86				●	●					●	
BU-35-AL		35%, solution in isododecane	35	4,8	IBC	70/158	-	-15/5	30/86	●				●						
Dicumylperoxide (CAS No. 80-43-3)																				
DCUP		powder, technically pure	>99	5,9	cartons	>70/158	-	-	30/86	●	●	●	●	●					●	
Di(tert.amyl)peroxide (CAS No. 10508-09-5)																				
DTAP		liquid, technically pure	>94	8,9	HDPE canisters	80/176	-	-	30/86					●					●	

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ORGANIC PEROXIDES			%	%		°C/°F	°C/°F	°C/°F	°C/°F									
1,3-/1,4-Di(2-tert.butylperoxy isopropyl)benzene (CAS No. 25155-25-3)																		
DIPP		flakes, technically pure	97	9,2	cartons	90/194	-	-	30/86			●						
2,5-Dimethyl-2,5-di(tert. butylperoxy)hexane (CAS No. 78-63-7)																		
DHBP		liquid, technically pure	95	10,4	HDPE canisters	90/194	-	10/50	40/104		●	●						
DHBP-1-IC5		1%, granules with PP	1	0,1	cartons	90/194	-	-	40/104		●							
DHBP-7.5-IC5		7.5%, granules with PP	7,5	0,8	cartons	90/194	-	-	40/104		●							
DHBP-20-IC5		20%, granules with PP	20	2,2	cartons	90/194	-	-	40/104		●							
DHBP-45-IC2		45%, powder with chalk and silica	45	5,1	cartons	90/194	-	-	40/104			●						
DHBP-45-PSI		45%, paste in silicone	45	5,0	HDPE drum	90/194	-	-	30/86			●						
DHBP-75-PIC		75%, paste in silica	75	8,1	HDPE drum	90/194	-	-	30/86			●						
CUROX SOLAR SC		liquid, technically pure	95	10,4	HDPE canisters	90/194	-	10/50	40/104			●						
Di(tert.butyl)peroxide (CAS No. 110-05-4)																		
DTBP		liquid, technically pure	>99	10,8	160 kg steel drum	>80/176	-	-	40/104		●	●		●			●	
DTBP S-500		liquid, technically pure, conductive	>99	10,8	160 kg steel drum	>80/176	-	-	40/104		●	●		●			●	
DTBP-75-AL		75%, solution in isododecane	75	8,2	IBC	>80/176	-	-	30/86		●			●				
DTBP-50-AL		50%, solution in isododecane	50	5,5	IBC	>80/176	-	-	30/86		●			●				
DTBP-50-AL4 (US)		solution in aliphatics	50	5,5	IBC	>80/176	-	-	30/86		●							
2,5-Dimethyl-2,5-di(tert. butylperoxy)hexyne-3 (CAS No. 1068-27-5)																		
DYBP		liquid, technically pure	94	10,5	HDPE canisters	90/194	-	10/50	40/104			●						
DYBP-85-WO		82%, solution in white oil	82	9,2	HDPE canisters	90/194	-	10/50	40/104			●						
DYBP-45-IC2		45%, powder with chalk and silica	45	5,0	cartons	90/194	-	10/50	40/104			●						
tert. Butylhydroperoxide (CAS No. 75-91-2)																		
TBHP-70-AQ		70%, aqueous solution	70	12,5	HDPE canisters 190 kg HDPE drum IBC	>80/176	-	2/35	35/95					●	●	●		
tert. Amylhydroperoxide (CAS No. 3425-61-4)																		
TAHP-88		88%, aqueous solution	88	13,5	190 kg HDPE drum	>80/176	-	2/35	35/95					●	●	●		

● = Recommended application

PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION	Tc (control temperature)	min. storage temperature*	max. storage temperature*	APPLICATION	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others	
CC-INITIATORS			%	%		°C/°F	°C/°F	°C/°F	°C/°F										
2,3-Dimethyl-2,3-diphenylbutane (CAS No. 1889-67-4)																			
CUROX CC-DC		flakes, technically pure	-	-	cartons	-	-	-	-		●			●				●	
Poly-1,4-diisopropylbenzene (CAS No. 25822-43-9)																			
CUROX CC-P3		flakes, technically pure	-	-	cartons	-	-	-	-		●			●				●	
PERSULFATES			%	%		°C/°F	°C/°F	°C/°F	°C/°F										
Ammoniumperoxodisulfate (CAS No. 7727-54-0)																			
APS		powder, technically pure	>99	7,0	25 kg bags	>130/266	-	-	30/86	●				●	●	●	●		
APS-3		free flowing grade	>99	7,0	1.000 kg super sacks	>130/266	-	-	30/86					●	●	●	●		
Potassiumperoxodisulfate (CAS No. 7727-21-1)																			
KPS/PPS		powder, technically pure	>99	5,9	25 kg bags	>170/338	-	-	30/86	●				●	●	●	●		
KPS-5		free flowing grade	>98,5	5,9	1.000 kg super sacks	>170/338	-	-	30/86					●	●	●	●		
Sodiumperoxodisulfate (CAS No. 7775-27-1)																			
NPS/SPS		powder, technically pure	>99	6,7	25 kg bags	>170/338	-	-	30/86	●				●	●	●	●		
					1.000 kg super sacks	>170/338	-	-	30/86										

Safety Information

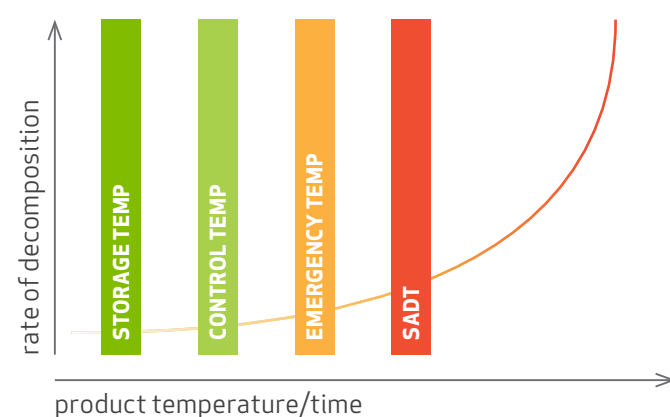
Half-life

Decomposition rates of peroxides are commonly reported in terms of half-life time. The half-life time is a measure of a peroxide's rate of decomposition at a certain temperature. It indicates the time when 50% of the peroxide has decomposed. The thermal stability of organic peroxides is commonly characterised by giving the temperature at which the half-life time of the product is 10 hours, 1 hour and 1 minute. The higher the temperature corresponding to the half-life, the more stable the peroxide. Half-life temperatures can vary based on the manner in which they are determined, especially the solvent used.

The half-life time can be derived from the Arrhenius equation:

$$k_d = A \cdot e^{-E_A/RT} \text{ and } t_{1/2} = \ln(2/k_d)$$

- k_d : Rate constant of the peroxide dissociation
- A: Arrhenius frequency factor
- E_A : Activation energy for the dissociation
- R: Ideal gas constant
- T: Temperature
- $t_{1/2}$: Half-life time



No single parameter is as important as the control of the temperature. Whether shipping, handling or storing, if the temperature is maintained well below its self-accelerating decomposition temperature (SADT), most hazards are avoided. For storage over a longer period of time, the manufacturer's recommended temperature for storage should be rigorously followed.

Self-Accelerating Decomposition Temperature (SADT)

The SADT is the lowest temperature at which self-accelerating decomposition occurs for a peroxide formulation in its packaging used for transport when held at that temperature. At the SADT, the rate of evolution of heat from decomposition exceeds the rate of heat loss to the surroundings so that the peroxide's temperature increases with time and the decomposition becomes increasingly more rapid or self-accelerating. The final decomposition may be uncontrollable.

Minimum/Maximum recommended storage temperatures

The maximum recommended storage temperature is lower than the control temperature, not for safety, but to maintain product quality. On the other hand, some liquid or paste organic peroxides must not be stored below a certain minimum temperature as turbidity, phase separation, crystal deposits or solidification can occur.

Control Temperature T_C

The T_C is the maximum temperature at which the product can be safely transported for an extended period of time. T_C is not required if the SADT exceeds 50°C (122°F). Generally the T_C is derived from the SADT as shown for canisters:

$$T_C = \text{SADT minus } 20^\circ\text{C if SADT} < 20^\circ\text{C}$$

$$T_C = \text{SADT minus } 15^\circ\text{C if SADT} < 35^\circ\text{C}$$

$$T_C = \text{SADT minus } 10^\circ\text{C if SADT} < 50^\circ\text{C}$$

Transportation temperatures are derived from the SADT according to the recommendations by the UN Committee of Experts on the Transport of Dangerous Goods.

Emergency Temperature T_E

The Control Temperature T_C is supplemented by an Emergency Temperature T_E which is higher than the T_C but still well below the SADT. The T_C may be exceeded if maintenance is necessary or until alternative cooling (e.g. dry ice or wet ice) is available. However, if the Emergency Temperature T_E is reached, emergency procedures must be implemented immediately, e.g. cooling down the organic peroxides.

PRODUCT CODE	CHEMICAL NAME	STORAGE TEMP	EA [KJ/MOL]	HALF LIFE TIME [°C]		
				10 H	1 H	1 MIN
DIPND	Di(2-neodecanoylperoxy-isopropyl)benzene	●	114	37	54	85
CUPND	Cumylperoxy-neodecanoate	●	115	38	55	90
TOPND	1,1,3,3-Tetramethylbutylperoxy-neodecanoate	●	117	40	57	92
TAPND	tert. Amylperoxy-neodecanoate	●	113	44	62	100
*)	Peroxydicarbonates	●	144	47	61	90
TBPND	tert. Butylperoxy-neodecanoate	●	121	47	64	100
TBPNH	tert. Butylperoxy-neoheptanoate	●	116	51	69	107
TAPPI	tert. Amylperoxy-pivalate	●	121	53	71	110
DCLBP	Di(2,4-dichlorobenzoyl)peroxide	●	121	54	72	110
TBPPI	tert. Butylperoxy-pivalate	●	121	56	74	110
INP	Di(3,5,5-trimethyl-hexanoyl)peroxide	●	117	59	78	120
DP	Didecanoyl-peroxide	●	126	62	80	120
LP	Dilauroyl-peroxide	●	126	62	80	120
AIBN	2,2'Azobis(isobutyronitrile)	●	130	62	80	120
DHPEH	2,5-Dimethyl-2,5-di(2-ethylhexanoylperoxy)hexane	●	137	67	84	125
APS	Ammoniumperoxodisulfate	●	135	69	87	125
PMBP	Di(4-methylbenzoyl)peroxide	●	125	70	89	130
BP	Dibenzoyl-peroxide	●	126	72	91	130
TAPEH	tert. Amylperoxy-2-ethylhexanoate	●	126	72	91	130
TBPEH	tert. Butylperoxy-2-ethylhexanoate	●	135	74	92	130
TBPIB	tert. Butylperoxy-isobutyrate	●	130	77	96	135
TBPM	tert. Butyl-monoperoxy-maleate	●	116	82	104	150
ACH	1,1-Di(tert. amylperoxy)cyclohexane	●	135	87	106	152
CUROX I	Methylisobutylketoneperoxide	●	125	90	110	155
TAPEHC	tert. Amylperoxy-(2-ethylhexyl)carbonate	●	151	95	113	150
TMCH	1,1-Di(tert. butylperoxy)-3,5,5-trimethyl-cyclohexane	●	143	95	114	155
CH	1,1-Di(tert. butylperoxy)cyclohexane	●	138	97	117	160
TBPIC	tert. Butylperoxy-isopropylcarbonate	●	138	97	117	160
TBPIN	tert. Butylperoxy-3,5,5-trimethyl-hexanoate	●	147	100	119	160
TBPEHC	tert. Butylperoxy-(2-ethylhexyl)carbonate	●	128	100	122	175
TBPA	tert. Butylperoxy-acetate	●	149	102	121	160
TAPB	tert. Amylperoxy-benzoate	●	143	102	122	160
TBPB	tert. Butylperoxy-benzoate	●	143	104	124	165
BU	2,2-Di(tert. butylperoxy)butane	●	143	104	124	165
NBV	n-Butyl-4,4-di(tert. butylperoxy)valerate	●	141	110	131	175
EBU	Ethyl-3,3-di(tert. butylperoxy)butyrate	●	144	114	135	180
DCUP	Dicumyl-peroxide	●	152	116	136	175
BCUP	tert. Butylcumyl-peroxide	●	154	118	138	180
DTAP	Di(tert. amyl)peroxide	●	129	118	142	190
DIPP	Di(2-tert. butylperoxy-isopropyl)benzene	●	142	120	142	190
DHBP	2,5-Dimethyl-2,5-di(tert. butylperoxy)hexane	●	142	120	142	190
DTBP	Di(tert. butyl)peroxide	●	152	125	146	190
DYBP	2,5-Dimethyl-2,5-di(tert. butylperoxy)hexyne-3	●	154	128	149	195
HMCN	3,3,6,6,9,9-Hexamethyl-1,2,4,5-tetraoxa-cyclononane	●	146	135	158	205
TBHP	tert. Butyl-hydroperoxide	●	149	173	200	260
CUROX CC-DC	2,3-Dimethyl-2,3-diphenylbutane	●	195	210	234	285
*) PEROXYDICARBONATES						
EHPC	Di(2-ethylhexyl)peroxydicarbonate	●	CHPC	Dicyclohexylperoxydicarbonate		
SBPC	Di(sec-butyl)peroxydicarbonate	●	NBPC	Di(n-butyl)peroxydicarbonate		
BCHPC	Di(4-tert. butylcyclohexyl)peroxydicarbonate	●	MYPC	Dimyristylperoxydicarbonate		
CEPC	Dicetylperoxydicarbonate	●				

Colour code for storage temperature:

- = Deep refrigeration
- = Moderate refrigeration
- = Ambient temperature

For precise values see specific product data sheets



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