



UNITED INITIATORS
driving your success



Polymer
Manufacturing &
Processing
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”.

<p>2020 PeroxyChem Acquisition of H₂O₂ plant in Canada</p> <p>2019 HP Acquisition of Hidrojen Peroksit</p> <p>2018 VR Joint Venture with VR Persulfates</p> <p>2016 EQUISTONE Equistone acquires majority stake</p> <p>2012 SYRGIS Acquisition of Syrgis</p> <p>2008 UNITED INITIATORS United Initiators</p> <p>2007 EVONIK Evonik Industries</p> <p>2001 degussa. Degussa acquires Laporte</p> <p>1994 AZTEC Laporte acquires Aztec Catalysts</p> <p>1968 Peroxid-Chemie Peroxid-Chemie</p> <p>1961 LAPORTE Laporte Organics</p> <p>1911 EWM Elektrochemische Werke München</p>	<p>1909 Patent for the production of Hydrogen Peroxide</p> <p>1911 Foundation of Elektrochemische Werke Adolph & Pietzsch</p> <p>1928 Merck AG becomes shareholder. Conversion into EWM AG</p> <p>1930's Inorganic Peroxide production</p> <p>1935 Breakthrough: Concentration of Hydrogen Peroxide solutions up to 81%, fuel for submarines and aero planes</p> <p>1936 Production of sodium percarbonate begins</p> <p>1938 Production of carbamide peroxid</p> <p>1944 80% of the Pullach plant destroyed in an air-raid</p> <p>1954 Entry into the field of organic chemistry (Organic Peroxides)</p> <p>1961 Takeover by Laporte Industries, new Hydrogen Peroxide process</p>	<p>1970 Joint Venture of Laporte and SOLVAY forms Interox</p> <p>1992 Demerger of the Interox Group, Peroxid-Chemie becomes again a 100% Laporte subsidiary</p> <p>2001 Takeover of Laporte by Degussa</p> <p>2004 Peroxid-Chemie becomes Degussa Initiators</p> <p>2007 Degussa becomes Evonik Industries</p> <p>2008 Sale to Speyside Equity. Birth of United Initiators</p> <p>2012 Acquisition of Syrgis Performance Initiators</p> <p>2016 Equistone acquires majority stake alongside current management</p> <p>2018 Joint Venture of United Initiators and VR Persulfates</p> <p>2019 Acquisition of Hidrojen Peroksit in Turkey</p> <p>2020 Acquisition of the Hydrogen Peroxide plant from Evonik Industries in Canada</p>
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HEALTH, ENVIRONMENT AND SUSTAINABILITY*

Priority for ESHQ

Environmental protection, safety, health, quality (ESHQ) and long-term profitability are essential and equally important conditions for the survival and the successful development of our company. However, in certain acute situations environmental protection, safety, health, quality will always take precedence over efficiency. These corporate objectives are not mutually exclusive but complementary. Sound future planning includes environmental, energy-efficient and economic considerations and therefore we will continually develop and balance these dual considerations.



* For more information about this topic check: www.united-initiators.com/company/sustainability/

Environmental Protection

Environmentally-friendly production and processes are prerequisites for the long-term preservation of the United Initiators' sites. We are committed to acting in a future-oriented and sustainable manner within the meaning of the Responsible Care Program for the chemical industry. United Initiators is certified in accordance with DIN EN ISO 14001 both to address any possible environmental consequences and to ensure the continuous improvement of environmental protection. The local employees or their representatives are actively involved in the definition of environmental programs and objectives according to the local requests.

OUR VALUES

- Respectful
- Entrepreneurial
- Safety-focused
- Professional
- Engaged
- Customer-focused
- Transparent



OUR VALUES, OUR VISION & OUR MISSION

OUR VISION

The leading initiators producer serving a grwoing wolrd!

OUR MISSION

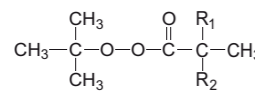
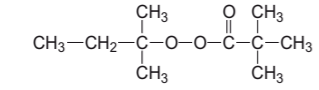
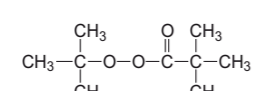
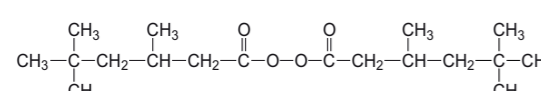
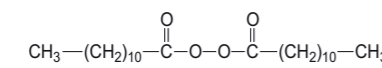
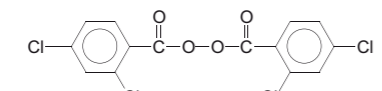
Satisfy customer needs with reliable service!

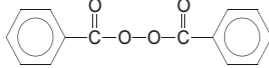
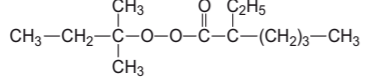
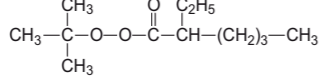
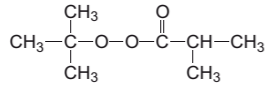
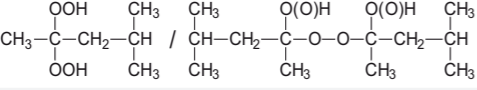
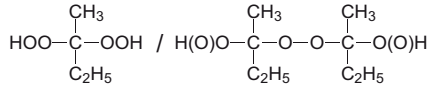


* For more information about this topic check: <https://www.united-initiators.com/company/our-mission/>



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												
Cumyl peroxyneodecanoate (CAS No. 26748-47-0)																				
CUPND-75-AL		75%, solution in aliphatics	75	3.9	HDPE canisters	15/59	-10/14	-	-15/5	●										
1,1,3,3-Tetramethylbutyl peroxyneodecanoate (CAS No. 51240-95-0)																				
TOPND-70-AL		70%, solution in isododecane	70	3.7	HDPE canisters	15/59	-5/23	-	-15/5	●										
tert-Amyl peroxyneodecanoate (CAS no. 68299-16-1)																				
TAPND-75-AL		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		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	●										
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	●					●	●				
Dicetyl peroxydicarbonate (CAS no. 26322-14-5)																				
CEPC		flakes, technically pure	96	2.7	cartons	40/104	30/86	-	20/68	●				●						
Dimyristyl peroxydicarbonate (CAS no. 53220-22-7))																				
MYPC		flakes, technically pure	97	3.0	cartons	35/95	20/68	-	20/68	●		●	●							

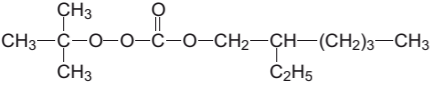
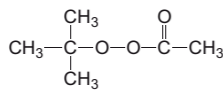
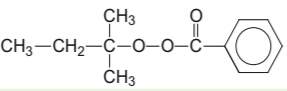
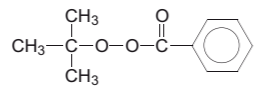
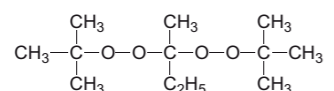
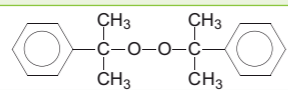
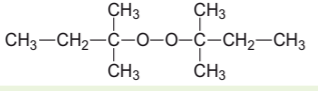
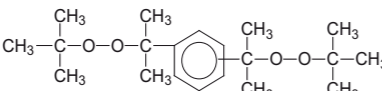
PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION			APPLICATION										
Organic Peroxides			%	%		°C/°F	°C/°F	°C/°F											
<i>tert</i> -Butyl peroxyneodecanoate (CAS no. 26748-41-4)																			
TBPND		liquid, technically pure	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		R ₁ +R ₂ =C ₇ H ₁₆	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	●	●							●
<i>tert</i> -Amyl peroxyvalerate (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	●	●								
<i>tert</i> -Butyl peroxyvalerate (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	●	●							●	
																			
Dilauroyl peroxide (CAS no. 105-74-8)																			
LP-40-SAQ2		40%, aqueous suspension	40	1.6	IBC	50/122	-	0/32	30/86	●									
CUROX® LP-S		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			●							

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										
Dibenzoyl peroxide (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-Amyl peroxy-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-Butyl peroxy-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	-	10/59	●								
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-Butyl peroxyisobutyrate (CAS no. 109-13-7)																		
TBPIB-50-AL		50%, solution in isododecane	50	5.0	HDPE canisters	30/86	15/59	-	10/50	●			●	●			●	
Methyl isobutyl ketone peroxide (CAS no. 37206-20-5)																		
CUROX®I		various grades see separate Thermoset brochures											●					
Methyl ethyl ketone peroxide (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											
Acetylacetone peroxide (CAS no. 37187-22-7)																			
CUROX®A		various grades see separate Thermoset brochures																	
Disuccinoyl peroxide (CAS no. 123-23-9)																			
SUCP-70-W		frozen, water damped	70	4.8	HDPE boxes or cartons	30/86	10/50	-	-10/14										
<i>tert</i> -Amyl peroxy-2-ethylhexylcarbonate (CAS no. 70833-40-8)																			
TAPEHC		liquid, technically pure	95	5.8	HDPE canisters	55/131	-	-	20/68										
CUROX®Solar AC3		liquid, technically pure	97	5.9	HDPE canisters	55/131	-	-	20/68										
1,1-Di(<i>tert</i> -butyl peroxy)-3, 3, 5-trimethylcyclohexane (CAS no. 6731-36-8)																			
TMCH-90-AL (AL3)*		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-M1		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(<i>tert</i> -butyl peroxy) cyclohexane (CAS no. 3006-86-8)																			
CH-80-AL (AL3) *		80%, solution in isododecane	80	9.8	HDPE canisters	60/140	-	-	30/86										
CH-50-WO		50%, solution in white oil	50	6.2	HDPE canisters	70/158	-	-	30/86										
1,1-Di(<i>tert</i> -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										
<i>tert</i> -Butyl peroxy-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										

12 * Also available with Isopar H (B)

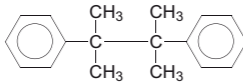
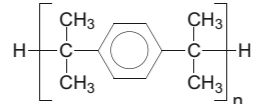
● = Recommended application

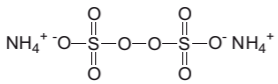
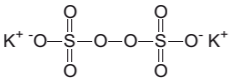
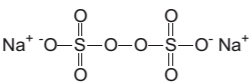
PRODUCT CODE	CHEMICAL STRUCTURE	SUPPLY FORM	PEROXIDE CONTENT	ACTIVE OXYGEN	STANDARD PACKAGING	SAFETY INFORMATION			APPLICATION									
Organic Peroxides			%	%		°C/°F	°C/°F	°C/°F	PVC	Polyolefins	Crosslinking	Curing of Thermoset Resins	Styrenics	Acrylics	Emulsion Polymerisation	Others		
<i>tert</i> -Butyl peroxy-2-ethylhexylcarbonate (CAS no. 34443-12-4)																		
TBPEHC		liquid, technically pure	>97	6.3	HDPE canisters	60/140	-	-	20/68	●	●	●	●					
CUROX®SOLAR FC1		liquid, technically pure	>98	>6.4	HDPE canisters	60/140	-	-	20/68		●							
<i>tert</i> -Butyl peroxyacetate (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	●								
<i>tert</i> -Amyl peroxybenzoate (CAS no. 4511-39-1)																		
TAPB		liquid, technically pure	95	7.3	HDPE canisters	60/140	-	10/50	40/104	●				●				
<i>tert</i> -Butyl peroxybenzoate (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(<i>tert</i> -butyl peroxy)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- <i>tert</i> -amyl peroxide (CAS no. 10508-09-5)																		
DTAP		liquid, technically pure	>94	8.9	HDPE canisters	80/176	-	-	30/86					●	●			
1,3-/1,4-Di(2- <i>tert</i> -butylperoxyisopropyl)benzene (CAS no. 25155-25-3)																		
DIPP		flakes, technically pure	97	9.2	cartons	90/194	-	-	30/86		●							

● = 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
Organic Peroxides			%	%		°C/°F	°C/°F	°C/°F										
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-PSI1		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 (US)		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-Butyl hydroperoxide (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-Amyl hydroperoxide (CAS no. 3425-61-4)																		
TAHP-88		88%, aqueous solution	88	13.5	190 kg HDPE drum	>80/176	-	2/35	35/95					●	●	●		
Methyl ethyl ketone peroxide (CAS no. 1338-23-4)																		
CUROX®CUHP		80-85%, liquid mixture	80-85	8.5	HDPE canisters	60/140	-	-	30/86				●	●	●	●		

● = 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
Organic Peroxides			%	%		°C/°F	°C/°F	°C/°F										
2,3-Dimethyl-2,3-diphenylbutane (CAS no. 1889-67-4)																		
CUROX®CC-DC		flakes, technically pure	-	-	cartons, Big Bag / super sacks	-	-	-	-		●			●				●
CUROX®CC-DCF		liquid, technically pure	-	-	IBC	-	-	-	-		●			●				●
Poly-1,4-diisopropylbenzene (CAS no. 25822-43-9)																		
CUROX®CC-P3		flakes, technically pure	-	-	cartons	-	-	-	-		●			●				●

Persulfates			%	%		°C/°F	°C/°F	°C/°F										
Ammonium peroxodisulfate (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					●	●	●	●	
Potassium peroxodisulfate (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					●	●	●	●	
Sodium peroxodisulfate (CAS no. 7775-27-1)																		
NPS/SPS		powder, technically pure	>99	6.7	25 kg bags	>170/338	-	-	30/8	●				●	●	●	●	●
					1.000 kg super sacks	>170/338	-	-	30/86									

Safety Information

Half-life

Peroxide decomposition rates are commonly reported in terms of half-life time or when 50% of the peroxide has decomposed at a certain temperature. Recommended organic peroxide heat temperatures commonly reflect the half-life time at 10 hours, 1 hour and 1 minute. The higher the half-life temperature, the more stable the peroxide. Half-life temperatures can vary based on formulations and solvents.

Using the Arrhenius equation, acronyms related to half-life time include:

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

k_d : Rate constant of the peroxide dissociation

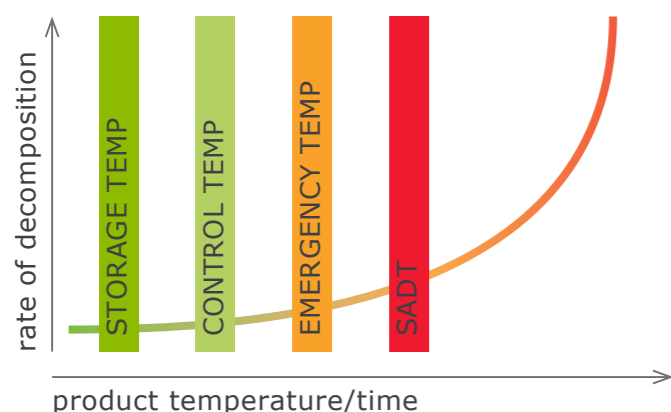
A: Arrhenius frequency factor

E_A : Activation energy for the dissociation

R: Ideal gas constant

T: Temperature

$t_{1/2}$: Half-life time



Controlling the temperature is the most important constant. If the temperature is maintained well below its self-accelerating decomposition temperature (SADT), most hazards are avoided when shipping, handling or storing. For storage over a longer period of time, follow the manufacturer's temperature recommendations.

Self-Accelerating Decomposition Temperature (SADT)

The SADT is the lowest constant temperature for self-accelerating decomposition when transporting packaged peroxides. At the SADT, when elevated heat temperatures from decomposition exceed the heat loss, over time, the peroxide's temperature increases and it decomposes faster or self-accelerates. The final decomposition may be uncontrollable.

Minimum/Maximum Recommended Storage Temperature

The maximum recommended storage temperature is lower than the control temperature for quality assurance purposes not safety. Keep in mind, 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 transportation temperature recommended for the product's estimated time of arrival. T_c is not required if the SADT exceeds 50°C (122°F). Generally, the T_c mirrors SADT canister guidelines.

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

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

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

SADT transportation temperatures are based on recommendations by the UN Committee of Experts on the Transportation 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 such as dry or wet ice is available. However, if the T_e is reached, emergency procedures must be implemented immediately – for instance, cooling down the organic peroxides.

Product Code	Chemical Name	Storage Temperature	EA [kJ/mol]	Half Life [°C]		
				10 h	1 h	1 min
IBP	Diisobutyl peroxide	●	110	23	39	73
CUPND	Cumyl peroxyneodecanoate	●	115	38	55	90
TOPND	1,1,3,3-Tetramethylbutyl peroxyneodecanoate	●	117	40	57	92
TAPND	tert-Amyl peroxyneodecanoate	●	113	44	62	100
CEPC	Dicetyl peroxydicarbonate	●	124	41	57	90
MYPC	Dimyristyl peroxydicarbonate	●	124	41	57	90
SBPC	Di-sec-butyl peroxydicarbonate	●	120	41	57	90
EHPC	Di-2-ethylhexyl peroxydicarbonate	●	121	47	64	83
TBPND	tert-Butyl peroxyneodecanoate	●	121	47	64	100
BCHPC	Di-4-tert-butylcyclohexyl peroxydicarbonate	●	129	48	64	82
NBPC	Di-n-butyl peroxydicarbonate	●	130	49	65	99
TBPNH	tert-Butyl peroxyneohexanoate	●	116	51	69	107
TAPPI	tert-Amyl peroxyipivalate	●	121	53	71	110
DCLBP	Di-2,4-dichlorobenzoyl peroxide	●	121	54	72	110
TBPPI	tert-Butyl peroxyipivalate	●	121	56	74	110
INP	Di-3,5,5-trimethylhexanoyl 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
PMBP	Di-4-methylbenzoyl peroxide	●	125	70	89	130
BP	Dibenzoyl peroxide	●	126	72	91	130
TAPEH	tert-Amyl peroxy-2-ethylhexanoate	●	126	72	91	130
TBPEH	tert-Butyl peroxy-2-ethylhexanoate	●	135	74	92	130
TBPIB	tert-Butyl peroxyisobutyrate	●	130	77	96	135
TBPM	tert-Butyl monoperoxy maleate	●	116	82	104	150
ACH	1,1-Di(tert-amylperoxy)cyclohexane	●	135	87	106	152
MIKP	Methyl isobutyl ketone peroxide	●	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-Butyl peroxyisopropyl carbonate	●	138	97	117	160
TBPIN	tert-Butyl peroxy-3,5,5-trimethylhexanoate	●	147	100	119	160
TBPEHC	tert-Butyl peroxy-2-ethylhexyl carbonate	●	128	100	122	175
TBPA	tert-Butyl peroxyacetate	●	149	102	121	160
TAPB	tert-Amyl peroxybenzoate	●	143	102	122	160
TBPB	tert-Butyl peroxybenzoate	●	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-Butyl cumyl 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
CUHP	Cumyl hydroperoxide	●	133	140	166	223
TBHP	tert-Butyl hydroperoxide	●	149	173	200	260
CUROX@CC-DC	2,3-Dimethyl-2,3-diphenylbutane	●	195	210	234	285

Colour code for storage temperature:

● = Deep refrigeration

● = Moderate refrigeration

● = Ambient temperature

UNITED INITIATORS – POLYMER MANUFACTURING AND PROCESSING 21

For precise values see specific product data sheets



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