



SPECIAL TOPICS

Peroxide cured silicone rubber

Alternative chlorine-free peroxide – Benefits with Aktisil Q

40-70 Shore A, Q, peroxide cure

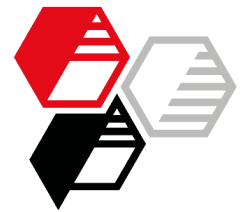
Guide formulations of HOFFMANN MINERAL	M 670.0	DCBP chlorinated peroxide					DMBP chlorine-free peroxide				
		1	2	3	4	5	11	12	13	14	15
Elastosil R 401/40		100	100	100	100	100	100	100	100	100	100
Perkadox PD-50S-PS <i>chlorinated peroxide, DCBP</i>		1.5	1.5	1.5	1.5	1.5	---	---	---	---	---
Perkadox PM-50S-PS <i>chlorine-free peroxide, DMBP</i>		---	---	---	---	---	1.07	1.07	1.07	1.07	1.07
AKTISIL Q		0	25	50	75	100	0	25	50	75	100
Total phr		101.5	126.5	151.5	176.5	201.5	101.5	126.5	151.5	176.5	201.5

Replacing a chlorinated peroxide with a chlorine-free alternative along with using Aktisil Q and increasing the cure temperature:

- easy processing due to eliminated stickiness
- higher scorch safety
- comparable and fast curing
- comparable tensile properties
- slightly improved compression set

More information on this topic:

[Alternative Chlorine-free Peroxide - Benefits with Aktisil Q](#)



	M 670.0	DCBP chlorinated peroxide					DMBP chlorine-free peroxide				
		1	2	3	4	5	11	12	13	14	15
Mooney Viscosity											
ML (1+2) @ 70°C <i>DIN ISO 289-1</i>	MU	16	19	24	33	58	16	19	23	27	36
Mooney Scorch											
ML +5 @ 70°C <i>DIN ISO 289-2</i>	min	17	5.7	3.8	3.1	2.5	>90	>90	>90	67	55
Rotorless curemeter <i>DIN 53529, T3</i>											
Mmin	Nm	0.04	0.05	0.07	0.09	0.12	0.04	0.04	0.06	0.07	0.10
Mmax-Mmin	Nm	0.35	0.45	0.60	0.77	0.94	0.33	0.42	0.56	0.70	0.84
Curing rate	Nm/min	0.59	0.88	1.29	1.77	2.15	0.70	0.95	1.31	1.74	2.15
t ₉₀	min	1.1	1.0	0.9	0.9	0.9	1.0	0.9	0.8	0.8	0.8
Mechanical properties											
Press cure + Post cure 4 h @200 °C											
Vulcanization		5 min @ 115 °C					5 min @ 135 °C				
Hardness <i>DIN ISO 7619-1</i>	Shore A	40	50	58	66	72	36	45	54	63	70
Tensile strength <i>DIN 53504, S2</i>	MPa	11	8.9	8.4	8.1	7.7	9.5	8.7	8.6	7.9	7.7
Modulus 100 % <i>DIN 53504, S2</i>	MPa	0.8	1.5	2.4	3.4	4.7	0.7	1.2	2.1	3.2	4.6
Elongation at break <i>DIN 53504, S2</i>	%	615	433	316	226	162	617	473	333	243	168
Tear resistance Trouser <i>DIN ISO 34-1, A</i>	N/mm	5.7	1.9	2.5	1.8	1.5	7.0	4.9	5.1	2.3	1.7
Tear resistance Graves <i>DIN ISO 34-1, Bb</i>	N/mm	22	9.3	7.0	6.4	6.1	35	10	8.1	7.1	6.4
Compression set 24 h @ 175°C, 25 % <i>DIN ISO 815-1, B</i>	%	33	29	28	28	30	36	29	26	24	27

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