



SPECIAL TOPICS

Peroxide cured silicone rubber: Elastosil R 401

Optimization of property combinations with Aktisil Q

45-50 Shore A, Q, peroxide cure

Guide formulations of HOFFMANN MINERAL	M 655.0	Curing agent C6			Dicumyl peroxide		
		5	1	2	25	21	22
Elastosil R 401/50		100.0	---	---	100.0	---	---
Elastosil R 401/40		---	100.0	100.0	---	100.0	100.0
Elastosil AUX Curing Agent C6		1.2	1.2	1.2	---	---	---
Perkadox BC-40S-ps		---	---	---	0.99	0.99	0.99
AKTISIL Q		---	12.5	25.0	---	12.5	25.0
Total phr		101.2	113.7	126.2	101.0	113.5	126.0
Density (calculated)	g/cm ³	1.130	1.195	1.262	1.129	1.194	1.262

Benefits over 50 Shore A base compound:

- comparable tear resistance along with improved compression set
- comparable or slightly improved resistance to hot air
- reduction of compound costs

More information on this topic:

[Peroxide Cured Silicone Rubber - Optimization of Property Combinations with Aktisil Q](#)



			Curing agent C6			Dicumyl peroxide			
			M 655.0	5	1	2	25	21	22
Mooney Viscosity									
ML (1+4) @ 120°C	DIN ISO 289-1	MU	14	11	13	14	11	13	
Mooney Scorch									
ML +5 @ 120°C	DIN ISO 289-2	min	72	20	12	64	17	10	
Rotorless curemeter				165 °C			180 °C		
Mmin	DIN 53529, T3	Nm	0.04	0.03	0.03	0.04	0.03	0.03	
Mmax-Mmin	DIN 53529, T3	Nm	0.32	0.28	0.34	0.39	0.35	0.41	
Curing rate	DIN 53529, T3	Nm/min	0.26	0.23	0.26	0.76	0.64	0.76	
t ₉₀	DIN 53529, T3	min	2.7	2.5	2.2	1.0	0.9	0.9	
Mechanical properties									
Press cure + Post cure 4 h @200 °C									
Vulcanization				5 min @ 165 °C			5 min @ 180 °C		
Hardness	DIN ISO 7619-1	Shore A	46	39	44	44	39	43	
Tensile strength	DIN 53504, S2	MPa	13	10	10	12	9.2	9.6	
Elongation at break	DIN 53504, S2	%	679	702	631	647	624	616	
Modulus 100 %	DIN 53504, S2	MPa	0.9	0.7	1.0	0.9	0.8	1.0	
Tear resistance (Graves)	DIN ISO 34-1, Bb	N/mm	9.5	7.8	5.2	8.6	10	7.8	
Compression set 24 h @ 175°C, 25 %	DIN ISO 815-1, B	%	23	18	17	13	11	9.6	
Air aging, 168 h @ 200°C, post cured specimen									
Hardness		Shore A	51	43	48	49	44	49	
Tensile strength		MPa	11	8.9	8.5	11	9.5	8.5	
Elongation at break		%	560	617	567	614	616	535	
Δ Hardness		Shore A	+5	+4	+4	+5	+5	+6	
Δ Tensile strength		%	-17	-15	-16	-9	+4	-12	
Δ Elongation at break		%, rel.	-18	-12	-10	-5	-1	-13	

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