

OTHER APPLICATION

Profile, solid, light-colored

Light-colored EPDM extrusion formulation

60/70 Shore A, EPDM, sulfur cure

		Aktisil Q	Aktisil VM 56	Aktisil VM 56/89	Aktisil AM	Aktisil PF 777	Aktisil PF 216	Aktifit AM
Guide formulations of HOFFMANN MINERAL	M 652.3	12	13	14	16	17	19	22
Vistalon 7700		100	100	100	100	100	100	100
Zinkoxyd aktiv		5	5	5	5	5	5	5
Stearic acid		2	2	2	2	2	2	2
Kezadol GR		10	10	10	10	10	10	10
AKTISIL Q		300	---	---	---	---	---	---
AKTISIL VM 56		---	300	---	---	---	---	---
AKTISIL VM 56/89		---	---	300	---	---	---	---
AKTISIL AM		---	---	---	300	---	---	---
AKTISIL PF 777		---	---	---	---	300	---	---
AKTISIL PF 216		---	---	---	---	---	300	---
AKTIFIT AM		---	---	---	---	---	---	300
Process Oil P 460 (ex Sunpar 2280)		70	70	70	70	70	70	70
Rhenogran ZBEC-70		2	2	2	2	2	2	2
Rhenogran CBS-80		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Rhenogran CLD-80		1	1	1	1	1	1	1
Rhenogran MBTS-80		1.3	1.3	1.3	1.3	1.3	1.3	1.3
Rhenogran S-80		0.75	0.75	0.75	0.75	0.75	0.75	0.75
Rhenogran TP-50		2	2	2	2	2	2	2
Total phr		494.55	494.55	494.55	494.55	494.55	494.55	494.55

Mooney Viscosity

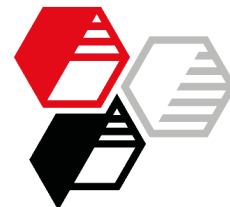
ML (1+4) 100°C	MU	73	82	83	86	69	89	98
ML (1+4) 120°C	MU	56	66	66	70	56	73	81

Mooney Scorch

ML (5 MU) 120°C	min	23	20	22	10	14	14	7
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Rotorless curemeter, 180°C

M _{min}	Nm	0.093	0.136	0.143	0.142	0.075	0.147	0.162
M _{max} -M _{min}	Nm	0.532	0.514	0.524	0.534	0.411	0.673	0.576
t ₅	min	0.87	0.66	0.70	0.49	0.64	0.52	0.47
t ₉₀	min	4.27	6.16	5.41	2.34	5.55	5.79	1.91
V _{max}	Nm/min	0.39	0.32	0.36	0.77	0.25	0.35	0.89



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Physical properties**Press cure @ 180°C, curing time 5 min or t₉₀ +10 %**

Density	g/cm ³	1.55	1.55	1.55	1.55	1.55	1.55	1.55
Tensile strength	MPa	4.2	5.9	6.8	7.9	3.9	8.0	8.4
Elongation at break	%	493	394	483	301	646	275	254
Modulus 50 %	MPa	1.8	1.9	1.8	2.3	1.2	2.7	2.5
Modulus 100 %	MPa	2.9	3.3	3.2	4.6	1.4	5.2	5.2
Hardness	Shore A	64	64	65	67	57	70	67
Rebound	%	45	43	41	44	38	42	40
Tear resistance (trousers)	N/mm	7.3	11.7	11.9	7.3	8.8	6.4	6.8

Compression set

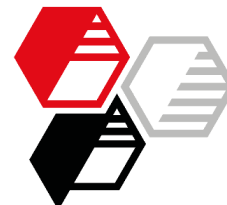
24 h @ 70°C, 25 % deflection	%	15	18	18	14	28	17	14
24 h @ 100°C, 25 % deflection	%	45	50	51	35	70	56	40

Air aging, 168 h @ 70°C

Tensile strength	MPa	4.1	6.2	6.3	7.5	3.3	8.4	7.8
Elongation at break	%	342	328	326	228	541	214	181
Modulus 50 %	MPa	2.2	2.1	2.3	2.5	1.3	3.5	3.0
Modulus 100 %	MPa	3.4	3.8	4.0	4.9	1.6	6.3	5.9
Hardness	Shore A	67	67	68	69	60	74	72
Rebound	%	49	45	44	46	42	45	42
Tear resistance (trousers)	N/mm	5.7	9.0	9.6	5.8	8.5	4.5	5.2
Δ Tensile strength	%	-3	+5	-8	-5	-15	+5	-7
Δ Elongation at break	%, rel.	-31	-17	-33	-24	-16	-22	-29
Δ Modulus 50 %	%	+20	+14	+26	+13	+15	+27	+23
Δ Modulus 100 %	%	+17	+13	+23	+8	+12	+22	+15
Δ Hardness	Shore A	+3	+3	+3	+2	+3	+4	+5
Δ Rebound	%, rel.	+9	+5	+7	+5	+11	+7	+5
Δ Tear resistance (trousers)	%	-22	-23	-19	-22	-4	-31	-24

Air aging, 168 h @ 100°C

Tensile strength	MPa	5.1	7.3	7.4	8.4	3.5	10.1	8.9
Elongation at break	%	211	195	233	174	415	124	135
Modulus 50 %	MPa	2.8	3.1	3.1	3.2	1.8	5.3	4.1
Modulus 100 %	MPa	4.4	5.6	5.4	6.3	2.1	9.2	7.8
Hardness	Shore A	72	73	73	72	67	80	76
Rebound	%	52	46	45	48	45	48	45
Tear resistance (trousers)	N/mm	4.0	5.2	5.6	3.8	5.0	2.6	3.5
Δ Tensile strength	%	+20	+23	+9	+7	-10	+26	+6
Δ Elongation at break	%, rel.	-57	-50	-52	-42	-36	-55	-47
Δ Modulus 50 %	%	+57	+67	+68	+44	+56	+95	+65
Δ Modulus 100 %	%	+52	+66	+66	+38	+48	+78	+51
Δ Hardness	Shore A	+8	+9	+8	+5	+10	+10	+9
Δ Rebound	%, rel.	+16	+7	+10	+9	+18	+14	+13
Δ Tear resistance (trousers)	%	-44	-56	-53	-49	-43	-60	-48



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Immersion in demineralized water, 168 h @ 95°C

Tensile strength	MPa	3.6	4.9	4.9	7.7	4.1	10.2	7.7
Elongation at break	%	367	490	505	198	550	146	165
Modulus 50 %	MPa	1.7	1.7	1.7	2.6	1.2	4.2	3.1
Modulus 100 %	MPa	2.6	2.7	2.6	5.0	1.4	8.0	6.0
Hardness	Shore A	61	65	65	67	59	75	74
Δ Tensile strength	%	-16	-17	-27	-3	+4	+27	-9
Δ Elongation at break	%, rel.	-25	+25	+5	-34	-15	-47	-35
Δ Modulus 50 %	%	-5	-9	-7	+14	+5	+52	+26
Δ Modulus 100 %	%	-10	-21	-20	+10	-4	+54	+15
Δ Hardness	Shore A	-3	+1	0	0	+2	+5	+7
Δ Weight	%	+8.0	+2.8	+2.5	+3.2	+3.2	+2.7	+2.2
Δ Volume	%	+11.6	+3.6	+3.4	+4.7	+4.3	+3.7	+2.5

Extrusion (without curing system, + 2 phr Aflux 42)

Extruder: Schwabenthan Polytest 30R, Ø 30 mm, L/D = 15

Temperature barrel: 40 / temperature head: 150 °C

Mass pressure	bar	60	75	75	80	65	70	85
Mass temperature	°C	75	76	76	76	76	68	76
Torque	Nm	120	140	140	130	130	120	145
Output speed	m/min	2.0	1.9	1.9	1.9	1.9	2.1	1.9
Output weight	g/min	187	160	166	160	181	188	170
Rating Garvey profile)*		4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4	4 4 4 4

)* Figure 1: die swell, figure 2: 30° edge, figure 3: surface quality, figure 4: corners

Standards:

Mooney Viscosity / Scorch	DIN 53523, T3+T4
Rotorless curemeter t_5 / t_{90}	DIN 53529, T3
Tensile strength, Moduli, Elongation at break	DIN 53504, S2
Hardness	DIN ISO 7619-1, piled S2 specimen
Rebound	DIN 53512
Tear resistance (trousers)	DIN ISO 34-1, A
Compression set	DIN ISO 815, B
Air aging	DIN 53508
Extrusion Garvey profile	ASTM D2230

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