

OTHER APPLICATION

Profile, solid, light-colored

Light-colored EPDM extrusion formulation

60/70 Shore A, EPDM, peroxide cure

		Aktisil MAM	Aktisil MAM-R	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 652.1	12	13	14	15	16	18	19	60	22
Vistalon 7700		100	100	100	100	100	100	100	100	100
Zinkoxyd aktiv		5	5	5	5	5	5	5	5	5
Stearic acid		2	2	2	2	2	2	2	2	2
Kezadol GR		10	10	10	10	10	10	10	10	10
AKTISIL MAM		300	---	---	---	---	---	---	---	---
AKTISIL MAM-R		---	300	---	---	---	---	---	---	---
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	70	70
TAC/GR 70		2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14	2.14
Perkadox 14-40B-pd-s		8	8	8	8	8	8	8	8	8
Total phr		497.14	497.14	497.14	497.14	497.14	497.14	497.14	497.14	497.14

Mooney Viscosity

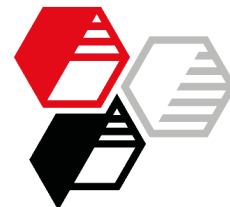
ML (1+4) 100°C	MU	72	75	73	88	81	93	59	96	101
ML (1+4) 120°C	MU	54	58	55	67	62	71	44	78	83

Mooney Scorch

ML (5 MU) 120°C	min	25	25	25	22	21	17	32	81	39
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Rotorless curemeter, 180°C

M _{min}	Nm	0.110	0.107	0.105	0.172	0.183	0.174	0.079	0.189	0.231
M _{max} -M _{min}	Nm	0.530	0.516	0.591	0.552	0.594	0.543	0.380	0.601	0.722
t ₅	min	0.29	0.31	0.27	0.35	0.38	0.37	0.37	0.28	0.39
t ₉₀	min	5.58	5.82	5.31	5.93	6.02	5.71	6.04	5.95	5.51
V _{max}	Nm/min	0.46	0.43	0.58	0.47	0.49	0.41	0.30	0.49	0.47



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

Density	g/cm ³	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.57
Tensile strength	MPa	6.4	6.8	7.3	8.6	8.9	7.5	4.3	7.9
Elongation at break	%	235	246	219	279	269	251	758	257
Modulus 50 %	MPa	2.0	1.9	2.1	2.0	2.0	2.3	1.4	2.3
Modulus 100 %	MPa	4.0	3.8	4.3	3.9	4.1	4.5	2.2	4.5
Hardness	Shore A	63	64	65	66	65	65	59	67
Rebound	%	44	43	43	41	40	40	40	41
Tear resistance (trousers)	N/mm	3.6	4.2	3.5	5.4	5.4	5.3	13.2	4.8

Compression set

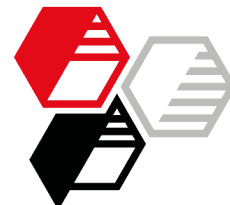
24 h @ 100°C, 25 % deflection	%	9	10	9	17	21	13	17	25
24 h @ 125°C, 25 % deflection	%	14	13	15	19	24	16	20	34
24 h @ 150°C, 25 % deflection	%	21	23	21	30	33	23	29	56

Air aging, 168 h @ 100°C

Tensile strength	MPa	6.1	6.4	7.1	7.5	7.4	7.9	3.9	8.1
Elongation at break	%	204	217	208	236	219	202	696	203
Modulus 50 %	MPa	1.9	2.0	2.1	2.2	2.3	2.7	1.6	2.8
Modulus 100 %	MPa	3.7	4.0	4.2	4.2	4.4	5.4	2.5	5.2
Hardness	Shore A	65	66	68	69	71	69	63	72
Rebound	%	43	42	42	39	38	39	40	41
Tear resistance (trousers)	N/mm	3.6	4.1	3.5	5.1	5.4	4.0	14.8	4.1
Δ Tensile strength	%	-5	-6	-3	-13	-17	+5	-11	+3
Δ Elongation at break	%, rel.	-13	-12	-5	-15	-19	-20	-8	-21
Δ Modulus 50 %	%	-4	+3	-1	+9	+14	+18	+12	+20
Δ Modulus 100 %	%	-7	+4	-2	+7	+9	+21	+13	+15
Δ Hardness	Shore A	+2	+2	+3	+3	+6	+4	+4	+5
Δ Rebound	%, rel.	-2	-2	-2	-5	-5	-3	0	0
Δ Tear resistance (trousers)	%	+1	-1	0	-6	+1	-25	+12	-14

Air aging, 168 h @ 125°C

Tensile strength	MPa	5.3	5.8	6.2	8.0	7.9	8.8	3.4	8.6
Elongation at break	%	133	137	129	244	225	192	399	164
Modulus 50 %	MPa	2.6	2.9	3.0	2.4	2.5	2.7	1.7	3.6
Modulus 100 %	MPa	4.6	5.1	5.4	4.6	4.9	5.5	2.6	6.6
Hardness	Shore A	69	71	72	70	71	70	65	74
Rebound	%	43	43	42	40	38	40	41	41
Tear resistance (trousers)	N/mm	2.6	2.9	2.7	4.8	5.2	3.8	13.4	3.4
Δ Tensile strength	%	-17	-15	-16	-8	-11	+18	-22	+10
Δ Elongation at break	%, rel.	-43	-44	-41	-12	-16	-24	-47	-36
Δ Modulus 50 %	%	+30	+50	+43	+20	+23	+20	+18	+54
Δ Modulus 100 %	%	+17	+34	+26	+16	+20	+24	+16	+45
Δ Hardness	Shore A	+6	+7	+7	+4	+6	+5	+6	+7
Δ Rebound	%, rel.	-2	0	-2	-2	-5	0	+3	0
Δ Tear resistance (trousers)	%	-27	-30	-22	-12	-4	-29	+2	-28



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M 652.1	12	13	14	15	16	18	19	60	22

Immersion in demineralized water, 168 h @ 95°C

Tensile strength	MPa	5.3	6.4	7.4	7.7	7.5	7.2	4.7	9.0	7.1
Elongation at break	%	177	235	212	265	249	197	721	244	159
Modulus 50 %	MPa	1.8	1.9	2.1	1.9	1.9	2.3	1.2	2.3	3.0
Modulus 100 %	MPa	3.5	3.6	4.0	3.5	3.5	4.5	1.7	4.6	5.7
Hardness	Shore A	65	65	67	65	68	67	58	67	78
Δ Tensile strength	%	-17	-7	+1	-11	-15	-4	+7	+15	-16
Δ Elongation at break	%, rel.	-25	-4	-3	-5	-8	-21	-5	-5	-25
Δ Modulus 50 %	%	-6	-3	-2	-5	-8	+2	-14	0	+23
Δ Modulus 100 %	%	-12	-6	-5	-10	-13	+1	-21	+1	+9
Δ Hardness	Shore A	+2	+1	+2	-1	+3	+2	-1	0	+10
Δ Weight	%	+1.4	+1.6	+1.7	+1.9	+1.9	+2.1	+2.0	+1.8	+1.4
Δ Volume	%	+2.1	+2.7	+2.6	+3.4	+3.1	+3.2	+2.8	+2.4	+1.6

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	65	65	60	75	75	80	65	70	85
Mass temperature	°C	76	76	75	76	76	76	76	68	76
Torque	Nm	125	125	120	140	140	130	130	120	145
Output speed	m/min	2.1	1.9	2.0	1.9	1.9	1.9	1.9	2.1	1.9
Output weight	g/min	193	179	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	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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