

OTHER APPLICATION

Profile, solid, light-colored

Light-colored EPDM extrusion formulation

60/70 Shore A, EPDM, peroxide cure

		Sillitin V 85	Sillitin V 88	Sillitin N 82	Sillitin N 85	Sillitin Z 86	Sillitin Z 89	Sillitin P 87	P 87 / DEG	Silfit Z 91
Guide formulations of HOFFMANN MINERAL	M 652.1	4	2	3	1	5	6	7	8	9
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
SILLITIN V 85		300	---	---	---	---	---	---	---	---
SILLITIN V 88		---	300	---	---	---	---	---	---	---
SILLITIN N 82)*		---	---	300	---	---	---	---	---	---
SILLITIN N 85		---	---	---	300	---	---	---	---	---
SILLITIN Z 86		---	---	---	---	300	---	---	---	---
SILLITIN Z 89		---	---	---	---	---	300	---	---	---
SILLITIN P 87		---	---	---	---	---	---	300	300	---
SILFIT Z 91		---	---	---	---	---	---	---	---	300
Diethylene glycol		---	---	---	---	---	---	---	2	---
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	499.14	497.14

)* No longer available. Recommended: SILLITIN N 75

Mooney Viscosity

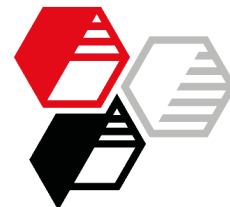
ML (1+4) 100°C	MU	89	83	98	89	105	91	111	109	103
ML (1+4) 120°C	MU	68	62	76	68	84	70	91	91	78

Mooney Scorch

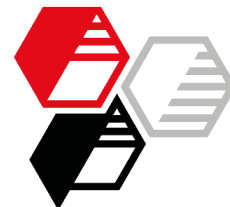
ML (5 MU) 120°C	min	24	24	23	28	13	20	16	39	41
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Rotorless curemeter, 180°C

M _{min}	Nm	0.214	0.170	0.252	0.221	0.320	0.262	0.380	0.338	0.369
M _{max} -M _{min}	Nm	0.613	0.593	0.703	0.748	0.824	0.805	0.940	0.941	0.761
t ₅	min	0.34	0.37	0.28	0.26	0.24	0.33	0.19	0.28	0.36
t ₉₀	min	5.20	6.08	4.43	4.82	4.12	6.02	4.47	5.62	5.95
V _{max}	Nm/min	0.49	0.46	0.61	0.65	0.73	0.60	0.90	0.66	0.67



		Sillitin V 85	Sillitin V 88	Sillitin N 82	Sillitin N 85	Sillitin Z 86	Sillitin Z 89	Sillitin P 87	P 87 / DEG	Silfit Z 91
M 652.1		4	2	3	1	5	6	7	8	9
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	1.57
Tensile strength	MPa	4.4	4.5	4.7	4.7	5.1	6.1	5.3	5.7	6.4
Elongation at break	%	478	452	506	470	548	470	548	433	333
Modulus 50 %	MPa	1.6	1.7	1.7	1.6	1.7	1.7	1.7	2.0	1.9
Modulus 100 %	MPa	2.6	2.8	2.7	2.7	2.7	2.9	2.6	3.4	3.6
Hardness	Shore A	63	62	62	62	64	63	64	66	64
Rebound	%	42	44	40	42	39	40	37	35	40
Tear resistance (trousers)	N/mm	10.5	9.7	12.4	11.1	13.7	12.3	14.2	11.1	7.8
Compression set										
24 h @ 100°C, 25 % deflection	%	18	15	27	22	28	19	41	21	13
24 h @ 125°C, 25 % deflection	%	23	17	31	25	37	25	49	30	20
24 h @ 150°C, 25 % deflection	%	34	28	42	38	46	34	60	40	29
Air aging, 168 h @ 100°C										
Tensile strength	MPa	4.6	4.6	4.9	4.8	5.2	5.4	5.4	5.7	5.6
Elongation at break	%	292	256	336	235	290	267	274	300	209
Modulus 50 %	MPa	1.8	1.8	1.9	1.9	2.1	1.9	2.2	2.2	2.0
Modulus 100 %	MPa	3.0	3.0	3.1	3.1	3.3	3.3	3.5	3.8	3.7
Hardness	Shore A	66	65	67	69	68	66	74	70	71
Rebound	%	42	43	40	42	39	39	37	35	39
Tear resistance (trousers)	N/mm	9.7	9.1	10.6	9.3	11.0	11.3	12.4	9.9	7.5
Δ Tensile strength	%	+5	+2	+5	+1	0	-11	+3	0	-13
Δ Elongation at break	%, rel.	-39	-43	-34	-50	-47	-43	-50	-31	-37
Δ Modulus 50 %	%	+11	+8	+15	+16	+20	+14	+32	+13	+6
Δ Modulus 100 %	%	+12	+8	+16	+17	+20	+13	+33	+11	+3
Δ Hardness	Shore A	+3	+3	+5	+7	+4	+3	+10	+4	+7
Δ Rebound	%, rel.	0	-2	0	0	0	-3	0	0	-3
Δ Tear resistance (trousers)	%	-7	-7	-15	-16	-19	-8	-13	-12	-3
Air aging, 168 h @ 125°C										
Tensile strength	MPa	5.1	4.9	5.6	4.9	5.5	5.7	5.6	6.4	5.6
Elongation at break	%	213	204	236	183	212	193	196	242	129
Modulus 50 %	MPa	2.1	2.1	2.4	2.2	2.4	2.2	2.4	2.4	2.5
Modulus 100 %	MPa	3.5	3.5	4.0	3.6	3.9	3.9	4.0	4.2	4.7
Hardness	Shore A	71	67	70	68	74	69	73	71	70
Rebound	%	42	43	41	42	39	40	38	36	39
Tear resistance (trousers)	N/mm	7.1	7.1	7.3	7.0	6.9	7.9	7.8	6.4	4.8
Δ Tensile strength	%	+16	+9	+20	+4	+7	-7	+6	+12	-12
Δ Elongation at break	%, rel.	-55	-55	-53	-61	-61	-59	-64	-44	-61
Δ Modulus 50 %	%	+28	+24	+44	+32	+39	+32	+46	+24	+34
Δ Modulus 100 %	%	+31	+25	+51	+34	+42	+34	+53	+23	+29
Δ Hardness	Shore A	+8	+5	+8	+6	+10	+6	+9	+5	+6
Δ Rebound	%, rel.	0	-2	+3	0	0	0	+3	+3	-3
Δ Tear resistance (trousers)	%	-33	-27	-41	-37	-50	-36	-45	-43	-38



	Sillitin V 85	Sillitin V 88	Sillitin N 82	Sillitin N 85	Sillitin Z 86	Sillitin Z 89	Sillitin P 87	P 87 / DEG	Silfit Z 91
M 652.1	4	2	3	1	5	6	7	8	9

Immersion in demineralized water, 168 h @ 95°C

Tensile strength	MPa	3.6	3.4	4.6	3.8	4.6	4.4	5.0	4.7	3.6
Elongation at break	%	689	618	750	616	730	658	777	692	564
Modulus 50 %	MPa	1.2	1.4	1.3	1.4	1.4	1.4	1.4	1.6	1.6
Modulus 100 %	MPa	1.7	1.9	1.8	1.9	1.8	1.9	1.8	2.1	2.1
Hardness	Shore A	60	62	61	63	64	64	63	68	69
Δ Tensile strength	%	-19	-24	-3	-20	-11	-28	-4	-17	-44
Δ Elongation at break	%, rel.	+44	+37	+48	+31	+33	+40	+42	+60	+69
Δ Modulus 50 %	%	-24	-20	-21	-15	-20	-15	-16	-18	-17
Δ Modulus 100 %	%	-36	-32	-33	-29	-33	-33	-32	-40	-42
Δ Hardness	Shore A	-3	0	-1	+1	0	+1	-1	+2	+5
Δ Weight	%	+2.7	+2.3	+3.2	+3.1	+3.0	+2.3	+3.2	+3.0	+2.4
Δ Volume	%	+4.3	+3.8	+4.9	+4.4	+4.4	+3.3	+4.8	+4.4	+3.3

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	80	75	85	80	85	85	95	95	85
Mass temperature	°C	74	74	72	74	74	74	75	75	77
Torque	Nm	135	135	135	140	140	140	145	145	145
Output speed	m/min	1.9	1.9	1.9	1.9	1.9	1.9	1.8	1.9	1.9
Output weight	g/min	169	163	160	158	155	175	143	161	173
Rating Garvey profile)*		4 2 4 4	4 2 4 4	4 2 4 4	4 2 4 4	4 4 4 4	4 4 4 4	4 3,5 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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