

OTHER APPLICATION

Profile, solid, light-colored

Light-colored EPDM extrusion formulation

60/70 Shore A, EPDM, sulfur 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 652.3	4	2	3	1	6	7	8	9	10
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
Rhenogran ZBEC-70		2	2	2	2	2	2	2	2	2
Rhenogran CBS-80		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Rhenogran CLD-80		1	1	1	1	1	1	1	1	1
Rhenogran MBTS-80		1.3	1.3	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	0.75	0.75
Rhenogran TP-50		2	2	2	2	2	2	2	2	2
Total phr		494.55	494.55	494.55	494.55	494.55	494.55	494.55	496.55	494.55

)* No longer available. Recommended: SILLITIN N 75

Mooney Viscosity

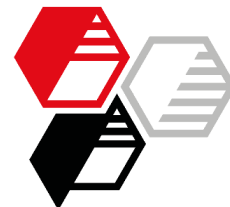
ML (1+4) 100°C	MU	90	83	93	91	99	87	106	105	94
ML (1+4) 120°C	MU	73	66	77	73	83	69	87	89	75

Mooney Scorch

ML (5 MU) 120°C	min	27	26	24	29	24	27	23	17	26
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Rotorless curemeter, 180°C

M _{min}	Nm	0.162	0.127	0.209	0.183	0.257	0.177	0.311	0.292	0.158
M _{max} -M _{min}	Nm	0.558	0.532	0.615	0.580	0.658	0.570	0.738	0.688	0.527
t ₅	min	0.75	0.78	0.68	0.75	0.65	0.82	0.27	0.59	1.03
t ₉₀	min	4.57	3.64	6.20	5.26	7.59	4.74	10.30	5.87	4.18
V _{max}	Nm/min	0.39	0.43	0.41	0.39	0.42	0.44	0.39	0.65	0.37



	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 652.3	4	2	3	1	6	7	8	9	10

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	1.55
Tensile strength	MPa	4.4	4.0	4.9	4.6	5.4	4.7	6.1	5.5
Elongation at break	%	654	623	642	662	631	634	598	546
Modulus 50 %	MPa	1.6	1.5	1.8	1.7	1.8	1.5	2.0	1.9
Modulus 100 %	MPa	2.3	2.1	2.7	2.5	2.8	2.4	3.2	2.8
Hardness	Shore A	61	60	63	63	64	61	65	65
Rebound	%	44	44	43	44	41	42	39	36
Tear resistance (trousers)	N/mm	9.7	8.2	12.6	11.3	12.5	11.3	15.3	12.6

Compression set

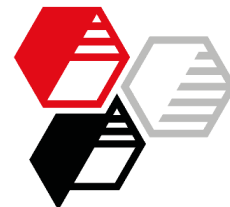
24 h @ 70°C, 25 % deflection	%	21	20	24	22	24	24	26	24
24 h @ 100°C, 25 % deflection	%	59	53	56	58	57	58	58	47

Air aging, 168 h @ 70°C

Tensile strength	MPa	3.6	3.0	4.3	3.6	4.3	4.0	4.8	4.4
Elongation at break	%	536	500	525	410	500	540	469	454
Modulus 50 %	MPa	1.8	1.7	2.0	2.0	1.9	1.7	2.0	2.0
Modulus 100 %	MPa	2.5	2.2	2.8	2.9	2.9	2.5	3.2	2.9
Hardness	Shore A	65	64	67	66	67	65	68	68
Rebound	%	47	48	44	46	42	44	40	37
Tear resistance (trousers)	N/mm	8.3	6.3	10.6	9.8	11.4	10.2	13.6	11.3
Δ Tensile strength	%	-19	-25	-12	-23	-20	-17	-22	-20
Δ Elongation at break	%, rel.	-18	-20	-18	-38	-21	-15	-21	-17
Δ Modulus 50 %	%	+13	+12	+8	+20	+5	+12	+3	+8
Δ Modulus 100 %	%	+8	+6	+5	+14	+2	+6	0	+5
Δ Hardness	Shore A	+4	+4	+4	+3	+3	+4	+3	+3
Δ Rebound	%, rel.	+7	+9	+2	+5	+2	+5	+3	+3
Δ Tear resistance (trousers)	%	-14	-23	-15	-13	-9	-10	-11	-10

Air aging, 168 h @ 100°C

Tensile strength	MPa	3.6	3.0	4.8	4.1	5.0	4.1	5.8	4.7
Elongation at break	%	368	333	380	282	341	388	315	343
Modulus 50 %	MPa	2.4	2.3	2.8	2.7	2.8	2.3	2.9	2.6
Modulus 100 %	MPa	3.2	2.8	3.9	3.8	4.1	3.4	4.6	3.8
Hardness	Shore A	71	69	72	72	72	70	72	73
Rebound	%	50	50	48	49	46	48	42	40
Tear resistance (trousers)	N/mm	5.0	4.3	6.8	6.4	7.1	6.9	9.4	8.9
Δ Tensile strength	%	-18	-25	-2	-12	-7	-14	-6	-14
Δ Elongation at break	%, rel.	-44	-47	-41	-57	-46	-39	-47	-37
Δ Modulus 50 %	%	+49	+52	+52	+64	+55	+52	+50	+40
Δ Modulus 100 %	%	+35	+35	+45	+49	+48	+41	+45	+36
Δ Hardness	Shore A	+10	+9	+9	+9	+8	+9	+7	+8
Δ Rebound	%, rel.	+14	+14	+12	+11	+12	+14	+8	+11
Δ Tear resistance (trousers)	%	-49	-48	-46	-43	-43	-39	-39	-29



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M 652.3	4	2	3	1	6	7	8	9	10

Immersion in demineralized water, 168 h @ 95°C

Tensile strength	MPa	4.7	3.4	5.6	4.7	5.3	5.0	5.6	6.0	3.7
Elongation at break	%	550	511	594	543	566	572	590	558	486
Modulus 50 %	MPa	1.6	1.5	1.5	1.8	1.5	1.6	1.5	1.5	1.9
Modulus 100 %	MPa	1.8	1.7	1.7	2.1	1.8	1.8	1.8	1.7	2.1
Hardness	Shore A	65	64	63	70	65	66	63	63	70
Δ Tensile strength	%	+5	-16	+14	0	-2	+5	-9	+8	-16
Δ Elongation at break	%, rel.	-16	-18	-7	-18	-10	-10	-1	+2	-19
Δ Modulus 50 %	%	-3	-4	-19	+8	-16	+5	-24	-21	+14
Δ Modulus 100 %	%	-23	-19	-37	-17	-36	-26	-44	-38	-28
Δ Hardness	Shore A	+4	+4	0	+7	+1	+5	-2	-2	+6
Δ Weight	%	+3.8	+3.5	+3.1	+4.0	+3.2	+3.2	+2.9	+2.6	+2.4
Δ Volume	%	+5.7	+5.1	+4.5	+6.0	+4.7	+4.5	+4.3	+3.7	+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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