MACHINERY and EQUIPMENT
Antivibration mount

55 Shore A, NR, sulfur cure

Guide formulations of HOFFMANN MINERAL		M 579.0	1	4	2	3
NR SMR 20			100.0	100.0	100.0	100.0
Zinkoxyd aktiv			3.0	3.0	3.0	3.0
Stearic acid			1.0	1.0	1.0	1.0
Corax N 774			50.0	25.0	25.0	25.0
SILLITIN Z 86			---	50.0	---	---
AKTISIL MM			---	---	50.0	---
AKTISIL PF 216			---	---	---	50.0
Evolute N 375 (ex Sunthene 4240)			5.0	5.0	5.0	5.0
Vulkanox 4010 NA/LG			1.0	1.0	1.0	1.0
Vulkanox HS/LG			0.5	0.5	0.5	0.5
TMTD pdr-d			0.5	0.5	0.5	0.5
CBS pdr-d-s			3.0	3.0	3.0	3.0
Sulfur			0.3	0.3	0.3	0.3
Total phr			164.3	189.3	189.3	189.3
Density		g/cm³	1.12	1.25	1.25	1.25
Mooney Viscosity						
ML (1+4) 120°C	DIN 53523, T3	MU	23	18	18	19
Mooney Scorch						
ML (5 MU) 120°C	DIN 53523, T4	min	32	32	32	32
Rotorless curemeter, 170°C						
Mmin	DIN 53529, T3	Nm	0.036	0.031	0.028	0.031
Mmax	DIN 53529, T3	Nm	0.535	0.513	0.528	0.553
t_5	DIN 53529, T3	min	1.6	1.8	1.8	1.7
t_{90}	DIN 53529, T3	min	4.1	3.7	3.7	3.5

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		M 579.0	1	4	2	3
Physical properties						
Press cure 5 min @ 170°C						
Hardness (piled S2 specimen)	DIN ISO 7619-1	Shore A	53	52	53	53
Modulus 50 %	DIN 53504, S2	MPa	0.9	0.9	1.0	1.1
Modulus 100 %	DIN 53504, S2	MPa	1.6	1.9	2.0	2.3
Modulus 200 %	DIN 53504, S2	MPa	4.8	4.7	5.5	6.4
Modulus 300 %	DIN 53504, S2	MPa	9.7	8.4	9.5	11.0
Modulus 500 %	DIN 53504, S2	MPa	19.2	---	---	---
Tensile strength	DIN 53504, S2	MPa	21.1	17.8	19.4	19.3
Elongation at break	DIN 53504, S2	%	515	480	490	455
Tear resistance	DIN ISO 34-1, A	N/mm	9.0	2.5	2.4	2.6
Tear resistance (Graves)	DIN ISO 34-1, B	N/mm	42.4	16.2	15.0	14.6
Volume resistivity	DIN IEC 93	Ω cm	3.1×10^{10}	3.6×10^{13}	2.8×10^{13}	3.0×10^{13}
Compression set	DIN ISO 815, B					
70 h @ 70°C, 25 % deflection		%	28	27	27	26
70 h @ 100°C, 25 % deflection		%	54	55	55	53
Air aging, 168 h @ 70°C, DIN 53508						
Hardness (piled S2 specimen)		Shore A	56	55	55	57
Modulus 50 %		MPa	1.1	1.2	1.2	1.3
Modulus 100 %		MPa	2.0	2.2	2.4	2.8
Modulus 200 %		MPa	5.8	5.4	6.4	7.4
Modulus 300 %		MPa	11.0	9.6	11.0	12.4
Tensile strength		MPa	21.4	18.4	19.5	21.3
Elongation at break		%	475	445	450	455
Δ Hardness		Shore A	+3	+3	+2	+2
Δ Modulus 50 %		%	+21.8	+24.7	+23.7	+21.1
Δ Modulus 100 %		%	+24.7	+20.0	+24.0	+20.6
Δ Modulus 200 %		%	+20.7	+14.9	+17.4	+15.7
Δ Modulus 300 %		%	+13.9	+14.5	+15.3	+13.2
Δ Tensile strength		%	+1.6	+3.5	+0.4	+10.5
Δ Elongation at break		%, rel.	-8.2	-6.4	-8.1	-0.2

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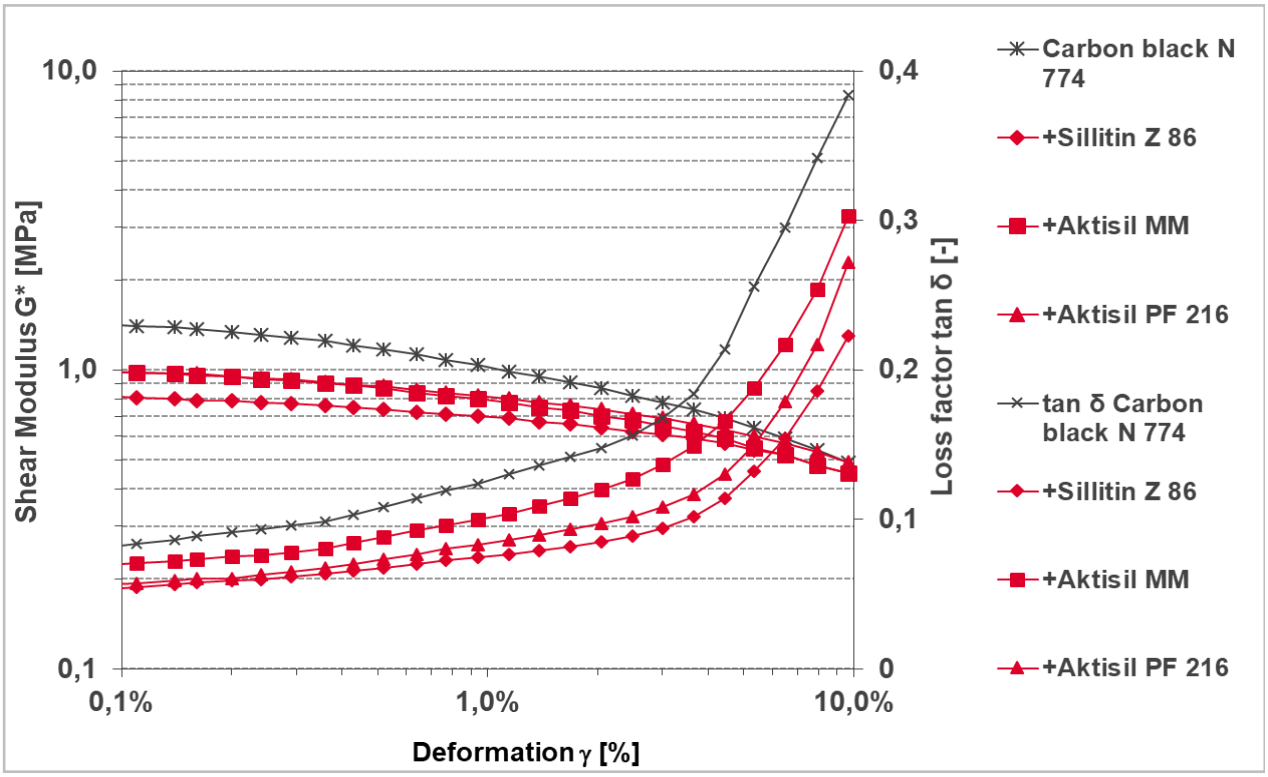
	M 579.0	1	4	2	3
Air aging, 336 h @ 125°C, DIN 53508					
Hardness (piled S2 specimen)	Shore A	84	68	71	72
Tensile strength	MPa	3.7	2.4	4.0	3.9
Elongation at break	%	0.3	0.1	0.9	0.1
Tear resistance (Graves)	N/mm	14.3	10.7	10.0	11.8
Δ Hardness	Shore A	+31	+16	+18	+17
Δ Tensile strength	%	-82.6	-86.3	-79.5	-79.9
Δ Elongation at break	%, rel.	-99.9	-100.0	-99.8	-100.0
Δ Tear resistance (Graves)	N/mm	-66.2	-34.0	-33.2	-19.1

Amplitude sweep, 23°C

Plate/plate-rheometer, frequency f = 0.16 Hz (ω = 1/s)



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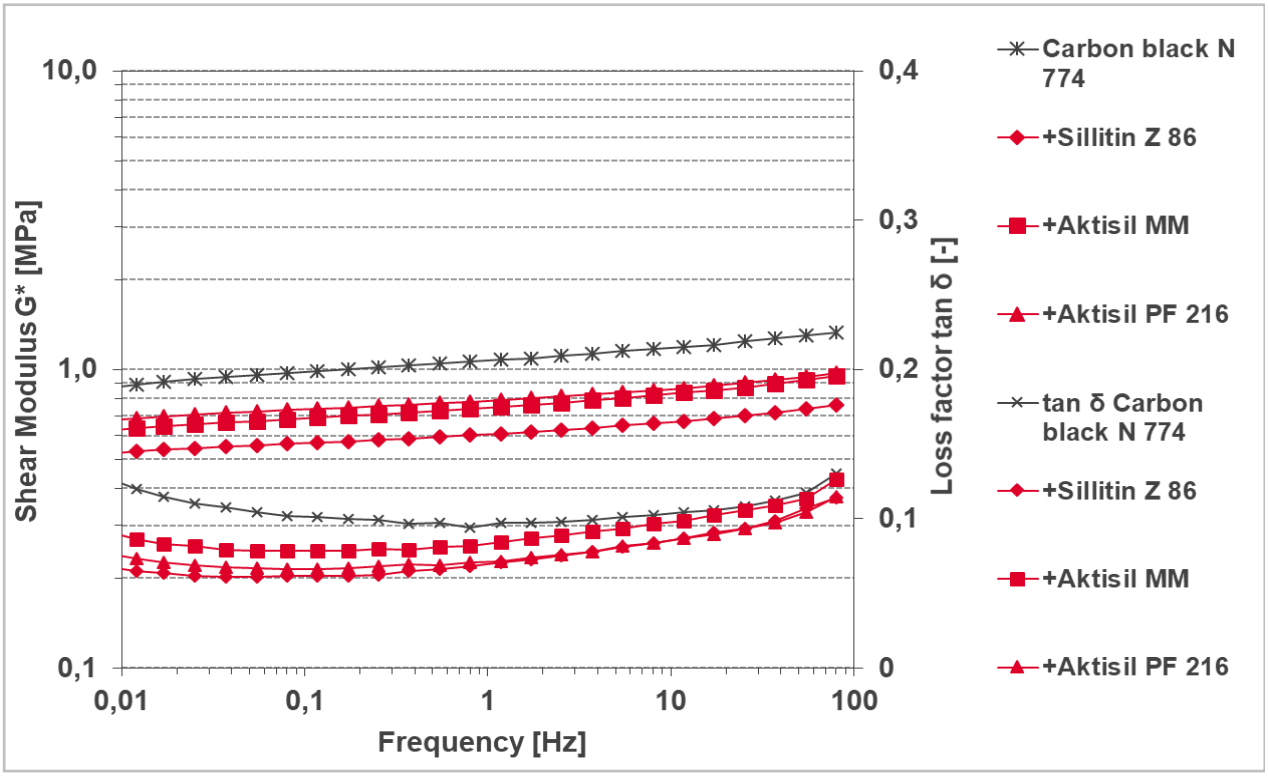
M 579.0/1-4

Frequency sweep, 23°C

Plate/plate-rheometer, deformation γ = 0.3 %



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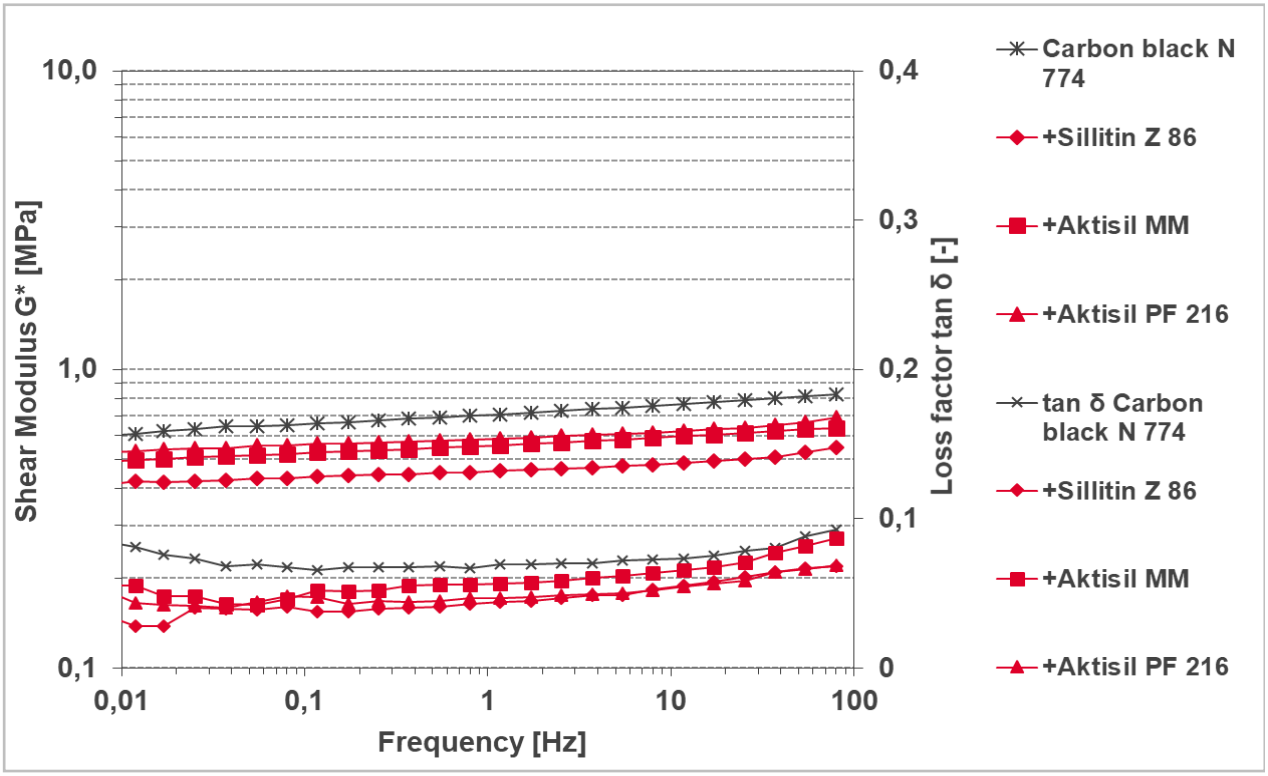
M 579.0/1-4

Frequency sweep, 100°C

Plate/plate-rheometer, deformation γ = 0.3 %



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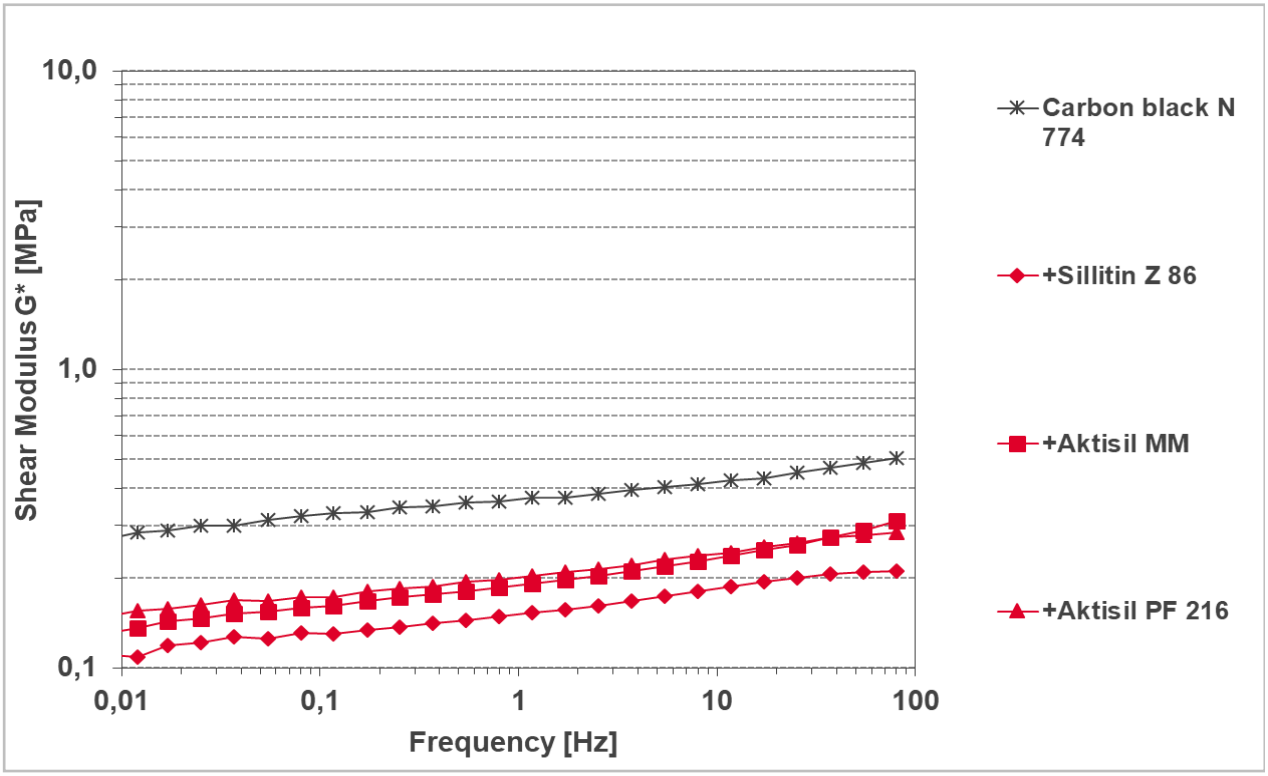
M 579.0/1-4

Change of shear modulus in frequency sweep, 23°C vs. 100°C

Plate/plate-rheometer, deformation γ = 0.3 %



More information on this topic:

Antivibration Mount Based on NR

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