

## AUTOMOTIVE INDUSTRY

### Radiator hose

#### Hose cover

65 Shore A, EPDM, peroxide cure

Specification VW TL 523.61

Guide formulation of HOFFMANN MINERAL		M 557.0/7
Vistalon 3666		52.5
Vistalon 7500		70.0
Durex 0		90.0
AKTISIL VM 56		40.0
Process Oil P 460 (ex Sunpar 2280)		22.5
TMQ		1.0
Rhenofit EDMA/S		0.7
Perkadox 14-40B-pd		7.0
Total phr		283.7

#### Mooney Viscosity

ML (1+4) 120°C	DIN 53523, T3	MU	100
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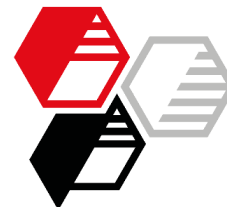
#### Mooney Scorch

ML (5 MU) 120°C	DIN 53523, T4	min	40.7
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#### Goettfert Elastograph, $\pm 0.2^\circ$ , 180°C

t <sub>5</sub>	DIN 53529, T3	min	0.5
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t <sub>90</sub>	DIN 53529, T3	min	4.6
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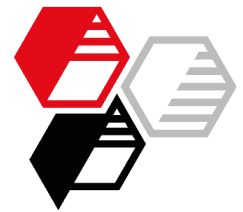
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**Physical properties****Press cure 5 min @ 180°C**

Density	DIN EN ISO 1183-1	g/cm <sup>3</sup>	1.19
Hardness	DIN ISO 7619-1	Shore A	67
Modulus 100 %	DIN 53504, S2	MPa	4.0
Modulus 300 %	DIN 53504, S2	MPa	9.7
Tensile strength	DIN 53504, S2	MPa	11.9
Elongation at break	DIN 53504, S2	%	395
Rebound	DIN 53512	%	52
Tear resistance	DIN ISO 34-1, A	N/mm	8.2

**Compression set**

22 h @ 160°C, 50 % deflection, 3 h cooled under deflection			
measured after 3 min relaxation		%	45.2
measured after 30 min relaxation		%	41.6
measured after 60 min relaxation		%	40.3
22 h @ 160°C, 25 % defl.	DIN ISO 815, B	%	21



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**Air aging, 94 h @ 160°C, DIN 53508**

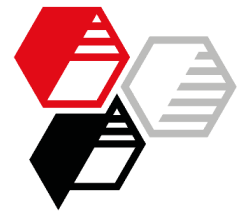
Hardness	Shore A	71
Modulus 100 %	MPa	5.2
Tensile strength	MPa	12.2
Elongation at break	%	265
Rebound	%	51
Tear resistance	N/mm	6.0
Δ Hardness	Shore A	+4
Δ Modulus 100 %	%	+29
Δ Tensile strength	%	+2
Δ Elongation at break	%, rel.	-33
Δ Rebound	%, rel.	-2
Δ Tear resistance	%	-26

**Air aging, 168 h @ 150°C, DIN 53508**

Hardness	Shore A	72
Modulus 100 %	MPa	5.3
Tensile strength	MPa	11.7
Elongation at break	%	260
Rebound	%	51
Tear resistance	N/mm	5.6
Δ Hardness	Shore A	+5
Δ Modulus 100 %	%	+31
Δ Tensile strength	%	-2
Δ Elongation at break	%, rel.	-34
Δ Rebound	%, rel.	+6
Δ Tear resistance	%	-31

**Air aging, 336 h @ 150°C, DIN 53508**

Hardness	Shore A	74
Modulus 100 %	MPa	6.3
Tensile strength	MPa	11.5
Elongation at break	%	210
Rebound	%	49
Tear resistance	N/mm	4.2
Δ Hardness	Shore A	+7
Δ Modulus 100 %	%	+57
Δ Tensile strength	%	-3
Δ Elongation at break	%, rel.	-46
Δ Rebound	%, rel.	-6
Δ Tear resistance	%	-49



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**Immersion in BP Olex MK 4449, 22 h @ 100°C, DIN 53521**

Hardness (piled S2 specimen)	Shore A	46
Modulus 100 %	MPa	4.3
Tensile strength	MPa	7.5
Elongation at break	%	210
Δ Hardness	Shore A	-22
Δ Modulus 100 %	%	+8
Δ Tensile strength	%	-37
Δ Elongation at break	%, rel.	-47
Δ Weight	%	+68
Δ Volume	%	+93

**Immersion in VW coolant G 12 (50 vol-% in deionized water), 94 h @ 160°C**

Hardness (piled S2 specimen)	Shore A	67
Modulus 100 %	MPa	3.7
Tensile strength	MPa	11.5
Elongation at break	%	370
Δ Hardness	Shore A	-1
Δ Modulus 100 %	%	-8
Δ Tensile strength	%	-4
Δ Elongation at break	%, rel.	-6
Δ Weight	%	+2.2
Δ Volume	%	+1.5

**More information on this topic:**

[Effect of Aktisil VM 56 in Radiator Hose acc. to VW TL 523 61](#)

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