

T40-M00



Introduction

Seflor® T40-M00 fluoroelastomer is a medium viscosity terpolymer of hexafluoropropene, tetrafluoroethylene and vinylidene fluoride particularly suitable for injection moulding of sealing devices that must meet the most critical conditions of usage. Due to narrow molecular weight distribution and a low long chain branching content Seflor® T40-M00 fluoroelastomer offers significant processing ease that can be modified when blended with similar fluoroelastomers. Seflor® T40-M00 is especially suited to curing with bisphenol-phosphonium salt systems.

Seflor® T40-M00 provides:

- improved injection rate
- fast curing rates
- low mould fouling
- easy mould release
- good mould flow
- improved extrusion
- good compression set resistance

Application

- Injection Moulded goods
- O rings
- Gaskets, seals and profiles
- Extruded cords

Safety and Handling

Despite the chemical inertness at ambient temperature, Seflor® T types fluoroelastomers should be handled in such a way to avoid contact with skin and eyes. In case of contact, wash thoroughly with soap and water. Store in a well ventilated place away from any source of heat. Smoking is strictly forbidden in working and storage areas. In the event of fire, toxic gases are produced. Refer to MSDS for additional information. For the safe handling of other compound ingredients normally used in fluoroelastomers compounding, please refer to the respective manufacturers.

Product Description

Chemical Composition	Terpolymer of hexafluoropropene, tetrafluoroethylene and vinylidene fluoride
Physical Form	Slabs
Color	Off white
Odor	Odorless
Specific Gravity	1,88 ± 0,02 g/cm ³
Fluorine Content	68,5 %
Glass transition temperature (T_g)	- 13 ± 1 °C
Solubility	Low molecular weight esters and ketones
Storage Stability	Excellent
Mooney Viscosity, ML 1+10 at 121 °C (250 °F)	40 MU

Seflor® T40-M00 typical Compound

Seflor® T40-M00	91,8	phr
High activity magnesium oxide (MgO)	3	phr
Calcium Hydroxide (Ca(OH)₂)	6	phr
Medium Thermal Carbon Black (N990)	30	phr
Seflor® Curative 1¹	7,2	phr
Seflor® Curative 3²	1	phr
Processing aids (wax)	1	phr

1) Fluoroelastomer masterbatch 33% by weight of Bisphenol AF (4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bisphenol) and Benzyltriphenylphosphonium salt with 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bisphenol (1:1)

2) Fluoroelastomer masterbatch 33% by weight of Benzyltriphenylphosphonium chloride

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AND DISTRIBUTED BY



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Performance of Seflor® T40-M00 in typical Compound

STOCK PROPERTIES

MDR at 180 °C, 6 min

ML	1,27	dN*m
T _s 2	1,15	min
T _c 90	2,39	min
MH	29,04	dN*m

Mechanical properties at 23°C, after aging in air 70 hrs at 250°C

100% modulus	5,3	MPa
Tensile strength	10,7	MPa
Elongation at the break	198	%
Hardness	80	ShoreA

VULCANIZATE PROPERTIES

Slabs cured 10 min at 180°C, 110 kPa, post cured 3+18 hrs at 230°C

100% modulus	5,4	MPa
Tensile strength	11,2	MPa
Elongation at the break	220	%
Hardness	78	ShoreA

Swelling resistance in test fluids, Δ Volume %

Fuel C, 70 hr at 23°C	+ 3,6	%
Methanol (99%), 70 hr at 23°C	+ 20	%
IRM 903 Oil, 70 hr at 150°C	+ 1,8	%

Compression set, Method B disks, 25% def.

Aged 70 hr @ 200°C 29%

Effect of filler (carbon black) level on Seflor® T40-M00 properties

	A	B	C	
Seflor® T40-M00	91,8	91,8	91,8	phr
High activity magnesium oxide (MgO)	3	3	3	phr
Calcium Hydroxide (Ca(OH) ₂)	6	6	6	phr
Medium Thermal Carbon Black (N990)	30	30	30	phr
Seflor® Curative 1 ¹	7,2	7,2	7,2	phr
Seflor® Curative 2 ²	1	1	1	phr
Processing aids (wax)	1	1	1	phr

1) Fluoroelastomer masterbatch 33% by weight of Bisphenol AF {4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bisphenol} and Benzyltriphenylphosphonium salt with 4,4'-[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bisphenol (1:1)

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STOCK PROPERTIES

MDR at 180 °C, 6 min

	A	B	C	
ML	1,27	0,92	0,64	dN*m
T _s 2	1,15	1,38	1,68	min
T _c 90	2,39	2,53	2,79	min
MH	29,04	21,95	17,27	dN*m

VULCANIZATE PROPERTIES

Slabs cured 10 min at 180°C, 110 kPa, post cured 24 hrs at 230°C

	A	B	C	
100% modulus	5,4	4,2	3,0	MPa
Tensile strength	11,2	10,5	9,8	MPa
Elongation at the break	220	235	270	%
Hardness	78	68	60	ShoreA

Compression set, Method B disks, 25% def.

	A	B	C	
Aged 70 hr @ 200°C	29	28	26	%

Test procedures

Compression set	ASTM D 395, Method B	Mooney viscosity	ASTM D 1646
Compression set, O-ring	ASTM D 1414	Property change after oven heat aging	ASTM D 573
Hardness	ASTM D 2240, Durometer A (Shore A)	Stress strain properties	ASTM D 412
MDR (Moving Die Rheometer)	ASTM D 5289	Volume change in fluids	ASTM D 471

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