

Introduction

Eliflon C20-M00 fluoroelastomer is a medium-low viscosity copolymer of hexafluoropropene and vinylidene fluoride particularly suitable for injection moulding of sealing devices that must meet the most critical conditions of usage. The polymer is also appropriate for compression molding and extrusion applications. Due to narrow molecular weight distribution and a low long chain branching content Eliflon C20-M00 fluoroelastomer offers significant processing ease that can be modified when blended with similar fluoroelastomers. Eliflon C20-M00 is especially suited to curing with bisphenol-phosphonium salt systems.

Eliflon C20-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, Eliflon C 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	Copolymer of hexafluoropropene and vinylidene fluoride
Physical Form	Slabs
Color	Off white
Odor	Odorless
Specific Gravity	1,81 ± 0,02 g/cm ³
Fluorine Content	66 %
Glass transition temperature (Tg)	- 18 ± 1 °C
Solubility	Low molecular weight esters and ketones
Storage Stability	Excellent
Mooney Viscosity, ML 1+10 at 121 °C (250 °F)	20 MU

Eliflon C20-M00 typical Compound

Eliflon C20-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
Eliflon Curative 1¹	7,2	phr
Eliflon 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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C20-M00



Performance of Eliflon C20-M00 in typical Compound

STOCK PROPERTIES

MDR at 180 °C, 6 min

ML	0,60	dN*m
T _s 2	1,05	min
T _c 90	1,87	min
MH	28,51	dN*m

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

100% modulus	4,8	MPa
Tensile strength	11,9	MPa
Elongation at the break	190	%
Hardness	74	ShoreA

Compression set, Method B disks, 25% def.

Aged 70 hr @ 200°C 19%

VULCANIZATE PROPERTIES

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

100% modulus	5,7	MPa
Tensile strength	12,3	MPa
Elongation at the break	220	%
Hardness	73	ShoreA

Swelling resistance in test fluids, Δ Volume %

Fuel C, 70 hr at 23°C	+ 3,5	%
Methanol (99%), 70 hr at 23°C	+ 75	%
IRM 903 Oil, 70 hr at 150°C	+ 2,0	%

Effect of filler [carbon black] level on Eliflon C20-M00 properties

	A	B	C	
Eliflon C20-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)	45	45	45	phr
Eliflon Curative 1 ¹	7,1	7,1	7,1	phr
Eliflon Curative 2 ²	1	1	1	phr
Processing aids (wax)	1	1	1	phr

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C20-M00



STOCK PROPERTIES

MDR at 180 °C, 6 min

	A	B	C	
ML	0,75	0,60	0,38	dN*m
T _s 2	0,93	1,06	1,19	min
T _c 90	1,58	1,87	2,03	min
MH	32,51	28,51	20,25	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	10,1	5,7	2,0	MPa
Tensile strength	13,1	12,3	8,9	MPa
Elongation at the break	182	220	247	%
Hardness	85	73	59	ShoreA

Compression set, Method B disks, 25% def.

	A	B	C	
Aged 70 hr @ 200°C	23	19	15	%

Test procedures

Compression set	ASTM D 395, Method B
Compression set, O-ring	ASTM D 1414
Hardness	ASTM D 2240, Durometer A (Shore A)
MDR (Moving Die Rheometer)	ASTM D 5289

Mooney viscosity	ASTM D 1646
Property change after oven heat aging	ASTM D 573
Stress strain properties	ASTM D 412
Volume change in fluids	ASTM D 471

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