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3M Advanced Materials Division

3M™ Dyneon™ Fluoroelastomer FC 2152

Features and Benefits

- Medium viscosity
- Excellent demolding of complex geometric profiles
- Best used for custom shapes
- Process targets: compression and transfer molding, and calendering

Typical Applications:

- Suitable for the manufacture of molded parts with complex shapes which require an excellent demoldability

Note: Data in this document are not for specification purposes.

Typical Properties

Property	Units	Value
Fluorine Content	%	65.9
Specific Gravity		1.80
Color		Opaque Off-White
Solubility		Ketones and Esters
Mooney Viscosity ML 1 + 10 @ 121°C (250°F)	MU	Approximately 51

Product Description

3M™ Dyneon™ Fluoroelastomer FC 2152 is a copolymer of vinylidene fluoride and hexafluoropropylene with proprietary incorporated cure technology.

Processing Guidelines

Dyneon FC 2152 can be compounded using standard water cooled internal mixers or two-roll mills with standard fillers and ingredients utilized in typical fluoroelastomer formulations. The dry ingredients should be blended before adding to the masticated gum. For best results, Dyneon FC 2152 should be banded on the mill several minutes prior to adding the blended dry ingredients. Once mixed, the compounded stocks have good scorch resistance and storage stability.

Delivered Product Form

FC 2152 is packaged in bale form. Quantities are available in 25.0 kg (55.1 lbs) boxes.

Safety/Toxicology

Follow recommended handling precautions for use of Dyneon fluoroelastomers from 3M. General handling precautions include: (1) Store and use all Dyneon fluoroelastomers only in well ventilated areas. (2) Do not smoke in areas contaminated with dust from Dyneon fluoroelastomers. (3) Avoid eye contact. (4) After handling Dyneon fluoroelastomers, wash any contacted skin with soap and water.

Potential hazards, including evolution of toxic vapors, do exist during compounding or processing under high temperature conditions. Before processing Dyneon fluoroelastomers, consult the product Safety Data Sheet (SDS) and follow all label directions and handling precautions. You should also read and follow all directions from other compound ingredient suppliers. Refer to the Dyneon fluoroelastomer safety data sheet for additional safety information.

ISO Registrations

All Dyneon fluoroelastomers are manufactured at ISO 9001 and 14001 registered facilities.

Typical Properties of Vulcanizate

Compound	Amount (in parts/100)
3M™ Dyneon™ Fluoroelastomer FC 2152	100
N990 MT Carbon Black	30
MgO	3
$Ca(OH)_2$	6

Typical Rheological Properties [ASTM D5289] Moving Die Rheometer (MDR) 100 cpm, 0.5° Arc 6 Minutes @ 177°C (351°F)

Property	Units	Value
ML, Minimum Torque	dN·m (in-lb)	2.5 (2.2)
ts2, Time to 2 Inch-lb Rise from Minimum	Minutes	1.0
t'50, Time to 50% Cure	Minutes	1.3
t'90, Time to 90% Cure	Minutes	1.8
MH, Maximum Torque	dN·m (in-lb)	15.8 (14.0)

Typical Physical Properties [ASTM D412 Method A, Die D] Press Cure 5 Minutes @ 177°C (351°F) Post Cure 24 Hours @ 230°C (446°F)

Property	Units	Value
Tensile	MPa (psi)	16.3 (2363)
100% Modulus	MPa (psi)	3.4 (493)
Elongation at Break	%	330
Durometer Type A Hardness [ASTM D2240]	Points	71

Compression Set Resistance [ASTM D1414]

70 Hours @ 200°C (392°F)

Property	Units	Value
Post Cured 16 Hours @ 230°C (446°F)	%	22
Post Cured 24 Hours @ 260°C (500°F)	%	22

Low Temperature [ASTM D1329]

Property	Unit	Value
TR10	°C (°F)	-18 (0)

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