Product Data Sheet

Commercial Product

3M™ Dyneon™

Fluoroelastomer FPO 3520
Low Fluorine Peroxide Curable

Product Description

3M™ Dyneon™ Fluoroelastomer FPO 3520 is a peroxide curable fluoroelastomer terpolymer containing 66 wt% fluorine. FPO 3520 can be used in compression, transfer or injection moulding, and extrusion processes.

Special Features

- Composition: terpolymer of vinylidene fluoride, hexafluoropropylene and tetrafluoroethylene plus cure site monomer
- Process target: moulding and extrusion
- Excellent flow
- Excellent scorch safety
- Excellent physical properties
- Excellent low temperature properties
- High resistance against chemical fluids

Typical Applications

Dyneon Fluoroelastomer FPO 3520 is typically used in applications, where low temperature resistance is needed.

Typical Polymer Properties

Property	Test method	Unit	Value
Colour			Off-White
Fluorine Content	QCM 50.18.3C	%	65.2
Mooney Viscosity (raw gum) ML 1 + 10 @ 121 °C	QCM 2.14.4C	Mooney unit	25
Solubility			Ketones and Esters
Specific Gravity	QCM 14.10		1.81
Tg		°C	- 23

Storage and Handling

Store and use all Dyneon Fluoroelastomers only in well-ventilated areas under cool and dry conditions.

The shelf life of product Dyneon Fluoroelastomer FPO 3520 is 3 years from date of manufacturing.

Delivery Form

Dyneon Fluoroelastomer FPO 3520 is delivered in slab form.

Packaging sizes are:

- 25 kg cardboard box
- 600 kg returnable bulk shipping container systems comprised of 48 PE bags, containing 12.5 kg of product each

Processing Recommendations

Dyneon Fluoroelastomer FPO 3520 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, FPO 3520 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.

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Typical Properties

Compound	Amount (in Parts/100)
FPO 3520	100
Carbon Black MT N-990	30
TAIC (70 %)	4
Trigonox 101-50D	3
ZnO	3

Typical Rheological Properties

Alpha Technologies Moving Die Rheometer (MDR 2000), 100 cpm, 0.5° Arc, (QCM 2.19.1)
Test Condition, 6' @ 177°C

Property	Unit	Value
ML, Minimum Torque	dNm	0.7
MH, Maximum Torque	dNm	18.8
ts2	Minutes	0.5
t'50, Time to 50 % cure	Minutes	0.7
t'90, Time to 90 % cure	Minutes	2.2

Typical Physical Properties

Press Cured 7' @ 180 °C
Post Cured 2 hours @ 180 °C

Property	Unit	Value
Physical Properties DIN 53504 (S2 DIE)		
100 % Modulus	MPa	5.8
Tensile	MPa	19.3
Elongation at break	%	204
Hardness (ASTM D2240)	Shore A	70
Compression Set on buttons ASTM D395 method B		
70 hours @ 200 °C	%	32
Compression Set on 2 mm disks; 50% deformation VDA 675218		
22 hours @ 150 °C	%	62
Lower Temperature Property		
TR10 (ASTM D1329)	C	-20

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Safety Instructions

Follow the normal precautions observed with all fluoropolymer materials.

Please consult the Material Safety Data Sheet and Product Label for information regarding the safe handling of the material. By following all precautions and safety measures, processing these products poses no known health risks. General handling/processing precautions include: 1) Process only in well-ventilated areas. 2) Do not smoke in areas contaminated with powder/residue from these products. 3) Avoid eye contact. 4) If any skin comes into contact with these products during handling, wash with soap and water afterwards. 5) Avoid contact with hot fluoropolymer.

Potential hazards, including release of toxic vapours, can arise if processing occurs under excessively high temperature conditions. Vapour extractor units should be installed above processing equipment. When cleaning processing equipment, do not burn off any of this product with a naked flame or in a furnace.

Important Notice

All information set forth herein is based on our present state of knowledge and is intended to provide general notes regarding products and their uses. It should not therefore be construed as a guarantee of specific properties of the products described or their suitability for a particular application. Because conditions of product use are outside Dyneon's control and vary widely, user must evaluate and determine whether a Dyneon product will be suitable for user's intended application before using it.

The quality of our products is warranted under our General Terms and Conditions of Sale as now are or hereafter may be in force.
Technical information, test data, and advice provided by Dyneon personnel are based on information and tests we believe are reliable and are intended for persons with knowledge and technical skills sufficient to analyse test types and conditions, and to handle and use raw polymers and related compounding ingredients. Testing in accordance with DIN, ISO and ASTM.

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General recommendations on health and safety in processing, on work hygiene and on measures to be taken in the event of accident are detailed in our material safety data sheets.

You will find further notes on the safe handling of fluoropolymers in the brochure "Guide for the safe handling of Fluoropolymers Resins" (download link) by PlasticsEurope, Box 3, B-1160 Brussels, Tel. +32 (2) 676 17 32.

You can also download it with your smartphone using the QR code below.

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We will gladly supply further contact details for our full network of global sales offices. Alternatively, find them here.

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