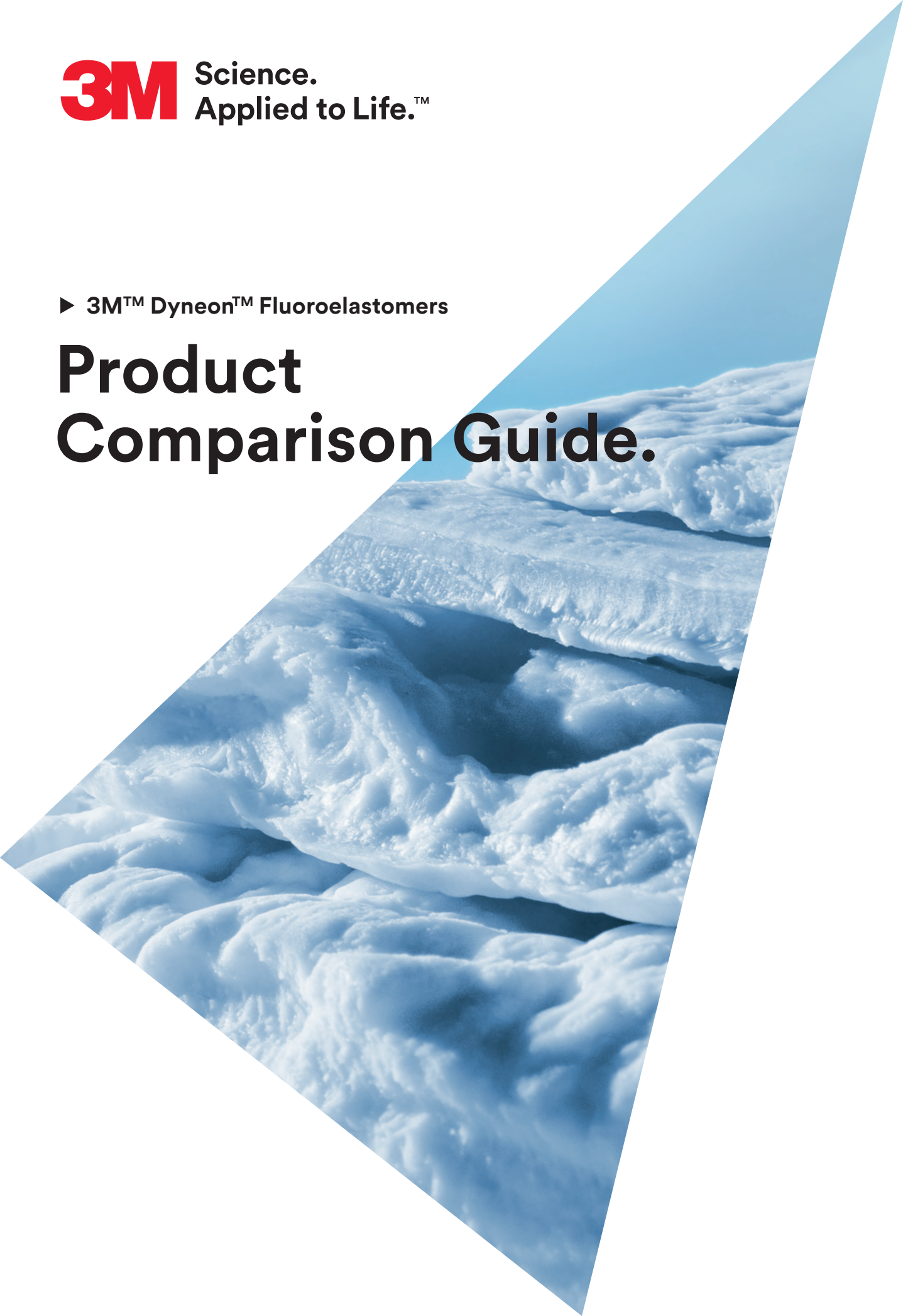


► 3M™ Dyneon™ Fluoroelastomers

Product Comparison Guide.



3M™ Dyneon™ Fluoroelastomers

Typical Physical Properties.

(not for specification purposes)

Raw gums , bisphenol cure	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)
FC 2178	65.9	100	- 18
FC 2211	65.9	20*	- 18
FC 2230	65.9	38	- 18
FE 5522	65.5	29	- 19
FT 2430	68.6	31	- 14

Peroxide curable fluoroelastomers	Test cpd.	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Tensile strength (MPa)	Elongation (%)	100% Modulus (MPa)	Compression set (%)**
FPO 3520	II	65.2	25	- 19	19.3	204	5.8	32
FPO 3630	III	67.3	37	- 17	24.0	197	7.0	24
FPO 3632	III	67.3	37	- 16	19.4	176	6.6	26
FPO 3730	V	69.8	35	- 7	23.8	183	8.4	30
FPO 3731	VI	69.8	35	- 6	20.9	188	7.3	35

Low temperature fluoroelastomer	Test cpd.	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Tensile strength (MPa)	Elongation (%)	100% Modulus (MPa)	Compression set (%)**
LTFE 6320Z	X	64.2	20	- 30	21.2	230	4.2	20
LTFE 6350Z	X	64.3	50	- 30	21.8	250	4.4	22
LTFE 6400Z	I	67.1	103	- 40	13.7	180	5.4	26

Perfluoroelastomers	Test cpd.	Hardness (Sh A)	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Tensile strength (MPa)	Elongation (%)	100 % Modulus (MPa)	Compression set (%)**
PFE 90Z	VII	73	90	- 2	19.8	134	13.1	29
PFE 40Z	VIII	72	40	- 6	19.0	144	10.4	15
PFE 131TZ	IX	74	80	- 2	15.2	165	8.6	15
PFE 7104BZ	Compound	76	90	- 2	17.5	137	13.0	29
PFE 7502BZ	Compound	76	-	0	15.8	129	11.6	15
PFE 7301BZ	Compound	80	-	- 2	17.0	153	12.5	14
E-21464	Compound	80	-	-	10.9	152	9.2	14
PFE 7403WZ	Compound	74	-	-	10.6	230	4.7	18

Test compounds	I	II	III	IV	V	VI	VII	VIII	IX	X
Polymer	100	100	100	100	100	100	100	100	100	100
MT Black (N990)	50	30	30	30	30	30	20	20		30
FEF Carbon Black N550									13.5	
PFE 01CZ									7.5	
ZnO	5	3	3		3		5			3
TAIC (70%)	1.8	4	3.5	4	2.85	2.85	2.5	2.5		4.3
Trigonox 101-50Pd		3	3	4	3	2.5	1.5	1.5		3
Varox™ DBPH-50 Peroxide	2.5									
Aerosil R972									1.5	

Varox is trademark of R.T. Vanderbilt Company, Inc.

*ML1 +10@100 °C

** Compression set measured after post cure acc. to ASTM D395, method B.

For more details please see the technical data sheet.

3M™ Dyneon™ Fluoroelastomers

Product Recommendations.

Grades with incorporated bisphenol cure system	Injection Moulding				
	Allround grades		Advanced grades		Allround
O-Rings Dipolymers	FC 2121 FE 5620Q Improved curative system*		FE 5610 FE 5621N FE 5623 FE 5625N MIP 8640X FG 5630Q Low viscosity grade as modifier Lower mould shrinkage Faster curing For multi-cavity moulds Improved processing Special for FDA compliant parts		FC 2174 FC 2179 FE 5640Q
Terpolymers			FE 5520 FE 5840Q MIP 8740 MIP 8781 Improved low temp flexibility Improved fuel resistance Improved processing Improved metal bonding		FX 9194 FE 5840Q
Terpolymer peroxide curable, raw gum	FPO 3630				
Moulded Goods Dipolymers			FC 2122 FE 5622Q Improved mould release Improved curative system*		FC 2152
Terpolymers	FX 11818				
Moulded Goods, metal bonding Dipolymers			FC 2123Z FC 2124 FE 5622Q Better flow Faster curing Improved curative system*		FC 2144
Terpolymers			FX 3734 Improved compression set		

This leaflet contains a selection of products recommended for specific applications. Other products might be available, too. Some of the products may be available in certain regions only. Please contact your 3M sales representative for more details.

Compression/Transfer Moulding			Extrusion		
grades	Advanced grades		%F	Bisphenol cure dipolymers terpolymers	Peroxide curable
High mooney grade (80) Improved curative system*	MIP 8640X	Improved processing	70%		FE 5830Z
			69%		FPO 3730 FPO 3731
			68%		FX 11818
Improved curative system*	MIP 8740	Improved processing			
	FE 5530	Improved low temp flexibility	67%		FPO 3632
			66%	FC 2120 FC 2181Z	
	FC 2144	Improved compression set			
	FE 5642	Improved curative system*			
	FX 9194	Improved compression set			
	FE 5642	Improved curative system*			

*The improved curative package of the 5000 series offers (depending on product type):

- Cleaner running
- Better flow
- Excellent mould release
- Improved scorch resistance at higher moulding temperatures
- More consistent cycle-to-cycle part dimensions
- Improved metal adhesion

Incorporated bisph . cure fluoroelastomers, dipolymers	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Hardness (ShA)	Tensile strength (MPa)	Elongation (%)	100% Modulus (MPa)	Compression set (%)*	Compression set (%)**
FC 2120	65.9	23	-18	74	15.5	210	5.9	22	16
FC 2121	65.9	24	-18	78	15.5	180	7.0	20	18
FC 2122	65.9	25	-18	72	14.8	350	3.3	28	27
FC 2123Z	65.9	25	-18	69	14.0	325	3.1	22	22
FC 2124	65.9	23	-18	70	16.5	300	3.6	22	20
FC 2144	65.9	41	-18	70	17.0	260	4.2	18	17
FC 2152	65.9	51	-18	71	16.3	330	3.4	22	22
FC 2174	65.9	40	-18	77	16.0	185	7.0	18	12
FC 2179	65.9	80	-18	74	16.5	200	7.0	13	10
FC 2181Z	65.9	44	-18	72	17.5	240	4.5	18	15
FE 5610	65.9	17	-18	76	14.0	215	5.3	23	15
FE 5620Q	65.9	23	-18	77	15.4	195	6.5	15	13
FE 5621N	65.9	23	-18	77	15.4	195	6.5	15	13
FE 5622Q	65.9	22	-18	71	16.2	300	3.6	23	22
FE 5623	65.9	24	-18	78	15.0	190	6.5	19	18
FE 5625N	65.9	20	-18	78	13.0	180	6.8	16	15
FE 5640Q	65.9	40	-18	77	15.5	220	6.0	16	12
FE 5642	65.9	42	-18	71	17.8	290	4.2	15	15
FG 5630Q	65.9	30	-18	80	15.5	170	8.5	27	22
FG 5690Q	65.9	97	-18	76	17.2	215	6.7	19	17
MIP 8640X	65.9	43	-18	78	15.0	175	7.8	21	19

Incorporated bisph . cure fluoroelastomers, terpolymers, low fluorine	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Hardness (ShA)	Tensile strength (MPa)	Elongation (%)	100% Modulus (MPa)	Compression set (%)*	Compression set (%)**
FE 5520	65.5	26	-19	76	14.5	185	6.6	18	17
FE 5530	65.5	42	-19	71	15.4	215	5.2	18	17

Incorporated bisph . cure fluoroelastomers, terpolymers	% F	Mooney viscosity (ML1 +10@121)	TR10 (°C)	Hardness (ShA)	Tensile strength (MPa)	Elongation (%)	100% Modulus (MPa)	Compression set (%)*	Compression set (%)**
FT 2350	68.6	56	-14	73	15.0	345	3.6	45	38
FX 11818	68.6	28	-14	77	12.5	290	4.0	37	33
FX 3734	68.6	49	-13	74	15.8	260	4.5	31	25
FX 9194	68.6	52	-13	77	16.5	250	4.7	30	27
MIP 8740	68.6	41	-13	82	15.1	205	6.3	28	28
MIP 8781	68.6	80	-13	72	17.3	270	4.1	40	
FE 5830Z***	70.0	36	-7	73	11.5	240	4.3	44***	
FE 5840Q	70.1	37	-7	86	15.0	240	6.0	35	43

Test compound: Polymer 100 phr, MT Black (N990) 30 phr, MgO 3 phr, Ca(OH)2 6phr

Post cure conditions:

* 16h/230 °C

** 24h/260 °C

*** 2h/180 °C

Compression set measured acc. to ASTM D1414: 70h/200 °C

Technical Information and Test Data

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. No license under any Dyneon or third party intellectual rights is granted or implied by virtue of this information.

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" by PlasticsEurope, Box 3, B-1160 Brussels, Tel. +32 (2) 676 17 32.

The present edition replaces all previous versions. Please make sure and inquire if in doubt whether you have the latest edition.

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.

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