

3M Advanced Materials Division

3M™ Dyneon™ Fluoroelastomer LTFE 6400ZC

Low Temperature Peroxide Curable

Features and Benefits

- High viscosity
- Peroxide curable
- Good compression set resistance with low/no post-cure
- Very good chemical resistance against most chemicals, such as acids, bases, fuels, oils, coolants and alcohols
- Processes comparable to other peroxide-cured fluoroelastomers
- Can be formulated to meet AMS 7379

Typical Applications

Dyneon LTFE 6400ZC can be used for manufacturing o-rings for fuel injectors and other parts.

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

Typical Polymer Properties

Property	Units	Value
Fluorine Content	%	67.1
Specific Gravity		1.86
Color		Translucent, clear-amber
Solubility		Ketones and esters
Mooney Viscosity ML 1 + 10 @ 121°C (250°F)	MU	100
Tg	°C (°F)	-40 (-40)

Product Description

3M™ Dyneon™ Fluoroelastomer LTFE 6400ZC is a technically advanced, -40°C (-40°F) low temperature, peroxide-cured fluoroelastomer, designated as a FKM type 3 elastomer per ASTM D1418. It is designed to meet the challenging demands of the automotive, aerospace and chemical processing industries, which require low-temperature sealing in chemically aggressive environments.

Processing Guidelines

Dyneon LTFE 6400ZC 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 LTFE 6400ZC 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

LTFE 6400ZC is packaged in crumb form in 15 kg (33 lb) and 1 kg (2.2 lb) 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™ LTFE 6400ZC	100
N990 MT Carbon Black	50
ZnO	5
TAIC (98%)	1.8
Trigonox 101-50D	2.5

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, Inch-lb	dN m (inch-lb)	4.5 (4.0)
ts2, Time to 2 Inch-lb Rise from Minimum	Minutes	0.4
t'50, Time to 50% Cure	Minutes	0.5
t'90, Time to 90% Cure	Minutes	0.8
MH, Maximum Torque, Inch-lb	dN m (inch-lb)	15.8 (14.0)

Typical Physical Properties [ASTM D412 Method A, Die D]

Press Cure 10 Minutes @ 177°C (351°F)
Post Cure 16 Hours @ 230°C (446°F)

Property	Units	Value
Tensile	MPa (psi)	13.3 (1928)
100% Modulus	MPa (psi)	6.1 (885)
Elongation at Break	%	175
Hardness, Type A [ASTM D2240]	Points	70

Compression Set on Molded Buttons [ASTM D395 Method B]

Property	Units	Result
70 Hours @ 150°C (302°F)	%	15
70 Hours @ 200°C (392°F)	%	26
168 Hours @ 200°C (392°F)	%	32

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