3M™ Dyneon™
Peroxide Cure Perfluoroelastomer
PFE 80Z

Features and Benefits

- Very low metal ion content with low extractables in a wide range of chemicals
- Ideal for wet chemical, fluid handling, cleaning and chemical etching processes and for semiconductor manufacturing
- Can be compounded for better acid resistance than PFE 90Z
- Upper use temperature of 200°C

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

Typical Properties

Property	
Specific Gravity	2.0
Color	Off-white
Form	Slab
TR 10	-2°C (28°F)
Brittleness Point	-35°C (-31°F)
Mooney Viscosity – ML (1+10) @ 121°C	80

Product Description

3M™ Dyneon™ PFE 80Z is a technically advanced peroxide curable perfluoroelastomer. This product is designed to have improved acid resistance and lower metal ion extractables, making it ideal for wet process electronics manufacturing such as semiconductor and flat panel display. It is classified as FFKM per ASTM D1418. Its fully fluorinated backbone structure provides a very broad chemical and thermal stability.

Product Form

Dyneon PFE 80Z is packaged in slab form. It is available in 2 kg boxes.

Safety and Toxicology

Before processing 3M perfluoroelastomers, read and follow all precautions and directions for use contained in the product label and Material Safety Data Sheet (MSDS). General handling precautions and directions for use include: (1) Store and use all 3M perfluoroelastomers only in well ventilated areas; (2) Do not smoke in areas contaminated with dust from 3M perfluoroelastomers; (3) Avoid eye contact; (4) After handling 3M perfluoroelastomers wash any contacted skin with soap and water. Potential hazards, including evolution of toxic vapors, can occur during compounding or processing under excessively high temperature conditions. Appropriate local exhaust ventilation such as vapor extractor units should be installed above compounding or processing equipment. When compounding, be sure to read and follow all precautions and directions for use from other compound ingredient suppliers.

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Typical Properties of Vulcanizate

Compound	phr
PFE 80Z	100
N990 MT Carbon Black	15
Peroxide (VAROX® DBPH – 100% Active)	0.75
Co-agent (TAIC®, 100% Active)	1.5

Typical Rheological [ASTM D5289]
Moving Die Rheometer (MDR)
100 cpm, 0.5° Arc, 6 Minutes @ 177°C (350°F)

Property	
ML, Minimum Torque, Inch-lb (dN m)	1.8 (2.0)
t_s2, Time to 2 Inch-lb Rise from Minimum – Minutes	0.8
t'50, Time to 50% Cure – Minutes	1.1
t'90, Time to 90% Cure – Minutes	2.7
MH, Maximum Torque, Inch-lb (dN m)	11.9 (13.4)

Typical Physical Properties [ASTM D412]
Press Cure 10 Minutes @ 177°C (350°F)
Post Cure 16 Hours @ 200°C (392°F)

Property	
Tensile, psi (MPa)	1590 (11.0)
100% Modulus, psi (MPa)	695 (4.8)
Elongation at Break, %	230
Hardness, Shore A [ASTM D2240]	72

Compression Set Resistance [ASTM D395 Method B, -214 O-rings]

70 Hours @ 200°C (392°F) – 25% Deformation	49
168 Hours @ 200°C (392°F) – 25% Deformation	69

Product Stewardship–Replacement Emulsifier: Dyneon™ and Dynamar™ products identified with a "Z" at the end of the product name indicate products that are made using a replacement emulsifier. This emulsifier, which Dyneon, a 3M subsidiary, began using in the manufacturing processes for these products in 2008, is a polymerization aid used to manufacture certain fluoropolymers and is not an intended ingredient in the polymers. The new emulsifier eliminates the use of the former polymerization aid, APFO (ammonium perfluorooctanoate, the ammonium salt of perfluorooctanoic acid (PFOA)), in the manufacture of these fluoropolymers. The use of the replacement emulsifier in the manufacture of these products is consistent with our product stewardship principles and our commitment to US EPA's Voluntary PFOA Stewardship Program under which fluoropolymer manufacturers agreed to work towards eliminating PFOA in emissions and product content by the year 2015. **We are pleased to report that Dyneon completely eliminated the use of APFO in its manufacturing processes in December 2008.**

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