Product Data Sheet

Experimental Product

3M™ Dyneon™

Fluoroelastomer E-20575
Ultra Low Viscosity Peroxide Curable

Product Description

3M™ Dyneon™ Fluoroelastomer E-20575 is an ultra low viscosity (ULV) fluoroelastomer. E-20575 is an experimental product that has not been introduced or commercialized for general sale. It is a 65.9 % fluorine containing, peroxide curable dipolymer. This product offers excellent flow compared to conventional fluoroelastomers used in many difficult moulding applications.

Special Features

- Composition: dipolymer of vinylidene fluoride and hexafluorpropylene (Type 1 FKM ASTM D1418)
- Peroxide curable with good steam and water resistance
- Excellent flow for moulding complex shapes
- High solids (low VOC) coating
- Excellent viscosity modifier
- Good physical properties with no post cure
- Exceptional low temperature cure capability

Typical Applications

Potential applications for Dyneon E-20575 range from moulding complex shapes to high solid sealants and coatings or viscosity modification of higher viscosity elastomers.

Typical Polymer Properties

Property	Test method	Unit	Value
Colour			Translucent
Fluorine Content	QCM 50.18.3C	%	65.9
Mooney Viscosity - ML 1 + 10 @ 100 °C	QMC 2.14.4C	Mooney Unit	3.5
Specific Gravity	QCM 14.10		1.8
Glass Transition Temperature (Tg)		°C	-20

Storage and Handling

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

The shelf life of Dyneon E-20575 is 3 years from date of manufacturing.

Delivery Form

Dyneon E-20575 is delivered in slab form.

Packaging sizes are:

- Cardboard box with 1 kg content each
- Cardboard box with 25 kg content each

Processing Recommendations

Dyneon E-20575 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 E-20575 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.

Product Data Sheet

Experimental Product

3M™ Dyneon™

Fluoroelastomer E-20575
Ultra Low Viscosity Peroxide Curable

Typical Properties

Compound	Amount (in Parts/100)
Dyneon E-20575	100
Carbon Black MT N-990	30
Zinc Oxide (ZnO)	3
Co-agent (TAIC®, 98 % active)	3
Peroxide (VAROX® DBPH-50)	2

Typical Rheological Properties

Alpha Technologies Moving Die Rheometer (MDR 2000), 100 cpm, 0.5° Arc, ASTM D5289
Test Condition, 6' @ 177 °C

Property	Unit	Value
ML, Minimum Torque	dNm	0.0
MH, Maximum Torque	dNm	15.3
ts2	Minutes	0.5
t'50, Time to 50 % cure	Minutes	0.7
t'90, Time to 90 % cure	Minutes	1.2

Typical Physical Properties

Press Cured 5' @ 177 °C
Post Cured 4 hours @ 232 °C

Property	Unit	Value	Value
Physical Properties ASTM D412			
100 % Modulus	MPa	4.1	4.8
Tensile	MPa	14.4	17.7
Elongation at Break	%	252	220
Hardness (ASTM D2240)	Shore A	67	70
Compression Set on buttons ASTM D395 method B			
22 hours @ 200 °C – Press Cure Only	%	36	
70 hours @ 200 °C – Post Cure	%	46	
Lower Temperature Property			
TR10 (ASTM D1329)	°C	- 19	
TR70 (ASTM D1329)	°C	- 10	

Product Data Sheet

Experimental Product

3M™ Dyneon™

Fluoroelastomer E-20575
Ultra Low Viscosity Peroxide Curable

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 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

This product - marked by the designation “E” - is an experimental or developmental product provided for the purpose of experiments, testing and evaluation. It may be subject to modification, product limitation or cancellation by Dyneon at any time without prior notice. In addition, because of its experimental nature, specifications and pricing may not be established or may be subject to change. Dyneon makes no guarantee as to its future commercial availability. The health and environmental risks of this product in your application are not fully known. Available health, environmental and safe handling information can be obtained from the MSDS sheet, from other information shipped with the product or from Dyneon.

Because this product is experimental or developmental, Dyneon makes no representation or warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose. The product is delivered “as is.” In no event will Dyneon be liable for any direct, indirect, special, incidental, or consequential loss or damage, regardless of legal theory, such as breach of warranty or contract, negligence, or strict liability.

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 sheet.

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.

Customer Service

Europe
Phone: 00 800 396 366 27
Fax: 00 800 396 366 39
Italy
Phone: 800 7 910 18
Fax: 800 7 810 19
USA
Phone: +1 800 810 8499
Fax: +1 800 635 8061

Technical Service Fluoroplastics

Dyneon GmbH
3M Advanced Materials Division
Industrieparkstraße 1
84508 Burgkirchen
Germany
Phone: +49 8679 7 4709
Fax: +49 8679 7 5037

Technical Service Fluoroelastomers & Polymer Processing Additives

3M Belgium BVBA / SPRL
3M Advanced Materials Division
Canadastraat 11,
Haven 1005
2070 Zwijndrecht
Belgium
Phone: +32 3 250 7868
Fax: +32 3 250 7905

Technical Service PTFE Compounds

Dyneon B.V.
3M Advanced Materials Division
Tunnelweg 95
6468 EJ Kerkrade
The Netherlands
Phone: +31 45 567 9600
Fax: +31 45 567 9619

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

Web Site: www.dyneon.eu

Printed in Germany

Status: Jun. 2014