Product Data Sheet

Experimental Product

3M™ Dyneon™

Perfluoroelastomer E-21464 Black Compound

Product Description

The Dyneon Perfluoroelastomer compound E-21464 is a high temperature perfluoroelastomer specifically developed for the future needs of aerospace engine sealing. The product provides outstanding low long term compression set at high temperatures and is resistant to the HTS oils in use.

Special Features

- Proprietary 80 Shore A black compound
- Designed for highest temperature applications
- Continuous operating temperature of > 300 °C
- Outstanding low long term compression set
- Excellent resistance towards HTS oils
- High resistance against chemical fluids

Typical Applications

Finished parts based on 3M™ Dyneon™ Perfluoroelastomer compounds like PFE E-21464 are used for true high temperature applications in the aerospace and the chemical processing industry. Typical applications are aero engine sealing systems or gearbox seals.

Typical Polymer Properties

Property	Test method	Unit	Value
Colour			Black
Specific Gravity	QCM 14.10		

Storage and Handling

Store Dyneon Perfluoroelastomer E-21464 in a fridge or climate controlled area in an air-sealed bag away from moisture. Allow conditioning to room temperature in the bag prior to use. The shelf life of product E-21464 is 2 years from date of manufacturing.

Delivery Form

Dyneon Perfluoroelastomer E-21464 is delivered in extruder-ready strip form.

Packaging sizes are:

- 5 kg cardboard box, containing PE / Aluminium / Epoxy layered bags with 1 kg content each

Processing Recommendations

N/A

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Typical Properties

Compound	Amount (in Parts/100)
N/A	

Typical Rheological Properties

Alpha Technologies Moving Die Rheometer (MDR 2000), 100 cpm, 0.5° Arc, (QCM 2.19.1)
Test Condition, 30' @ 177 °C

Property	Unit	Value
ML, Minimum Torque	dNM	3.7
MH, Maximum Torque	dNM	22.1
ts2	Minutes	1.2
t'50, Time to 50 % cure	Minutes	2.9
t'90, Time to 90 % cure	Minutes	9.5

Typical Physical Properties

Press Cured 15' @ 177 °C
Post Cured Ramp up from 200 °C to 310 °C in 8 hours

Property	Unit	Value
Physical Properties DIN 53504 (S2 DIE)		
100 % Modulus	MPa	8.8
Tensile	MPa	10.3
Elongation at break	%	149
Hardness (ASTM D2240)	Shore A	80
Compression Set on O-rings ASTM D395 method B		
70 hours @ 230 °C (25 % deflection)	%	14
70 hours @ 316 °C (18 % deflection)	%	29
Lower Temperature Property		
TR10 (ASTM D1329)	°C	- 1

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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

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.

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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 analyze test types and conditions, and to handle and use raw polymers and related compounding ingredients.

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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 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 using the QR code below with your smartphone.

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