

Product Description

FFKM (perfluoroelastomer) seals are intended for demanding static and dynamic sealing applications where high temperature capability and broad chemical resistance are required. This grade is based on documented high-temperature FFKM compound data.

Material

FFKM, nominal hardness 70 Shore A. Documented test hardness: 70 Shore A.



Typical Applications

For demanding sealing duties in chemical processing, oil & gas, semiconductor/process equipment and other applications where conventional elastomers may be limited by heat or aggressive media. Final suitability must be confirmed for the actual medium, temperature, pressure, seal geometry and duty cycle.

Key Material Data

Property	Documented value
Material	FFKM (Perfluoroelastomer)
Hardness	70 Shore A
Tensile strength	18 MPa
Modulus at 100% (M100)	9 MPa
Elongation at break	150%

High-Temperature Performance

The underlying compound test data demonstrate improved high-temperature compression-set behaviour above 200°C and short-duration test survivability at 350-360°C. These results are laboratory compound/O-ring test data and must not be interpreted as a universal continuous service-temperature rating for every finished seal.

Important

Chemical compatibility, continuous operating temperature, pressure capability and service life depend on the complete application. For critical service, provide the medium, temperature range, pressure, seal size/geometry and operating conditions for technical review.

Mechanical Properties

Documented properties for the high-temperature FFKM compound.

Property	Test Result	Test Method / Basis
Hardness	70 Shore A	Source compound data
Tensile Strength	18 MPa	ASTM D412
Modulus @ 100% (M100)	9 MPa	ASTM D412
Elongation at Break	150%	ASTM D412

Compression Set / High-Temperature Test Evidence

Test condition	Documented observation	How to use the data
70 h at 200-350°C	#214 O-ring specimens were evaluated across this range; the high-temperature FFKM showed improved retention compared with the reference FFKM at elevated temperatures.	Comparative laboratory evidence; not a standalone service-life rating.
24 h at 350°C	Specimens remained intact and were evaluated for compression set.	Short-duration high-temperature exposure data.
24 h at 360°C	Specimens survived the test and were evaluated for compression set.	Do not interpret as a continuous 360°C operating rating.

Technical Interpretation

- The source data identify the material as a high-temperature FFKM with improved compression-set behaviour above 200°C.
- The source presentation reports survivability above the conventional ~320-325°C FFKM limit and includes short-duration testing at 350°C and 360°C.
- Because the source is compound/O-ring test data, STEMA does not state 350-360°C as a universal continuous operating limit for all seal designs.

Ordering / Application Information

When requesting FFKM seals, specify the seal type and dimensions, quantity, operating medium, minimum/maximum temperature, pressure and whether the application is static or dynamic. This allows the material and seal geometry to be checked against the intended service conditions.

Data Qualification

Values in this datasheet are material/compound test data and are not dimensional tolerances, pressure ratings or guaranteed service-life values for every finished seal. Product-specific performance can vary with seal geometry, manufacturing condition, mating surfaces and application conditions.