FFKM High-Temp 75P

FFKM-HT75P-01 · FFKM · 75 Shore A · Peroxide cure · −15 °C to +300 °C

HPHT

For the hottest seals, where replacing them costs more than the seal.

READ THE CODE FFKM-HT75P-01 = FFKM, HT duty (high temperature), 75 Shore A, P for peroxide cure, recipe 01.

DEVELOPMENT TARGETS: NOT MEASURED RESULTS. Every value on this sheet is a design target or a release limit for development. Replace targets with measured typical values (mean of production lots, with the number of lots) and the test report reference before external use.

Description

A 75 Shore A FFKM for the highest temperatures and the broadest chemistry: steam and hot water, acids, bases, amines and aromatics; to 300 °C in dry heat, with a steam limit to be set from test data (target 250 °C).

POLYMER	FFKM (perfluoroelastomer)
DUTY	HT: high temperature
CHEMISTRY	Peroxide-cured perfluoroelastomer (FFKM), steam grade
CURE	Peroxide
HARDNESS	75 Shore A nominal
DESIGN RANGE	−15 °C to +300 °C
COLOUR	Black
PORTFOLIO	Wave 2, probable
POLE MARKS	HPHT

Applications

- Downhole tools and MWD/LWD seals at high temperature
- Refinery and petrochemical pump mechanical seal secondaries
- Geothermal and steam valves
- Chemical injection and stimulation equipment

Properties: targets and release limits

PROPERTY	TARGET	RELEASE LIMIT	UNIT	TEST METHOD
Hardness	**75**	**70 to 80**	Shore A	ASTM D2240 / ISO 48-4, 1 s
Specific gravity	**2.00**	**±0.03 of approved value**	—	ASTM D297 / ISO 2781
Tensile strength	**15**	**min 12**	MPa	ASTM D412 die C / ISO 37 type 2
Elongation at break	**170**	**min 130**	%	ASTM D412 die C / ISO 37 type 2
Modulus at 100 %	**7**	**5 to 9**	MPa	ASTM D412 die C / ISO 37 type 2
Compression set, 70 h at 250 °C	**25**	**max 35**	%	ASTM D395 method B, button
TR10	**−2**	**max 0**	°C	ASTM D1329 / ISO 2921
Saturated steam, 168 h at 250 °C, volume change	**+3**	**max +6**	%	In-house autoclave method
Heat ageing 70 h at 300 °C, hardness change	**+3**	**0 to +6**	points	ASTM D573 / ISO 188

Qualification plan

The grade code says what this compound is designed for. This table says what it has passed: a duty is claimed only once its report is on file. Evidence for the HT duty: Heat ageing and compression set at the rated temperature.

TEST	STANDARD OR METHOD	CONDITIONS	STATUS
Steam ageing	In-house autoclave method, published with results	168 h and 500 h at 250 °C	Planned
Long-term heat ageing	ASTM D573 / ISO 188	1,000 h at 300 °C	Planned
Sour ageing and life prediction	ISO 23936-2 Annex A / NORSOK M-710	Sour multiphase fluid (hydrocarbon liquid, water, gas with H2S) at three temperatures; Arrhenius extrapolation to service temperature	Planned
Mechanical seal approval	Pump OEM qualification (API 682 seals)	Per OEM	Planned

Processing

Press cure guide: 15 min at 177 °C. Post-cure: stepped to 230 °C over about 24 h, per the processing sheet.

Storage and lot record

Target 12 months at or below 25 °C. Every lot ships with its Passport: results against these limits, the rheometer cure curve and the raw-material lots.

How to read this sheet

Target: the value the compound is designed to reach, used until measured data exists.

Typical: the mean of measured production lots, stated with the number of lots. Replaces the target.

Release limit: the window every lot is tested against. A lot outside it does not ship.

Method: the standard, specimen and conditions behind each number.

Supply

Supplied as uncured compound by the batch, with the lot Passport. Test slabs, buttons and trial quantities are available for qualification.

Tell us the fluid, the temperature range, the pressure and the seal design, and we will say whether this grade fits, and which one does if it does not.

Pole marks on this grade

HPHT: designed for high-pressure duty (rapid gas decompression, extrusion or sour gas at pressure) at 160 °C or above. Neither term has an industry-wide definition. These are Pascalor rules, and every datasheet states the actual numbers.