



AFLAS® for Oil & Gas Applications

Exceptional Sealing Life for when Failure is not an Option

AFLAS® Fluoroelastomers

Since 1975, AGC's AFLAS® Fluoroelastomers have exhibited the exceptional performance of a thermoplastic in high temperature and aggressive chemical environments whilst also providing the flexibility and sealing of an elastomer.

The original AFLAS® product range is classified as FEPM elastomers, unique polymers based on the monomers TFE (tetra fluoroethylene) and P (propylene). FEPM elastomers excel in their performance in oils, steam, and strong alkaline media compared to FKM fluoroelastomers.

AGC launched its range of AFLAS® FFKM elastomers for sale in Europe in 2022. These are fully fluorinated polymers capable of withstanding far more aggressive media than other elastomers, and at temperatures approaching 300°C.

Performance in Oil and Gas Exploration

Economic drivers demand the best in quality, reliability and lifetime: downtime caused by maintenance outages costs the industry huge sums of money, thus long periods of continuous operation are crucial to ensuring viability of wells.

AFLAS® Fluoroelastomers offer a unique combination of benefits that make them the perfect choice for the Oil and Gas industry:

- ◊ Well suited to high pressure and high temperature (HPHT) applications
- ◊ Continuous sealing performance at high temperatures (200°C and more)
- ◊ Long service life in harsh environments
- ◊ Durable under contact with aggressive chemicals
- ◊ Compoundable to be highly resistant to rapid gas decompression (ED/RGD)
- ◊ Resistant to sour and acidic gases (e.g. H₂S, CO₂)
- ◊ Excellent insulating properties – volume resistivity 10¹⁶ Ω.cm

AFLAS® FEPM and FFKM Grade Range for Oil and Gas Applications

Material Classification	Grade	Service Temperature (°C)	Storage Modulus (G')	Compression Set* (%)	Comments
FEPM	100H	200	500	35	High strength, RGD resistant
FEPM	100S	200	340	29	High molecular weight, high performance
FEPM	600X	200	350	14	Good mould release and compression set
FFKM	PM-1100	230	480	9.6	Entry level FFKM, peak temperature 250°C
FFKM	PM-3000	250	480	6	Excellent compression set for reduced maintenance

* Compression Set data measured on ASTM Type 1 Button, 70 hours, 200°C

Applications

- Pump and motor stators
- Pump housing (Electrical Submersible Pump, ESP Bags)
- Packing elements
- General and high-performance seals

Compounds made from AFLAS® Fluoroelastomers are capable of operation beyond their service temperatures for short periods of time.

The AFLAS® FEPM and FFKM grades noted above are all peroxide curable for ease of handling and processing. Many more grades are also available, and our team is always working to develop new products for the most challenging applications. If you have any specific requirements or ideas you would like to discuss, please get in touch.



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