

AGC Chemicals

AGC



High-performance fluoroelastomers



Resistant to acid, alkalis, amines and steam.

AFLAS® the material of choice for products and systems that have to work in tough environments.

AFLAS® fluoroelastomer was launched over 30 years ago by AGC. It is based on an alternating copolymer of tetrafluoroethylene and propylene. The unique properties of AFLAS® are:

1. Excellent heat resistance with a maximum service temperature of approx. 230°C and above
2. Excellent chemical resistance to strong acids and bases at high temperatures
3. Excellent steam resistance
4. Excellent electrical insulation properties with volume resistivity of 10^{16} Ω·cm

AFLAS® is used worldwide in all kinds of industrial applications where ultimate reliability is required.

AFLAS® features

Low Outgassing

Ideal for making precision parts due to its extremely low outgassing level.

Heat Resistance

Fluoroelastomers have the highest heat resistance of all synthetic rubbers. AFLAS® has outstanding heat resistance.

Electrical Insulation Properties

AFLAS® has excellent electrical insulation properties comparable to those of silicone rubber and ethylene-propylene rubber. These electrical properties are much enhanced compared to those of other fluoroelastomers.

Gas Barrier Properties

Compared with other synthetic rubbers AFLAS® has excellent gas barrier properties.

Low Temperature Properties

At low temperatures flexibility is lost but the physical properties are maintained.

Steam Resistance

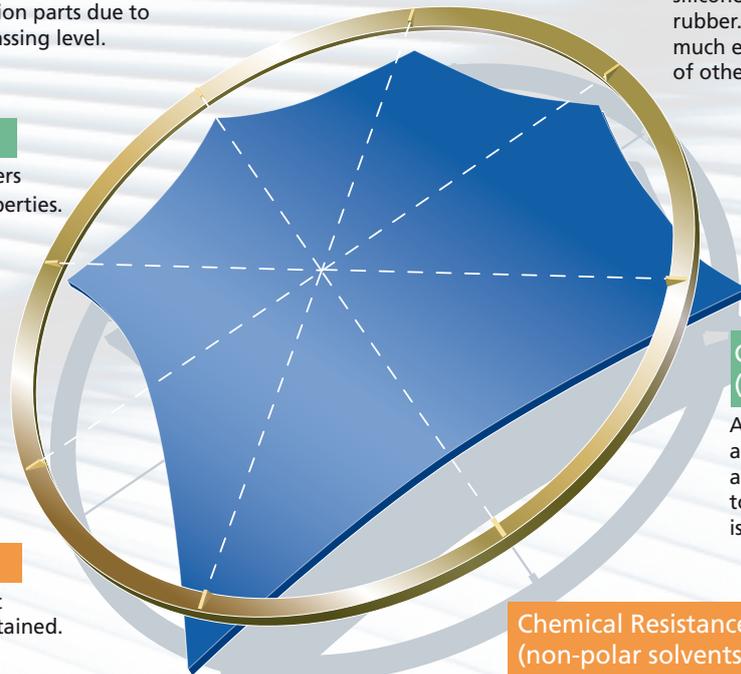
AFLAS® is resistant to very hot water and to steam at high temperatures.

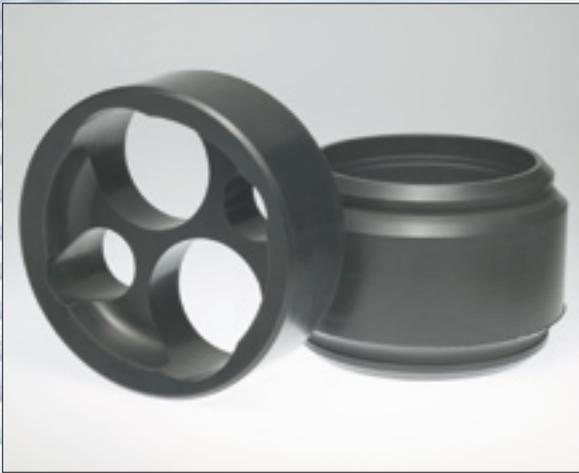
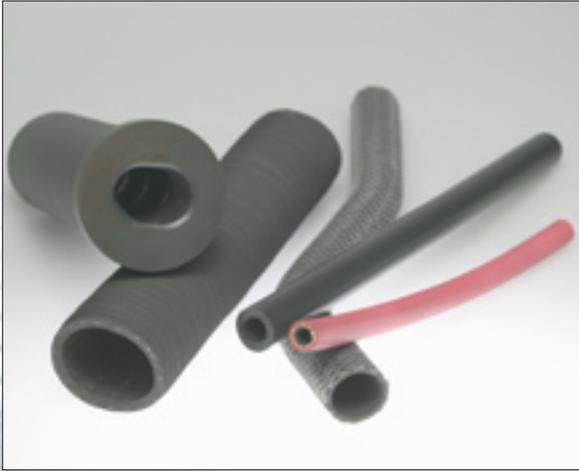
Chemical Resistance (strong acids/bases)

AFLAS® resists aqueous and non-aqueous acids and bases of high concentration and at high temperatures. Compared to all fluoroelastomers its base resistance is particularly good.

Chemical Resistance (non-polar solvents)

AFLAS® undergoes a relatively large volume change in gasoline, hydrocarbon-based solvents and chlorine based solvents.





AFLAS® Applications

O-Rings and Gaskets

Due to its outstanding chemical and heat resistance AFLAS® is used as a sealing material in various applications such as chemical plants, downhole applications and in the Japanese food processing industry.

Manufacture of Liquid Crystal and Semi-Conductors

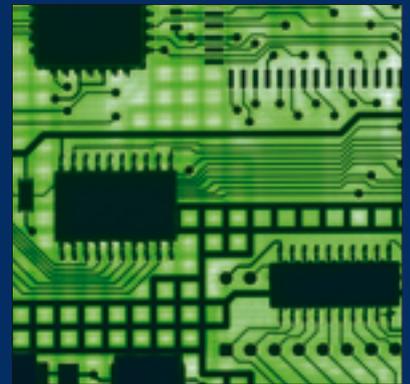
AFLAS® is resistant to aqueous caustic soda, ammonia water and alkaline chemicals (such as TMAH and NMP) that are used on liquid crystal and semiconductor manufacturing lines.

Wire and Cable

AFLAS® has outstanding electrical insulation, heat resistance and mechanical strength enabling manufacture of cables with relatively thin insulation layers for high electrical currents. An example of this type of application is the engine cables in the Japanese high speed train.

Automotive Oil Seals

Engine oils contain amine-based additives. AFLAS® is ideal for use in oil seals that need to resist high temperatures.



AFLAS® Grade Range

**AFLAS®
150
Series**

Standard Grade

Excellent chemical resistance and electrical insulation properties. Suitable for extrusion and compression moulding.

**AFLAS®
100
Series**

High Strength Grade

The high molecular weight of AFLAS® 100S gives it its high mechanical strength. The structure is identical to that of AFLAS® 150.

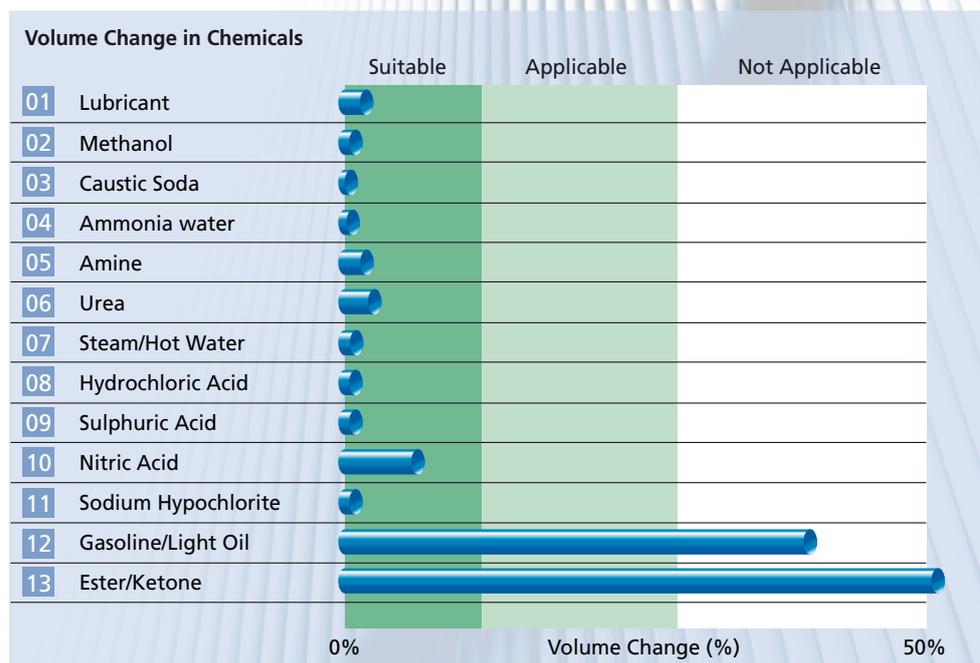
**AFLAS®
300
Series**

Improved Processability Grade

Translucent white base resin with a special termonomer. AFLAS® 300 can be pigmented, has improved curability and gives a smooth surface finish. Suitable for extrusion.

AFLAS® Chemical Resistance

AFLAS® shows excellent chemical resistance against acids and bases. AFLAS® excels in extreme conditions at high temperatures and high concentrations in aqueous and non-aqueous environments. This is of increasing importance where longer guarantees of service life are offered.



Immersion test

AFLAS® keeps its original shape after immersion in various chemicals.

O-ring immersed in 28% ammonia water (25°C for 1000 hours)



AFLAS®



Fluoroelastomer
(FKM Terpolymer)



Fluoroelastomer
(FKM Copolymer)

User Information

Information contained in this publication (and otherwise supplied to users) is based on our general experience and is given in good faith, but we are unable to accept responsibility in respect of factors which are outside our knowledge or control. All conditions, warranties and liabilities of any kind relating to such information, expressed or implied, whether arising under statute, tort or otherwise are excluded to the fullest extent permissible in law. The user is reminded that his legal responsibility may extend beyond compliance with the information provided. Freedom under patents, copyright and registered designs cannot be assumed. AFLAS® grades are general industrial grades. It is the responsibility of the purchaser to check that the specification is appropriate for any individual application. Particular care is required for special applications such as pharmaceutical, medical devices or food. It is advisable to contact the AGC Chemicals sales office for the latest position. Users of AFLAS® are advised to consult the relevant health and safety literature which is available from the AGC Chemicals sales office.

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