

●Appendix

Comparative data of AFLAS and other type fluororubbers

	C ₂ F ₄ -C ₃ H ₆ AFLAS	CH ₂ CF ₂ -C ₃ F ₆ elastomer	Fluorosilicone elastomer	Phosphazene elastomer	C ₂ F ₄ -C ₂ F ₃ OCF ₃ elastomer	
Basic structure	$\begin{array}{c} \text{F} \quad \text{F} \quad \text{H} \quad \text{CH}_3 \\ \quad \quad \quad \\ (-\text{C}-\text{C}-\text{C}-\text{C}-)_n \\ \quad \quad \quad \\ \text{F} \quad \text{F} \quad \text{H} \quad \text{H} \end{array}$	$\begin{array}{c} \text{H} \quad \text{F} \\ \quad \\ (-\text{C}-\text{C}-)_n \\ \quad \\ \text{H} \quad \text{F} \end{array}$	$\begin{array}{c} \text{FCF}_3 \\ \\ (-\text{C}-\text{C}-)_m \\ \quad \\ \text{F} \quad \text{F} \end{array}$	$\begin{array}{c} \text{CH}_3 \\ \\ (-\text{Si}-\text{O}-) \\ \\ \text{C}_2\text{H}_4\text{CF}_3 \end{array}$	$\begin{array}{c} \text{O}-\text{CH}_2\text{CF}_3 \\ \\ (-\text{P}=\text{N}-)_n \\ \\ \text{O}-\text{CH}_2\text{C}_3\text{F}_6\text{H} \end{array}$	$\begin{array}{c} \text{F} \quad \text{F} \quad \text{F} \quad \text{F} \\ \quad \quad \quad \\ (-\text{C}-\text{C}-)_n \quad (-\text{C}-\text{C}-)_m \\ \quad \quad \quad \\ \text{F} \quad \text{F} \quad \text{F} \quad \text{OCF}_3 \end{array}$
Specific gravity	1.51~1.60	1.81~1.86	1.30~1.40 ¹⁾	1.75	2.02	
Properties						
Tensile strength (MPa)	12~20	12~18	8~10	7~10	15~20	
Elongation (%)	250~350	150~450	200~500	100~200	50~200	
Hardness	60~90	65~90	50~70	50~80	70~90	
Tear (kN/m)	25~40	25~40	10~30			
Heat resistance (Continuous use)	230°C	230°C	185°C	175°C	250°C	
Cold resistance						
Brittle point	-40°C	-30°C	-68°C	— ²⁾	-40°C	
TR-10	0°C	-17°C	-67°C	-68°C	0°C	
Chemical resistance						
Acid	A	B~A ³⁾	C	— ²⁾	A	
Alkali	A	B	B	— ²⁾	A	
Oxidation/Reduction	A	C~B ³⁾	C	— ²⁾	A	
Hot water/ steam resistance	A	B~A	B	B	B	
Oil resistance						
Lubricant	A	B	B~A	— ²⁾	A	
Fuel	B	A	B	B	A	
Working oil	B~A	C~A	B~A	B~A	A	
Solvent resistance						
Polar solvent	A	B	B	C	A	
Non-polar solvent	B	A	A	A	A	
Compression set	B	C~A ³⁾	B	B	D	

1) Filler included 2) Details unknown 3) Depends on formula
A>B>C>D in excellence