



Complete Sealing Solutions

Material Data Sheets

Raw Materials

Ank Seals Pvt. Ltd. IN



Complete Sealing Solutions

APU red 93 Shore A (HPU)

ANK PU is a hydrolysis - resistant polyurethane elastomer. It combines the engineering properties of polyurethane with a high resistance to hydrolysis which is otherwise rarely found in polyurethanes. It is stable in water upto +90°C (hydrolysis is degradation in water). Because of its resistance to hydrolysis, ANK PU can be used for water hydraulic applications in mining, tunnel construction, press manufacture and the food industry.

Suitable for pressure applications of upto 1500 bars.

Resistant to : Minerals oils & greases, Fire resistant HFA, HFB, Biologically degradable hydraulic fluid & water upto 95°C.

Not resistant to : Alkalies & acids.

PROPERTIES	STANDARD	UNIT	
Color			RED
Hardness	DIN 53505	Shore A	93 ± 2
Bulk density	DIN 53479	g/cm ³	1.20
Modulus 100%	DIN 53504	N/mm ²	≥13
Tensile strength	DIN 53504	N/mm ²	≥48
Elongation at break	DIN 53504	%	≥330
Permanent set	DIN 53512	%	29
Compression set 70°C/70h	DIN 53517	%	20
Tear strength	DIN 53515	N/mm	≥100
Abrasion	DIN 53516	mm ³	17
Lower Temp. Limit		°C	-20
Upper Temp. Limit		°C	110



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NBR – Nitrile butadiene rubber (AR1)

NBR is an elastomer based on acrylonitrile butadiene rubber which is used for U-cup seals, lip seals, chevron packings, special seals and various components. Due to its good resistance to the majority of mineral oil-based oils & greases, NBR is the material most frequently used in hydraulic & pneumatic systems. NBR has excellent mechanical properties such as abrasion resistance & elasticity.

NBR is resistant to : Mineral oils & greases of HFA, HFB & HFC pressure fluids. Vegetable & animal oils & greases, fats, water & seawater upto approx 100°C.

NBR is not resistant to : Glycol based brake fluids, HFD Fluids, aromatic & benzene chlorinated hydrocarbons, esters, ketones, amines, concentrated acids & bases..

PROPERTIES	STANDARD	UNIT	
Color			BLACK
Hardness	DIN 53505	Shore A	85 ± 3
Bulk density	DIN 53479	g/cm ³	1.32
Modulus 100%	DIN 53504	N/mm ²	≥11
Tensile strength	DIN 53504	N/mm ²	≥15
Elongation at break	DIN 53504	%	≥130
Permanent set	DIN 53512	%	22
Compression set 70°C/70h	DIN 53517	%	5
Tear strength	DIN 53515	N/mm	≥18
Abrasion	DIN 53516	mm ³	110
Lower Temp. Limit		°C	-30
Upper Temp. Limit		°C	100



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FPM Brown – Fluoro rubber (AR2)(VITON®)

Viton® is an elastomer based on Fluorine rubber which is used for U-Cup seals, lip seals, chevron packings, wipers, various components and special seals. Its outstanding properties are its high resistance to heat, chemicals, weathering and ozone. FPM is highly resistant to all mineral oil-based & synthetic-based hydraulic fluids.

Viton® Brown is resistant to : Mineral & synthetic oils & greases containing sulphur, fire resistant fluids HFD (phosphorous ethers & chlorinated hydrocarbons based) fuels, aliphatic, aromatic & chlorinated hydrocarbons, most inorganic acids in corresponding mixtures.

Viton® Brown is not resistant to : Anhydrous ammonia, caustic soda, caustic potash solutions, ketones, ethers, amines, low molecular organic acids, such as formic & acetic acids.

PROPERTIES	STANDARD	UNIT	
Color			BROWN
Hardness	DIN 53505	Shore A	85 ± 3
Bulk density	DIN 53479	g/cm ³	2.50
Modulus 100%	DIN 53504	N/mm ²	≥7
Tensile strength	DIN 53504	N/mm ²	≥10
Elongation at break	DIN 53504	%	≥90
Permanent set	DIN 53512	%	8
Compression set 70°C/70h	DIN 53517	%	15
Tear strength	DIN 53515	N/mm	≥17
Abrasion	DIN 53516	mm ³	180
Lower Temp. Limit		°C	-20
Upper Temp. Limit		°C	200



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Virgin PTFE – Polytetrafluoroethylene (AF1)(Teflon®)

Teflon is a material with the widest technical range of applications. Teflon has lowest coefficient of friction. Static & dynamic frictions are virtually identical. Depending on the load virgin PTFE has a tendency to creep or cold flow (at relatively low loads). For this reason pure PTFE is not used for sealing parts in hydraulic systems. Teflon is used for backing rings, chevron packings, O-rings, seals and gaskets

Teflon is resistant to: Virtually all chemicals.

Teflon is not resistant to: Liquid alkali metals & gaseous fluorine compounds at high pressures & temperatures..

PROPERTIES	STANDARD	UNIT	
Color			White
Hardness	DIN 53505	Shore D	60 ± 2
Bulk density	DIN 53479	g/cm ³	2.17
Coefficient of Friction		μ	0.06
Tensile strength	DIN 53504	N/mm ²	≥21
Elongation at break	DIN 53504	%	≥300
Permanent set	DIN 53512	%	8
Compressive strength	ASTM D-695	Kgf/cm ²	45
Wear Rate	ASTM G-137	g/cm	0.01
Lower Temp. Limit		⁰ C	-200
Upper Temp. Limit		⁰ C	260



Complete Sealing Solutions

Filled PTFE – (AF2)(15% Glass + 5% MOS₂)(Grey)

Filled PTFE – (AF3)(40% Bronze)(Brown)

Filled PTFE with glass fibre & MoS₂ or Bronze fillers greatly reduces the cold flow(creep) found in virgin PTFE . This in turn makes this grade of PTFE suitable for use in dynamic application like guide (Slide)rings, low friction seals, thrust collars and bearing rings for chevron packings and guide rings. These additives reduce thermal expansion, increase thermal conductivity, and improve wear resistance & resistance to permanent deformation (cold flow). Since the material has no rubber-elastic properties, they are usually always used in conjunction with rubber-elastic materials or metal springs which provide the necessary contact pressure & preload.

Filled Teflon is resistant to: Virtually all chemicals.

Filled Teflon is not resistant to: Liquid alkali metals & gaseous fluorine compounds at high pressures & temperatures..

PROPERTIES	STANDARD	UNIT		
Color			Grey	Brown
Hardness	DIN 53505	Shore D	63 ± 2	63 ± 2
Bulk density	DIN 53479	g/cm ³	2.22	3.0
Coefficient of Friction		μ	0.18	0.13
Tensile strength	DIN 53504	N/mm ²	≥20	≥20
Elongation at break	DIN 53504	%	≥250	≥250
Permanent set	DIN 53512	%	7.5	3
Compressive strength	ASTM D-695	Kgf/cm ²	70	90
Wear Rate	ASTM G-137	g/cm	0.01	0.01
Lower Temp. Limit		⁰ C	-200	-200
Upper Temp. Limit		⁰ C	260	260



Complete Sealing Solutions

Acetal – PA (AMD) White

POM (Acetal) is a polyoxymethylene plastomer for anti-extrusion rings; guide rings bushes, scrapers and other high precision rotating parts. One of the most important technical thermoplastics with very good mechanical properties, low water absorption and good chemical resistance.

POM (Acetal) Black is resistant to: Any mineral oil grease HFA,HFB & HFC fluids.

POM (Acetal) Black is not resistant to: Concentrated Acids and alkaline solutions.

PROPERTIES	STANDARD	UNIT	
Color			White
Hardness	DIN 53505	Shore A	85
Bulk density	DIN 53479	g/cm ³	1.40
Tensile strength	DIN 53504	N/mm ²	≥62
Elongation at break	DIN 53504	%	≥40
Compressive Strength	DIN 53455	N/mm ²	85
Coefficient of Friction		μ	0.28
Lower Temp. Limit		°C	-30
Upper Temp. Limit		°C	100



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