DIAPHRAGM MATERIALS

ELASTOMER MATERIAL	Characteristics
Nitrile (Buna-N)	Excellent for Petroleum-based fluids.
FKM (Viton®)	Excellent for high temperature applications. Good with some aggressive fluids. High cost price.
Hytrel®	Excellent for general-purpose transfer applications. Ideal for abrasive and non-corrosive fluids. Provides excellent flex-life.
Santoprene®	Good with mild acids or caustics. Good abrasion resistance and wider chemical compatibility. Provides high flex-life. Good choice for low temperature applications. Most economic diaphragm material.
PTFE (Teflon®)	Excellent for highly aggressive fluids including strong solvents, acids, caustics. High cost price.

DIAPHRAGM SELECTION

DIAPHRAGM MATERIAL	Color	Cost Price	Flexion Resist	Abrasion Resist	Chemical Resist	Temperature Resist	Temperature Limits* °C	Temperature Limits* °F
Nitrile (Buna-N)	Black	$$$	A-	B	C	C	-23°/+82°	-10°/+180°
FKM (Viton®)	Black	$$$$$	A	C	A	A+	-40°/+177°	-40°/+350°
Hytrel®	Cream	$$	A	A+	C	B	-29°/+104°	-20°/+220°
Santoprene®	Tan	$	A+	A+	B	A+	-40°/+135°	-40°/+275°
PTFE/Santoprene® (Backer)	White / Green	$$$$	C	F	A+	A	-20°/+107°	-4°/+225°
PTFE/ EPDM (Bonded)	Blue / Black	$$$$$	B	F	A+	A+	-10°/+107°	-4°/+225°

A = Excellent, B = Good, C = Fair, D = Poor, F = Not recommended.
(*) Maximum temperature limits are based on mechanical stress resistance only. Certain chemicals can significantly reduce the maximum temperature limits.

DIAPHRAGM DESIGN

DIAPHRAGM DESIGN	FLUID TYPE					MOUNTING		REQUIRED DUTY		SERVICE
	Water	Solids charged	Abrasive	High Viscous	Common Fluid	W/Inlet Pressure	Suction Lift	Intermittent	Continuous	Maintenance
Conventional (TPE)	A	A	A	B	A	A	A	A	A	B+
Two-Piece (PTFE/Santoprene®)	A	B+	C	B	A	A	B+	A	B+	B+
Overmolded (TPE)	A+	A+	A+	A+	A+	A+	A	A+	A+	A+
Overmolded (Rubber)	A+	A	B	A+	A+	A+	A+	A+	A+	A+
Overmolded (PTFE/ EPDM)	A+	A+	C+	A+	A+	A+	A	A+	A+	A+

A = Excellent, B = Good, C = Fair.
Please note that excessive inlet pressure or excessive suction lift can shorten diaphragm life.

Always check chemical compatibility of the selected materials.