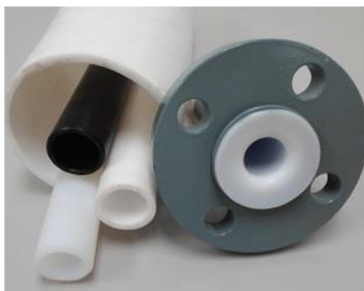


LINING MATERIALS



POLYTETRAFLUOROETHYLENE (PTFE)

Polytetrafluoroethylene or PTFE, with its carbon chains completely fluorinated is inert to an exhaustive range of industrial chemicals. Its non-stick characteristic which resists the build-up of deposits reduces clogging problems and is better for handling sticky resins and foodstuffs. Generally, limitation for use is molten alkali metals (such as metallic sodium), fluorine and strong fluorinating agents.

PERFLUOROALKOXY (PFA)

Perfluoroalkoxy or PFA is a perfluoropolymer which has essentially the same chemical resistance as PTFE has added moulding properties ideal for lining complex shapes. PFA is extensively used in ultra-pure applications. It has excellent creep resistance at high temperatures with good flame resistance and is reasonably tough at low temperatures. PFA can be used in combination with PTFE lined pipe for handling most chemical fluids.



POLYVINYLIDENE FLUORIDE (PVDF)

Polyvinylidene Fluoride or PVDF is a crystalline fluorinated polymer, which is able to resist most inorganic acids and bases such as aliphatic and aromatic hydrocarbons and particularly for the halogens, bromine and chlorine. Its better elongated property is suitable for thermal cycling up to its temperature limit. PVDF has good abrasion and permeation resistance but being partially fluorinated its chemical resistance is limited by temperature and concentration of the fluid.

POLYPROPYLENE COPOLYMER (PP)

Polypropylene Copolymer or PP is an inexpensive heat stabilized copolymer with good mechanical and chemical properties. It is ideal as a general purpose lining material for pipe, fittings and special fabrications normally used for water treatment, hot effluent lines, pickling and plating.



	PTFE	PFA	PVDF	PP
Specific Weight g/cm ³	2.14 – 2.19	2.12-2.17	1.75 – 1.78	0.9 – 0.92
Elongation %	200 – 400	300 – 400	10 – 300	10 – 600
Tensile Strength Mpa	20 – 40	27 – 32	40 – 50	20 – 40
Max. Service Temp °C	200	200	140	100
Melting Point °C	327 – 342	300 – 310	165 – 178	158 – 167
Thermal Conductance W/m ² h°C	9.65	7.38	9.09	4.54