

Virgin PTFE (Teflon) Sheet – Material Specification

Property	Typical Value
Polymer Type	Polytetrafluoroethylene (PTFE) – Virgin
Density	2.15–2.20 g/cm ³
Water Absorption	< 0.01%
Tensile Strength	20–35 MPa
Tensile Modulus	0.4–0.6 GPa
Elongation at Break	200–400%
Compressive Strength	~15–25 MPa
Hardness	Shore D 50–60
Continuous Service Temperature	-200°C to +260°C
Short-Term Max Temperature	Up to 300°C
Melting Point	~327°C
Coefficient of Friction	0.05–0.10
Thermal Conductivity	~0.25 W/m·K
Electrical Insulation	Excellent
Dielectric Strength	~60 kV/mm
UV Resistance	Excellent
Chemical Resistance	Virtually inert to all chemicals
Weather Resistance	Excellent
Machinability	Good (soft material – sharp tools required)
Weldability	Not weldable
Food Contact	FDA compliant (virgin grades)

Key Characteristics

- Extremely low friction (self-lubricating)
- Outstanding chemical and temperature resistance
- Non-stick and non-wetting surface
- Excellent electrical insulation

Limitations

- Low mechanical strength compared to engineering plastics
- Creeps under load (not suitable for structural components)
- Higher cost than Nylon, HDPE, or UHMWPE

Common Applications

- Chemical liners and seals
- Slide plates and wear surfaces
- Gaskets and valve seats
- Electrical insulation components
- Food processing equipment