

PPS (Polyphenylene Sulfide) Material Properties Data Sheet

Comprehensive Technical Data for PPS High-Temperature Engineering Plastic

Introduction

This technical data sheet provides comprehensive physical, mechanical, thermal, and electrical properties of PPS (Polyphenylene Sulfide). PPS is a high-temperature engineering thermoplastic known for its excellent chemical resistance, flame retardancy, and dimensional stability. It is widely used in electrical/electronic, automotive, and industrial applications where high performance under harsh conditions is required.

Material Properties

Property	Typical Value
Density (g/cm ³)	1.34-1.36
Melting Point (°C)	285-290
Glass Transition Temperature (°C)	85-90
Operating Temperature Range (°C)	-60 to +120 (continuous)
Tensile Strength (MPa)	80-120
Tensile Modulus (GPa)	3.0-4.5
Elongation at Break (%)	2-5
Flexural Strength (MPa)	120-160
Flexural Modulus (GPa)	3.5-5.0
IZOD Impact Strength (kJ/m ²)	3-8 (notched)
Coefficient of Friction	0.2-0.4
Dielectric Constant (@1MHz)	2.8-3.2
Dielectric Strength (kV/mm)	15-20
Volume Resistivity (Ω·cm)	>10 ¹⁶
Linear Coefficient of Thermal Expansion (10 ⁻⁵ /°C)	1.5-3.0
Thermal Conductivity (W/m·K)	0.20-0.25
Water Absorption (%)	0.02-0.05 (24 hrs)
Flammability Rating	UL94 V-0 (1.5mm thickness)

Key Characteristics

- Excellent chemical and solvent resistance
- Inherent flame retardancy (self-extinguishing)
- High thermal stability and low smoke emission
- Excellent dimensional stability
- Low moisture absorption
- Good electrical insulation properties
- High strength retention at elevated temperatures
- Resistance to radiation and hydrolysis
- Processable by injection molding and extrusion

Typical Applications

- Electrical connectors and sockets
- Automotive sensors and under-the-hood components
- Chemical pump parts and valves
- Electronic components and circuit breakers
- Industrial filter elements
- Coatings for high-temperature applications
- Bearings and wear components

(内容由 AI 生成, 仅供参考)