

Technical Data Sheet PTFE K25

PTFE + 25 % carbon/graphite (K25)

PTFE + 25 % carbon/graphite (K25) – standard grade, carbon/graphite-filled PTFE, highly wear-resistant, electrically conductive, -200 ... +260 °C

Typical Properties

- Standard compound of the carbon/graphite-filled PTFE range
- Highest wear and compressive resistance in the carbon/graphite PTFE range
- Very low creep (cold flow) under sustained load
- Very wide temperature range (-200 ... +260 °C)
- Near-universal chemical resistance, including hydrofluoric acid
- Very low coefficient of friction, self-lubricating
- Non-flammable (UL 94 V-0)
- Electrically conductive / antistatic
- Not meltable/weldable – machining only

Typical Industries

- Sealing technology
- Chemical process and plant engineering
- Plain bearings, sliding and guide elements
- Pump and valve technology
- Piston rings and compressor engineering
- Semiconductor and electronics manufacturing (ESD applications)

	Test Method	Unit	Value
Physical Properties			
Density	ISO 1183	g / cm ³	2.10
Water absorption	ISO 62	%	< 0.05
Color			black
Mechanical Properties			
Tensile strength	ISO 527	MPa	≥ 13
Elongation at break	ISO 527	%	≥ 100
Hardness	ISO 868	Shore D	62–67
Ball indentation hardness	ISO 2039-1	MPa	≥ 30
Coefficient of friction (vs. steel)	DIN 53375		~ 0.13
Thermal Properties			
Service temperature		°C	-200 ... +260
Coefficient of linear expansion (25–100 °C)	DIN 52612	10 ⁻⁵ / K	≈ 9.5
Thermal conductivity	DIN 52612	W / (m * K)	≈ 0.65
Electrical Properties			
Dielectric strength	IEC 60243-1	kV / mm	~ 2.8

	Test Method	Unit	Value
Volume resistivity	IEC 60093	$\Omega \cdot \text{cm}$	$\sim 10^3 \dots 10^4$
Fire Behaviour			
Flammability	UL 94		V-0 (non-flammable)

PTFE + 25 % carbon/graphite (K25) is the standard grade of Liedtke Kunststofftechnik's carbon/graphite-filled PTFE compounds for maximally wear- and friction-optimised, electrically conductive applications. The values stated are typical properties of a PTFE-K25 compound; they serve as an aid to material selection and do not constitute a legally binding guarantee of specific properties. Values for filled PTFE grades depend on filler, particle size and processing and can vary by manufacturer. The carbon/graphite content significantly improves wear, friction, creep behaviour and electrical conductivity, but reduces elongation and notched impact strength compared with virgin PTFE. PTFE must not be overheated (decomposition from approx. 260 °C, releasing hazardous gases).

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