

What is PF CP 205 (Hp 2062.9)

PF CP 205 (Hp 2062.9)

Hp 2062.9 acc. DIN 7735 / PF CP 205 acc. EN 60893 – phenolic paper laminate, flame-retardant cold-punchable special grade (UL 94 V-0)

PF CP 205 (Hp 2062.9) is the flame-retardant special grade among the cold-punchable phenolic paper laminates of the PF-CP series. It consists of phenolic resin reinforced with cellulose paper and combines the economic advantages of a punching grade with flame retardancy to UL 94 V-0.

CLASSIFICATION AND BASIC CHARACTER

Paper-based laminate (PF-CP) belongs to the large family of industrial laminates: paper webs are impregnated with a thermoset resin and pressed under heat and pressure into sheets, rods or tubes. In PF CP 205 (Hp 2062.9), the reinforcing material is cellulose paper and the bonding resin is a flame-retardant phenol-formaldehyde resin. Unlike thermoplastics, the cured thermoset does not melt but remains dimensionally stable, hard and mechanically resilient. The colour is typically brown.

THE FLAME-RETARDANT PUNCHING SPECIAL GRADE WITHIN THE PF-CP FAMILY

Within the phenolic paper laminate family according to DIN 7735 / EN 60893 (PF CP 201 to PF CP 206), PF CP 205 (Hp 2062.9) and Hp 2062.8 (PF CP 206) are the economical punching grades for stamped parts without high mechanical requirements. Within this punching pair, PF CP 205 (Hp 2062.9) takes on the flame-retardant role: a cold-punchable special grade with a flammability rating of UL 94 V-0, while Hp 2062.8 (PF CP 206) is the comparable punching grade without flame retardancy. Other grades in the family are designed for other requirements: Hp 2061 (PF CP 201) is the economical standard grade, Hp 2061.5 (PF CP 202) offers the highest dielectric strength in the series, Hp 2061.6 (PF CP 203) is hot-punchable with particularly low water absorption, and Hp 2063 (PF CP 204) is the PCB-oriented, likewise flame-retardant base grade (FR-2). For cold-punched parts with a flame-retardancy requirement, PF CP 205 (Hp 2062.9) is the targeted choice.

HOW HP 2062.9 (PF CP 205) IS MANUFACTURED AND PROCESSED

PF CP 205 (Hp 2062.9) is produced by pressing phenolic-resin-impregnated cellulose paper webs into sheets, rods or tubes, using a flame-retardant formulation. From these semi-finished products we machine precision parts – sawing, milling, drilling and turning can be carried out cleanly and accurately with sharp, carbide-tipped tools; the cold-punchable grade also allows economical punching without preheating. Adequate dust extraction should be ensured during machining (resin/paper dust).

MECHANICAL, ELECTRICAL AND THERMAL PROPERTIES

PF CP 205 (Hp 2062.9) achieves typical values of 130 MPa flexural strength, 70 MPa tensile strength and 250 MPa compressive strength (perpendicular to laminations), with a modulus of elasticity of 7000 MPa and a density of 1.4 g/cm³. Electrically, the material offers an electric strength of 25 kV (parallel) or 30 kV (perpendicular) and a moderate comparative tracking index (CTI 100). The limiting temperature for continuous use is 120 °C (thermal class E); flammability corresponds to UL 94 V-0.

WHEN HP 2062.9 (PF CP 205) IS THE RIGHT CHOICE

- Cold-punched series parts with a flame-retardancy requirement (UL 94 V-0)
- Insulating and partition parts in electrical and switchgear engineering subject to fire-protection requirements
- Economical punched parts for the electrical industry
- Spacers and simple structural parts requiring flame retardancy

WHEN HP 2062.9 (PF CP 205) IS NOT THE RIGHT CHOICE

- Direct food contact – PF CP 205 (Hp 2062.9) is not declared suitable for this
- Applications with high mechanical strength requirements – Hp 2061 (PF CP 201) is the better choice here
- Applications requiring higher dielectric strength – Hp 2061.5 (PF CP 202) is more suitable here
- Hot punching with particularly low water absorption requirements – Hp 2061.6 (PF CP 203) should be used here
- Without a flame-retardancy requirement, the punching grade Hp 2062.8 (PF CP 206) is the more economical choice

WHAT DOES HP 2062.9 (PF CP 205) COST?

Due to its flame retardancy, PF CP 205 (Hp 2062.9) is typically priced somewhat above the non-flame-retardant punching grade Hp 2062.8 (PF CP 206). Component price is mainly determined by sheet thickness or rod diameter, dimensions, material utilisation (offcuts), machining effort and batch size. We are happy to provide binding prices on request based on your drawing.

MACHINING AT LIEDTKE

PF CP 205 (Hp 2062.9) machines and punches well – sawing, milling, drilling, turning and cold punching can be carried out cleanly and accurately with sharp, carbide-tipped tools. We ensure adequate dust extraction during machining. This allows us to reliably manufacture flame-retardant punched and structural parts – from single items to series production.

ADVANTAGES AND DISADVANTAGES AT A GLANCE

An honest assessment – and how the disadvantages can be mitigated in practice:

Advantages

- Flame-retardant to UL 94 V-0
- Cold-punchable, economical punching processing
- Good basic mechanical properties
- Thermoset, dimensionally stable

Disadvantages

- Not declared suitable for direct food contact
- Moderate comparative tracking index (CTI 100) – unsuitable for higher electrical requirements
- Paper reinforcement absorbs moisture
- Continuous use limited to approx. 120 °C

Typical Properties

- Flame-retardant special grade to UL 94 V-0
- Cold-punchable
- Good basic mechanical properties
- Moderate electrical insulation properties
- Thermoset laminate (dimensionally stable)
- Economical punching grade of the PF-CP series
- Colour brown

Product Examples

- Cold-punched insulating parts requiring flame retardancy
- Partition parts in switchgear construction
- Spacers and simple structural parts
- Punched parts for the electrical industry

Typical Industries

- Electrical and switchgear engineering
- Electrical industry (punched parts with flame-retardancy requirement)
- Stamped/punched parts manufacturing
- Mechanical engineering
- Equipment manufacturing

	Test Method	Unit	Value
Mechanical			
Flexural strength	DIN 53452	MPa	130

	Test Method	Unit	Value
Tensile strength	DIN 53455	MPa	70
Compressive strength $\perp$	DIN EN 60893	MPa	250
Modulus of elasticity	DIN 53457	MPa	7000
Electrical			
Comparative tracking index (CTI)	IEC 112		100
Electric strength $\parallel$ / $\perp$	DIN 53481	kV	25 / 30
General			
Density	DIN 53479	g / cm ³	1.4
Limiting temperature	VDE 0304/2	°C	120
Flammability	UL 94		V-0
Colour			brown

PF CP 205 (Hp 2062.9) is a phenolic paper laminate (phenolic resin/paper) according to DIN 7735 / EN 60893, a flame-retardant, cold-punchable special grade. The stated values are typical properties researched from commonly available published datasheet information for this product type; they serve as an aid to material selection and are not a legally binding warranty of specific properties. Actual values may vary slightly depending on manufacturer and sheet thickness. PF CP 205 (Hp 2062.9) is not declared suitable for direct food contact.