

AGRU PFA is a semi-crystalline unreinforced fluoropolymer combining good mechanical, thermal and electrical properties with excellent chemical resistance. It also shows good resistance to high-energy radiation. In addition, the composition of the raw material used for the production of AGRU PFA products complies with the regulations of the European Union (Directive 2002/72/EC, as amended) and the United States of America (FDA) for plastic materials and articles intended to come into contact with foodstuffs. AGRU PFA is a versatile engineering material especially suitable for the manufacture of components for the petrochemical, chemical, metallurgical, food, paper, textile, pharmaceutical and nuclear industries.

Technical data for PFA

	Property	Standard	Unit	PFA
	Colour	--	--	natural
	Density	ASTM D 792	g/cm ³	2.15
	Water absorption: - after 24 h immersion in water of 23 °C	ASTM D 570	%	<0.03
	PFA Type	ASTM D 3307	--	Type II
	Melt Flow Rate	ASTM D 1238	g/10min	1 – 3
Mechanical Properties	Tension test: - tensile strength	ISO 527	MPa	27
	- tensile strain at break	ISO 527	%	300
	- tensile modulus of elasticity	ISO 527	MPa	300
	Flexural Modulus	ISO 178	MPa	650
	Compression test: - compressive stress	ASTM D 695	MPa	24
	Hardness Shore D	ISO 868	--	55
	Izod impact strength – notched	ISO 180	J/m	No break
	Abrasion Resistance Taber	Taber CS 17/1 kg	mg/1000 rev	9.5
	Friction Coefficient: - dynamic	ASTM D 1894	--	0.3
Thermal Properties	Melting temperature	ASTM D 3418	°C	290 – 310
	Glass transition temperature	DMTA	°C	90
	Thermal conductivity at 23 °C	ASTM D 433	W/(K * m)	0.19
	Coefficient of liner thermal expansion: - average value between 23 °C and 100 °C	ASTM D 696	K-1 * 10 ⁻⁴	1.4
	Specific Heat Capacity	DSC	kJ/(kg * K)	1.17
	Vicat Point B	DIN 53460/B	°C	74
	Max. allowable service temperature in air: - continuously : for min. 20 000 h	--	°C	260
	Min. service temperature	--	°C	-190
	Flammability: - Oxygen Index - According to UL94	ASTM D 2863 UL94	% --	95 V-0
Electrical Properties	Dielectric strength	ASTM D 149	kV/mm	20 – 80
	Volume resistivity	ASTM D 257	OHM * cm	>10 ¹⁸
	Surface resistivity	ASTM D 257	OHM	>10 ¹⁸
	Dielectric constant at 1 MHz	ASTM D 150	--	2.1
	Dielectric dissipation factor tan δ at 1 MHz	ASTM D 150	--	0.0001 – 0.001

All values are results of tests, made by raw material suppliers and AGRU and from literature. Most of the figures given in the table are results of tests made on extruded or injection molded sheets. Lining laminates can only be tested, if the fabric backing is removed carefully by machining. Otherwise the fabric backing influences the results. These values are average values and can vary depending on product, production method and specimen preparation.

This table is a valuable help in the choice of a material. The data listed here fall within a normal range of product properties of dry material. However they are not guaranteed and they should not be used to establish material specification limits nor used alone as the basis of design.

All information and statements submitted on this paper are based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve users from the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws, standards and legislation are observed. The statements about all product relevant properties in our valid catalogues, documents and price lists have to be considered.

