

APSOplast® UP GM 203 white
**Engineering Plastic Technology
Technical Data Sheet**
Application purpose and characteristics

Electrical insulation, transport of goods, naval application
Fire proof, arc resistant, high rigidity, flame resistance and low smoke emission

Product description

Material name, long description	Polyester resin laminated glass mat
Material name, short description	UP GM
Material Code	UP GM 203-1.019-00
Density	1.81 g/cm ³
Color	white

Mechanical properties

Modulus of elasticity and tension	Test value: 11.721 MPa Test norm: ASTM D 638
Tensile strength	Test value: 75 MPa Test norm: ASTM D 638
Bending strength	Test value: 192 MPa Test norm: ASTM D 790 Test value: 90 MPa Test norm: ASTM D 790 Test parameter: 130 °C
Compressive strength	Test value: 282 N/mm ² Test norm: ASTM D 695
Impact strength	Test value: 5 J/cm Test norm: ASTM D 256 Test parameter: Izod
Shear strength	Test value: 80 MPa Test norm: ASTM D 732

Thermal properties

Coefficient of linear thermal expansion	Test value: 20 10 ⁻⁶ K ⁻¹
Thermal class	Test value: F Test norm: IEC Publ. C5
Thermal conductivity	Test value: 0.724 W/m·K Test norm: ASTM C 177
Limit temperature	Test value: 155 °C Test norm: IEC 216

Electrical properties

Dielectric loss factor	Test value: 0.010 / 0.013 Test norm: ASTM D 150 Test parameter: 1 MHz / 60 Hz
Dielectric constant	Test value: 4.1 Test norm: ASTM D 150 Test parameter: 60 Hz / 1 MHz

Overview Fire Protection

DIN 5510-2 (2009-05): S4/ SR2/ ST2; FED < 1 (15' and 30')
DIN EN 45545-2 (2013-08): R22, R23, R24: HL3
UL 94: V0/ 2.4 mm

Dielectric strength	Test value: 18 kV/mm Test norm: ASTM D 149 Test value: 23 kV/mm Test norm: ASTM D 149 Test parameter: in oil perpendicular to laminations
Dielectric tension	Test value: 47 kV Test norm: ASTM D 149 Test parameter: in oil parallel to laminations
Creep resistance	Test value: 600 V Test norm: UL 746 A Test parameter: CTI
Surface resistivity	Test value: 3.1 x 10 ¹² Ohm
Arc resistance	Test value: 180 s Test norm: ASTM D 495

Other properties

Water absorption at saturation	Test value: 0.4 % Test norm: ASTM D 570 Test parameter: by wt.
Limiting oxygen index	Test value: 39 % Test norm: ASTM D 2863