

## **VOLTIS® HP P 1015H / 2063W**

Phenolic Paper Laminate

### Composition

VOLTIS® HP P 1015H / 2063W is a phenolic paper laminate conforming PFCP 204 acc. IEC 60893 and Hp 2063 acc. DIN 7735.

### Application

VOLTIS® HP P 1015H / 2063W has exceptionally high temperature and moisture resistance and good punching characteristics at elevated temperatures. The extremely low water absorption of the material together with the outstanding electrical insulation properties, including a low dielectric loss factor makes VOLTIS® HP P 1015H / 2063W an ideal material for use in the field of tele-communications, signaling equipment and high frequency units and also the potentiometer industry.

It is also recommended for use in components operating in extreme climatic conditions as the excellent insulating properties of the material are not affected by moisture or variations in temperatures, and the material does not initiate electrolytic corrosion on electrical conductors.

The material displays good property retention even after short term exposure to high temperatures. For example VOLTIS® HP P 1015H / 2063W will exhibit good punching properties after 1 hour at 200°C, but the smooth surface becomes marginally rougher.

### Processing

We recommend that HP P 1015H / 2063W is cut with hard metal saws and punched in thickness up to 2 mm after pre-heating to 80 - 130°C.

### Availability

Thickness:	0,1 - 3 mm, tolerances acc. IEC 60893
Colour:	light brown
Sheet size:	1070 x 1070 mm or 2170 x 1070 mm, tolerances + 10 / - 30

Cuttings are available on request.

## Technical Data

Properties	Testmethod	Unit	Value
Density	ISO 1183 / A	g/cm <sup>3</sup>	1,36
Flexural strength	ISO 178	MPa	120
Flexural modulus of elasticity	ISO 178	MPa	9000
Tensile strength	ISO 527	MPa	110
Compressive strength perpendicular to laminations	ISO 604	MPa	250
Electric strength at 90°C in oil perpendicular to laminations (thickness 1,5 mm)	IEC 243	kV/mm	8,4
Breakdown voltage at 90°C in oil parallel to laminations	IEC 243	kV	25
Permittivity at 1 MHz	IEC 250	-	< 5,5
Dissipation factor at 1 MHz	IEC 250	-	< 0,05
Insulation resistance after immersion in water	IEC 167	Ohm	1 x 10 <sup>10</sup>
Comparative tracking index	IEC 112	-	CTI 100
Thermal endurance	IEC 216	T.I.	120
Water absorption (thickness 1,5 mm)	ISO 62 / 1	mg	35
Electolytic corrosion	DIN 53489	-	AN 1,4

Special test for potentiometer use (Roughness of the surface (Rz)):

as supplied: 1,5 - 2,5 µm

after 1h/200°C: 3 - 5 µm

Temperature resistance

No delamination occurs after 7hours at 200°C.

Solvent resistance

No change after treatment with: acetone, alcohols and glycols, benzines and ketons.

Adhesion of inks

Good adhesion of varnishes and printing inks, based on epoxy or urethane resins.