Technical notes
Policril Acrylic Tubes

CAST AND EXTRUDED ACRYLIC TUBES

PHYSICAL PROPERTIES

Density:	20°C : 1,19 (that of glass is approx. 2,7)
Water absorption:	0,25 - 0,30% after 24 hours at 20°C; max. 0,5% after 7 days
Impermeability:	Policril tubes are completely waterproof and allow the convey of liquids with high vapour pressure and gas.
Weather resistance:	Policril tubes do not suffer ageing, they are not affected by sudden changes in temperature, they do not crack or deform.
Exposure to UV rays:	no effect is visible after 500 hours.

MECHANICAL PROPERTIES (at 20°C)

Tensile strength:	55-70 MPa (exceeds 90 at –40°C; decreases to 40 at +40°C)
Flexural strength:	100-120 MPa
Compressive yield stress:	70 - 90 MPa (exceeds 170 at –40°C, decreases to 30 at +40°C)
Brinell hardness:	17,9 with a 5mm sphere of weight 250kg in 3"
Moh's hardness:	2 +/- 3 (madreperla 3, glass 6)
Modulus of elasticity:	2850 MPa

THERMAL PROPERTIES

Vicat softening temperature:	95 - 105°C
Coefficient of linear expansion:	$90 \cdot 10^{-6}$/°C (at 20°C)
Specific heat:	1,5 W/mK
Thermal conductivity:	0,19 W/mK

OPTICAL PROPERTIES

Refractive Index n_D^{20}: 1.493 at 20°C (sodium line)

Transmittance: for a thickness of 5mm –

a. in the visible spectrum: superior to 92%, the loss is almost entirely due to the reflection of the surfaces.
b. In the ultraviolet range: better than that of glass and precisely:

Nanometers:	
302	27%
312	57%
314	60%
317	62%
328	64%
340	76%

c. in the infrared range: good permeability except for absorbent rays in the frequencies 1200, 1400, 1700 Nanometers.

ACOUSTIC PROPERTIES

Policril tubes significantly deaden sound waves and can be utilised as a transparent sound proofing material.