Spectraglass
SPECIALIST GLASS SOLUTIONS

SPECTRAGLASS Limited
Unit 2, Inveralmond Close,
Inveralmond Industrial
Estate, Perth PH1 3TT

Tel: 01738 638358
Fax: 01738 634744

info@spectraglass.com
www.spectraglass.com

ILMADUR 420

Ilmadur 420 is a borosilicate material which is ideally suited for high temperature and high pressure gauge glasses

TYPICAL PROPERTIES

Working point: @ 10^4 dPa • s	= 1225° C
Littleton Softening point: Mg @ 10^7.6 dPa • s	= 810° C
Annealing point: Tu @ 10^13 dPa • s	= 580° C
Strain point: Tc @ 10^14.7 dPa • s	= 520° C
Transformation temp: Tg @ 10^13.3 dPa • s	= 560° C
Maximum working temperature annealed	= 500° C
Maximum working temperature toughened	= 280° C
Thermal expansion (20-300° C) α	= 4.2 x 10-6 K
Density	= 2.28 g/cm3
Modulus of elasticity	= 66000N/mm2
Poisson ratio:μ	= 0.20 • 103 N/mm2
Thermal conductivity @ 90° C	= 1.40 W m-1 K-1
Refractive Index	= nd 1.481
Chemical composition (wt %) SiO2 Al203 B203 Na20 K20 ZrO2	~ 77.0 ~ 4.0 ~ 11.0 ~ 5.0 ~ 1.0 ~ 1.0
Chemical properties:	
Water resistance tested to DIN ISO 719 (at 98 °C):	HGB 1
Water resistance tested to DIN ISO 720 (at 121 °C):	HGA 1
Alkali resistance tested to DIN ISO 695:	Class A2
Acid resistance tested to DIN 12 116:	Class 1
Acid resistance tested to DIN ISO 1776:	Class 1
Electrical properties:	
Volume resistivity@ 25°C	= 6.6 x 1013 Ω cm
Volume resistivity@ 300°C	= 1.4 x 106 Ω cm
Dielectric constant εr at 25°C and 1 MHz:	= 4.6
Loss factor tan δ at 25°C and 1 MHz:	= 1.4