

TECHNICAL DATA SHEET

PC 409XP



MATERIAL DESCRIPTION

PC 409XP coating is a radiation-curable acrylate useful for polymer cladding, especially has no POFA & POFs similar chemicals to meet TSCA regulation. PC 409XP coating has suitable glass transition temperature, rapid cure property, non-yellowing, thermal resistance, high oxidative and hydrolytic (moisture) stability, which are required by optical fiber industry applications.

MATERIAL PROPERTIES

LIQUID

| | |
|--------------------------|--------------------------------|
| Viscosity at 25°C | 1,900 cPs ± 300 |
| Density at 24°C | 1.50 ~ 1.55 g·cm ⁻³ |
| Refractive Index at 25°C | 1.387 ± 0.005 (589nm) |

CURED

| | |
|-------------------------------|---------------------------------|
| Refractive Index at 852nm | 1.398 ± 0.005 |
| Secant Modulus at 2.5% Strain | 28.0 ~ 33.0 kgf/mm ² |
| Tensile Strength at Break | 1.1 ~ 1.3 kgf/mm ² |
| Elongation at Break | 30 ~ 60 % |
| Glass Transition Temperature | 75 °C at Tan_delta Max |
| Coefficient of Expansion | On testing |
| Shrinkage on Cure < 5.5 % | |

CURING CONDITION

Minimum UV dose of PC 409XP for complete cure is 1,000 mJ/cm² under a nitrogen environment. However, the minimum dosage is dependent upon the thickness of the PC layer.

STORAGE CONDITION

PC 409XP polymer cladding coating can polymerize under improper storage conditions. Store materials away from direct sunlight and presence of oxidizing agents and free radicals. Storage temperature range is between 15°C to 27°C.

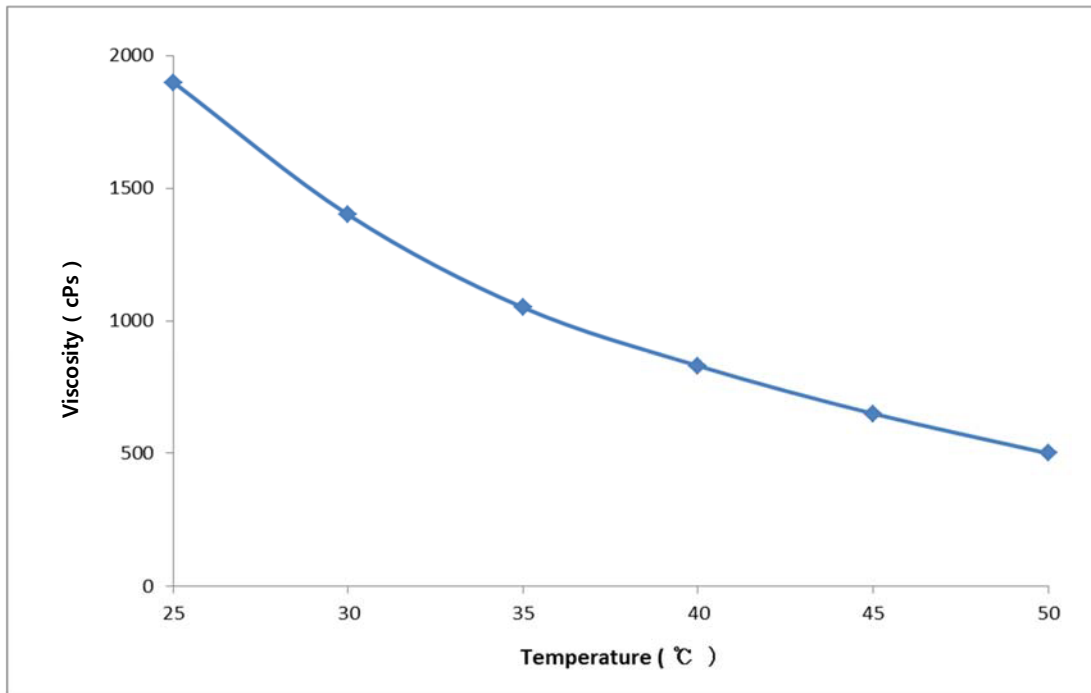
PRECAUTION

PC 409XP polymer cladding coating materials can cause skin and eye irritation after contact. Therefore, avoid direct contact with these materials. If contact occurs, immediately rinse affected areas copiously with water.

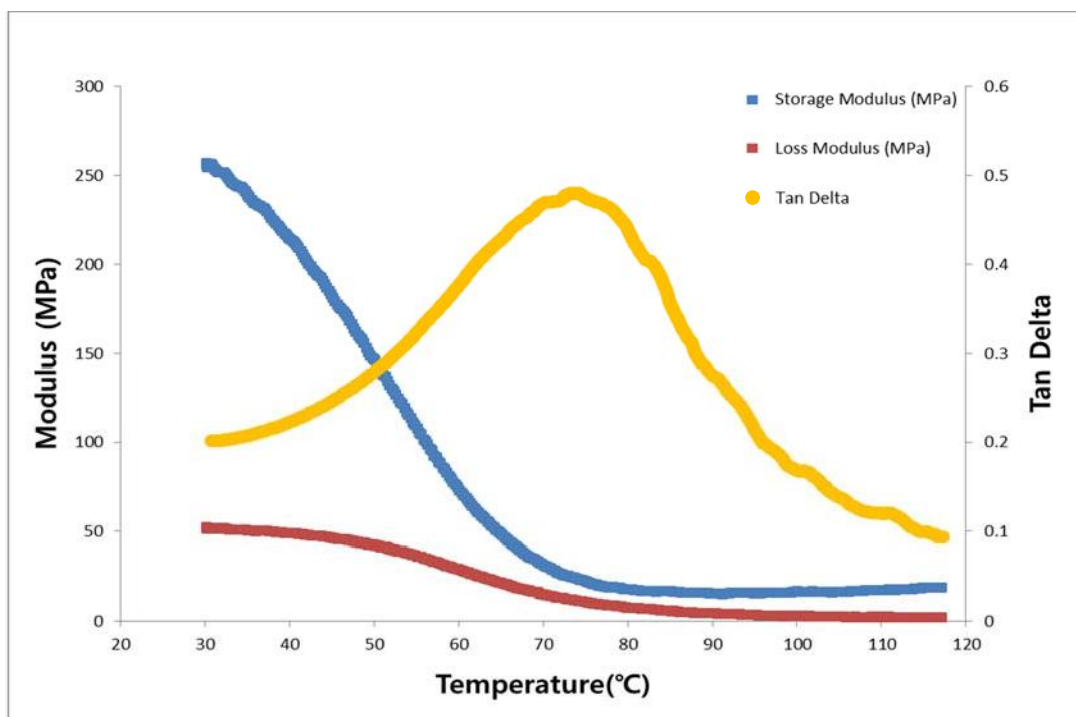
** The information contained herein is believed to be reliable but is not to be taken as a representation, warranty or Guarantee. Customers are urged to perform their own process and QC tests.*

PC 409XP

Viscosity Reference



DMTA Analysis Data



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APPENDIX

TEST EQUIPMENT

| | Test Equipment |
|--|------------------------------------|
| Viscosity (cPs) | Brookfield DV II+ or DV III+ |
| Refractive Index (uncured) | Abbe Refractometer |
| Density (g/cm ³) | Pycnometer |
| Refractive Index (cured) | Prism Coupler / Abbe Refractometer |
| Shrinkage On Cure | Pycnometer |
| Secant Modulus (kgf/mm ²) | Instron 4443 UTM |
| Elongation (%) | Instron 4443 UTM |
| Tensile Strength (kgf/mm ²) | Instron 4443 UTM |

TEST METHOD

| | | |
|---|----------------------|---|
| Viscosity (cPs) | ASTM D-1084 Method B | $V = fs$ |
| <i>V=Viscosity of sample in centipoises f=Scale factor furnished with instrument s = Scale reading of viscometer</i> | | |
| Refractive Index (uncured) | ASTM D 542-50 | |
| Density (g/cm ³) | ASTM 1475 | $D = (W - w)/V$ |
| <i>V =Volume of container(mL) W = Weight of the filled container w = Weight of the empty container D = Density (g/mL)</i> | | |
| Shrinkage On Cure | ASTM D-792 | $X = (a \times d) / (b + a - m)$ % Shrinkage = $(X - d)/d$ |
| <i>a=Sample Weight d=Specific Gravity of Uncured Sample b=Weight of Pycnometer and water m= Weight of Water and Sample in Pycnometer e=Weight of Pycnometer</i> | | |
| Secant Modulus (kgf/mm ²) | ASTM D-638 | |
| Elongation (%) | ASTM D-638 | $(L - L_0) / L_0 \times 100$ |
| <i>L₀ = Length of initial L=Length at break point</i> | | |
| Tensile Strength (kgf/mm ²) | ASTM D-638 | $P / (T \times W)$ |
| <i>T = Film Thickness, P=Tensile pull to rupture W= Width of Film</i> | | |

Contact US

Luvantix SSCP
 22 Quail Run, Warren, NJ, USA
 Tel: +1 732 271 0350
 Fax: +1 732 348 9496
info@sccpusa.com