TECHNICAL DATA SHEET

PC 409L AP

CONTENTS

Rev. III
Revised Date : 02th April 2014
The Term of Validity : 02th April 2014 ~ 01th Aug 2015

A. MATERIAL DESCRIPTION

PC-409L AP coating is a radiation-curable acrylate useful for polymer cladding making processes. PC-409L AP 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.

1. CURING CONDITION

Minimum UV dose of PC-409L AP for complete cure is 1000 mJ/cm^2 under a nitrogen environment. However, the minimum dosage is heavily dependent upon the thickness of the PC layer.

2. STORAGE

PC-409L AP 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℃ to 27℃.

3. PRECAUTION

PC-409L AP 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.

4. NOTES

The information contained herein is believed to be reliable but is not to be taken as representation, warranty or guarantee and customers are urged to make their own tests.

B. MATERIAL PROPERTIES

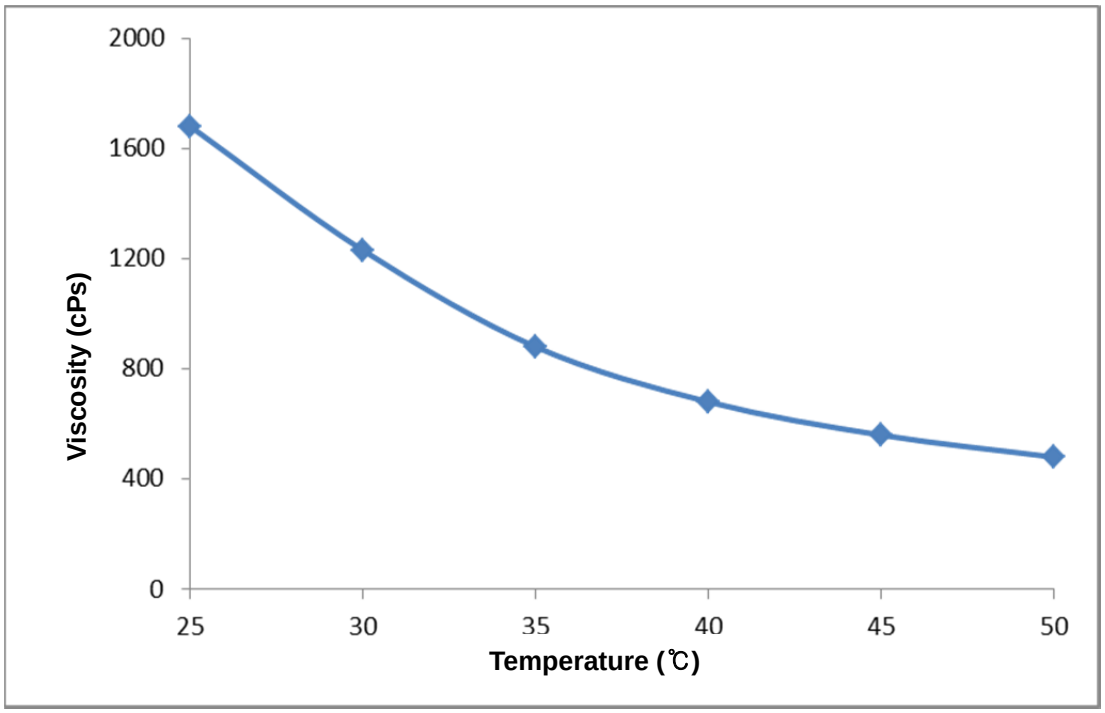
1. LIQUID

Viscosity	at 25 ºC	1850 cPs ± 500
Density	at 24 ºC	1.50 ~ 1.55 g·cm^{-3}
Refractive Index at 25ºC, 589 nm		1.3890 ± 0.005

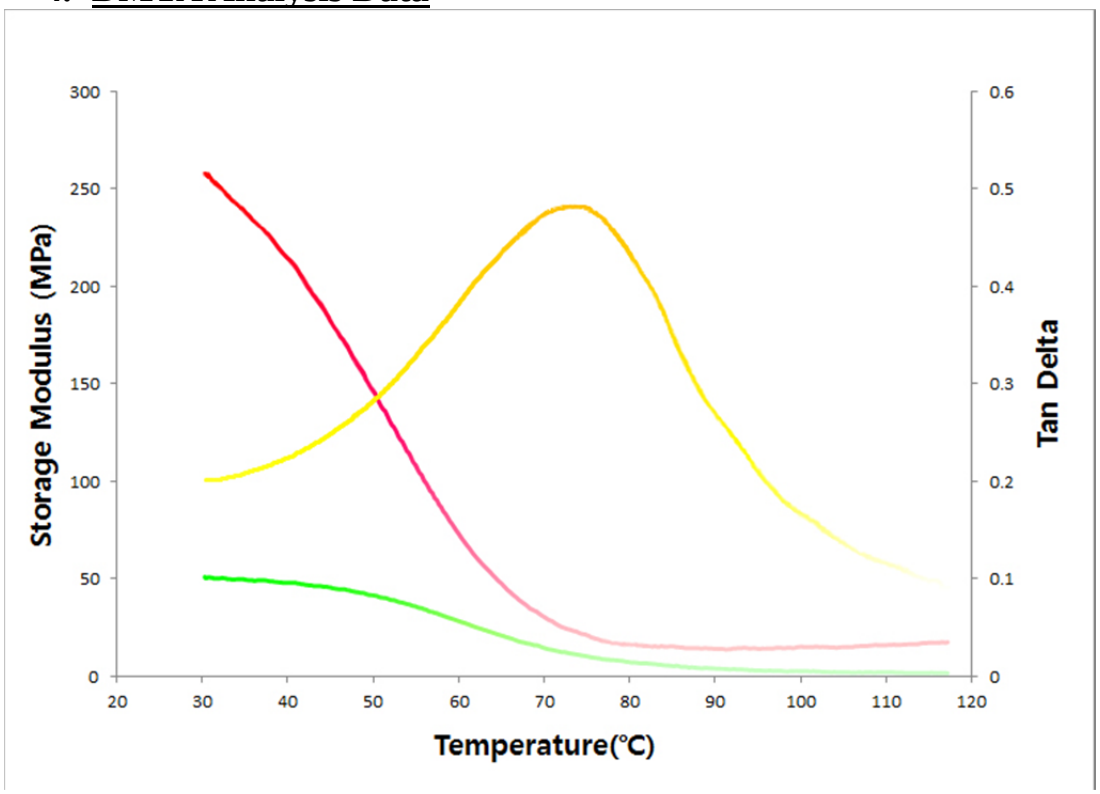
2. CURED

Refractive Index at 852 nm	1.3950 ± 0.005
Secant Modulus At 2.5% Strain	19 ~ 29 kgf/mm2
Tensile Strength at Break	0.85 ~ 1.85 kgf/mm2
Elongation at Break	40 ~ 70 %
Glass Transition Temperature At Tan_delta Max	70 ℃
Coefficient of Expansion At 25 ℃ ~ 120 ℃	18.60 X10^5 cm/(cm℃)
Shrinkage on Cure	~ 10.5 %

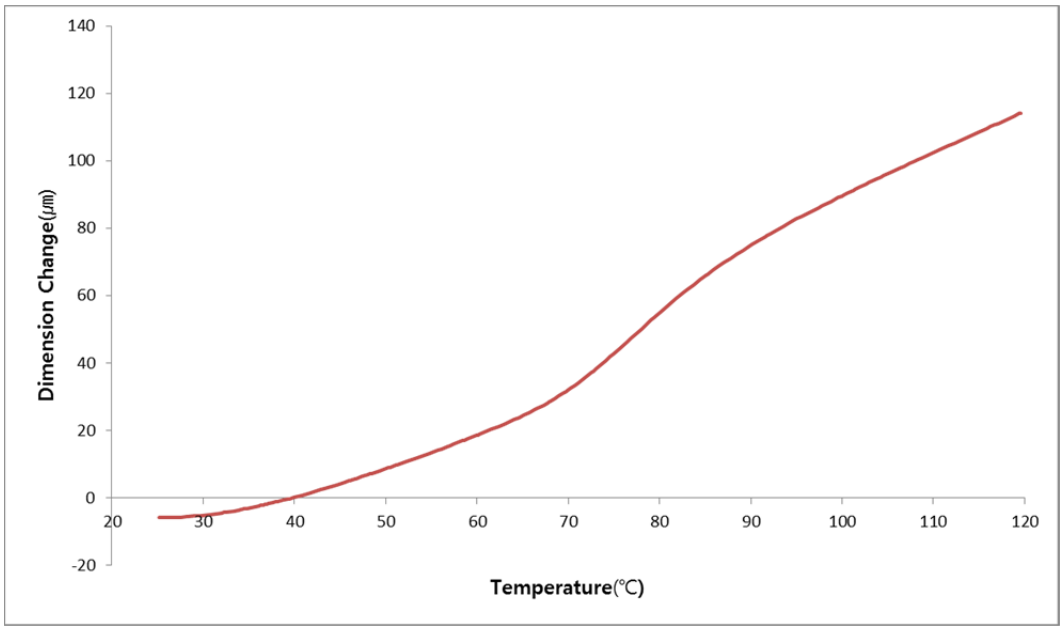
3. Viscosity Reference



4. DMTA Analysis Data



5. TMA Analysis Data



C. APPENDIX

1. TEST EQUIPMENT

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

2. TEST METHOD

Viscosity (cPs)	ASTM D-1084 Method B	**V = fs** V=Viscosity of sample in centipoises f=Scale factor furnished with instrument s = Scale reading of viscometer
Refractive Index	ASTM D 542 – 50	
Density (g/cm^3)	ASTM 1475	**D = (W – w)/V** V =Volume of container(mL) W = Weight of the filled container w = Weight of the empty container D = Density (g/mL)
Shrinkage On Cure	ASTM D-792	**X = (a x d) / (b + a – m)** **% Shrinkage =(X-d)/d** 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
Secant Modulus (kgf/mm^2)	ASTM D-638	
Elongation (%)	ASTM D-638	**(L – L_0) / L_0 X 100** L_0 = Length of initial L=Length at break point
Tensile Strength (kgf/mm^2)	ASTM D-638	**P/ (T X W)** T = Film Thickness, P= Tensile pull to rupture W= Width of Film