

LOW REFRACTIVE INDEX POLYMER CLADDING RESIN_

Polymer Cladding Resin



EFiRon SPC Series

Environmentally
Non-hazardous

PFOA, and PFOA Precursor Free
Custom Designed Refractive Index
Applications:
- Biomedical Fibers, Fiber Bundles
- Polymer Cladding Fibers

Description

- ✓ **EFiRON® SPC Polymer Clad** Series is PFOA free and PFOA precursor free product.
- ✓ SPC products satisfy rigorous European and USA environmental regulations.
- ✓ The properties of SPC series are the same as the original PC series.
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Low refractive index from 1.347 to 1.452
- Easy to design a product around specific application
- Optimization of optical, thermal, mechanical property on customer's demands
- Long shelf life (1 year)
- Application: Special Optical Fiber, High Power Fiber Laser, Fiber Recoating, PCF, POE, PMMA, Large Core Fiber and etc

Liquid State

Inspection	SPC-347	SPC-355	SPC-363	SPC-365	SPC-370	SPC-373	SPC-382	SPC-400	SPC-404F	SPC-414	SPC-430	SPC-444	SPC-452
Viscosity (cps)	2,000	5,000	4,500	4,300	5,500	4,700	5,000	5,200	4,800	4,800	4,500	5,000	4,200
R. I. at 589nm	1.345	1.349	1.361	1.362	1.365	1.367	1.376	1.394	1.396	1.407	1.418	1.434	1.442

Cured State

Inspection	SPC-347	SPC-355	SPC-363	SPC-365	SPC-370	SPC-373	SPC-382	SPC-400	SPC-404F	SPC-414	SPC-430	SPC-444	SPC-452
R. I. at 852nm	1.347	1.355	1.363	1.365	1.370	1.373	1.382	1.400	1.404	1.414	1.430	1.444	1.452
N.A at 852nm	0.54	0.52	0.50	0.49	0.48	0.46	0.44	0.40	0.37	0.34	0.25	0.15	0.00
2.5% Secant Modulus (MPa)	19	30	40	45	40	60	240	370	450	360	430	500	680
Young's Modulus (MPa)	20	35	45	45	45	65	270	440	540	420	510	560	760
Tensile Strength (MPa)	4	6	10	8	10	13	14	20	23	22	22	25	30
Elongation(%)	25	20	90	100	90	80	70	15	15	15	18	10	10
Tg(°C)			39	38	45	47	57	85	103	98	98	95	90

* Film Thickness: 75um, UV dose : 12.5J/cm² (SPC-363~ 382) , 3J/cm² (SPC 400~452)

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Liquid State

Inspection	SPC-370HM	SPC-373HM
Viscosity (cps)	6,300	5,400
R. I. at 589nm	1.367	1.367

Cured State (High Modulus Version)

Inspection	SPC-370HM	SPC-373HM
R. I. at 852nm	1.370	1.373
N.A at 852nm	0.48	0.46
2.5% Secant Modulus (MPa)	82	115
Young's Modulus (MPa)	86	120
Tensile Strength (MPa)	10	11
Elongation(%)	52	55
Tg(°C)	55	57

*Film Thickness: 75um, UV dose : 12.5J/cm²

Polymer Cladding Resin



EFiRon XPC Series

High Temperature
High Glass Adhesion

Description

- ✓ **EFiRON® XPC Polymer Clad** Series is specially designed to meet the growing customer needs in the high power/thermal laser fiber industry.
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Low refractive index from 1.363 to 1.400
- Formulated for High modulus
- Can be used for high power single coating applications
- Long shelf life (1 year)
- Application: Special Optical Fiber, High Power Fiber Laser, Fiber Recoating, PCF, POF, PMMA, Large Core Fiber and etc

Liquid State

Inspection	XPC-363	XPC-365	XPC-370	XPC-373	XPC-373HV	XPC-409
Viscosity (cps)	1,300	2,500	6,200	1,500	4,900	1,500
R. I at 589nm	1.357	1.361	1.365	1.371	1.369	1.390

Cured State

Inspection	XPC-363	XPC-365	XPC-370	XPC-373	XPC-373HV	XPC-409
R. I at 852nm	1.363	1.365	1.370	1.373	1.373	1.400
N.A at 852nm	0.50	0.49	0.48	0.46	0.46	0.38
2.5% Secant Modulus (MPa)	90	100	140	200	190	375
Young's Modulus (MPa)	100	105	142	230	210	480
Tensile Strength (MPa)	8	8	10	15	12	18
Elongation(%)	15	15	20	20	12	19
Tg(°C)	73	73	75	78	71	75

* Film Thickness: 75um, UV dose : 12.5J/cm²

Polymer Cladding Resin



EFiRon APC Series
Silane Technology
Super Adhesion

Description

- ✓ **EFIRON® APC Polymer Clad Series** is specially designed to have high adhesion and modulus for water/thermal resistance applications.
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Low refractive index from 1.363 to 1.382
- Formulated with newly developed silane technology
- Application: Special Optical Fiber, High Power Fiber Laser, Fiber Recoating, PCF, POF, PMMA, Large Core Fiber and etc

Liquid State

Inspection	APC-363	APC-370	APC-373	APC-382
Viscosity(cps)	4,500	6,200	6,700	5,000
R. I at 589nm	1.361	1.368	1.371	1.378

Cured State

Inspection	APC-363	APC-370	APC-373	APC-382
R. I. at 852nm	1.363	1.370	1.373	1.382
N.A at 852nm	0.49	0.48	0.46	0.44
2.5% Secant Modulus (MPa)	20	70	100	200
Young's Modulus (MPa)	20	80	110	230
Tensile Strength (MPa)	9	10	10	10
Elongation(%)	90	60	60	60
Glass Adhesion(N/25mm)	2.5	2.3	2.3	3.8

* Film Thickness: 75um, UV dose : 12.5J/cm²

Polymer Cladding Resin



EFiRon HDC Series
Silane Technology
Super Adhesion

Description

- ✓ **EFIRON® HDC Polymer Clad Series** is specially designed to have high thermal / boiling water resistance applications.
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Low refractive index from 1.363 to 1.382
- Formulated with newly developed silane technology
- Application: Special Optical Fiber, High Power Fiber Laser Beam passive part, Fiber Recoating, PCF, POF, PMMA, Large Core Fiber and etc

Liquid State

Inspection	HDC-363	HDC-370	HDC-373	HDC-382
Viscosity(cps)	4,500	6,000	3,500	6,000
R. I at 589nm	1.357	1.365	1.370	1.377

Cured State

Inspection	HDC-363	HDC-370	HDC-373	HDC-382
R. I. at 852nm	1.363	1.370	1.373	1.382
N.A at 852nm	0.49	0.48	0.46	0.44
2.5% Secant Modulus (MPa)	9	20	35	112
Young's Modulus (MPa)	17	30	30	115
Tensile Strength (MPa)	6	15	9	10
Elongation(%)	80	120	70	50
Glass Adhesion(N/25mm)	2.0	2.3	2.6	2.0

* Film Thickness: 75um, UV dose : 1J/cm²

Polymer Cladding Resin



EFiRon SCU Series
Single coating process

Description

- ✓ EFiRON® SCU Series is specially designed to enhance the effectiveness of the lab's product testing
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Refractive index from 1.50
- Formulated with newly developed coating technology
- Can be used as a single coating application in Lab. instead of primary and secondary application

Liquid State

Inspection	SCU-2000 (UV)	SCL-2000 (LED)*
Viscosity(cps)	10,000	10,000
R. I at 589nm	1.496	1.496

Cured State

Inspection	SCU-2000 (UV)	SCL-2000 (LED)*
R. I. at 852nm	1.50	1.50
N.A at 852nm	0	0
2.5% Secant Modulus (MPa)	260	260
Young's Modulus (MPa)	300	300
Tensile Strength (MPa)	23	23
Elongation(%)	40	40

* Wave length : 395nm, It might vary depending on light source and power .

* Film Thickness: 75um, UV dose : 1J/cm²

Polymer Cladding Resin



EFiRon FOS,TPR, PTI, HRI
3D, Pattern Ink Technology

Description

- ✓ EFiRON® TPR, HRI Series is specially designed to enhance property of Refractive Index, Modulus.
- ✓ ROHS compliance & USP Class 6 certification issued by NAMSA

Feature

- Refractive index 1.55, 1.612
- Formulated with newly developed coating for 3D, Pattern Ink technology.

Liquid State

Inspection	FOS-1000	TPR-550	PTI-540	HRI-640
Viscosity(cps)	906	700	500	590
R. I at 589nm	-	1.540	1.527	1.588

Cured State

Inspection	FOS-1000	TPR-550	PTI-540	HRI-640
R. I. at 852nm	-	1.554	1.541	1.612
N.A at 852nm	-	0	0	-
2.5% Secant Modulus (MPa)	-	1,500	730	-
Young's Modulus (MPa)	140.7	1,800	880	-
Tensile Strength (MPa)	15.2	48	26	-
Elongation(%)	32.4	3	15	-

* Film Thickness: 75um, UV dose : 1J/cm²