LUMIFLON® Product Data Sheet
LUMIFLON LF-916F Solid Resin

AGC Chemicals Americas, Inc.

LUMIFLON fluoropolymer resins were developed in 1982 as the first solvent-soluble fluoropolymers in the world. LUMIFLON polymers consist of alternating fluoroethylene and alkyl vinyl ether segments (FEVE). The fluorinated segments provide outstanding UV stability, weather resistance, and chemical resistance, while the vinyl ether segments provide solvent compatibility and cross-linking sites. LUMIFLON resins are used to make ultra-weatherable coatings for architectural, aerospace, automotive, and industrial maintenance markets.

LUMIFLON LF-916F is a low molecular weight, high OH number resin. When LF-916F is dissolved in the appropriate exempt solvents, zero and low VOC and HAPS-free fluorourethane coatings can be formulated. The resin is typically used in applications where outstanding weathering is required along with excellent chemical resistance. Markets include aerospace coatings, architectural coatings, heavy duty industrial coatings, automotive coatings, and coatings for concrete.

Product Characteristics

- High OH functionality
- Excellent weatherability and water resistance, excellent chemical resistance
- Good adhesion to primers, metals, fiberglass, plastics, and composites
- Zero/low VOC and HAPS free coatings are possible
- Wide range of gloss possible
- Curable at both ambient and elevated temperatures
- Suitable for shop and field applied coatings

Typical Physical Properties
LUMIFLON LF-916F

Physical Property	Value
Appearance	Pale yellow flakes
Non-volatiles, wt. %	>99%
OH Number, mg KOH/g-polymer	100
T_g, ^oC	34
Density, g/cc, 25^o C	1.39
Softening Point, ^oC	117.5

Formulation for Zero VOC Two-Component Coating with LUMIFLON LF-916F

Varnish (Non-volatiles=60%)

Ingredient	Ingredient Function	Parts By Weight
LUMIFLON LF-916F	Resin	60.0
t-Butyl Acetate	Solvent	40.0
Total		100.0

Stir resin until dissolved, filter with 200 mesh screen

Pigment Paste

Ingredient	Ingredient Function	Parts By Weight
LUMIFLON LF-916F Varnish	Resin	40.0
Ti-Pure 960[1]	Pigment	37.0
t-Butyl Acetate	Solvent	24.0
Total		100.0

[1] DuPont

Let Down (Main Package)

Ingredient	Ingredient Function	Parts By Weight
Pigment Paste	Pigment	50.0
LUMIFLON LF-916F Varnish	Resin	48.0
Dibutyl Tin Dilaurate (DBTDL, 0.0001 in xylene)	Catalyst	2.0
Total		100.0

Paint Formulation

Ingredient	Ingredient Function	Parts By Weight
Main Package	Described Above	100
Desmodur N-3300[2]	Crosslinker	12.0

[2] Bayer Corp.

Paint Formulation Characteristics

Property	Value
Solids Content, Wt. %	63.3
Varnish Viscosity, mPas	40
Paint Viscosity, mPas	240

Coating Properties of Fluorourethane

Cure Conditions: 1 hour, 80° C
Substrate: Aluminum panels, 8 mm, acid chromated

Coating Properties of LF-916F Based Fluorourethane

Property	Test Method		Results
Gloss	ISO 2813	20° 60°	80 90
Pencil Hardness	ASTM D3363	Gouge	F
Flexibility	ASTM D 4145	Mandrel bend	2T-3T (Paint fracture)
Flexibility	ISO 1520	Cupping test	>6mm (cracking)
Impact Resistance	ASTM D 2794 (Diameter=0.5”)	Intrusion 0.5 kg Extrusion 0.5 kg	>1.0 m >1.0 m
Cross Cut Adhesion	ISO 2409		0-1