

# LUMIFLON® Product Data Sheet

## LUMIFLON FE-4400 for Coil Coatings



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 FE-4400 is a water emulsion product that was developed to meet VOC and HAPS regulations on many solvents in the U. S. FE-4400 is hydroxyl functional, and can be crosslinked with water-dispersible polyisocyanates. Like other LUMIFLON resins, FE-4400 is used to produce coatings with high gloss and excellent weatherability. This bulletin describes the use of FE-4400 to produce single component elevated cure coatings. These coatings are primarily coil coatings for architectural applications.

### Product Characteristics

- Moderate OH functionality
- Excellent weathering and chemical resistance
- Suitable for ambient cure and bake coatings
- Used in architectural ambient cure and coil coatings

### Typical Physical Properties LUMIFLON FE-4400

Physical Property	Value
Appearance	Milky White Liquid
Solids, wt. %	50%
pH	7-9
Ionic Character	Anionic
Particle Diameter, $\mu\text{m}$	0.1-0.2
OH Number, mg KOH/g-polymer	49
Specific Gravity, 25° C	1.16
Minimum Film Forming Temperature, °C	55

The data given in this product bulletin is for information purposes only. It is given in good faith and based on the best knowledge and experience of the company. This product should be used only in applications for which it was intended. This product is not designed for special applications such as pharmaceutical or other medical use. The company makes no warranties and undertakes no responsibilities regarding this product except as stated in contract documents for its supply.





## Standard Formulation for Single Component Coating with LUMIFLON FE-4400

### Pigment Paste

Ingredient	Ingredient Function	Parts By Weight
Water	Diluent	23.65
Ti-Pure R-706 <sup>1</sup>	Pigment	72.0
Hydropalat 3275 <sup>2</sup>	Dispersant	3.6
Dehydran 1620 <sup>2</sup>	Defoamer	0.75
Total		100.0

<sup>1</sup> DuPont

<sup>2</sup> Cognis

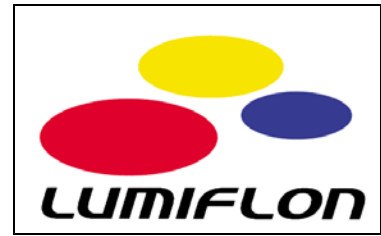
### Let Down

Ingredient	Ingredient Function	Parts By Weight
Pigment Paste	From Above	34.7
LUMIFLON FE-4400	Emulsion Resin	100.0
Texanol <sup>3</sup>	Coalescing Solvent	7.5
Bayhydur BL-5140	Crosslinker	29.9
Total		169.6

<sup>3</sup>Eastman Chemicals

<sup>4</sup>Bayer





## Fluorourethane Coating Properties

Cure Conditions: Flashing: 40° C for 10 minutes. Baking: 150° C for 30 minutes.  
 Substrate: Aluminum panels, 8 mm, acid chromated

### Coating Properties of FE-4400 Based Fluorourethane

Property	Test Method		Results
Film Thickness			30-40 µm
Gloss	ISO 2813	20° 60°	65 82
Pencil Hardness	ASTM D3363	Gouge	4H
Flexibility	ISO 1520	Cupping test	>6mm (cracking)
Impact Resistance	ASTM D 2794 (Diameter=0.5")	Intrusion 0.5 kg Extrusion 0.5 kg	>0.5 m >0.5 m
Cross Cut Adhesion	ASTM D 3359		5B
Water Resistance	ISO 2812 40° C, 24 hrs. 1. Cross Cut Adhesion, ASTM D 3359 2. Blistering, ASTM D 714 ISO 4628		5B/5B (Wet/dry)  No blistering

