

## ZEFFLE GK-571

### FEVE Resin-Coil Coating

Fluoropolymer, Weather, Chemical/ Solvent, and Stain Resistant Coating

#### Characteristics

Solvent borne copolymer of tetrafluoroethylene and vinyl monomer

Slower solvent package to increase tailing and improve processability

Chlorine free

Excellent weather resistance with decades of performance

Anti-corrosion, chemical resistance, and staining reduction / elimination

Various gloss and colors can be obtained

Curing from room temperature to 230°C

Cured with polyisocyanate or melamine-type crosslinking agents

Applications can be performed by various methods, including spraying, brushing, roller painting and in roll to roll processes

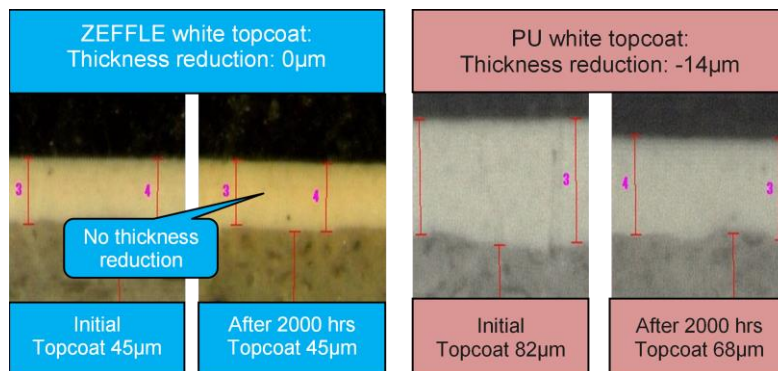
Low vapor permeability

Main ZEFFLE Applications:  
Architectural Panels  
Industrial Paints  
Chemical Resistant Topcoat  
UV Durable Applications

#### Weathering Data:

2000 hrs by QUV (U-VB313):

Corresponding approx. 5-7 year natural exposure



Properties	Value	
<b>Formulation Properties</b>		
White pigmented film on surface treated Al Panel		
Pencil Hardness (ASTM D3363)	H	
60° Gloss (ASTM 523)	82	
Adhesion (1mm Crosscut 25/25)	Pass	
Flexibility (180° Bend)	@ 25°C	φ 2 mm OK
	@ -20°C	φ 3 mm OK
Solvent resistance (Butyl Acetate 100 cycles)	No change	
Water Resistance (7 days immersion)	Appearance	No Change
	Adhesion	Pass
Chemical Resistance (7 days immersion)	5% H <sub>2</sub> SO <sub>4</sub>	No Change
	5% NaOH	No Change
Xylene Marker Removability Test (ΔE) After 1 day wiped with Ethanol	Black	0
	Blue	0
	Red	6
<b>Resin Properties</b>		
Resin Viscosity (25°C; 10 sec <sup>-1</sup> )	< 1000 cps	
Molecular Weight	Moderate	
Resin Solids (wt%)	50%	
Tg (°C)	25-28	
OH Value (mg KOH/g polymer)	55-65	
Acid Value (mg KOH/g polymer)	< 5	
Solvent Blend	n-butyl acetate/ Solvesso 100	

\*Typical properties are not suitable for specification purposes.

**Coil Coating ZEFFLE Starting Point Formulation:**

**Mill Base:**

Ingredient	Function	Parts per hundred
GK-571	Resin	26.1
Ti-Pure R-706 <sup>1</sup>	Pigment	26.3
n-butyl acetate	Solvent	10.5
<b>Total</b>		<b>63.1</b>

<sup>1</sup>DuPont

**Let Down:**

Ingredient	Function	Parts per hundred
Mill-base		63.1
GK-571	Resin	36.9
<b>Total</b>		<b>100.0</b>

**Paint Formulation:**

Ingredient	Function	Parts per hundred
Let Down		100
Desmodur N3300A <sup>2</sup> (50% in t-butyl acetate)	Crosslinker	6.8
<b>Total</b>		<b>106.8</b>

<sup>2</sup>Bayer Material Science

**Recommended Curing:**

GK-571 paint can be cured at multiple curing conditions.

Examples:

- 7 days at room temperature
- 1 hour at 80°C
- 2 minutes at 230°C

	Test Conditions	ZEFFLE	Current Acrylic Silicone	Current Acrylic Urethane
<b>8% Buffered HF</b>	1 hr @ RT	A	B	C
<b>50% HF</b>	1 hr @ RT	A	C	C
<b>60% Sulfuric Acid</b>	24 hr @ RT	A	A	A
	2 hr @ 60°C	A	A to B	B
<b>50% Nitric Acid</b>	2 hr @ RT	A to B	C	C
<b>35% HCl</b>	2 hr @ RT	A	A	A
<b>50% Acetic Acid</b>	2 hr @ RT	A	A to B	A to B
<b>10% NaOH</b>	14 days @ RT	A	A to B	A to B
<b>10% H<sub>2</sub>O<sub>2</sub></b>	14 days @ RT	A to B	B	C
<b>Butyl Acetate</b>	24 hr @ RT	A	A to B	A to B
<b>MEK</b>	24 hr @ RT	A	A to B	A to B
<b>Chloroform</b>	24 hr @ RT	A	A to B	B
<b>Petroleum Benzene</b>	24 hr @ RT	A	A to B	B

Notes: A (Excellent), B (Fair), C (Poor)