



## NeoResins

### NeoRez R-966

NeoRez R-966 is an emulsion of an aliphatic urethane in water. It contains no organic cosolvent and will dry by evaporation of water to yield tough, flexible films with exceptional abrasion resistance, ultraviolet light stability, water and chemical resistance. By incorporating air-dry crosslinkers, such as Crosslinker CX-100, general film physical properties may be improved

#### Key Benefits

- Contains No Organic Cosolvent
- Abrasion Resistant
- UV Resistant
- Impact Resistant
- Chemical Resistant

Suggested Markets: Automotive & General Plastic Coatings

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#### Typical Properties

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Type	Aliphatic polyurethane
Appearance	Milky white
Total solids, by weight, %	33
Total solids, by volume, %	31.3
pH	7.5
Viscosity, Brookfield, 25°C, cps	30
Weight per gallon, 25°C, as supplied, lbs	8.6
Flash point (Pensky-Martens Closed Cup), °F	No flash point
Elongation, %	225
Freeze/thaw stability	Passes 5 cycles
Mechanical stability, 15 min. waring blender	Satisfactory
Volatile Organic Compound (grams per liter minus water)	37
Type of VOC	TEA
Shelf life	1 year

Bulletin R-966  
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### APPLICATION CHARACTERISTICS

NeoRez R-966 can be applied by spray, dip, roll or flow coating. Although no coalescing agents are necessary, some applications may require defoaming or flow control and leveling agents. Recommendations to improve foam resistance, flow and leveling are listed in our NeoRez R-960 bulletin.

#### Drying Characteristics

Three mil wet films of NeoRez R-966 were cast on a glass plate. Dry times and sward hardness development were obtained at 72°F and 54% relative humidity.

Set to touch, min.	30
Dry to touch, min	45
Through dry, min.	50
<b>Sward Hardness Development</b>	
1 hour	22
2 hours	30
24 hours	30
1 week	30
Baked 20 minutes at 200°F	30

#### Adhesion Characteristics

Films of NeoRez R-966 were prepared from 3 mil wet draw downs on the substrates indicated and allowed to cure at ambient conditions for one week. Adhesion was determined by ASTM D-3359 method B. Adhesion may be improved by incorporating leveling aids and/or Crosslinker CX-100. Also, blends with suitable acrylic polymers may be used to improve adhesion to plastics.

<b>Cold rolled steel</b>	
Smooth	5B
Bonderite 100 treated	5B
Bonderite 1000 treated	5B
Tin plated	5B
<b>Aluminum</b>	
Bare	5B
Anodized	5B
<b>Plastics</b>	
HDPE	0B
Polycarbonate	0B
Sheet molding compound (polyester)	3B
Nylon	0B
Flexible vinyl	3B

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### PERFORMANCE PROPERTIES

#### Free Film Properties

Ultimate tensile strength, psi	6000
Ultimate elongation, percent	225
Shore D hardness	35

#### Clear Film Properties

A 1.0 mil dry film was cast on cold rolled steel and force dried for 20 minutes at 200°F. Comparable properties were obtained with one week ambient cure.

Pencil hardness	3H
Sward hardness	30
Taber Abrasion resistance, mg. loss (CS-17, 1 kg, 1000 cycles)	16
Gloss (on black glass)	
60° Geometry	95
20° Geometry	93
Flexibility, "0" T bend on aluminum	Pass
Impact resistance, in./lbs., Pass/Fail	
Direct	160/-
Reverse	160/-

#### Clear Film Chemical Resistance

Force dried clear films (1.0 mil dry, 20 minutes at 200°F) on cold rolled steel were tested as follows:  
NOTE: Chemical resistance can be improved by the addition of 2% Crosslinker CX-100.

	Immediate	One Hour Recovery
24 Hour Immersion		
Toluene		
Softening	No effect	No effect
Whitening	No effect	No effect
Methanol		
Softening	Severe	No effect
Whitening	Moderate	No effect
One Hour Spot Tests		
Glacial Acetic Acid		
Softening	Moderate	No effect
Whitening	Moderate	No effect
1N NaOH		
Softening	Moderate	No effect
Whitening	No effect	No effect

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### Clear Film Environmental Properties

One mil dry films were spray applied to cold rolled steel and force dried 20 minutes at 200°F.

Cleveland Cabinet Humidity Resistance (100°F, 100% RH, 500 hours)	
Rusting	No effect
Blistering	No effect
Gloss loss	No effect
Salt Spray Resistance (5% NaCl, 95°F, 150 hours)	
Scribed:	
Rusting	Slight
Undercutting	1/4 inch
Blistering	No effect
Unscribed:	
Rusting	No effect
Blistering	No effect
QUV Weathering (500 hours/Alclad Aluminum)	
Gloss loss	No effect
Rusting	No effect
Blistering	No effect
Yellowing	No effect

### FOR YOUR PROTECTION

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