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Technical Information

Effective: 12.21.2007

Witcobond® W-240

An aliphatic polyurethane dispersion

Wicobond W-240 self-crosslinking, aqueous polyurethane dispersion is a water-based product that is intended to produce nondiscoloring, high-performance, protective top finishes for metal, rigid plastics and wood. Primers for these types of substrates also may be formulated with use of Witcobond W-240 urethane dispersion as part of the vehicle.

Optimum film properties can be achieved by drying coatings at ambient temperatures. Crosslinking of the polymer occurs during the drying cycle, and approximately a 90% level of the ultimate film properties can be achieved after overnight drying. Maximum film properties are obtainable after two weeks at ambient temperatures or by heating at 82 to 107°C (180 to 225°F) for three minutes.

Coatings based on Witcobond W-240 urethane dispersion have been found to exhibit exceptional resistance to abrasion, hydrolysis, oxidative discoloration, impact, solvents and staining.

Latex Properties:

Appearance	Translucent
Solids %	30
Particle Charge	Anionic
Particle Size	Colloidal
Surface tension, dynes/cm	54
pH	7-9
Viscosity (Brookfield LV), cps @ 25°C	<75
Density (lbs/gallon)	8.7
Specific gravity at 25°C	1.05
Flash Point (°C Pensky-Martens closed cup)	>100
Freeze/thaw stability .	Passed 6+ cycles
Thermal stability (28 days @ 52°C)	Satisfactory
Mechanical stability	Excellent
VOC, Wt. %	13.4
VOC, g/L	347.3
Tg, °C	-53

Film Properties:

1. Application Properties of Films

Set to touch, minutes	10
Dry to touch, minutes	15
Dry Through, minutes	70

Film Properties (continued)

2. Physical Performance Properties of Dry Films

Hardness	
Pencil	F
Sward	48
Impact resistance, in lbs.	
Direct	160
Reverse	160
QUV weatherometer (aluminum, 500 hrs)	
Oxidation	No effect
Loss of gloss	No effect
Blistering	No effect
Yellowing	No effect
UV Stability (Fadeometer), hours	1,500
Crosshatch Adhesion	
Untreated cold rolled steel	5B
Untreated aluminum	5B
Polycarbonate	5B
Rigid Vinyl	5B
Urethane (RIM)	5B

3. Free Film Properties

Tensile strength, psi	6000
Ultimate Elongation, %	70

4. Solvent Resistance, # Rubs Passed

MEK	>150
Cellosolve Solvents	>200

5. Hydrolytic Stability

8 hours at 15 psi in pressure cooker	Excellent; no loss
2 weeks at 70° C, (158% F), 95% relative humidity	Excellent; no loss

All tests were conducted on 1.0 to 1.5 mil films, air-dried for seven days at room temperature.

Storage and Handling:

Please refer to our Material safety Data Sheet (MSDS). Witcobond aqueous dispersions should be mixed well before use. Shelf life is one year.

