

ESSENTIAL R4511

HYDROXYL-FUNCTIONAL POLYURETHANE DISPERSION

Essential R4511 is an aliphatic triethanolamine neutralized Hydroxyl-functional polyurethane dispersion that will produce low VOC 2-K coatings when cross-linked with a water-dispersible polyisocyanate; such as, Easaqua L-600. The 2-K coating formulated with R4511 can be classified as a vapor barrier because of its extremely low perm rating.

It is designed for topcoat applications for concrete, wood, metal and plastics.

KEY BENEFITS

- Low VOC coatings
- Excellent chemical resistance
- Excellent adhesion
- <0.10 perm rating

DISCLAIMER: The information and recommendations contained herein are based on data believed to be correct. The information is offered solely for the customer's consideration, investigation and verification because of numerous factors beyond our control affecting the results of the use of products, Essential Industries, INC. makes no warranty of any kind, expressed or implied, including those of merchantability and fitness for a particular purpose, other than that the product conforms to its applicable current standard specification. The manufacturer's only obligation shall be to replace such quantity of the product proven to be defective.

TYPICAL PROPERTIES*

Appearance	Translucent
pH	8.0
Solids, % by weight	35.0
Viscosity, cP @25°C	
Brookfield, LV2, 60 rpm	500
Density Lb./Gal.	8.80
VOC Level (as supplied)	
Lbs./Gal.	0.0
G/L	0.0
Particle Charge	Anionic
Particle Size.....	25 nm
Acid No.	26 mg KOH per gm of solid
Hydroxyl Content**...71 mg per gm of solid	

*These values should not be interpreted as specifications.
**Without -OH groups of the Triethanolamine.



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ESSENTIAL R4511

Hydroxyl-Functional Polyurethane Dispersion

Starting Point Formulation - ALX292

INGREDIENTS

POUNDS

Part A

Essential R4511	559.33
Water	83.84
SURFYNOL® 104BC	2.83
BYK028	3.33
TEGO® Glide 496	<u>0.67</u>

TOTAL: 650.00

Part B

Easaqua L 600	250.00
Dipropylene glycol dimethyl ether (DMM)	<u>75.00</u>

TOTAL: 325.00

Formulation Attributes

Part A

Solids, % by Weight	30.70
pH	8.00
Viscosity	< 25 cps
VOC	5.2 g/L
Density, Lbs./Gal	8.81

Part A plus Part B

Solids, % by Weight	44.50
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Film Properties - ALX292:

Applied using a 50-wire wound bar to Cold rolled Steel panels.
1 mil dry film thickness.

Konig Hardness

1 day	67 secs
2 day	78 secs
3 day	112 secs
7 day	139 secs

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Hydroxyl-Functional Polyurethane Dispersion

Film Properties - ALX292 (continued)

Abrasion Resistance

7 day cure C-17 wheel, 500 mg, 1000 CYCLES 29.50 mg lost

Crosshatch Adhesion

Dry No removal of the coating

Wet (1 hour spot test with water) No removal of the coating

Chemical Resistance

200 MEK double rubs No effect

Impact Resistance

Direct Passes 160-inch lbs.

Indirect Passes 160-inch lbs.

Mandrel Bend Passes 0 t-bend

Perm Rating 0.098 perms (Vapor Barrier Rating)

Chemical Resistance Properties

1 coat applied to concrete tile using a roller at 300 sq feet per gallon.

Allowed to cure for 7 days.

Chemical Spot Test

5% NaOH

1 HR.

No Effect

24 HR.

No Effect

5% NaCl

No Effect

No Effect

5% HCl

No Effect

No Effect

10% Bleach

No Effect

No Effect

Kerosene

No Effect

No Effect

Antifreeze

No Effect

No Effect

Motor Oil

No Effect

No Effect

Ethanol

No Effect

No Effect

Isopropanol Alcohol

No Effect

No Effect

Transmission Fluid

No Effect

No Effect

Skydrol

No Effect

No Effect

Brake Fluid

No Effect

No Effect