

ESSENTIAL R4370

ALIPHATIC POLYURETHANE/ACRYLIC HYBRID

DESCRIPTION

Essential R4370, a urethane/acrylic hybrid, is solvent-free; allowing for coatings to be formulated to <100 g/l while still offering a balance of hardness and flexibility.

For improved resistance, Essential R4370 can be cross-linked with either a polyaziridine or a trimer. These 2K systems exhibit excellent gloss and exceptional chemical and mar resistance.

Essential R4370 has shown excellent adhesion to various substrates; in particular, wood, concrete and cold-rolled steel.

KEY BENEFITS

- Low VOC
- Solvent-Free
- n-MP-Free

TYPICAL PROPERTIES*

Appearance	Translucent
pH	7.5
Solids, % by Weight	35
Viscosity, cP @ 25°C - Brookfield, LV2, 60rpm	50
Density Lbs./Gal.	8.72
VOC Level (As Supplied)	
Lbs./Gal.	0.43
G/L	51
Particle Charge	Anionic
Acid Number	25

**These values should not be interpreted as specifications.*

Visit us on the web at www.essentialrmd.com

* 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.

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ESSENTIAL R4370 FILM PROPERTIES

All tests were performed on coatings kept at 77°F and 50% RH for seven days before testing.

Tensile Strength, PSI	3900
Elongation at Break, %	50
Tests Performed on Aluminum Panels (1-Mil Dry Films)	
Konig Hardness (Seconds) (1 day, 7 day)	84, 102
Grit Feed Taber Abrasion (Mg Loss, 500 Cycles, 1000g)	25

STARTING POINT FORMULATION

ESSENTIAL R4370 Clear 2-K Formulation

<u>MATERIALS</u>	<u>POUNDS</u>
Part A	
ESSENTIAL R4370	675.5
Premix Next Items:	
Water	135.3
Dowanol® DPnB	20.2
BYK 028	0.2
BYK 346	0.7
Zonyl® FSP	0.7
Part B	
Rhodacoat® EZ	35.4
Progyld® DMM	4.0
	100 gallons
Formulation Attributes:	
Solids, % by Weight	31.0%
Solids, % by Volume	27.5%
Viscosity	<50 cps.
Calculated VOC (Excluding Water)	
G/L	132
Lbs./Gal.	1.10

PERFORMANCE INFORMATION

All tests were performed on coatings kept at 77°F and 50% RH for seven days before testing.

Tests Performed on Maple Veneer (3 Coats, 1-Mil Dry Per Coat) 1 Hour Covered Spot Test.

Water	No Effect	70% IPA	No Effect
Formula 409	No Effect	5% Bleach	No Effect
50% Ethanol	No Effect	10% HCl	No Effect
Suntan Lotion SPF 45	No Effect	100% DEET	Slight softening, recovers

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STARTING POINT FORMULATION

ESSENTIAL R4370 Clear Formulation

<u>MATERIALS</u>	<u>POUNDS</u>
ESSENTIAL R4370	679.95
Premix Next Two Items:	
Water	156.3
Dowanol® DB	13.59
Then Add:	
BYK® 028	0.22
BYK® 346	<u>0.843</u>
	850.9

Formulation Attributes:

Solids, % by Weight	28
Solids, % by Volume	26.2
Viscosity, #4 Ford cup, Seconds	15.20
Calculated VOC (Excluding Water)	
G/L	100
Lbs./Gal.	0.8

PERFORMANCE INFORMATION

All tests were performed on coatings kept at 77°F and 50% RH for seven days before testing.

Tests Performed on Maple Veneer (3 Coats, 1-Mil Dry Per Coat) 1 Hour Covered Spot Test.

Water	No Effect
Soda	No Effect
Beer	No Effect
Formula 409.....	Slight Film Damage

SUPPLIER INFORMATION

<u>Product</u>	<u>Description</u>	<u>Supplier</u>
Essential R4370	Polyurethane Dispersion	Essential Industries
Dowanol® DB, DnPB	Solvent	Dow Chemical
BYK® 028	Defoamer	BYK Chemie
BYK® 346	Flow Agent	BYK Chemie
Progyld® DMM	Solvent	Dow Chemical
Zonyl® FSP	Leveling Agent	Du Pont
Rhodacoat® EZ	Trimer	Rhodia