

ESSENTIAL R4560

ALIPHATIC POLYURETHANE/ ACRYLIC HYBRID

Essential R4560 is a Polyurethane/Acrylic Hybrid based on renewable sources, is HAP's-free and solvent-free. The bio-based content, 28%, gives it a rating of moderately bio-based. It can be formulated into non-yellowing coatings, low VOC coatings for wood, concrete and plastics.

KEY BENEFITS

- Bio-based
- Hap's-free
- Low VOC
- Non-yellowing

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TYPICAL PROPERTIES*

Appearance	Translucent
pH.....	9.0
Solids, % by Weight	32
Solids, % by Volume	30.6
Viscosity, cP @ 25°C.....	< 300
Density Lbs./Gal.....	8.72
VOC Level (As Supplied)	
Lbs./Gal.	0.6
G/L.....	72.2
Particle Charge	Anionic
Acid Number	21

*These values should not be interpreted as specifications.



The Spark of Innovation

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Film Properties

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

Tensile Strength, PSI 3495
Elongation at Break, %..... 155

Tests Performed on Aluminum Panels (1-Mil Dry Films)

Konig Hardness (Seconds) (1 Day, 7 Day) 72, 90

Taber Abrader (Mg Loss, CS10, 500 Cycles, 1000g) 11

Starting Point Formulation

ESSENTIAL R4560 – Clear 2-K Formulation

<u>MATERIALS</u>	<u>POUNDS</u>
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Part A

Essential R4560	609.30
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BYK094	3.80
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SE-21	3.20
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Mix under high shear until all defoamers
are fully incorporated into the system

Water	184.40
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Zonyl FSO	0.30
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Essential R2083	19.10
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Part B

Rhodocoat EZ-D803	82.40
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902.50

Pot life - 4 hours

Formulation Attributes

Solids, % by weight	30.0
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Solids, % by volume	27.7
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Calculated VOC (excluding water)	<82 g/l
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Performance Information

All tests were performed on coatings kept at 77°F and 50% RH.

Konig Hardness Development (secs)

1 Hour.....	27
2 Hours	32
3 Hours	39
24 Hours	72
48 Hours	82
72 Hours	85
1 Week	90

1 hour covered chemical spot test was performed on solid maple panels (3 coats, 1 mil dry per coat)

50% EtOH	Slight softening, fully recovers
70% IPA.....	Slight softening, fully recovers
Formula 409	No effect
10% NH ₄ OH	No effect
10% HCL	No effect
10% NaOH	No effect
10% H ₂ SO ₄	No effect
5% Bleach	No effect
Vinegar.....	No effect
Suntan lotion.....	No effect
Mustard.....	No effect

Supplier Information

Product

Essential R4560
BYK 094
SE-21
Zonyl FSO
Essential R2083
Rhodocoat EZ-D803

Description

Urethane/Acrylic hybrid
Defoamer
Defoamer
Leveling agent
Anti-mar additive
Cross-linking agent

Supplier

Essential Polymers
BYK-Chemie
Wacker Silicones
DuPont
Essential Polymers
Rhodia



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