

# ESSENTIAL R5103

## SELF CROSS-LINKING ACRYLIC POLYMER

Essential R5103 is a self cross-linking acrylic polymer that was developed to create a primer for Medium Density Fiber Board. The formulations are block-resistant to temperatures up to 150°F. They have excellent adhesion to the fiber board and are water resistant.

### KEY BENEFITS

- Primer for MDF board
- Block resistance
- Low VOC
- Adhesion

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### TYPICAL PROPERTIES\*

Appearance .....	Translucent White
pH.....	9.5
Solids, % by Weight .....	45.0
Viscosity, cps @ 25°C .....	< 150
Density, lbs/gal .....	8.8
% VOC .....	0
Tg °C.....	65
Acid Number .....	19
Freeze/Thaw Stability ....	Passes 3 cycles
Konig Hardness (secs).....	98

\*These values should not be interpreted as specifications.



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28391 Essential Road • P.O. Box 12  
Merton, WI 53056-0012  
(262) 538-0091 • FAX: (262) 538-1354

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## Starting Point Formulation – MDF Primer

<b>INGREDIENTS</b>	<b>LBS</b>	<b>GALLONS</b>
<b><u>GRIND</u></b>		
Water	100.0	12.0
Kathon LX(1.5%)	1.2	0.14
Tamol 165A	11.0	1.25
BYK 022	1.0	0.12
Chemours Ti-Pure R-706	225.0	6.75
Calcium Carbonate	400.0	17.72
<b><u>LET DOWN</u></b>		
Water	113.8	13.66
Essential R5103	388.9	44.39
DPnB	7.6	1.0
DPM	11.9	1.5
Water	2.6	0.31
BYK 024	2.0	0.25
BYK 346	2.5	0.25
Ammonia Hydroxide	2.5	0.33
Acrysol RM 995	2.9	0.33
	1274.4	100.0

## Formulation Attributes

PVC .....	56.6%
Volumes Solids .....	43.2%
Weight Solids .....	62.9%
VOC .....	50 g/l
Viscosity, cps .....	250

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## SELF CROSS-LINKING ACRYLIC POLYMER

### Performance Information

2-mils wet of coating is applied to Medium Density Fiberboard (MDF). The panel is baked 15 minutes at 300F in an oven.

### Adhesion Testing – ASTM D3359

The panels are removed and allowed to cool to room temperature.

Results - Excellent – Trace adhesion failure around cut line.

### Face-to-Back Block Test

The cooled panels are placed Face to back and 250 PSI is applied to the panels in 150F oven for 2 hours. The panels are removed and allowed to cool to room temperature before evaluating block resistance.

Results - Excellent – No Blocking.