

Industrial Coatings

Technical Data Sheet

Joncryl® 1921



Product Description	Joncryl® 1921 is an acrylic emulsion offering a balance between block resistance and adhesion properties for hardboard primer coatings.
Key Features & Benefits	<ul style="list-style-type: none">- Very good block resistance- Excellent water resistance- Very good wet and dry adhesion- Low VOC
Chemical Composition	Acrylic emulsion

Properties

Typical Properties	Appearance	semi-translucent emulsion
	Non-volatile at 145°C (2g, 60 minutes)	45%
	pH at 25°C	8.8
	Viscosity at 25°C (Brookfield #3LV, 30 rpm, 60 seconds)	1200 cps
Typical Characteristics	Density at 20°C	1.04g/cm ³ (8.68 lbs/gal)
	MFFT	12°C
	Tg	25°C
	Freeze-thaw stable	Yes

These typical values should not be interpreted as specifications.

Applications

Joncryl® 1921 is a unique acrylic emulsion that exhibits low minimum film forming temperature, yet offers excellent block and water resistance. Joncryl® 1921 is ideally suited for high PVC primers used over hardboard and cement fiberboard substrates.

Joncryl® 1921 is recommended for applications such as:

- Interior/exterior primers on wood, hardboard, cement fiberboard, and composite wood

Formulation Guidelines

Solvent Levels – Normal primer cure temperatures range from 180 – 250°F maximum board surface temperature. This is generally enough heat to obtain a good performing film, even at PVC's in excess of 55. The addition of low levels of ethylene glycol mono butyl ether, propylene glycol n-butyl ether, or propylene glycol t-butyl ether may further enhance film formation. Caution should be taken not to include too much solvent, as this may encourage blistering or blocking of the coating.

Performance Evaluation

Water Resistance - The Cobb test was performed according to ASTM D 5795-95. Joncryl® 1921 neat resin was cured to a board surface temperature (BST) of 180°F. Test result was 3.7 Cobb units.

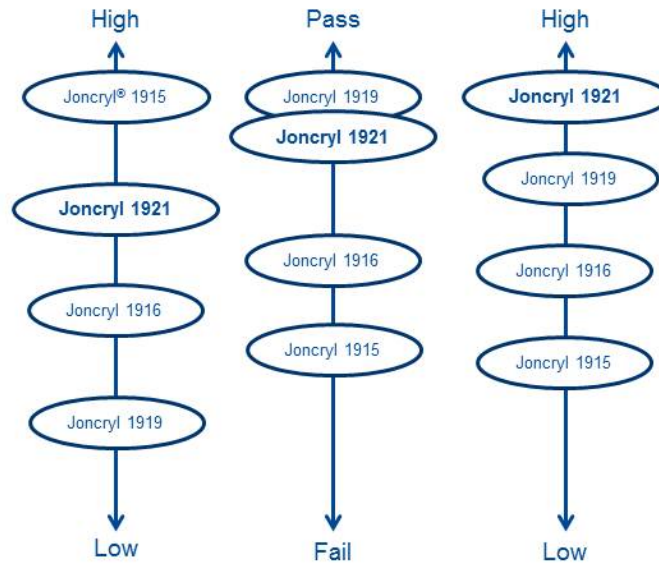
Block Performance – Neat resin is drawn down on medium density fiberboard (MDF) and cured to a BST of 180°F. After cooling to 130°F, boards are placed face-to-face in a carver press at 500 psi for 8 minutes. Joncryl® 1921 had no blocking; boards separated without force and without damage to the coating surface.

Adhesion – As a neat resin, Joncryl® 1921 passes wet adhesion when drawn down on an aluminum panel, baked to a BST of 180°F, x-scribed, and soaked in water for 16 hours.

The starting point formulations drawn down on MDF, baked to BST of 250° F, cooled to a BST of 150°F and X-scribed then tested using 250 tape resulted in very good dry and wet adhesion with little adhesion failure at coating substrate interface; mostly substrate failure.

General property comparison with other Joncryl® primer emulsions:

Block Resistance Adhesion Water Resistance



Starting Point Formulations

The following starting point formulations are recommended for an initial evaluation of Joncryl® 1921. Additional optimization of the formulations may be required to achieve desired results for specific applications.

Joncryl® 1921 HARDBOARD PRIMER, 50 PVC Formula 32004 - 8A

Materials	Pounds	Gallons
Joncryl® 1921	236.3	27.42
Water	48.8	5.86
FoamStar® SI 2292 NC	4.3	0.58
DMEA (Dimethyl ethanolamine)	2.6	0.35
Ti-Pure ¹ R-902	245.8	7.38
Atomite ² Calcium carbonate	451.4	20.06
Disperse to 5 Hegman		
Let-down:		
Water	163.0	19.56
Joncryl® 1921	157.5	18.27
FoamStar® SI 2292 NC	2.2	0.29
Rheovis® PU 1250 NC	2.1	0.23
Total	1,314.0	100.00

Formulation Attributes

Solids	67.3% by wt, 48.2% by volume
Viscosity	50 cps
PVC	57.0%
VOC (calculated)	21 g/l, 0.17 lbs/gal

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Joncryl® 1921 HARDBOARD PRIMER, 35 PVC Formula32004 – 8B

Materials	Pounds	Gallons
Joncryl® 1921	245.5	28.5
Pluronic® 31R1	8.3	1.0
CAB-O-SIL ³ M-5	4.0	0.2
BYK ⁴ -024	4.0	0.5
Water	53.3	6.4
DMEA (Dimethyl ethanolamine)	2.5	0.3
Ti-Pure ¹ R-902	123.6	3.7
Minex ⁵ 12	40.6	1.9
Nicron ⁶ 402	50.9	2.2
ASP® 200	50.9	2.4
Grind at 2000 RPM for 20 minutes		
Water	90.0	10.8
Joncryl® 1921	88.6	10.3
Tego ⁷ Wet 270	3.2	0.4
Rheovis® PU 1250 NC	2.0	0.2
Total	767.4	68.7

Formulation Attributes

Solids	58%by wt, 44% by volume
Viscosity	60 cps
PVC	34.7%
VOC (calculated)	11.87 g/l, 0.10 lbs/gal

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Safety**General**

The usual safety precautions when handling chemicals must be observed. These include the measures described in Federal, State, and Local health and safety regulations, thorough ventilation of the workplace, good skin care, and wearing of protective goggles.

Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Joncryl® 1921.

Important

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