

# Joncryl<sup>®</sup> 1530

**Product Description** Joncryl 1530 is an acrylic emulsion for industrial coating applications.

**Key Features & Benefits**

- **Excellent adhesion**
- **Humidity resistance**
- **Low temperature, high humidity application capability**
- **Modifier for water-reducible alkyds**

**Chemical Composition** Acrylic emulsion

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## Properties

<b>Typical Properties</b>	Appearance		opaque emulsion
	Non-volatile at 145°C (2g, 60 minutes)	%	51
	pH at 25°C		7.8
	Viscosity at 25°C (Brookfield #2LV, 30 rpm, 30 seconds)	cps	500
	Density at 20°C	g/cm <sup>3</sup> (lbs/gal)	1.03 (8.55)
	Tg	°C (°F)	12 (53.6)
	Freeze-thaw stable		Yes

These typical values should not be interpreted as specifications.

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## Applications

Joncryl 1530 is an acrylic emulsion designed to provide excellent humidity, water resistance and adhesion. This emulsion has also been found to show utility as a vehicle for low temperature, high humidity applications without flash and early rusting. This product also shows excellent utility as a modifier for water-reducible alkyd coatings.

Joncryl 1530 is recommended in applications such as:

- Interior/exterior general metal coating applications
- Interior/exterior wood coatings for flooring, furniture, or millwork applications
- Interior/exterior plastic component coating applications
- Interior/exterior concrete coating applications

## Formulation Guidelines

**Coalescence** – Joncryl 1530 is a room temperature film former and can be formulated without added coalescing solvents. This allows the formulation of coatings approaching zero VOC. However, performance dramatically improves as the co-solvent level is increased. A minimum of 10% on resin solids of most co-solvents is recommended, and 15 – 20% on resin solids will generally give optimum properties. A wide range of solvents including HAPS-free solvents can be used with Joncryl 1530. Blends of Ethylene glycol monobutyl ether and Diethylene glycol monobutyl ether have been found to provide excellent performance, while Diethylene glycol monomethyl ether has been found to provide good early water spot resistance. Texanol<sup>1</sup> has been found to be useful for film formation under severe conditions, such as 40° F and 90% humidity.

<sup>1</sup>Trademark of Eastman Chemical Company.

## Dispersion Characteristics -

Joncryl 1530 is shear stable and can be used as a grind vehicle if great care to temperature development and dispersion time is given. Using Joncryl 1530 in the grind however is not normally recommended. Long dispersion times or high viscosity grind bases will generate heat, which causes the system to lose amine and gelation can occur. If dispersion in Joncryl 1530 is desired, a slower amine such as DMEA (dimethyl ethanolamine) can be added to compensate for amine lost during the dispersion phase. Normally 2 – 5 pounds added as a 50% solution in water will stabilize the system sufficiently; however, good manufacturing practice will still be important.

**Defoamer Selection** – The selection of defoamers is formulation dependent. BYK<sup>2</sup>-024 has been found to give good overall utility in most formulations. BYK<sup>2</sup>-020 in the grind and BYK<sup>2</sup>-080 in the let-down may prove useful in more difficult formulations, but this combination is more sensitive and can cause application problems.

**Pigment Selection** – Due to its unique composition, Joncryl 1530 requires proper selection of Titanium dioxide for long term package stability. Titanium dioxide such as Ti-Pure<sup>3</sup> R-902 is highly recommended, whereas Ti-Pure<sup>3</sup> R-900 and R-960 should be avoided.

Inhibitive pigment selection is important for good corrosion resistance and long term package stability. For best results, experimental tests should be conducted prior to use. It is important to add inhibitive pigments before other pigments to avoid problems during the dispersion phase. Extender pigments have not been found to be problematic and general formulating practices should be followed.

## Application – Formula Guide

Application	Formulation	Formula	Page #
Maintenance	Semi-gloss white DTM maintenance coating	250-X	2
Maintenance and Industrial Finishing	Modified water-reducible alkyd topcoat	261-DG-2	4

## Starting Point Formulations

The following starting point formulations are recommended for an initial evaluation of Joncryl 1530. Additional optimization of the formulations may be desired to achieve maximum suitability for specific applications.

### Joncryl<sup>®</sup> 1530 SEMI-GLOSS WHITE DTM MAINTENANCE COATING, Formula 250-X

Materials	Pounds	Gallons
Joncryl <sup>®</sup> 1530	121.9	14.34
Water	34.1	4.10
BYK <sup>2</sup> -020	2.0	0.27
Surfynol <sup>4</sup> 104-H	5.0	0.63
<b>Add while mixing:</b>		
Ti-Pure <sup>3</sup> R-902	121.9	3.66
Imsil <sup>5</sup> A-10	66.2	3.00
Halox <sup>6</sup> SW-111	56.9	2.39
<b>Disperse at high speed to 5 Hegman, then add:</b>		
Joncryl <sup>®</sup> 1530	341.0	40.12
Water	132.7	15.93
<b>Premix:</b>		
Ethylene glycol monobutyl ether	64.7	8.62
Dipropylene glycol monomethyl ether	34.9	4.39
<b>Then add slowly:</b>		
BYK <sup>2</sup> -080	2.0	0.22
10% Ammonium benzoate solution	20.0	2.34
<b>Total</b>	<b>1,003.3</b>	<b>100.00</b>

Note: Grinding in Joncryl<sup>®</sup> 1530 is not normally recommended. If stability problems occur during grind phase, a surfactant-based grind is recommended.

<sup>2</sup>Registered trademark of BYK Additives.

<sup>2\*</sup>This product has been discontinued. Contact a BYK representative for a suitable replacement.

<sup>3</sup>Trademark of The Chemours Company TT, LLC.

<sup>4</sup>Registered trademark of Air Products and Chemicals, Inc.

<sup>5</sup>Registered trademark of UNIMIN Corporation.

<sup>6</sup>Registered trademark of ICL Performance Products LP.

**Formulation Attributes of Formula 250-X**

Solids	48% by wt, 37% by volume
Viscosity	400 cps
PVC	25%
Pigment/Binder ratio	1.04
VOC	247g/l, 2.06 lbs/gal

**Typical Properties of Formula 250-X**

Gloss, 20°, 60°	9, 50
Impact resistance, Direct, Reverse	75, 20
Hardness	2B
Cyclic prohesion, 30 weeks	Excellent
Seaside exposure (250 m), 1 year	Outstanding
Salt spray (300 hours)	Fair

**Joncryl 1530 MODIFIED WATER-REDUCIBLE ALKYD TOPCOAT, Formula 261-DG-2**

This formulation features the utility of Joncryl 1530 as a modifier for water-reducible alkyds. Modification with 10 – 25% of the vehicle solids with Joncryl 1530 results in a significant reduction in dry time without negatively affecting other performance properties. This formulation can be further optimized for gloss, performance, and application properties for specific applications.

<b>Materials</b>	<b>Pounds</b>	<b>Gallons</b>
Chempol <sup>7</sup> 810-0091	223.8	25.43
Ethylene glycol monobutyl ether	12.4	1.65
<b>Premix:</b>		
Activ <sup>8</sup> -8	1.2	0.15
5% Cobalt Hydro-Cure <sup>9</sup> II	6.9	0.90
Ethylene glycol monobutyl ether	14.3	1.90
<b>Then add:</b>		
Ammonia	3.4	0.45
Water	51.9	6.25
Ti-Pure <sup>3</sup> R-902	238.3	7.16
<b>Disperse to 7 Hegman, than add:</b>		
Ammonia	10.4	1.39
Water	327.8	39.49
Ethylene glycol monobutyl ether	11.1	1.48
Joncryl <sup>®</sup> 1530	117.0	13.77
<b>Total</b>	<b>1,018.3</b>	<b>100.00</b>

**Formulation Attributes of Formula 261-DG-2**

Solids	46% by wt, 32% by volume
Viscosity	320 cps
PVC	22.4%
Pigment/Binder ratio	1.04
VOC	277 g/L, 2.31 lbs/gal

**Typical Properties of Formula 261-DG-2**

	<b>Unmodified</b>	<b>Modified with 25% Joncryl<sup>®</sup> 1530</b>
Gloss, 20°	80	50
Gloss, 60°	90	84
Dry time	3 hours	1 hour
Salt spray resistance	Good	Fair
Water resistance	Good	Excellent

<sup>7</sup>Registered trademark of Arkema, Inc.

<sup>8</sup>Registered trademark of Vanderbilt Minerals, LLC.

<sup>9</sup>Registered trademark of OMG Americas, Inc.

**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 1530.

## Storage

Please refer to the "Handling and Storage of polymer dispersions" brochure.

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