

# Industrial Coatings

## Technical Data Sheet



# Joncryl® 1980

<b>Product Description</b>	Joncryl® 1980 is a self-crosslinking acrylic emulsion for industrial coating applications.
<b>Key Features &amp; Benefits</b>	<ul style="list-style-type: none"><li>- Excellent chemical resistance</li><li>- Cold check resistance</li><li>- Low foaming</li><li>- Good scratch and mar resistance</li></ul>
<b>Chemical Composition</b>	Acrylic emulsion

### Properties

<b>Typical Properties</b>	Appearance	translucent emulsion
	Non-volatile at 145°C (1g, 60 minutes)	~ 40.0 %
	pH at 25 ± 1°C	~ 8.5
	Viscosity at 25°C (Brookfield #2LV, 60 rpm, 30 seconds)	~ 50 – 250 cps
<b>Typical Characteristics</b>	Density at 20°C	1.03 g/cm <sup>3</sup> (8.61 lbs/gal)
	MFFT	45°C
	Tg	69°C
	Freeze-thaw stable	No

These typical values should not be interpreted as specifications.

### Applications

Joncryl® 1980 is a one-pack, self-crosslinking acrylic emulsion that is non-formaldehyde emitting. A key use is for wood coatings that require resistance to various chemicals. Joncryl® 1980 offers excellent clarity, low foaming, and excellent crack resistance. The chemical resistance of Joncryl® 1980 may allow its use in other applications, such as concrete coatings, specialty hardboard, and plastics.

Joncryl® 1980 is recommended for applications such as:

- Interior/exterior concrete applications
- Interior/exterior wood applications

### Formulation Guidelines

**Slip and Mar** - In general, the use of 3 – 5% Joncryl® Wax 26 wax emulsion (wax solids on resin solids) will be sufficient to improve slip and mar resistance of the coating. For added slip and mar resistance, a combination of Joncryl® Wax 26 and Hydropalat® WE 3370 can be used.

**Thickeners** - Associative thickeners are preferred due to their minimal effect on gloss. Thickeners that offer some pseudoplasticity are useful in preventing sag.

**Solvent Levels** - The solvent package described in Formula 32004 - 1 provides good film formation with moderate hardness development. Decreasing the level of hydrophobic solvents, such as Dowanol<sup>1</sup> DPnB or Dowanol<sup>1</sup> PPh, will hasten hardness development, but may result in lower cold check resistance. Hydrophilic solvents, such as Diethylene glycol monobutyl ether (DB) and Ethylene glycol mono n-butyl ether (EB), may also be used as coalescers, but lower associative thickener efficiency will likely be observed.

**Starting Point Formulations**

The following starting point formulation is recommended for an initial evaluation of Joncryl<sup>®</sup> 1980. Additional optimization of the formulation may be required to achieve desired results for specific applications.

**Joncryl<sup>®</sup> 1980 CLEAR WOOD SEALER/TOPCOAT, Formula 32004 - 1**

<b>Materials</b>	<b>Pounds</b>	<b>Gallons</b>
Joncryl <sup>®</sup> 1980	615.4	71.56
Hydropalat <sup>®</sup> WE 3320	3.2	0.37
<b>Premix:</b>		
Water	90.9	10.91
Dowanol <sup>1</sup> DPM	34.2	4.29
Dowanol <sup>1</sup> DPnB	23.3	3.08
Dowanol <sup>1</sup> PPH	7.2	0.82
<b>Then add:</b>		
FoamStar <sup>®</sup> ST 2436	1.8	0.22
Joncryl <sup>®</sup> Wax 26	21.0	2.56
Hydropalat <sup>®</sup> WE 3322	1.5	0.18
<b>Premix:</b>		
Dowanol <sup>1</sup> DPM	4.9	0.61
Rheovis <sup>®</sup> PU 1250 NC	2.7	0.30
<b>Then add:</b>		
Water	<u>42.5</u>	<u>5.10</u>
<b>Total</b>	<b>848.6</b>	<b>100.00</b>

**Formulation Attributes**

Solids	30.51% by wt, 30.14% by volume
VOC (calculated)	217 g/l, 1.81 lbs/gal

<sup>1</sup>Trademark of The Dow Chemical Company.

**Coating Performance**

Formula 32004-1  
 Bake schedule for panels tested for Chemical Resistance  
*Each coat = 4 – 5 wet mils on horizontal panel*  
*Room temperature flash, 15 – 20 minutes*  
*Bake 5 minutes at 140°F*

<b>Chemical Resistance</b>	<b>Results</b>
<i>One-hour Covered Spot Test (panels aged 3 days)</i>	
Water	No effect
50% Ethyl alcohol	No effect
70% Isopropyl alcohol	Very slight effect
NKCA soap solution	No effect
<i>24-hour Uncovered Spot Test (panels aged 14 days)</i>	
Vinegar	No effect
Orange juice	No effect
Grape juice	No effect
Ketchup	No effect
Lemon juice	No effect
Hot coffee	No effect
Formula 409 <sup>2</sup>	No effect
Mustard (1 hour)	No effect
<b>Boiling water / Mug test (15 minutes)</b>	No permanent whitening, slight ring

<b>Hot / Cold Cycles</b> (1 hour at - 5°F / 1 hour at 120°F)	No cracks after 20 cycles
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**Joncryl® 1980 SELF-CROSSLINKING EMULSION, PIGMENTED CONCRETE SEALER, LOW VOC, Formula Concrete 3**

<b>Materials</b>	<b>Pounds</b>	<b>Gallons</b>
Water	85.4	10.25
Propylene glycol	24.4	2.83
AMP <sup>3</sup> -95	0.2	0.02
BYK <sup>4</sup> -022	3.8	0.45
Tamol <sup>1</sup> 731	9.4	1.02
Acrysol <sup>1</sup> RM-2020	2.8	0.33
Ti-Pure <sup>5</sup> R-902	94.3	2.83
Minex <sup>6</sup> 7	70.7	3.26
Minex <sup>6</sup> 4	70.7	3.26
<b>Disperse high speed for 30 minutes, then add:</b>		
Joncryl® 1980	490.7	57.26
<b>Premix:</b>		
Water	37.7	4.53
Dowanol <sup>1</sup> DPM	17.6	2.21
Dowanol <sup>1</sup> DPnB	20.5	2.71
Dowanol <sup>1</sup> PPH	4.8	0.55
<b>Then add:</b>		
BYK <sup>4</sup> -024	3.8	0.45
Water	44.8	5.38
Proxel <sup>7</sup> DL	0.5	0.05
Joncryl® Wax 120	9.4	1.16
<b>Mix for 5 minutes, then add:</b>		
Acrysol <sup>1</sup> RM-2020	5.3	0.61
Acrysol <sup>1</sup> RM-825	7.4	0.85
<b>Total</b>	<b>1,004.0</b>	<b>100.00</b>

**Formulation Attributes**

Solids	44.7% by wt, 33.1% by volume
Viscosity (Stormer, ICI)	90 – 100 KU, 0.75 – 0.85 ICI Poise
VOC (calculated)	195 g/l, 163 lbs/gal

<sup>2</sup>Registered trademark of The Clorox Company.

<sup>3</sup>Registered trademark of The Dow Chemical Company.

<sup>4</sup>Registered trademark of BYK-Chemie GmbH.

<sup>5</sup>Registered trademark of E.I. du Pont de Nemours and Company.

<sup>6</sup>Registered trademark of Unimin Canada Ltd.

<sup>7</sup>Registered trademark of Arch UK Biocides Limited.

**Coating Performance**

**Formula Concrete 3**

<b>Chemical Resistance for softness/appearance</b>	<b>Clear</b>	<b>Pigmented</b>
<i>1-hour spot test after 1-hour recovery</i>		
Water	10/10	10/10
10% NaOH	10/9	9/10
Formula 409 <sup>2</sup>	10/10	10/9
Bake fluid	3/9	4/5
70% Isopropyl alcohol	10/10	10/8
Gasoline	10/10	10/9
<b>Water Resistance</b>		
<i>1-hour spot test after 1-hour recovery after:</i>		
24-hour dry	No effect	No effect
1-week dry	No effect	No effect
<b>Hot Tire Pickup for color/tack</b>		
	8/medium	8/medium
<b>Wet Adhesion</b>		
Tile	5B	5B
Concrete	NA	4B – 5B

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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.

### Material Safety Data Sheet

All safety information is provided in the Material Safety Data Sheet for Joncryl® 1980.

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