

# Industrial Coatings

## Technical Data Sheet

# Joncryl® 922 Polyol



<b>Product Description</b>	Joncryl® 922 is a fast curing acrylic polyol for high solids polyurethane coating applications.
<b>Key Features &amp; Benefits</b>	<ul style="list-style-type: none"><li>- Very low VOC</li><li>- Fast dry time</li><li>- Utility as a modifier</li><li>- Supplied in n-Butyl acetate</li></ul>
<b>Chemical Composition</b>	Acrylic polyol

### Properties

#### Typical Properties

Appearance	clear liquid
Non-volatile at 150°C (0.5g, 60 minutes)	~ 80%
Hydroxyl number of solids	~ 140
Viscosity at 25.0 ± 0.5°C (Brookfield #4LV, 60 rpm, 30 seconds)	3,400 – 7,400 cps
Density at 20°C	~ 1.05 g/cm <sup>3</sup> (8.73 lbs/gal)
Equivalent weight as supplied, of solids	~ 500, 400
Tg (measured)	~ -7°C
Solvent	n-Butyl acetate

These typical values should not be interpreted as specifications.

### Applications

Joncryl® 922 is an innovative acrylic oligomer for high solids polyurethane coatings. It employs a novel technology, which makes this polyol more reactive with isocyanate crosslinking agents. The result is the ability to formulate fast drying urethane coatings with quick dry times and a practical pot life. High solids coatings for maintenance, transportation, and other applications can be formulated from 2.3 to 3.8 pounds per gallon of VOC.

Joncryl® 922 is supplied in n-Butyl acetate for use in areas where odor is a concern. The Joncryl® 922 is also available in MAK as Joncryl® 920. Joncryl® 922 should be considered as a candidate for high performance, maintenance, and transportation coatings as a replacement for conventional solids urethane finishes. More information can be found in the Joncryl® 920 technical data sheet.

Joncryl® 922 is recommended for applications such as:

- Interior/exterior general metal coating applications
- Automotive refinish coating applications

#### Formulation Guidelines

**Crosslinker Selection** – For maximum gloss retention properties, aliphatic isocyanates are recommended. The isocyanurate (trimer) or biuret versions of hexamethylene diisocyanate can be used. The trimer version may give better gloss retention and reactivity. A ratio of 1.05:1 of isocyanate to hydroxyl is normally recommended in the industry. However, a ratio of 1:1 of isocyanate to hydroxyl is more economical and does not sacrifice performance properties.

**Solvent Selection** – Because the hydroxyl functionality of alcohols and glycol ethers can react with isocyanates, their use should be avoided. Urethane-grade solvents should be used when available. Ketone solvents will give the best viscosity/VOC due to a combination of good solvency and low density. Esters generally provide the next best viscosity/VOC, but do not provide as low of a viscosity/VOC as the ketones due to their higher density. Generally, the lower the molecular weight of the solvent within the family, the lower the viscosity/VOC that is obtainable. Aromatics such as xylene and toluene provide good solvency and can be readily used in combination with the more polar solvents. Glycol ether acetates can be used but normally do not provide as low viscosity/VOC. PM acetate exhibits film retention characteristics.

**Catalysis** – Due to the increased reactivity of Joncryl® 922, a catalyst is not normally required. If additional speed of cure is desired, typical urethane catalysts such as dibutyltin dilaurate can be utilized. If required, catalysis with 0.005% dibutyltin dilaurate on total binder solids is normally recommended. Higher catalyst levels will result in shorter pot lives and faster cure rates. Other catalysts such as zinc octoate and other metallic soaps can also be used.

**Additives** – Efka® FL 3670 results in excellent flow and leveling. If a dispersant is necessary, Lecithin or Disparlon<sup>1</sup> KS-273N is recommended. For higher film build, thixotropes such as bentonite clays, fumed silicas, or organic additives such as Thixatrol<sup>2</sup> can be used.

### Starting Point Formulation

The following starting point formulation is recommended for an initial evaluation of Joncryl® 922. Additional optimization of the formulation may be required to achieve desired results for specific applications.

#### Joncryl® 922 GLOSS WHITE TOPCOAT, Formula #384-B

Part A	Pounds	Gallons
Joncryl® 922	212.10	24.10
Efka® FL 3670	2.45	0.30
n-Butyl acetate	25.00	3.40
<b>Add while mixing:</b>		
Ti-Pure <sup>3</sup> R-960	333.00	10.30
<b>Disperse to 6 – 7 Hegman, then add:</b>		
Joncryl® 922	188.80	21.50
n-Butyl acetate	175.70	23.90
Subtotal	937.05	83.50
<b>Part B</b>		
Basonat® HI 100	160.80	16.50
<b>Total</b>	<b>1,097.85</b>	<b>100.00</b>

#### Formulation Attributes

Solids	74.3% by wt, 62.0% by volume
Viscosity	120 cP
PVC	16.7%
Pigment:Binder ratio	0.68:1
NCO:OH ratio	1.05:1
VOC (calculated)	2.8 lbs/gal, 338 g/l

<sup>1</sup>Registered trademark of King Industries, Inc.

<sup>2</sup>Registered trademark of Elementis Specialties, Inc.

<sup>3</sup>Registered trademark of The Chemours Company.

## 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 personal protective equipment.

### Safety Data Sheet

All safety information is provided in the Safety Data Sheet for Joncryl® 922.

## Important

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