# Industrial Coatings

Technical Data Sheet

# Joncryl® 922 Polyol

We create chemistry

***Product Description*** **Joncryl® 922 is a fast curing acrylic polyol for high solids polyurethane coating applications.**

***Key Features & Benefits***

***- Very low VOC***
***- Fast dry time***
***- Utility as a modifier***
***- Supplied in n-Butyl acetate***

***Chemical Composition*** **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$^3$ (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[1] KS-273N is recommended. For higher film build, thixatropes such as bentonite clays, fumed silicas, or organic additives such as Thixatrol[2] 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 |
| **Add while mixing:** | | |
| Ti-Pure[3] R-960 | 333.00 | 10.30 |
| **Disperse to 6 – 7 Hegman, then add:** | | |
| Joncryl® 922 | 188.80 | 21.50 |
| n-Butyl acetate | 175.70 | 23.90 |
| Subtotal | 937.05 | 83.50 |
| **Part B** | | |
| Basonat® HI 100 | 160.80 | 16.50 |
| **Total** | **1,097.85** | **100.00** |

**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 |

*[1]Registered trademark of King Industries, Inc.*
*[2]Registered trademark of Elementis Specialties, Inc.*
*[3]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

While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, they are provided for guidance only. Because many factors may affect processing or application/use, BASF recommends that the reader make tests to determine the suitability of a product for a particular purpose prior to use. **NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESCRIPTIONS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS.** In no case shall the descriptions, information, data or designs provided be considered a part of BASF's terms and conditions of sale. Further, the descriptions, designs, data, and information furnished by BASF hereunder are given gratis and BASF assumes no obligation or liability for the descriptions, designs, data or information given or results obtained all such being given and accepted at the reader's risk.



Responsible Care®
Good Chemistry at Work

BASF Corporation is fully committed to the Responsible Care® initiative in the USA, Canada, and Mexico.
For more information on Responsible Care® goto:
U.S.: www.basf.us/responsiblecare_usa
Canada: www.basf.us/responsiblecare_canada
México: www.basf.us/responsiblecare_mexico

**U.S & Canada**
BASF Corporation
24710 W Eleven Mile Road
Southfield, MI 48034
ph: 1(800) 231-7868
fax:1(800) 392-7429
Email: DispersionsPigmentsCC@basf.com
Email: edtech-info@basf.com
www.basf.us/dpsolutions

**Mexico**
BASF Mexicana, S.A. de C.V.
Av. Insurgentes Sur # 975
Col. Ciudad de los Deportes
C.P. 03710
Mexico, D.F.
Phone: (52-55) 5325-2756
Fax: (52-55) 5723-3011