

Printing & Packaging

Technical Data Sheet

Joncryl® 652-A



Product Description	Joncryl® 652-A is an emulsion of a specialty resin developed for water-based inks and overprint varnishes.
Key Features & Benefits	<ul style="list-style-type: none">- Very hard resin- Rapid resolubility- Hydrophilic nature of the polymer- Can be used as a main or modifying resin
Chemical Composition	Carboxylated acrylic copolymer in water

Properties

Typical Properties	Appearance	white emulsion
	Solid Content	50%
	pH	3.0
	Acid value (as 100%)	130
	Viscosity at 25°C (Brookfield 60 rpm)	100 cps
	Density at 25°C	1.1 g/cm ³
	Tg	105°C
	Softening point (initial)	approx. 180°C

Applications

Joncryl® 652-A is an emulsion of a specialty resin designed for use in water-based inks and overprint varnishes. This product is recommended as effective modifying binders improving gloss, hardness, and heat resistance of formulations based on softer resins or grinding bases.

Joncryl® 652-A is recommended for applications such as:

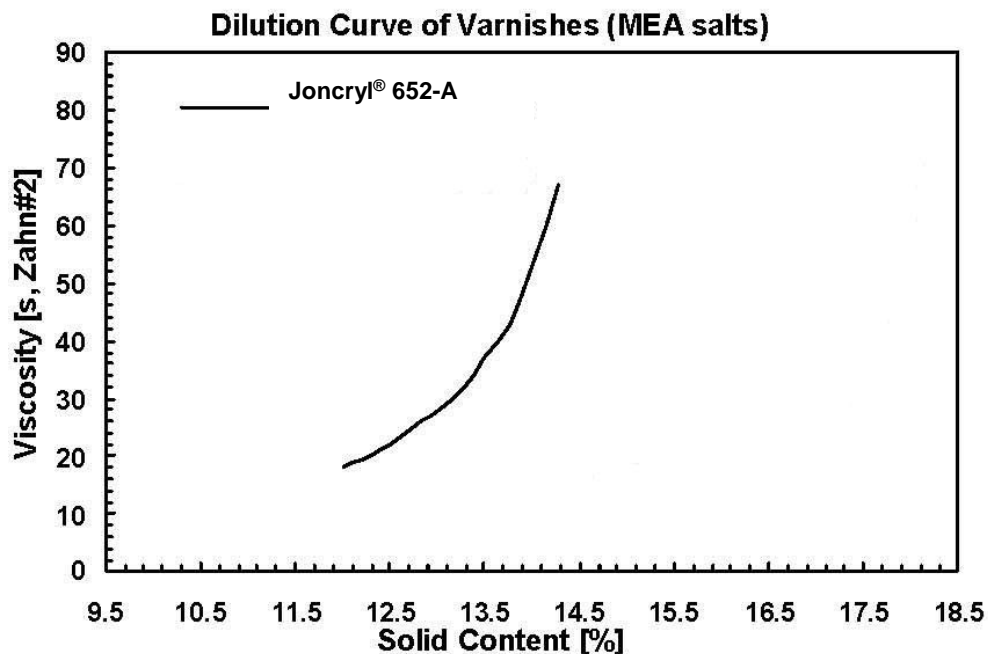
- Water-based inks
- A single let-down water-based overprint varnish on all flexographic inks for paper sacks and corrugated board applications
- Water-based paper/paperboard coatings
- A binder in poster paints or drawing inks

When used in water-based inks, this product demonstrates excellent machine stability and resolubility, due to the hydrophilic nature of the polymers.

Its efficiency and heat resistance offers the possibility to use it as a let-down varnish on all flexographic inks for paper sacks and corrugated board (pre-print and post-print) applications. It is also compatible with resin emulsions for use in higher-end applications.

Other uses include paperboard coatings (neutralized or in emulsion form), paper coatings, or as a binder in poster paints or drawing inks.

The efficiency of Joncryl® 652-A is demonstrated by its concentration needed to reach a given viscosity, as shown in the table below:



Processing

For water-based inks formulated at pH 8.5, Joncryl® 652-A must be pre-neutralized.

Neutralization

Joncryl® 652-A can easily be converted to a neutralized solution with various alkali. However, since the solution is significantly more viscous than the emulsion, it is highly recommended that Joncryl® 652-A be diluted with water prior to neutralization. The relevant alkali can then be added with stirring to form the required solution.

Although Joncryl® 652-A will very quickly reach its final viscosity, it is suggested practice to allow the neutralized solution to stabilize before re-checking the pH and viscosity. The neutralized solution of Joncryl® 652-A offers the advantage of building a clear solution.

Below are typical alkali used as neutralizing agents:

<u>Alkali</u>	<u>Weight %</u>
Ammonia (20%)	10.2
Monoethanolamine (MEA)	7.3
Dimethylaminoethanol (DMAE)	10.7
Aminomethylpropanol (AMP)	10.5
Morpholine	10.4
Triethanolamine (TEA)	17.8

Note: Weight % of alkali to 100 grams of Joncryl® 652-A for a pH 8.5

Additional Formulation Recommendations

Compatibility with organic solvents

Joncryl® 652-A will tolerate water-miscible solvents such as alcohols, glycol ethers, and low boiling esters or ketones. However, the tolerance is limited to about 20 – 30% of the resin solid weight. Neutralized Joncryl® 652-A has a high tolerance to pH changes but becomes rapidly insoluble when the pH drops below 7.0.

Compatibility with other resins

Joncryl® 652-A in its neutralized solution, has a wide compatibility with a variety of other water-based resins. Specifically, it is compatible with most acrylics, styrene acrylics, polyesters, and rosin-modified maleic resins.

Compatibility with pigments

Neutralized Joncryl® 652-A is compatible with most alkali-stable pigments. Care must be taken with certain pigments due to adverse interactions with trace elements present in them. Specific care must be taken when using calcium and barium lithols since trace metal ions can crosslink the polymer giving rise to gelation. High pH (above 9.0) or additions of EDTA before grinding can overcome this problem.

In order to obtain good compatibility with basic dyes, it is necessary to add up to 10% of alcohol or glycol ether to the neutralized Joncryl® 652-A and to dissolve the dyestuff in a similar solvent plus water.

In most cases, a significant increase in color development can be achieved by the use of the neutralized Joncryl® 652-A as a let-down resin for pigment grinding bases. For suitable grinding resins, please contact our Technical Service Department.

Crosslinking	Since Joncryl® 652-A is a carboxylated polymer, it will crosslink with a number of reagents, such as urea or melamine formaldehydes, aziridines, or zinc or zirconium compounds.
Recommended concentrations	Since any component present in a formulation can have significant impact on the overall ink properties, testing compatibility and dosage level prior to use is highly recommended.
Water-based flexographic inks	May be used as a let-down resin in conjunction with a grinding resin at about 7 – 20% of total formulation.
Overprint varnishes	May be used as a sole or modifying resin in combination with an emulsion resin.

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® 652-A.

Important

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