We create chemistry

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

- Heat resistance
- 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
Non-volatile	%	50
pH at 25°C		2.5
Acid number (NV)		136
Molecular weight (Mw)		19,900
Viscosity at 25°C	cps	100
Density at 25°C	g/cm³	1.10
MFFT	°C	< 5
Tg	°C	105

* These typical values should not be interpreted as specifications.

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:

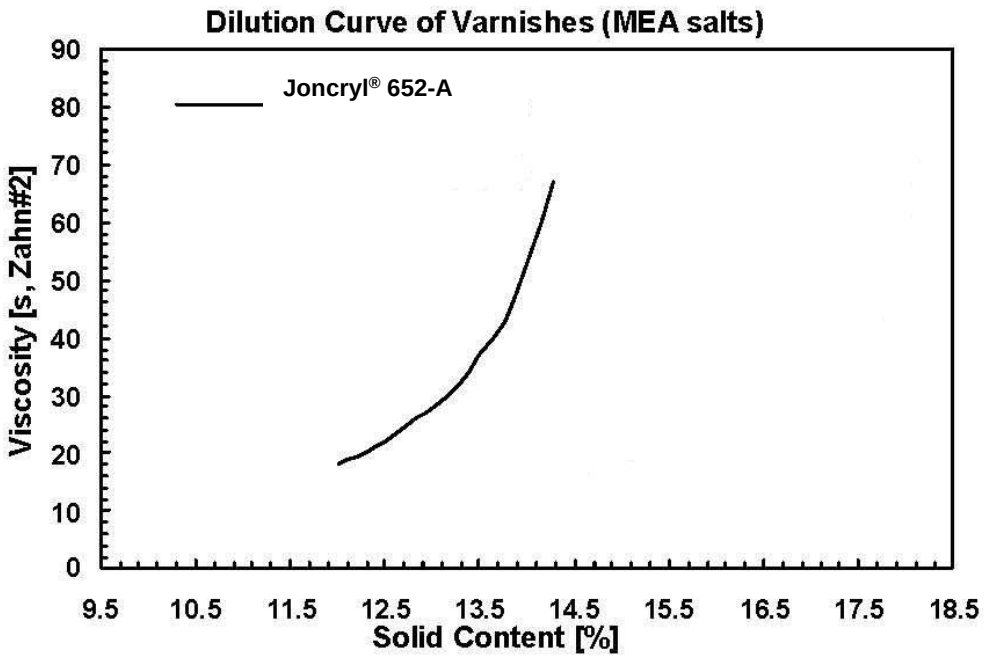
- Water-based inks
- A single let-down water-based overprint varnish on all flexographic inks for paper sacks and corrugated board applications
- Water-based paper/paperboard coatings
- A binder in poster paints or drawing inks

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 offer 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:

Alkali	**Weight %**
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

Compatability 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.

Compatability 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, azridines, or zinc or zirconium compounds.

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.

Storage

Please refer to the “Handling and Storage of Polymer Dispersions” brochure.

Important

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