

Vinac® DPN890 DEV Emulsion

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Vinac DPN890 DEV polymer emulsion is a crosslinkable poly(vinyl acetate) emulsion that is pre-catalyzed and formulated to be ready for use. Intended applications are those that require a wood adhesive that meets U.S. Type 2 or European D3 water resistance standards. Its properties include: excellent water resistance; very good heat resistance; good resistance to static load; and a very fast setting speed in room temperature cold press, hot press or radio frequency (RF) applications.

A unique characteristic of Vinac DPN890 emulsion is its unique balance of pre-catalyzed viscosity stability and water resistance performance, unsurpassed by any other adhesive available in this classification.

Vinac DPN890 emulsion shows strong adhesion to porous and cellulosic surfaces like paper, wood and cloth. The emulsion provides tough films that have outstanding water resistance when cured.

Compounding

If needed, Vinac DPN890 emulsion can be further formulated with various fillers, thickeners and extenders. This system combines the easy handling and fast-setting characteristics of a poly(vinyl acetate) emulsion with the excellent water resistance of self-curing resins.

Vinac DPN890 emulsion will accept fillers like clay, uncooked cornstarch, wood flours, shell flours or other fillers. Calcium carbonate or other fillers with a high pH are not recommended since they would interfere with the cross-linking reaction. If a lower viscosity is desired, water can be used to dilute the adhesive. Vinac DPN890 emulsion is compatible with other emulsions, especially other homopolymers like the Vinac XX series emulsions. The level of catalyst should be adjusted to maintain performance as fillers or extenders are added. Pre-catalyzed Vinac DPN890 emulsion is acidic in nature; the use of alkali additives will decrease stability and performance.

Vinac DPN890 emulsion can be thickened with hydroxyethyl cellulose, poly(vinyl alcohol) or associative thickeners.

It is recommended that Vinac DPN890 emulsion is used within six months of receipt.

Technical Data Sheet

Typical Emulsion Properties

% Solids ¹	49 ± 1%
Viscosity, cPs ²	4,000-6,000
pH	2.5-3.5
Polymer Type	Vinyl Acetate
Protective Colloid	PVOH
Mechanical Stability	Excellent
Freeze Thaw Stability	Stable
Thickening Response	Moderate
Reaction to Borax	Coagulates
Wet Tack	High
Density, lb/gal	9.0

Typical Film Properties

Water Resistance	High
Adhesion to Glass	High
T _g	34 °C
Film Clarity	Slightly Hazy
Dry Tack	None
Flexibility	Slight

¹ Cenco Moisture Balance

² Brookfield Viscometer, Model RVF, @20 RPM

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Applications

Vinac DPN890 polymer emulsion meets the following wood adhesive specifications:

- Water resistance requirements of ANSI-HPVA [HP-1-1994] "Type 2" and strain group D3 of DIN EN 204.
- Heat resistance requirements of ASTM D 5751-95 and WATT 91.

Vinac DPN890 emulsion is used in a variety of wood-bonding applications like composite panel, panel-on-frame construction, edge gluing, face gluing, finger jointing and laminating of various core stocks. Vinac DPN890 emulsion is suitable for radio frequency gluing, as well as hot press and cold press operations. Typical end uses include furniture parts assembly and various door constructions like architectural doors, fire doors, and stile and rail doors. Water-resistant and heat-resistant constructions include finger-jointed millwork for frames, moldings and doors. Plywood constructions or veneering operations can be hot pressed or cold pressed. Other miscellaneous applications include water-resistant paper cores, paint roller cores and fiberglass sizing. Cured gluelines have excellent sandability.

Vinac DPN890 emulsion has been formulated to a minimum film formation temperature of 54 °F (12 °C). For proper performance, the application temperature of the adhesive and substrates should be above this temperature.

Handling

Vinac DPN890 polymer emulsion contains ingredients which could be harmful if mishandled. Contact with skin and eyes should be avoided and necessary protective equipment and clothing should be worn.

Ashland maintains Material Safety Data Sheets on all of its products. Material Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers.

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