product data sheet

Wood Adhesives

ReacTITE EP-980

ReacTITE EP-980 is an emulsion polymer isocyanate system (EPI) developed specifically to meet AC05 and ASTM D 7446 for use in the manufacture of Structural Insulated Panels (SIPs) comprised of OSB or mineral board with EPS core. It should be used with conventional cold press equipment. ReacTITE EP-980 emulsion is mixed with Hardener 200, a polymeric isocyanate, at 100 parts emulsion to 15 parts Hardener 200. This adhesive has no-added formaldehyde and offers a long working time, as well as exceptional heat, water and solvent resistance, making it ideal for demanding applications. ReacTITE EP-980 is also characterized by good spreader stability and low foam production when compared with traditional EPI adhesives.

PHYSICAL PROPERTIES

ReacTITE EP-980
Chemical family description: *polyvinyl acetate emulsion adhesive*
Appearance: *White colored liquid*
Specific gravity: *1.27*
Weight solids (%): *49.3 - 52.2*
pH: *7.0 - 8.0*
Suggested minimum use temperature: *46°F/7°C*
Typical viscosity (cps): *4900 - 8800*
Mixed viscosity (cps): *9000 - 16000 when mixed; 26000 - 36000 at one hour*

Hardener 200
Chemical family description: *Polymeric MDI*
Appearance: *Brown colored liquid*
Typical viscosity at 25°C (cps): *170 - 230*
Specific gravity: *1.22*

KEY PRODUCT FEATURES

- Emulsion polymer isocyanate system (EPI) developed specifically to meet AC05 and ASTM D 7446 for use in the manufacture of Structural Insulated Panels (SIPs)
- Meets requirements of Norma Ch2148 and approved for residential use in Chile
- Low foaming EPI adhesive with good spreader stability and long assembly time
- Recommended for applications requiring water, heat and solvent resistance
- Excellent for cold pressing
- Low film formation temperature, which allows it to be used at a wide range of plant temperatures
- Meets the definition of NAF for CARB and TSCA Title VI
- Tested according to reference method EN 16516 and meets German formaldehyde emission requirements for wood-based materials

POT LIFE

The pot life of these systems is in excess of one hour at 77 degrees Fahrenheit (25 degrees Celsius), but will vary depending on temperature. However the viscosity of the mix will increase as it ages, and foam will be generated.

MIXING INSTRUCTIONS

ReacTITE EP-980 resin is mixed with Hardener 200 at a ratio of 100 parts resin to 15 parts Hardener by weight or 6.45 parts resin to one part Hardener by volume. Avoid mixing for long periods of time or with excessive agitation as pot life is affected by mixing time and speed. Product can be easily mixed by hand. Substrates glued with older material will have less water resistance, a characteristic common to most EPI adhesives. Therefore, it is recommended that fresh adhesive be mixed only when it is to be immediately used. EPI adhesives also generate foam during the reaction process; so it is best to have the material continually moving.

A division of **Franklin International**
2020 Bruck Street Columbus, Ohio USA 43207
T 800.877.4583 F 614.445.1555

Franklin Adhesives & Polymers

PERFORMANCE PROPERTIES

Bonding Strength (ASTM D 7446 screening)

Exceeds ASTM D 905 block shear strength requirement on Douglas-fir

	Test results				Requirements
Exposure	Strength (psi) Average	Strength (psi) Minimum	Wood failure (%) Average	Wood failure (%) Minimum	Strength (psi) Average
Dry, (bonded)	1907	1311	79	50	1020
Dry (solid)	1750	819	100	100	NA
Soak/Re-Dry, (bonded)	1564	807	79	30	80% of soak/re-dry strength for solid**
Soak/Re-Dry, (solid)	1643	753	100	100	NA

**Douglas fir Franklin Laboratory results 17626*
***1314 psi for test case*

Exceeds ASTM C 297 tensile strength test on oriented strand board to rigid cellular polystyrene

	Test results				Requirements	
Exposure	Strength (psi) Average	Strength (psi) Minimum	Bond line failure (%) Average	Bond line failure (%) Maximum	Strength (psi) Average	Bond line failure (%) Maximum
OSB-EPS-OSB	21	15	1	10	15	10**

** Franklin Laboratory results 17626*
***Individual specimen requirement*

APPLICATION GUIDELINES

Spread rate: EPI adhesives have superior gap filling properties due to their higher percent solids content. Spread rates of 270 - 370 g/m² are recommended for larger area applications requiring longer working times, such as SIP manufacture, but optimal spread rates should be verified by plant trials. Generally, 200 g/m² of glue line is adequate for millwork applications. Roller spreaders are commonly used in gluing applications. In general, verify that adequate coverage exists by evaluating squeeze-out along the glue lines of pressed panels.

Clamping pressure: Pressure is dependent upon the materials being glued. Direct contact of the gluing surfaces must be made to obtain maximum strength. Typical pressures used during SIP manufacture are 5 - 7 psi. See EPS manufacturers for specific information regarding acceptable pressures used with EPS cores.

Press/clamp time: It is recommended that optimum press times be determined in actual plant conditions, recognizing that seasonal changes may lead to variable requirements. Press times generally vary from 30–60 minutes, under ideal conditions at factory temperatures of 68 degrees Fahrenheit/20 degrees Celsius. Longer press times may be required for colder factory temperatures. A Franklin representative can set up a trial to evaluate the appropriate minimum press time required for a specific manufacture facility.

At 70°F and 50% relative humidity, based on spread rate of 270 – 370 g/m^2:
Open Assembly Time – 3 minutes per panel for best results
Closed Assembly Time – 30 minutes per load for best results

Working pauses: The spreader should be kept running during pauses in production for lunch breaks, etc. to help extend the working life of the adhesive.

Clean-up: The foaming and cross-linking characteristics of EPI may cause blockages in the wastewater plumbing. Furthermore, there may be disposal concerns with the mixed product. It is recommended that the excess glue from the spreader and mixing containers be poured into a container and disposed of properly. Avoid sealing the container for at least 24 hours to permit EPI components to finish reacting. Glue pans and rollers may then be washed in warm water.

HANDLING AND STORAGE

Shelf life: Best if used within nine months of date of manufacture. Product is freeze-thaw stable. If it becomes frozen, allow to warm to ambient temperature and thoroughly mix until a homogenous, smooth mixture is obtained.

Storage of Hardener: Hardener 200 is very susceptible to moisture. We recommend that it be kept in a sealed container. A desiccant or nitrogen blanket is recommended.

Safety and disposal: Hardener 200 is a polymeric isocyanate. Use of gloves and other protective equipment is recommended. Consult MSDS before use for additional information.

For additional questions, Franklin's technical service team is available at 1.800.877.4583. 24/7 technical service is available online at www.franklinadhesivesandpolymers.com.

IMPORTANT NOTICE TO CUSTOMER:
The recommendations and data contained in this Product Data Sheet for use of this product are based on information Franklin believes to be reliable. They are offered in good faith without guarantee, as conditions and methods of use of our product by Customer are beyond Franklin's control. Customer should determine the suitability of the product for a particular application before adopting it on a commercial scale. Discoloration and checking of wood veneer materials may occur with use of the product. These occurrences range in appearance, color and may also vary depending upon the species of wood veneer to which the product is applied. Such discoloration and checking may appear during or after the manufacturing process which utilizes the product. Environmental conditions in some manufacturing plants and end-use locations can contribute to discoloration and checking. Because such discoloration and checking are attributable to conditions beyond Franklin's control, Franklin cannot assume any responsibility or liability for any discoloration and/or checking problems that might occur.
All orders for Franklin products shall be subject to Franklin International, Inc.'s Standard Terms and Conditions of Sale which may be found at http://www.franklini.com/Terms_and_Conditions.aspx ("Standard Terms"). Different or additional terms proposed by Customer are expressly rejected and shall not become part of the agreement between Customer and Franklin International, Inc. with respect to any order. Contact Franklin International, Inc. immediately if you cannot access our Standard Terms and we will provide you a copy upon request. Any sale of products by Franklin to Customer is expressly conditional upon Customer's consent to the Standard Terms, and Customer's acceptance of any performance by, or receipt of products from, Franklin International, Inc. shall constitute Customer's acceptance of the Standard Terms and Conditions of Sale.
© Copyright 2022. All rights reserved. Franklin International. Revised 12/12/2022.

A division of **Franklin International**
2020 Bruck Street Columbus, Ohio USA 43207
T 800.877.4583 F 614.445.1555

Franklin Adhesives & Polymers™