PRODUCT BULLETIN

March 2025

NuTack®-BLU and NuTack®

046-4061, 046-4062, 046-4066
Reactive Tackifiers for Polyesters in RTM, VARTM and Vacuum Bagging

DESCRIPTION

NuTack®-BLU and NuTack® products are polymeric-based tackifiers designed for use in RTM, VARTM or vacuum bagging processes. NuTack®-BLU and NuTack® products provide enhanced positioning of coring materials and dry glass fiber or carbon-fiber-roll goods. NuTack®-BLU and NuTack® products are based on a toughened polymer technology specifically designed for use with unsaturated polyester and vinyl ester-based gel coats, barrier coats, and resins.

NuTack® is available in neutral, for color sensitive applications, and NuTack®-BLU products are available in blue, for added visual thickness control. NuTack® and NuTack®-BLU products are available for pressure pot spray or in conveniently packaged aerosol cans. Specific products are as follows:

BENEFITS & FEATURES

- Excellent adhesion to gel coats, barrier coats, reinforcing glass fiber and carbon-fiber-roll goods as well as coring products
- Maintains interlaminar strength between plies in the finished part
- Maintains the cure and flow properties of polyester and vinyl ester-based infusion resins
- Reactive chemistry allows broad application window
- Available with blue dye for visual thickness control or in a neutral color for sensitive applications
- Available in convenient aerosol packaging or in 5-gallon and 55-gallon quantities for pressure pot spray in high volume applications

PROPERTIES – PHYSICAL

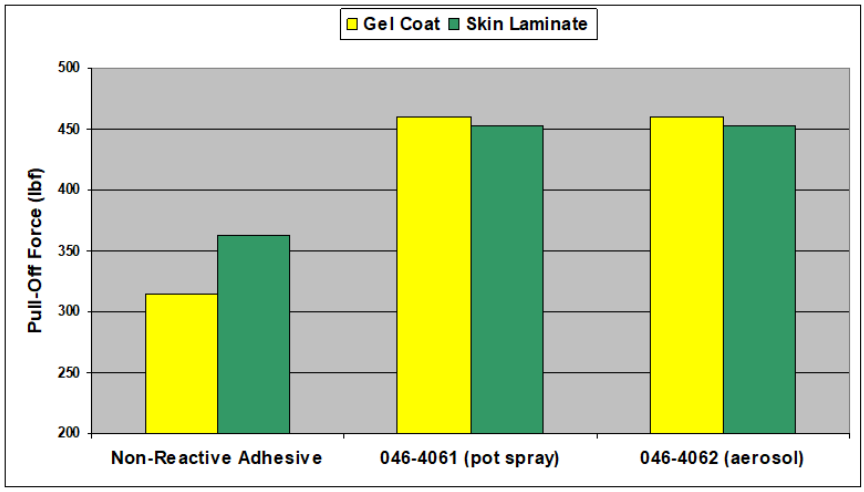
The mechanical properties of laminates fabricated using NuTack®-BLU (pot spray & aerosol) and a popular nonreactive adhesive were evaluated and compared for physical properties. Nonreactive, rubberized, adhesive based products have been the standard for positioning reinforcements and core during the RTM, VARTM or vacuum bagging processes. A pull-off force test was used to characterize the adhesion of a laminate to cured gel coat or a skin laminate. Interlaminar shear testing was used to characterize adhesion between plies of an infused laminate. For adhesion testing, NuTack®-BLU 046-4061 or NuTack®-BLU 046-4062 and the nonreactive adhesive were applied per manufacturer's instructions.

Pull-Off Testing

For pull-off testing the tackifiers were applied directly to cured gel coat or skin laminate surfaces. The tackifier application thickness was limited to approximately 1 mil. The surface was then backed with a

glass fiber reinforced, polyester resin laminate. The force required to pull the gel coat or skin laminate off the backing laminate was then measured. Results are shown in Figure 1. Samples tacked with NuTack®-BLU 046-4061 or NuTack®-BLU 046-4062 required 25-47% more force to pull apart than samples tacked with the nonreactive adhesive.

Figure 1: NuTack®-BLU 046-4061 Pull-Off Strength(1)

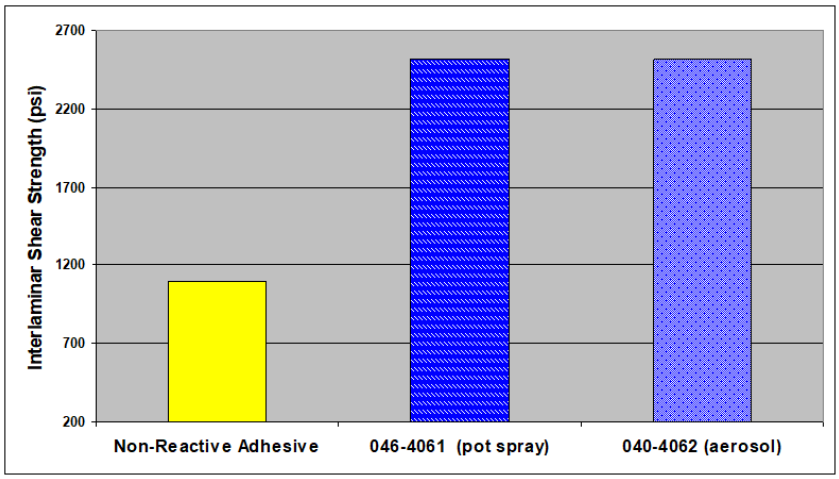


(1) Gel Coat or Skin Laminate to Backing Laminate

Interlaminar Adhesion Testing

Laminates for interlaminar shear testing were fabricated using 15 plies of 18 oz/ft^2 woven roving. Tackifier was applied between each ply. The tackifier application thickness was limited to 1 mil. Laminates were then infused with a polyester resin. The laminates were tested according to tests similar to ASTM D2344 "Standard Test Method for Short-Beam Shear Strength of Polymer Matrix Composite Materials and their Laminates." Test results are shown in Figure 2. Interlaminar shear strengths of laminates tacked with NuTack®-BLU were over 130% better than that of laminates tacked with the nonreactive adhesive.

Figure 2. NuTack®-BLU Interlaminar Shear Results



TESTING SUMMARY

Both the pull-off testing and the interlaminar shear strength testing demonstrate the superior properties achieved when the reactive NuTack®-BLU products were used versus the nonreactive adhesive.

While the tackifier application was tightly controlled by weighing, for the testing reported above, tackifier application amounts may vary in manufacturing shops. The tackifiers regulate themselves under application, as they will not hold reinforcements and coring materials in place when too little tackifier is applied. However, the effect of over-application is a concern. Evaluation of the nonreactive adhesive showed that over-application interrupted the resin flow resulting in laminates with dry glass. Over-application of NuTack®-BLU did not interrupt the flow of resin. While over-application of NuTack®-BLU was less problematic than with the nonreactive adhesive, Polynt recommends that NuTack®-BLU products be applied at the minimum amount needed to hold reinforcements or coring materials.

APPLICATION

1. Before use:

   Pressure Pot Spray

   Mix prior to use. Use NuTack®-BLU and NuTack® as supplied out of the container.

   Aerosol Can Spray

   Use NuTack®-BLU as supplied from the aerosol can. Shake the can well before each use.

2. Wear safety glasses and protective clothing. Use NuTack®-BLU and NuTack® only with adequate ventilation. Always point the spray tip away from the body.

3. Protect surrounding surface areas from overspray by using paper, plastic film, or cardboard.

4. Hold the aerosol or pressure pot spray gun about 8-10 inches from the surfaces to be tacked and spray a continuous film of NuTack®-BLU or NuTack® on one or both surfaces. Use the minimum amount needed to hold the two surfaces together. Typical application thicknesses are 0.5-1.0 mils. One mil will weigh approximately 2.0 g/ft^2 when wet, or 1.0 g/ft^2 after solvent evaporation. Use the blue dye color of NuTack®-BLU as a visual thickness guide. If applied at the recommended thickness:

5. Firmly press dry fiber plies or core materials into the NuTack®-BLU or NuTack® tackifiers.

6. Repeat steps 4 and 5 as often as needed to build proper laminate and core schedules. Reapply more NuTack®-BLU or NuTack® after several hours if tack is too low or if dry goods require repositioning.

7. Cleanup can be done with a variety of solvents and paint thinners. Wait at least 30 seconds after spraying to allow solvent to evaporate. Additional dry time may be required for heavier applications. Use a gloved finger to determine "dryness" and degree of desired tack prior to proceeding.

Product Code	Color	Application Method
NuTack®-BLU	Blue	Pressure Pot Sprayable
NuTack®-BLU	Blue	Aerosol Spray
NuTack®	Neutral	Pressure Pot Sprayable

Refer to Polynt's Composites Applications Guide ("Cookbook") for equipment and application recommendations. Each user must determine the suitability of this product to his/her particular mode of operation and intended end-use application. A Polynt representative will be available to assist in the proper selection of all Polynt products available for commercial use.

CAUTION

The NuTack®-BLU 046-4061 or NuTack®-BLU 046-4066 pails or drums should always be resealed tightly after opening to avoid solvent losses.

Store NuTack®-BLU 046-4062 aerosol cans away from heat (> 1200°F), sparks, flame and sources of static discharge. The cans are under aerosol pressure and could become unstable. Read all side panel safety precautions printed on the aerosol cans.

Never point or spray the pressure pot spray unit or aerosol can directly at your face or expose the can to an open flame or spark.

SHELF LIFE & STORAGE

The shelf life of NuTack®-BLU 046-4061 and NuTack® 046-4066 is 180 days from the date of manufacture from Polynt when stored at 73°F or below in a closed, factory sealed, opaque container, out of direct sunlight.

The shelf life of the NuTack®-BLU 046-4062 aerosol product is 360 days from the date of manufacture from Polynt when stored at 80°F or below, in the original container, and out of direct sunlight. Keep containers sealed to prevent moisture pick-up and monomer loss.

RELATED PRODUCTS

NuTack® E Reactive Tackifiers for Epoxies

SAFETY & WARRANTY

To receive a copy of our safety and warranty information, please email safetyandwarranty@polynt.com.