PRODUCT BULLETIN

June 2024

# STYPOL® LAB Series

## Acrylic and ABS Bonding Resins

## DESCRIPTION

STYPOL® LAB Series resins are pre-promoted, thixotropic resins containing styrene monomer. These resins are designed for use in open mold processes such as hand lay-up and spray-up where adhesion to thermoformed acrylic and ABS is required. STYPOL® LAB Series resins are available for unfilled or filled applications.

## BENEFITS & FEATURES

- Excellent adhesion to both acrylic and ABS
- Fast cure with a low exotherm
- Excellent wet-out properties
- Fillable versions allow for high filler loading

STYPOL® LAB Series resins meet the EPA National Emission Standard for Hazardous Air Pollutants (NESHAP): Reinforced Plastics for Open Molding – Non-Corrosion Resistant, Non-High Strength provided the resin application is non-atomized. Contact a Polynt Composites representative for actual HAP content.

## PROPERTIES – LIQUID

| Property[1] | Unit | LABI1721 | LABI1200 |
|---|---|---|---|
| Viscosity | cps | 450[2] | 500[3] |
| Thix Index | - | 3.0 (Min.)[4] | 2.80 (Min.)[5] |
| Gel Time[6] | minutes | 18 | 12 |
| Peak Exotherm | °C/°F | 171/340 | 177/350 |

1) All properties at 25°C/77°F unless otherwise noted
2) Brookfield Viscometer LV Spindle #2 at 50 RPM
3) Brookfield Viscometer LV Spindle #3 at 60 RPM
4) Brookfield Viscometer RV Spindle #2 at 5/50 RPM
5) Brookfield Viscometer LV Spindle #3 at 6/60 RPM
6) 1.50% Arkema Luperox® DDM-9

## PROPERTIES – PHYSICAL

| Property[1] | Unit | Neat Resin Casting[2] | Unfilled Laminate[3] | Filled Laminate[4] | Test Method |
|---|---|---|---|---|---|
| Tensile Strength | psi | 9,000 | 17,000 | 12,000 | ASTM D 638 |
| Tensile Modulus | psi | 620,000 | 1,580,000 | 1,600,000 | ASTM D 638 |
| Tensile Elongation | % | 2.0 | 1.4 | 1.3 | ASTM D 638 |
| Flexure Strength | psi | 16,000 | 31,000 | 18,000 | ASTM D 790 |
| Flexure Modulus | psi | 460,000 | 1,050,000 | 820,000 | ASTM D 790 |
| Heat Deflection Temperature | °C/°F | 70/158 | - | - | ASTM D 648 |

1) Physical properties were determined using internal Polynt test methods that are similar to those listed above.
2) Neat resin casting initiated with 1.5% Arkema Luperox® DDM-9. The casting was cured for 16-20 hours at room temperature followed by a post cure of 4 hours at 150 °F.
3) Unfilled Laminate – Resin initiated with 1.5% Arkema Luperox® DDM-9. The laminate schedule was 2 plies of 2.0 oz. CSM. Glass content was 34%. The panel was cured for 16 hours at room temperature followed by a post cure of 4 hours at 150 °F.
4) Filled Laminate – Resin was Stypol® LABF filled with 50% Valu-Fil 650. Resin initiated with 1.5% Arkema Luperox® DDM-9 BOM. The laminate schedule was 2 plies of 2.0 oz. CSM. Glass content was 18%. The panel was cured for 16 hours at room temperature followed by a post cure of 4 hours at 150 °F.

## APPLICATION

To make a filled mix with STYPOL® LAB Series resin, first mix the resin. Transfer the required amount of resin to the mix tank. Start the agitation. Slowly add the appropriate amount of filler making sure that filler is wetted as added and does not collect around the mixer shaft. Mix under high shear to thoroughly disperse the filler. Shear mixing of the filler will increase the temperature of the resin. For mixes starting at 77°F, continue mixing until the temperature has increased to 85-90°F. Once the filler has been dispersed, reduce agitation. Maintain a constant, slow agitation to prevent the filler from settling or caking. Ideally, make only the quantity of mix that can be used in one day's production.

STYPOL® LAB Series is quality control tested using Arkema Luperox® DDM-9. United Initiators Norox® MEKP-9 and Norox® MEKP-9H and CADOX® D-50 are expected to yield similar performance. Arkema Luperox® DHD-9, United Initiators Norox® MEKP-925, Norox® MEKP-925H, and Akzo Nobel CADOX® L-50a may also be used, but gel times will vary.

The initiator level should not exceed 2.4% or fall below 0.9% for proper cure. An initiator level of 1.25% at 77°F is considered ideal.

This product should not be used when temperature conditions are below 60°F, as curing may be adversely affected.

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

Do not add any material, other than the recommended methyl ethyl ketone peroxide, to this product without the advice of a representative of Polynt.

While the STYPOL® LAB Series is designed for use in laminates backing up thermoformed ABS and acrylic, adhesion to these materials can be affected by a number of factors. These include the ABS or acrylic source, color and draw thickness; plant conditions; filler type and amount; and application technique. Each fabricator is ultimately responsible for determining the suitability of the resin system for use in their process.

## SHELF LIFE & STORAGE

The shelf life of STYPOL® LAB Series is 120 days from the date of manufacture from Polynt. To maximize usage life and maintain optimum properties, resins and gel coats should be stored in the original closed container at temperatures below 23°C/73°F and away from ignition sources and sunlight. Keep containers sealed to prevent moisture pick-up and monomer loss.

## SAFETY & WARRANTY

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