

Polylite[®] Profile 33541-00

Tooling System

(Promoted Version of 33540-00)

DESCRIPTION

Polylite 33541-00 is a pre-promoted version of PolyLite 33540-00. It is a promoted, non-thixotropic, unsaturated polyester laminating resin developed to be used with specific alumina trihydrate fillers for fabricating FRP tooling. This resin is formulated for room temperature cure with Superox[®] 46750 or Superox[®] 46757 peroxide catalyst.

FEATURES

- Reduces tool-building time up to 80%
- Low-shrink
- Rapid Barcol development
- Changes color during cure
- Fillable to 50% with ATH
- Promoted
- Manufactured using statistical process and quality controls

BENEFITS

- Significant labor cost reduction
- Prototype tools can be made quickly and economically
- Tools can go into production sooner
- Tools reproduce master exactly
- Resulting tools are stress-free
- Print-through and surface distortion eliminated
- Minimized potential for pre-release
- Reduced post-finishing time
- Tools can be demolded earlier
- Quality control indicator
- Lower composite cost
- Increased composite stiffness
- Requires no handling or mixing of promoters
- Consistent performance, batch to batch

The information herein is general information designed to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to contents and suitability for their specific applications. We warrant that our products will meet our written specifications. **Nothing herein shall constitute any other warranty express or implied, including any warranty of merchantability or fitness for a particular purpose,** nor is any protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is limited to replacement of our materials and in no event shall we be liable for special, incidental or consequential damages.

**TYPICAL LIQUID
PROPERTIES¹
@ 25°C**

Gel Time*, mins.	26
Total Time to Peak, mins.	34
Peak Exotherm, °C {°F}	213 {415}
Viscosity (Brookfield LVF#1 @ 20 RPM), cps.	120
Non-Volatiles, %	53
Weight, lb/gal.	8.8
Flash Point (Seta closed cup), °C {°F}	31.6 {89}
Shelf Life (minimum), months	3
Color	clear red

*with 1.25% Superox 46750 by weight

¹ Properties reported in this bulletin are typical of those obtained in controlled laboratory tests and may vary.

**TYPICAL FILLED
PROPERTIES
@ 25°C**

Gel Time*, mins.	26
Total Time to Peak, mins.	41
Peak Exotherm, °C {°F}	127 {260}
Viscosity (Brookfield LVF#3 @ 60 RPM), cps.	850
Weight, lb/gal.	12.3
Alumina Trihydrate, parts	100
Superox 46750 Initiator, parts	1.25
Polylite Profile 33540-00, parts	100

Type and lot of alumina trihydrate may significantly influence gel and cure times. Testing is recommended prior to production use.

APPLICATION

Polylite 33541-00 is a pre-promoted version of Reichhold's PolyLite Profile 33540-00 tooling resin. The procedures for 33540-00 outlined in the Profile Tooling Manual should be followed when using 33541-00 with the following exceptions:

1. Since 33541 is already promoted, promotion steps in the Profile Tooling Manual are not required.
2. Slow gel or cure should be addressed by increasing ambient temperature rather than using the procedures outlined in Tooling Manual Step 3-C. PolyLite 33541 should be used at an ambient temperature of 75-90°F with a typical slave arm setting of 1-1.25% using Superox 46750 or 46756. When using the diluted initiator Superox 46757, the slave arm should be set to 1.25-1.75%.

CAUTION: Increasing peroxide level may shorten gel time, but may also retard cure.

3. A 120-mil thick test laminate should have a gel time of 10-40 minutes with a barcol of 20+ in 3 hours. If this cannot be obtained using the above slave arm settings, either the ambient temperature should be adjusted, or the procedures for use at low ambient temperature (following) should be followed.
4. To reduce the effect of the ATH filler on the gel time, we recommend use of a filler with a medium particle size (10-18u). Because of the variation in filler, each mix should be tested for gel and cure prior to use.

USE AT LOW AMBIENT TEMPERATURES

To achieve the best possible profile when using the PolyLite Profile system, an ambient temperature of 75°F or higher should be maintained. Warming the filled resin will improve sprayability, but it will not compensate for a cool ambient temperature. The chopper gun slave arm should not be set beyond 1.25% of Superox 46750 or 46756 (this is delivering 1.88% based on resin). Increasing the peroxide level may shorten the gel time, but it does not improve cure. A higher level of peroxide can, in fact, retard the cure of PolyLite 33451.

In cases where the recommended ambient temperature cannot be maintained, additional PolyLite 46559 promoter should be added to the mix. At ambient temperatures below 75°F, the laminate should be tested for Barcol development. A Barcol of 20-25 should be obtained in 3 hours or less. If the Barcol is below this level, an additional 0.1% of 46559 should be added to the mix. If a Barcol of 20-25 still cannot be obtained in 3 hours, the use of PolyLite Profile 33541-00 should be discontinued until the ambient temperature can be raised to 75°F.

STORAGE

To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 75°F (25°C) and away from heat sources and sunlight. All storage areas and containers should conform to local fire and building codes. Drum stock should be stored away from all sources of flame or combustion. Inventory levels should be kept to a reasonable minimum with first-in, first-out stock rotation.

Additional information on handling and storing unsaturated polyesters is available in Reichhold's application bulletin "Bulk Storage and Handling of Unsaturated Polyester Resins." For information on other Reichhold resins or initiators, contact your sales representative or authorized Reichhold distributor.

STANDARD PACKAGE

Non-returnable 55-gallon metal drums (302 lb. net) or 40,000-44,000-lb. tank truck.

SAFETY

READ AND UNDERSTAND THE MATERIAL SAFETY DATA SHEET BEFORE WORKING WITH THIS PRODUCT

Obtain a copy of the material safety data sheet on this product prior to use. Material safety data sheets are available from your Reichhold sales representative. Such information should be requested from suppliers of any chemical and understood prior to working with the material.

**DIRECTLY MIXING ANY ORGANIC PEROXIDE WITH A METAL SOAP, AMINE, OR OTHER
POLYMERIZATION ACCELERATOR OR PROMOTER WILL RESULT IN VIOLENT DECOMPOSITION.**

**TECHNICAL
SUPPORT**

Consult Reichhold's *Profile Tooling Manual* for detailed instructions for using the Polylite Profile tooling system.

Reichhold's technical support staff has extensive practical experience with polyesters and manufacturing techniques. Please do not hesitate to request our assistance through your sales representative.

Copies of test methods used to determine reported properties are available through your Reichhold sales representative.

Polylite® is a registered trademark of Reichhold, Inc.
