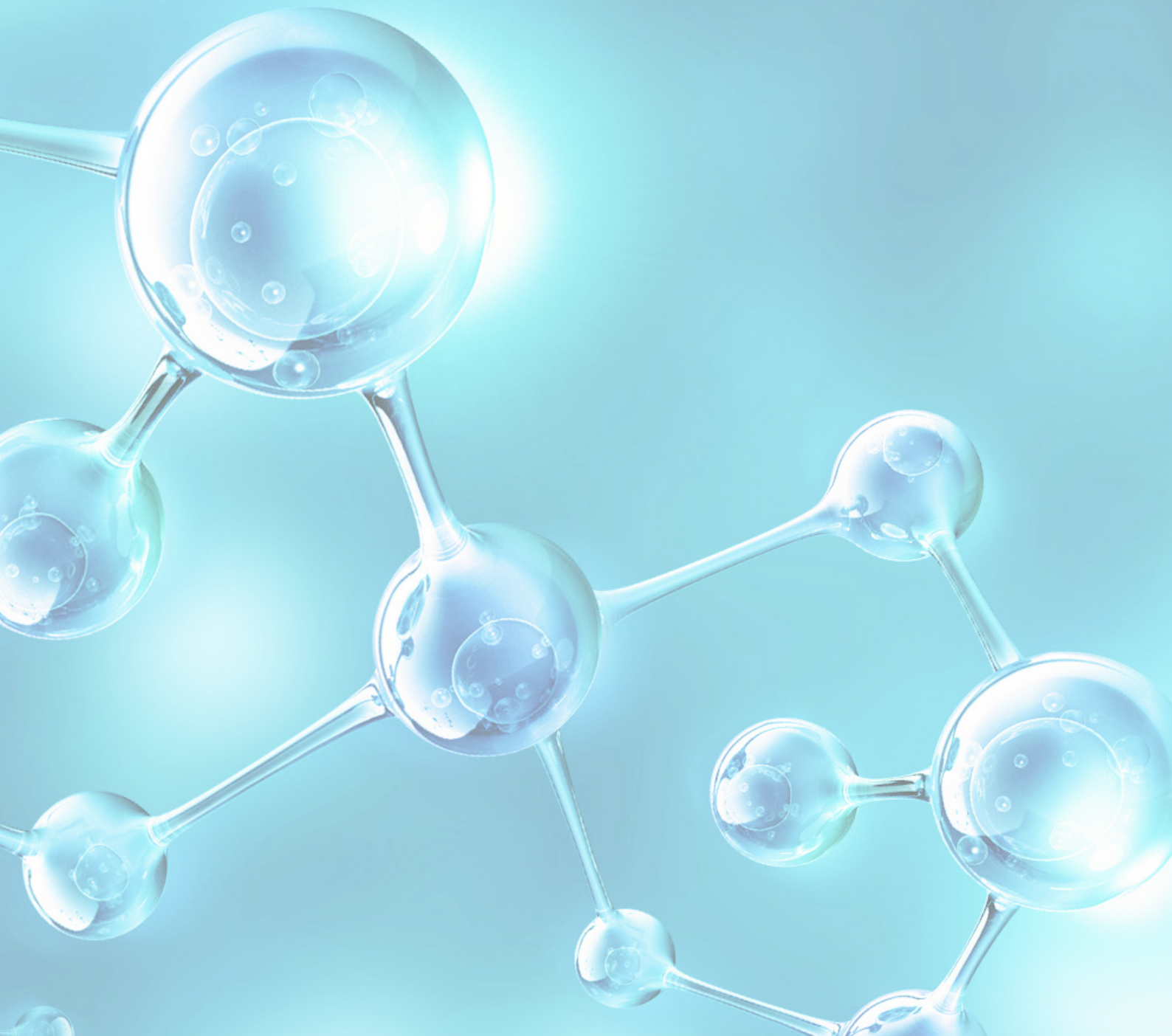
Polynt Composites

Closed Mold Product Line Guide



Closed Mold Product Line Guide

Polynt Composites offers a full line of resins to meet the needs of the Closed Molding industry. Polynt Composites also offers several support products including tackifiers, cleaning, and tooling materials. The products included in this guide are Polynt's recommended products for the most common applications. Additional products are available and custom product development is available for specialty applications. Minimum order quantities may apply. Please consult your Account Manager for more information.

RTM and Light RTM Resins

Code	Gel Time (Min.)	Initiator	Description
Unsaturated Polyester Blend Resins			
POLYLITE® 33282-07	30	1.5% Nouryon Trigonox® 178	Pre-promoted, unsaturated polyester resin for RTM or vacuum infusion. Low exotherm and shrinkage for good cosmetics. Low viscosity for good glass wet-out and low air entrapment. Crack resistant.
STYPOL® 040-8085	8.5	1.25% Arkema Luperox® DDM-9	Pre-promoted unsaturated polyester RTM resin for rapid production rates. Low shrinkage for good cosmetics. Formulated for reduced mold build-up. Can be filled.
STYPOL® 040-8086	20	1.25% United Initiators Norox® Azox	Pre-promoted unsaturated polyester RTM resin for moderate production rates. Low shrinkage for good cosmetics. Formulated for reduced mold build-up. Can be filled.
STYPOL® RLPH0922	9	1.50% Arkema Luperox® DDM-9	Pre-promoted DCPD/Ortho unsaturated polyester RTM resin with low cured color. Readily accepts pigmentation. Low viscosity for rapid mold filling, good glass wet-out. Can be filled.
Unsaturated Isophthalic Polyester Resins			
POLYLITE® 31509-01	Unpromoted for improved product stability and customization of gel times. See the technical datasheet for recommended promotion and initiation.		Unsaturated isophthalic polyester RTM resin with resilience and impact resistance. Corrosion resistant. Medium reactivity. Good thermal cycling and heat aging. May be used in certain food-contact applications.
Unsaturated Orthophthalic Polyester Resins			
STYPOL® RGPS1100	11	1.25% United Initiators Norox® Azox	Pre-promoted, unsaturated orthophthalic polyester RTM resin with low cured color. Low viscosity for rapid mold filling, good glass wet-out. Good cosmetics. Versatile curing system for a range of gel times by adjusting initiator.

(1) Gel time values are typical values for a 100 g mass at 77°F (25°C) unless otherwise noted.

Code	Gel Time (Min.)	Initiator	Description
Unsaturated Terephthalic Polyester Resins			
ENVIROLITE® 31401-12	12.5	1.25% United Initiators Norox® MEKP-9	Pre-promoted unsaturated terephthalic polyester RTM resin with medium to high reactivity. Low viscosity resin with excellent wet-out. Accepts higher filler and glass loadings. Recycled content of 21.5%.
Epoxy Vinyl Ester Resins			
DION IMPACT® 9102-70	Unpromoted for customization of fast and slow gel times for small or large parts. See the technical datasheet for suggested promotion and initiator schedules.		Bisphenol-A epoxy vinyl ester RTM or infusion resin certified to NSF/ANSI 61 (piping and tanks for domestic and commercial drinking water). Excellent mechanical properties and temperature stability. Crack and fatigue resistant. Corrosion resistant. Low cured color.
Fire Retardant Resins			
752-4420-20	20	1.00% United Initiators Norox® MEKP-925	Pre-promoted halogenated flame retardant unsaturated polyester RTM resin. Meets ASTM E84 Class 1 Flame Spread and UL 94 V-0 and 5VA. Qualified to MIL-R-7575. Excellent mechanical properties. Good Wet-out.
Polynt A 6170 A	31	1.50% United Initiators Norox® MEKP-9	Pre-promoted non-halogenated flame retardant unsaturated polyester RTM resin. Meets flame spread and smoke requirements for transportation applications when filled with aluminum tri-hydrate (ATH). Resistant to fiberglass print-through and post-cure distortion.
Polynt A 6104 A	25	1.5% United Initiators Norox® MEKP-9	Docket 90 with 20% ATH filler in infusion, 38% ATH filler in LRTM and open mold lamination. Excellent mechanical properties for use in structural applications
Shrinkage Controlled Resins			
POLYLITE® 31515 Series	12.5	1.0% United Initiators Norox® MEKP-900	Pre-promoted one-component low shrink unsaturated polyester RTM resins. Class A surface with filler. Near Class A without filler. Low viscosity and accepts high filler and glass loadings. Fast Barcol development for fast cycle times. Dimensionally stable.
POLYLITE® 31520-07	Unpromoted for improved product stability and customization of gel times. See the technical datasheet for recommended promotion and initiation.		One-component low shrink unsaturated polyester RTM resin for Class A surfaces. Low viscosity and accepts high filler and glass loadings. Fast cycle times. Mold temperature between 25-70°C. Dimensionally stable.

(1) Gel time values are typical values for a 100 g mass at 77°F (25°C) unless otherwise noted.

Infusion Resins

Code	Gel Time (Min.)	Initiator	Description
Unsaturated Polyester Blend Resins			
STYPOL® RSP04021 RSP10021	40 88	- 2.0% United Initiators Norox® MEKP-925 - 2.0% United Initiators Norox® MEKP-925H	Pre-promoted unsaturated polyester infusion resins for large parts. Low exotherm allows infusion of thick cross-sections. Good surface cosmetics, Good strength and crack resistance. Low viscosity for good fiber wetting and mold filling performance.
Unsaturated Orthophthalic Polyester Resins			
POLYLITE® 32850-00 32850-73	105 85	1.5% United Initiators Norox® MCP-75	Pre-promoted unsaturated orthophthalic infusion resins formulated for fabrication of large structures such as composites wind blades. Good mechanical properties and toughness. Efficient flow and fiber wetting.
Epoxy Vinyl Ester Blend Resins			
ArmorStar® IVEXC410	42	1.5% Arkema Luperox® DDM-9	Pre-promoted epoxy vinyl ester blend infusion resin for large parts with thick cross sections. Low viscosity for good fiber wetting and mold filling performance. Excellent strength and toughness for crack resistance.
ArmorStar® IVSXC160	16	1.75% United Initiators MCP-75	Pre-promoted epoxy vinyl ester blend infusion or RTM resin for manufacture of thicker parts requiring reduced exotherm. Low viscosity for good fiber wetting and mold filling performance. Excellent strength and toughness for crack resistance. High heat distortion temperature. Good surface cosmetics.
HYDREX® ONE HF 33385-10 33385-25	43 120	- 1.5% United Initiators Norox® MEKP-9 - 1.5% United Initiators Norox® MCP-75	Pre-promoted epoxy vinyl ester blend infusion resin for manufacture of thick laminates. Low viscosity for rapid wetting of reinforcements and high flow rates. Excellent blister resistance. High heat distortion temperature.
Epoxy Vinyl Ester Resins			
EPOVIA® RF1001L-00	Unpromoted for customization of fast and slow gel times for small or large parts. See the technical datasheet for suggested promotion and initiator schedules.		Bisphenol-A vinyl ester infusion or RTM resins. Corrosion resistant. Excellent mechanical properties for load bearing and structural construction applications. Good dimensional stability for accurate design tolerances.
EPOVIA® RF1001L-35	35	1.25% United Initiators MEKP-9 peroxide	
HYDREX 100-HF® 33375-00	Unpromoted for customization of fast and slow gel times for small or large parts. See the technical datasheet for suggested promotion and initiator schedules.		Vinyl ester infusion resin with low viscosity for rapid wetting of reinforcements and high flow rates. Reduced porosity, non-foaming on initiation. Excellent mechanical properties and high heat distortion temperature. Lloyd's Register certified.

(1) Gel time values are typical values for a 100 g mass at 77°F (25°C) unless otherwise noted.

Barrier Coats

Closed molding applications often require the use of a barrier coat behind the gel coat to achieve the desired surface profile. These products are applied after the gel coat application and offer good protection from fiberprint and distortion on the gel coat surface. Polynt's line of Barrier Coats is designed for application using traditional spray equipment.

Code	Description
ArmorGuard® 967BK246	Black pigmented, vinyl ester blend barrier coat. Cost effective print blocker to provide a smoother gel coat finish.
ArmorGuard® 967BK150 967BD123	Black pigmented MACT compliant 100% vinyl ester barrier coats. Provides resistance to high temperatures and water penetration. 967BD123 has an extended gel time for pot gun spray application.
ArmorGuard® 967WK396	White pigmented MACT compliant 100% vinyl ester barrier coat; designed for use behind low high colors like yellows and reds. Provides resistance to high temperatures and water penetration.
IMEDGE® HPB 210 Series	High performance polymer barrier technology MACT compliant; hybrid technology for superior cosmetics, toughness and blister resistance

Tackifiers

Reactive tackifiers enhance the interlaminar strength between plies in the finished part over non-reactive tackifiers.

Products for 'Pressure Pot' Application

Code	Description
NuTack® Blu 046-4061	Tackifier for use in placing coring and dry fibers in parts to be infused with unsaturated polyester resins; blue dye added for visual thickness control
NuTack® 046-4066	Tackifier for use in placing coring and dry fibers in parts to be infused with unsaturated polyester resins; neutral for color sensitive applications
NuTack® E 046-4101	Tackifier for use in placing coring and dry fibers in parts to be infused with epoxy resins; neutral for color sensitive applications

Products in Aerosol Cans

Code	Description
NuTack® Blu 046-4062	Tackifier for use in placing coring and dry fibers in parts to be infused with unsaturated polyester resins; blue dye added for visual thickness control

Counter Mold Tooling Materials

The products listed below are ideal for fabricating upper or counter molds. They provide excellent transparency for observation of resin flow in closed mold applications. Please reference Polynt's Tooling Product Line Guide for other tooling gel coats and resins that can be used for counter or A-side molds.

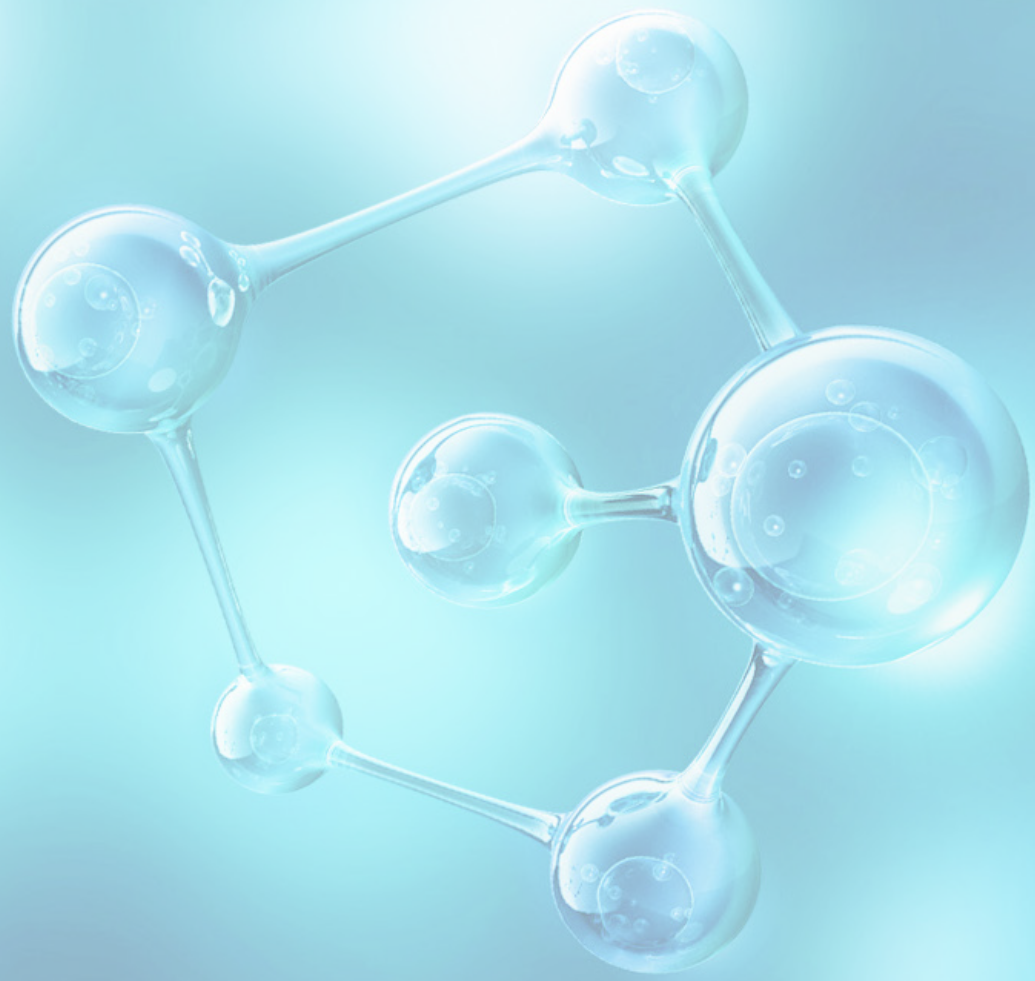
Code	Description
POLYCOR® 945XK184	Clear polyester tooling gel coat for RTM Light counter molds
Armorstar® VSXH2210	Pre-promoted, vinyl ester blended laminating resin. Formulated for rapid cure and hardness development in thin laminates, ideal for use as a skin laminate in tooling applications.
Hydrex® 100 33350	Pre-promoted, thixotropic, 100% vinyl ester laminating resin. Premium tooling resin due to excellent retention of properties and profile at elevated temperatures. Formulated for curing at room temperature with standard methyl ethyl ketone peroxide without foaming.
OptiPlus® KRF-1001LC-25	Pre-promoted, Bisphenol A based vinyl ester laminating resin specifically designed for low color applications where transparency would be desirable. Allows observation of resin flow in Light RTM counter tooling.

ThermaClean® Cleaners

Code	Description
Replacetone® 095-0030	Water-based tool and hand cleaner; no heating required; for use in Polynt's Redi Scrub equipment
Gun Flush 095-0043	Nonflammable, nonhazardous cleaner that is exceptional for flushing spray equipment
Gun Flush ES 095-0063	Power cleaner that is both nonflammable and nonhazardous, providing superior results in flushing equipment; extra strength version of 095-0043
Unisolve™ EX	Nonhazardous, solvent-based cleaner that is an efficient and cost-effective replacement for highly flammable and/or hazardous solvents. It can be used for cleaning tools, spray equipment, mixing equipment, and other process equipment, Unisolve™ EX is formulated with a unique anti-gelling chemistry for higher resin loading capacity, extending the useful life of the product.
EP 095-0049	Cleans liquid and cured epoxies as well as many other difficult to clean materials. It can be used 'as is' or diluted 5:1 with water and used heated.

Safety Datasheets are available upon request from Polynt-Reichhold customer service.

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



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