

LumiSet™ Film Formers for Long-Wear Nail Coatings



Strong on Their Own. Tougher with Light.

Welcome to the future of simple, durable raw materials for long-wear and natural-light curable hybrid nail polishes! Building on the strengths of Bomar® oligomers for UV nail gels, Bomar's all-new LumiSet™ film-forming polyurethane methacrylate resins offer excellent adhesion, easy removal, inherent toughness, and fast dry times. Their superior flexibility over cellulose resins allow nail polish formulators to easily create 5-free formulations without suspect materials like TSF, DBP, or other plasticizers and adhesion promoters. LumiSet™ resins also have excellent compatibility with common organic solvents like butyl and ethyl acetate, and with common film formers like nitrocellulose.

Different material options are available for base/color coat formulations or top coat formulations, allowing either for improved adhesion to the nail bed or excellent intrinsic hydrophobicity built into the resin backbone.

- Great adhesion to nails - no base coat or adhesion promoters needed
- Extreme toughness for improved durability and wear
- Inherent flexibility - no leach-able or toxic plasticizers needed
- Easy to formulate - compatible with organic solvents & common film formers
- Fast, tack-free dry time - excellent properties dried, superior properties cured
- INCI registered & MeHQ free - compliant with requirements for retail nail polishes

AVAILABLE PRODUCTS

Bomar currently offers LumiSet™ resins for color coats and top coats with methacrylate functionality. Color coat resin, LSR-141, is sold in 50% butyl acetate. Topcoat resin, LSR-241, is sold as a blend of Bomar patented urethane polymers and other cosmetic grade film formers dissolved in butyl and ethyl acetate. LSR-241P, the top coat polymer in a 50% solution in butyl acetate, is also available, providing more formulation flexibility. The table below lists the available products and properties that formulators may want to control during nail coating formulation. For more information on these products, please visit our website or download the full LumiSet™ Resin Technology Bulletin.



Product		Functionality	Viscosity at 25°C (cP) ASTM D4287	% Solids		Tack-Free Time (min)*** ASTM D5895	Tensile Strength (psi) ASTM D882	Elongation (%) ASTM D882	Modulus (ksi) ASTM D882	Toughness (J) ASTM D882	Sward Hardness (30 min)*** ASTM D2134	Sward Hardness (24h)*** ASTM D2134	Contact Angle (°) ASTM D7490	Gloss at 60° ASTM D2457
LumiSet™ Resins for Color Coats														
LSR-141	Air-Dried*	Methacrylate	25000	50% in butyl acetate	Resin diluted to 30% solids in butyl acetate for application testing	9.2	370	410	17	0.530	3	4	81	N/A
	Sunlight Cured**						3100	300	43	1.750	5	6	81	
LumiSet™ Resins for Top Coats														
LSR-241	Air-Dried*	Methacrylate	430	24% in butyl/ethyl acetate blend	No further dilution required for application testing	1.3	4500	6	190	0.070	10	12	94	86
	Sunlight Cured**						5200	6	205	0.083	15	15	99	
LSR-241P	Air-Dried*	Methacrylate	12500	50% in butyl acetate	Resin diluted to 30% solids in butyl acetate for application testing	18	1500	700	3.7	2.7	1	2	94	N/A
	Sunlight Cured**						5800	460	15	5.0	3	3	88	

* Air dry method: A ~3.5 mil film was drawn down and allowed to dry for 24 hours under yellow UV-filtered lights at ambient temperature and humidity.

** Sunlight cure method: A ~3.5 mil film was drawn down, initially dried for 10 minutes, then cured for 1 hour in a Q-Sun Xe-3 Xenon test chamber at an intensity of 0.19 W/m² and a temperature of 35°C with daylight filters. The sample was then removed and dried for an additional 23 hours under yellow UV-filtered lights at ambient temperature and humidity. Additional data is available with a 24 hr initial dry time followed by cure.

*** Dry times can be reduced and hardness can be increased by the addition of nitrocellulose or other film formers at 5–15% weight by solids.

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