

Formulate Nail Gel Coatings that Look Salon-Fresh Longer



Bomar[®] Oligomers for LED-Curable Nail Gel Coatings

Overcome common nail coating issues like low gloss, color drift, regulatory compliance issues, premature chipping, and high heat generation during cure by formulating your nail gel coatings with a Bomar[®] oligomer. Coatings formulated with Bomar[®] oligomers have a non-yellowing, high-gloss finish for vibrant coatings, and exhibit excellent durability for a longer lasting salon-fresh look. They generate minimal heat during LED cure, are easily removed with acetone, and are created with low MeHQ levels for insignificant skin irritation. Our oligomers for nail gel coatings are INCI registered and meet many global regulatory conditions.

Bomar[®] oligomers are ideally suited for top coat, color coat, or base coat LED-curable nail gel polishes sold in professional salons or do-it-at-home kits. They cover a diverse range of mechanical properties allowing complete formulation flexibility, enabling formulators to get the desired coating properties.

If one of our existing oligomers do not provide the desired properties for your application, Dymax O&C can work with you to develop a custom oligomer. We also offer contract manufacturing services for companies that would like to outsource synthesis.

- **Low heat generation** to eliminate skin irritation during cure
- **Diverse mechanical properties** for formulation flexibility
- **Non-yellowing, high-gloss finish** for vibrant coatings
- **Easy removal** with acetone
- **Excellent durability** for nails that stay salon fresh longer
- **INCI registered oligomers**





Available Products

Dymax recommends BR-952, BR-541S, BRC-443D, BR-742M, BR-744BT, and XR-741MS for LED-curing nail gel coating applications. The table below lists properties that formulators may want to control during nail coating formulation. For more information on these products, please visit our website.

Property	BR-541S	BR-742M	BR-744BT	BR-952	BRC-443D	XR-741MS	BRC-843D
Viscosity (cP) ASTM D4287	7,100	58,000	75,000	1,100	49,000	92,000	13,000
Durometer Hardness (D) ASTM D2240	D65	D77	D51	D78	D64	D86	D60
Gloss ASTM D2457	78	83	67	85	76	74	83
Yellowness (b*) ASTM E1164	0.005	0.26	0.33	0.2	0.26	0.04	0.14
Rolling Ball Tackiness Tester (cm) ASTM D3121	85	48	10	44	45	>100	82
Glass Transition Temp. (°C) ASTM E831	44	65	-18	159	41	110	45
Maximum Temp. Evolved During LED-Curing (°C)	45	36	36	52	40	39	42
Acetone Double Rub Resistance ASTM D4572	80	50	20	200	50	200	57



Recommended Equipment for Use with Nail Coatings

Model 830 Metering System

The Model 830 metering system is a great way to fill bottles and other containers with nail gel coatings. The system is built around a pneumatically operated pinch valve that is specifically designed to dispense thick, stringy materials with ease. The valve is highly precise and obtains its precision from lockable controls that facilitate the adjustment of three critical parameters: the flow rate through the valve, the amount of tube closure, and suck-back.

The valve's suck-back feature allows for the clean shutoff of stringy and tacky materials and prevents the formation of a droplet at the end of the dispense nozzle. It also minimizes the filming over of materials that tend to dry out at the end of the nozzle.

The valve also features a disposable fluid path which carries materials from the material reservoir to the dispense tip. Fluids are sealed within the fluid path, preventing contact with the valve's inner components and ensuring a contaminate-free dispensing process. The fluid path is easy to replace and requires minimum cleanup, allowing for rapid material changeover. This valve can be supplied with fluid paths of varying lengths for optimum dispense flexibility.

The Model 830 dispensing valve can be integrated into an automated dispensing system or can be paired with the Dymax DVC-345 Digital Valve Controller and a material reservoir to create a bench-top dispensing system.

The Dymax Application Engineering team is available to help guide you through the dispensing and filling process to make sure the right system is selected for your application.

- Disposable fluid path that carries materials from the material reservoir to the dispense tip
- Stroke adjustment for precise, micrometer control over dispensing volumes
- Over-pinch adjustment prevents tubing damage, allowing millions of cycles before replacement is necessary
- Adjustable suck-back that eliminates drooling and filming over of the nozzle
- Lightweight for easy handling and mounting in automated or bench-top systems
- Compatible with most standard fluid packages and delivery systems

Dymax Oligomers & Coatings: Innovating Unique Oligomers for Over Twenty Years

Dymax Oligomers & Coatings, formerly Bomar Specialties, Inc., is a leading innovator of advanced-performance materials for energy (UV/EB), light, and other free-radical cure applications. We couple our technical strength in acrylate and urethane chemistry with a strong emphasis on new product development. Our scientists synthesize a broad range of select specialty oligomers, custom-designed to satisfy the unique performance requirements of emerging application technologies, while providing customers an edge in formulating products with outstanding performance, reproducibility, and cost effectiveness. In addition to our line of Bomar oligomers, we provide assistance in coatings formulation, custom blending, toll manufacturing, and contract-manufactured coatings solutions.

In addition to our high-performance oligomers, Dymax also offers a variety of light-curable adhesives and coatings as well as dispensing and light-curing equipment. Our products are perfectly matched to work seamlessly with each other, providing design engineers with tools to dramatically improve manufacturing efficiency and reduce costs. Dymax is committed to providing the best chemistry, curing equipment, and dispensing systems that offer customers complete manufacturing solutions for their challenging applications.



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