

LSR-141

Polyether Urethane Methacrylate Resin

Applications

- Hybrid nail lacquer base coat
- Hybrid nail lacquer color coat
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Features

- Excellent adhesion to fingernails
- Compatible with common film formers
- Dries to a tack-free film
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Additional Features

- Tough, flexible polymeric resin
- Reactive to cure with sunlight exposure
- No TSF, DBP, MeHQ, or other common materials of concern for cosmetics
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LumiSet™ LSR-141 is a urethane methacrylate polymeric resin designed for use in base and color coat applications for hybrid and long-wear nail lacquers. Synthesized using building blocks from nail gel chemistries, LSR-141 is a solvent-borne film-forming resin that can offer nail lacquer formulators the benefits of adhesion and durability from nail gels while also achieving a tack-free finish, without the need for UV or LED lamps. The combination of excellent adhesion, flexibility, and toughness offers formulators an alternative to other leachable plasticizers or potentially toxic adhesion promoters. The excellent adhesion of LSR-141 allows for the combination of color and base coats into one step. Base and color coats formulated with LSR-141 should also be paired with a hydrophobic top coat due to the hydrophilic nature of LSR-141. LSR-141 is INCI registered, and can be formulated to cure with sunlight exposure using appropriate INCI-registered photoinitiators. A non-reactive alternative version of LSR-141 is available as LSR-141N.

UNCURED PROPERTIES

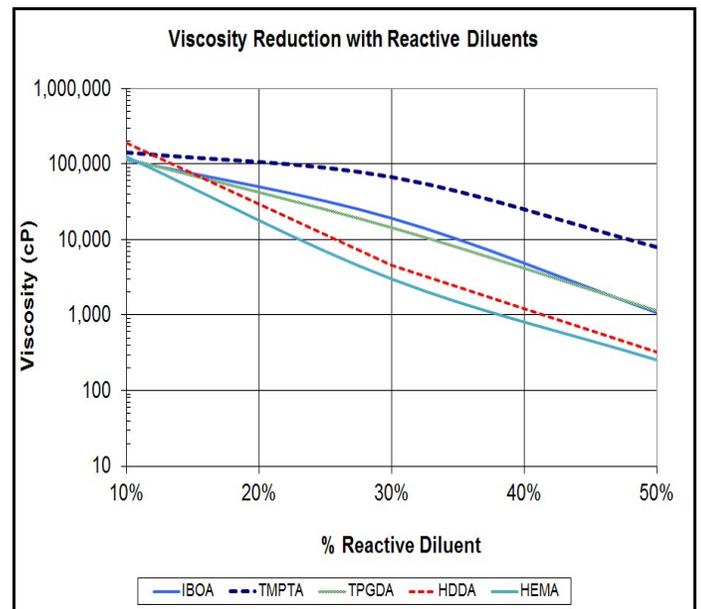
Property	Value
Viscosity, cP (25°C)	25,000
Yellowness Index (b*) †	0.03
Density, g/cm ³ (25°C)	0.97
MEHQ Content (ppm)	Undetectable
% Solids	50% in butyl acetate
Tack Free Time (min.) #	9.2
† Per ASTM E313	
# Per ASTM D5895 5 mil wet film, reduced to 30% solid with butyl acetate	
* Brookfield – CAP 2000+ @ 25°C.	

STARTING POINT FORMULA

Ingredient	% Weight
LSR-141 (50% Solids)	51.6%
1/4 Nitrocellulose (70% Solids)	4.5%
Pigment Dispersion (35% Solids)	5.8%
Irgacure® 819	0.3%
Butyl Acetate	4.7%
Ethyl Acetate	33.2%
Total	100.0%

FILM PROPERTIES Reduced to 30% solids with butyl acetate

Property	Air Dried	Sunlight Cured
Tensile Strength, psi**	370	3,100
Elongation, %**	410	300
Elastic Modulus, ksi**	17	43
Toughness (J)	0.530	1.750
Sward Hardness 30 minutes	3	5
24 hours	4	6
Contact Angle	81	81
Per ASTM D882. Air dried and cured in Q-Sun for 1 hour at 0.19 W/m ²		



Brookfield – CAP 2000+ @ 25°C

GENERAL INFORMATION

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the I Safety Data Sheet before use. The data provided in this document are based on historical testing that Dymax performed under laboratory conditions as they existed at that time, and are for informational purposes only. The data are neither specifications nor guarantees of future performance in a particular application. Dymax does not guarantee that this product's properties are suitable for the user's intended purpose. Numerous factors—including, without limitation, transport, storage, processing, the material with which the product is used, and the ultimate function or purpose for which the product was obtained—may affect the product's performance and/or may cause the product's actual behavior to deviate from its behavior in the laboratory. None of these factors are within Dymax's control. Conclusions about the behavior of the product under the user's particular conditions, and the product's suitability for a specific purpose, cannot be drawn from the information contained in this document. It is the user's responsibility to determine (i) whether a product is suitable for the user's particular purpose or application and (ii) whether it is compatible with the user's intended manufacturing process, equipment, and methods. Under no circumstances will Dymax be liable for determining such suitability or compatibility. Before the user sells any item that incorporates Dymax's product, the user shall adequately and repetitively test the item in accordance with the user's procedures and protocols. Unless specifically agreed to in writing, Dymax will have no involvement in, and shall under no circumstances be liable for, such testing. Dymax makes no warranties, whether express or implied, concerning the merchantability of this product or its fitness for a particular purpose. Nothing in this document should be interpreted as a warranty of any kind. Under no circumstances will Dymax be liable for any injury, loss, expense or incidental or consequential damage of any kind allegedly arising in connection with the user's handling, processing, or use of the product. It is the user's responsibility to adopt appropriate precautions and safeguards to protect persons and property from any risk arising from such handling, processing, or use. The specific conditions of sale for this product are set forth in Dymax's Conditions of Sale which are available at <https://www.dymax.com/index.php/en/resources/sales-terms-conditions>. Nothing contained herein shall act as a representation that the product use or application is free from patents owned by Dymax or any others. Nothing contained herein shall act as a grant of license under any Dymax Corporation Patent. Except as otherwise noted, all trademarks used herein are trademarks of Dymax. The "®" symbol denotes a trademark that is registered in the U.S. Patent and Trademark Office. The contents of this document are subject to change. Unless specifically agreed to in writing, Dymax shall have no obligation to notify the user about any change to its content.

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