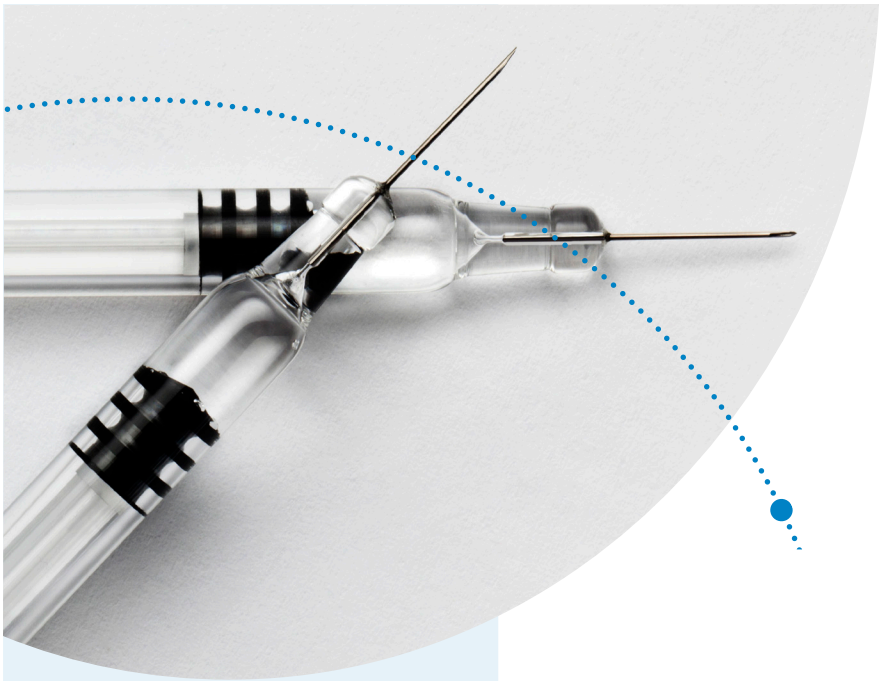


MD® 1045-M

Multi-Purpose Adhesive for the Assembly of Prefillable Syringes and Injection Devices

- Very low extractables
- Low shrinkage
- Excellent surface aesthetic that resists yellowing
- Meets ISO 10993 cytotoxicity and bio-compatibility standards
- Compatible with autoclave, gamma, EtO, and E-Beam sterilization
- LED curable for faster, environmentally friendly processing
- Strong bonds to a variety of substrates including glass, SS, ABS, and PC

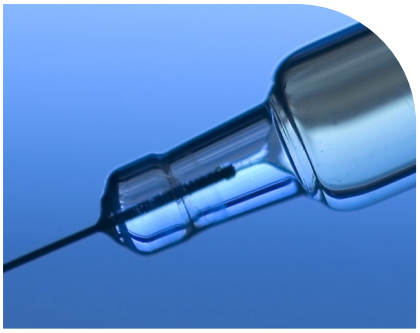
Dymax MD® 1045-M medical adhesive was specifically formulated for assembly of glass prefillable syringes, pen injectors, auto injectors, wearable Injectors, and single-use devices. This very low extractables adhesive passes ISO 10993 cytotoxicity testing and meets the required biocompatibility standards for medical device applications. 1045-M is optimized to cure with LED light, providing higher intensity cures in a shorter time with less heat generation. It has excellent adhesion to a variety of materials, including commonly used substrates like glass, stainless steel, ABS, and PC. Bonds are strong and withstand the harsh cleaning and sterilization processes prefilled syringes undergo.

It exhibits low shrinkage and after cure, it maintains a desirable profile with glass-like surface that resists yellowing. The material's one-part, solvent-free, 100% solids attributes also make it an eco-friendly alternative to solvent-based adhesives.

Properties

Product	Features	Cure Mechanism	Recommended Substrates	Viscosity, cP	Durometer Hardness	Tensile Break, MPa [psi]	Elongation at Break, %	Modulus of Elasticity, MPa [psi]	Water Absorption, % (25°C, 24h)
1045-M	Compatible with sterizilation; low viscosity; very low extractables; glass-like surface after cure; non yellowing; low shrinkage	UV Broadspectrum LED (365 nm)	Glass, SS, ABS, PC	475	D78	23,4 [3.400]	20	1.861,6 [270.000]	1,0

Additional technical specifications are available on the product data sheet.



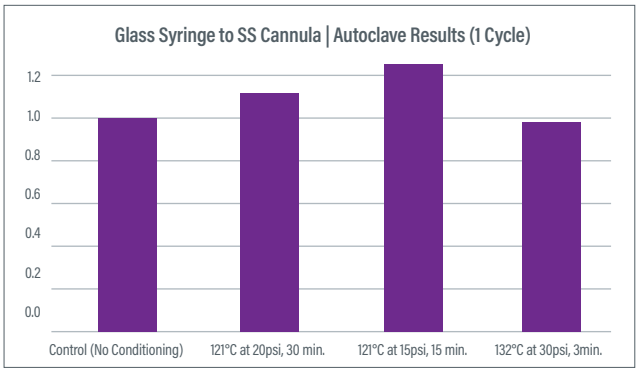
1045-M is ideal for assembling glass prefillable syringes, pen injectors, auto injectors, wearable Injectors, and single-use devices

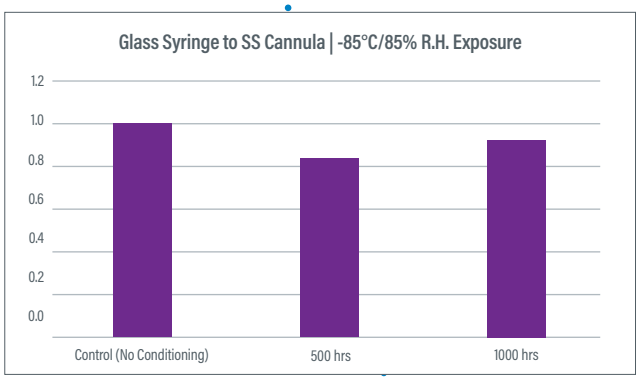
Performance Testing

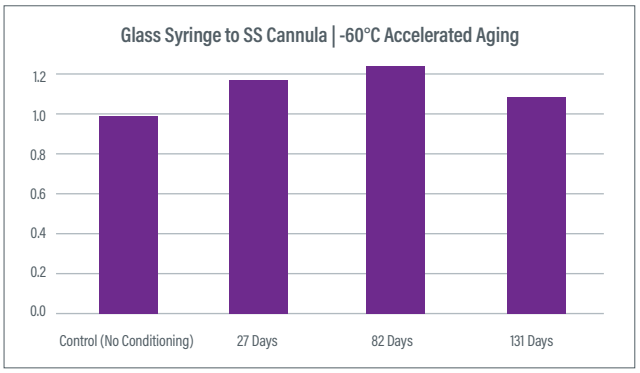
1045-M was designed to withstand harsh cleaning and sterilization methods. A variety of performance testing was completed on samples (glass syringe with SS cannula) to evaluate how the product would perform under various conditions, i.e. autoclave, heat/humidity, accelerated aging. Results are shown below.

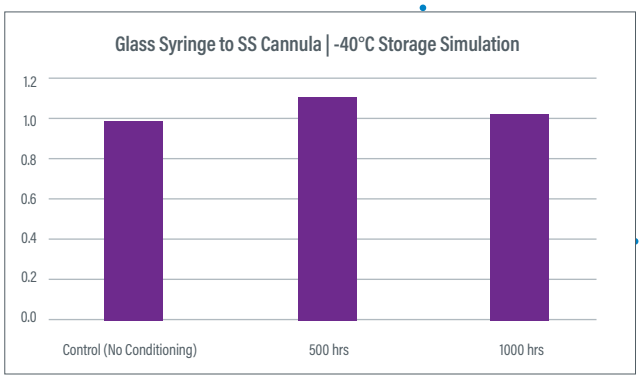
Substrates	Conditions	Avg. Max Load, N	% of Original
Glass Syringe to SS Cannula	Control (No Conditioning)	120,77	100%
Glass Syringe to SS Cannula	60°C / 27 Days	141,143	117%
Glass Syringe to SS Cannula	60°C / 82 Days	150,484	125%
Glass Syringe to SS Cannula	60°C / 131 Days	131,218	109%
Glass Syringe to SS Cannula	85°C/85% / 500 hrs	101,81	84%
Glass Syringe to SS Cannula	85°C/85% / 1000 hrs	110,249	91%
Glass Syringe to SS Cannula	Autoclave: 121°C at 20 psi, 30 min	134,793	112%
Glass Syringe to SS Cannula	Autoclave: 121°C at 15 psi, 15 min	150,68	125%
Glass Syringe to SS Cannula	Autoclave: 132°C at 30 psi, 3 min	118,256	98%
Glass Syringe to SS Cannula	-40°C / 500 hrs	135,294	112%
Glass Syringe to SS Cannula	-40°C / 1000 hrs	125,521	104%

60°C Dry Heat – 26 days (1 year), 79 days (3 years), 131 days (5 years)









Our Commitment to Greener, Safer Manufacturing

Dymax is committed to green manufacturing that reduces environmental impact, conserves energy, and provides greater worker safety. Over the last 40 years, our light-curable materials and curing equipment have become the industry standard for fast, environmentally conscious assembly. Dymax products are readily replacing technologies that contain hazardous ingredients, produce waste, or require higher amounts of energy to process.

Eco-friendly, one-component materials

Materials without solvents and other materials of concern for improved worker and user safety

Fast curing products and LED equipment designed for less energy consumption

Dymax products conform to regulatory standards like RoHS and REACH

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