



EA-40®

Clear Epoxy Adhesive

PRODUCT OVERVIEW

EA-40® Clear Epoxy is an unfilled low-viscosity epoxy adhesive that can be spread easily in thin films that are almost transparent after curing. EA-40® has a fairly long pot life and cures in 24 hours at room temperature to provide good mechanical and electrical properties. Mix ratio is 1:1 by volume. When mixed 2A:1B by volume, EA-40® will achieve greater heat resistance and improved physical properties. EA-40® is versatile and can be used for many different assembly and repair applications ranging from electrical potting to jewelry assembly to repairing plumbing fixtures. Bow makers have come to know EA-40® as a tremendous laminating resin. EA-40® provides highly moisture resistant bonds meeting the performance requirements for Federal Specification MMM-A-188, Type III.

TECHNICAL OVERVIEW

Key Values: ~**Mixing Ratio:** One A to One B (1A:1B) by volume ~ **Pot Life:** 2 hours (1/4 pint)
 ~ **Sag Resistance:** 1/16" ~ **Color:** Clear Amber ~ **Barcol 935 Hardness:** 66 (69)

<u>Properties</u>	<u>Viscosity</u>	<u>G/CC</u>	<u>Elongation At Break</u>	<u>Tensile Strength</u>
A+B Mixed	Light-paste	1.10	1.0% (0.4%)	3400 psi (1000 psi)

Modulus of Elasticity in Tension . . . 190 M (160M) Compressive Yield Strength . . . 8,100 psi (8,300)
 Modulus of Elasticity in Compression . . . 140 M (180M)

Adhesive Properties (Tensile Shear Adhesion – ASTM D1002)

<u>Substrate</u>	<u>Exposure</u>	<u>Test Temp.</u>	<u>Value(psi)</u>
AL 2024-T-3	None	-50C	1400 (800)
“	None	25C	1500 (1200)
“	None	80C	1800 (1900)
“	30 days in tap water @25C	25C	2500 (1600)
“	7 days in 100% RH @ 65C	25C	2900 (2000)
Cold Rolled Steel	None	25C	3300 (2500)

Preparation Of Surfaces For Adhesive Bonding

Materials should be stored and used in a warm environment (72° F / 22° C). This product has a limited shelf life and should be used as soon as possible. Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk. A clean, dry surface is a necessary prerequisite for adhesive bonding. Adhesives will stick to either the surface of which a bond is desired or to that film of extraneous material directly on that surface. Rarely can a structural adhesive penetrate through surface contaminants to provide an optimum bond on an unclean surface.

Porous materials are simple to bond, provided they are dry. The surface should be sanded till clean and free from dust. Non-porous surfaces, such as found on metal and plastic materials, should be degreased, dried and roughened by sanding, sandblasting or chemical etching. The etched or sandblasted surfaces should be covered within a few hours of treatment to prevent contamination. Handlers should wear clean cotton gloves to prevent body oils from contaminating the clean surfaces.

For maximum bond strength surfaces must be clean and free of any contamination. Non-porous surfaces should be abraded to increase effective surface area and then be wiped clean with a solvent. Epoxy adhesives do not perform well on metals such as nickel, chromium, tin or zinc nor on soft thermoplastics like polyethylene. Refer to the Preparation of Surfaces for Adhesive Bonding technical bulletin. **Because no two applications are quite the same, a small test application to determine suitability for your project is recommended if performance of this material is in question.**

Measuring

Mixing

Curing

If dispensing from tubes, squeeze out equal amounts onto a disposable surface and mix thoroughly. If dispensing from pint or larger containers, measure equal amounts of Parts A and B (or 2A:1B) by volume into a clean mixing container. Mixing tools and containers should be clean and made of metal, glass or plastic. After dispensing required amount of Parts A and B into mixing container, mix thoroughly for 3 minutes making sure that you scrape the sides and bottom of the mixing container several times.

Apply to prepared surface and let cure for 24 hours. Applying mild heat will cure EA-40® faster – 150°F/65°C for 6 hours.

Post Curing – After EA-40® has cured at room temperature, heating the epoxy to 150° F (65° C) for 4 to 8 hours will increase physical properties and performance. Let cool to room temp. before moving bonded substrates, machining, etc.

Safety First!

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The Material Safety Data Sheet (MSDS) for this or any Smooth-On product should be read prior to use and is available upon request from Smooth-On. All Smooth-On products are safe to use if directions are read and followed carefully.

Be Careful! EA-40® Part-A is irritating to the eyes and skin. Avoid prolonged or repeated skin contact to prevent possible sensitization. Use only with adequate ventilation. If contaminated flush eyes with water for 15 minutes and seek medical attention. Remove from skin with waterless hand cleaner then soap and water. Refer to MSDS. EA-40® Part-B causes burns to the eyes. May burn the skin and cause sensitization. Vapors irritate the respiratory tract. If contaminated, flush eyes with water for 15 minutes and seek medical attention. Remove from skin with soap and water. Use only with adequate ventilation.

Important! The information contained in this bulletin is considered accurate. However, no warranty is expressed or implied regarding this accuracy, the results to be obtained from the use thereof, or that any such will not infringe a patent. User shall determine beforehand the suitability of this product for the intended application and assume all risk and liability in connection therewith.

Feel free to call us any time with your questions.

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