

PRODUCT OVERVIEW

EA-40® Clear Amber 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 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

Mix Ratio: 1A : 1B by volume

Mixed Viscosity, Light-paste

Specific Gravity, g/cc: 1.10

Pot Life: 2 hours (73°F/23°C)

Cure time: 24 hours (73°F/23°C)

Color: Clear Amber

Barcol 935 Hardness: 66

Tensile Strength, psi: 3,400

Elongation @ Break: 1.0%

Sag Resistance: 1/16"

Modulus of Elasticity in Tension, psi: 190 M

Modulus of Elasticity in Compression, psi: 140 M

Compressive Yield Strength, psi: 8,100

Heat Distortion Temperature:

At 1A:1B Mix Ratio*: 163°F (73°C)

At 2A:1B Mix Ratio*: 217° F (103 °C)

*With Post Cure – see reverse side for post cure procedure

* All values measured after 7 days at 73°F/23°C

PROCESSING RECOMMENDATIONS

PREPARATION...Safety - Use in a properly ventilated area ("room size" ventilation). Wear safety glasses, long sleeves and rubber gloves to minimize contamination risk.

Store and use material at room temperature (73°F/23°C). This product has a limited shelf life and should be used as soon as possible.

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.

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 How-To at www.smooth-on.com.

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...

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.

Safety First!

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.

Keep Out of Reach of Children

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® 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 the accuracy of the data, the results to be obtained from the use thereof, or that any such use will not infringe upon a patent. User shall determine the suitability of the product for the intended application and assume all risk and liability whatsoever in connection therewith.

GENERAL PURPOSE BONDING APPLICATIONS...

Application - 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.

To Attain Maximum Heat Distortion Temperature - let cure for 24 hours at room temperature, heat cure for 2 hours at 250°F (122°C).

At mix ratio 1A:1B – HDT will be 163°F (73°C).

At mix ratio 2A:1B – HDT will be 217° F (103 °C)

WOOD LAMINATING / BOWMAKING

EA-40® has been used for many years for laminating fine woods. It is preferred by bow makers around the world and offers longevity, flexibility and memory required for making award winning performance bows.

Suggested laminating procedure;

1. Plane or lightly sand all surfaces to be laminated with 120 grit sand paper
2. Blow off dust with compressed air and wipe all surfaces clean using acetone (Warning – acetone is flammable. Follow acetone manufacturer procedures for handling). Let acetone evaporate for 10 minutes.
3. Mix and apply EA-40® as directed between layers of laminate to sanded surfaces using a brush.
4. Carefully clamp laminated pieces together applying even pressure.
5. Place in oven and use the following step-cure schedule:

Temperature	Duration
120°F / 48°C	2 hours
150°F / 65°C	2 hours
185°F / 85°C	2 hours

Important; Let cool for at least 6 hours to room temperature before releasing clamps or handling.

ADHESIVE PROPERTIES (Tensile Shear Adhesion - ASTM D1002)

Substrate	Exposure	Test Temp	Value, psi
AL 2024-T-3	None	-50°C	1400
AL 2024-T-3	None	25°C	1500
AL 2024-T-3	None	80°C	1800
AL 2024-T-3	30 days in tap water @ 25°C	25°C	2500
AL 2024-T-3	7 days in 100% RH @ 65°C	25°C	2900
Cold Rolled Steel	None	25°C	3300



Call Us Anytime With Questions About Your Application.

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The new www.smooth-on.com is loaded with information about mold making, casting and more.