501-E-REV-A Activator
Environmentally Safe for Fast, Reliable, Structural Bonding

APPLICATIONS

- **Cure of Dymax Multi-Cure® adhesives**
- **Suitable for gaps <0.001 to 0.020" (preferred gap 0 – 0.002")**

FEATURES

- **Strong structural bonds**
- **Fixtures in seconds**
- **Solvent-free**

RECOMMENDED SUBSTRATES

- **Metals**
- **Ceramic**
- **Glass**
- **Plated surfaces**

501-E-REV-A activator, when pre-applied to metallic, plated, ceramic, or glass substrates, rapidly cures high-strength Dymax Multi-Cure® and structural adhesives in gaps from less than 1 mil to 20 mils. 501-E-REV-A activator is environmentally safe because it is free of solvents. 501-E-REV-A's low volatility and high flash point, also enhances safety in the workplace. Activator bonding increases efficiencies, consistency, and reliability. Dymax formulations provide a broad range of process control advantages by matching the cure speed with assembly needs, thereby increasing total process efficiency. Activator 501-E-REV-A provides broad tolerance of adhesive-to-activator ratios. Rapid, on-demand curing to fixture or handling strength allows in-line quality control and increased production throughput. This product is in full compliance with RoHS2 directives 2015/863/EU and 2011/65/EU.

UNCURED PROPERTIES *

Property	Value	Test Method
Appearance	Yellow to Amber	N/A
Solvent Present	None	N/A
Flash Point (Closed Cup)	245°F (118°C)	N/A

TYPICAL CURING PROPERTIES *

Curing Conditions	Dymax 846-GEL	Dymax 6-621
Fixture Time/Handling Strength	15-20 sec	10-15 sec
Lap Shear with CRS laps (psi)		
5 minutes	829	1267
30 minutes	1244	1644
24 hours	2095	2239
72 hours	2028	2574
1 hour at 200°F	2255	3516

N/A Not Applicable

* Not Specifications

RECOMMENDED SPEED OF CURE FIXTURE TEST

This test is recommended for inspection of incoming adhesive and activator and for in-line process control. Production parts are ideal for in-line inspection and QC. Alternatively, microscope slides or steel laps may be used as the test substrate. It is recommended that this test be performed at the beginning of each shift and the results charted. This will ensure the adhesive and activator are in good working order.

Step 1: Apply a thin film of activator to one part. Cover about one square inch.

Step 2: Apply a thin, 1/16" BEAD of adhesive (do not spread) to the other part.

Step 3: With a 3/4" to 1" overlap, press the two parts together and hold for 5 seconds. (Note – as the adhesive bead rolls across the activator, it picks up the activator – this is how they mix.)

Step 4: Every 5 seconds, gently tap the end of one part while holding the other part still. Fixture time is when the parts resist movement with light finger pressure.

Step 5: Record the fixture time. Fixture time should fall within the range set during process validation. If outside these limits, repeat, check method, and check with different lot of activator or adhesive.

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OPTIMIZING PERFORMANCE AND HANDLING

For most bonding applications, activator is applied to one bonding surface and adhesive to the other. Spraying, dipping, brushing, or pad transfer are all acceptable techniques for application.

Activators are oxygen sensitive. Containers must be kept closed or stored under nitrogen when not in use in order to maintain shelf life. Remove only enough activator from the container that can be used in a short period of time.

Recommended Technique:

1. Apply a thin film of activator to one of the surfaces to be bonded. Activator should not stand in pools. Surfaces will have an oily appearance. Activating both surfaces may produce better results on some porous surfaces or if bond-line gaps exceed 0.015".
2. Apply a single drop or small bead of adhesive (DO NOT SPREAD) onto the mating surface. When the parts are joined the adhesive spreads, mixing with activator to completely fill the joint.
3. Assemble parts and clamp or leave undisturbed until fixture (handling strength) occurs. Assembled parts should be held immobile until adhesive fixture occurs. Movement of parts relative to each other prior to achieving fixture or handling strength can result in weaker bond lines.

Additional Technical Considerations:

Adhesive Application: Adhesive should only be applied as a drop or bead that squeezes from the center to the edges of the bonding surfaces. This technique promotes mixing and assures maximum contact of adhesive and activator over the entire bond area. Use the optimum amount of adhesive to COMPLETELY FILL the joint. Apply just enough adhesive so that a small fillet becomes visible around all edges when the parts are pressed together. Do not overfill. The “fillet” should cure if the proper ratio of adhesive to activator has been used.

Adhesive/Activator Ratio: Dymax Multi-Cure® and structural bonding adhesive systems are formulated to allow a wide tolerance of adhesive-to-activator ratios. The same approximate strength results when using ratios from 15:1 to 30:1. The critical factor is that a thin film of activator on one mating surface contact adhesive bead(s) on the other mating surface and that both mix during assembly. With these criteria met, the actual adhesive-to-activator ratio may vary with assembly design and adhesive/activator dispensing systems. It should be noted that flooding or over-activation may result in weaker ultimate bond strengths.

Applying activator to porous surfaces: Two-sided activation may be preferable to activating only one of two mating surfaces depending on the porosity of the substrate.

Surface preparation: Most substrates require little if any surface preparation, though adhesion is frequently enhanced by clean, mechanically roughened surfaces. Follow the manufacturer's instructions for cleaning or preparing surfaces. Grease, wax, and some mold-release agents are barriers against adhesion.

DISPENSING THE ACTIVATOR

Activator is easily applied with dispensing equipment for automated assembly. Best methods are spraying or pad printing. Natural felt, lamb’s wool, horsehair, or chemically resistant polyurethane and silicone foams are suitable. Spray application is also satisfactory. Proper ventilation must be provided, as well as proper design of spray nozzles to prevent overspray. Overspray on surrounding surfaces does not dissipate. Activated surfaces have an oily appearance. Pressurize dispensers only with nitrogen, never with air.

CLEANUP

Excess activator and adhesive may be cleaned with organic solvents. Ketones, like Acetone, should not be used on surfaces to be bonded as they sometimes leave a harmful residue. Cured material will be impervious to many solvents and difficult to remove. Cleanup of cured material may require mechanical methods of removal.

STORAGE AND SHELF LIFE

Store the material in a cool, dark place when not in use. Do not expose to oxygen. Keep tightly sealed when not in use. Store between 10˚C [50˚F] and 32˚C [90˚F] in the original, unopened container. Activator has a 6-month shelf life from date of shipment, unless otherwise specified, when stored in original, unopened, and undamaged containers. No shelf life is stipulated once opened. Activator is oxygen sensitive. Containers should be closed immediately following dispensing. Resealing container under nitrogen can help to extend shelf life. If activator turns dark in color, run the fixture test (on previous page) to determine its potency.

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 Safety Data Sheet before use.

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