

**DYMAX® 846 STRUCTURAL ADHESIVE
STRUCTURAL STRENGTH BONDS FOR MAXIMUM TENSILE/SHEAR DESCRIPTION**

DESCRIPTION

Dymax 846 is a 100% solvent-free activator-curable adhesive that combines strength of assembly with environmental compliance. 846 is ideal for applications where dissimilar substrates are to be joined, maximum tensile shear strength is required and elimination of solvents is sought for compliance with the U.S. Clean Air Act of 1990. High speed assembly, in-line quality testing, and easy, consistent automated or manual dispensing are all possible when 846 is designed into your assembly process.

846 cures upon contact with Dymax solvent-free activators between closely mating surfaces (activator choices described on page 2). No cure until assembly allows time for precise alignment of parts.

Dymax 846 is ideal for metal frame bonding, metal to stone assembly, loudspeaker hardware, D.C. Motor assembly and a variety of other applications joining dissimilar substrates. Tough durable bonds form in seconds between metal, ferrite, stone, ceramic, glass, filled nylon, thermoset plastics and epoxy bond.

UNCURED PROPERTIES

Composition	Urethane Oligomer/(Meth)Acrylate Monomer Blend	
Viscosity (20 rpm) 846	5,000 cP	ASTM D-1084
846-T	11,000 cP	ASTM D-2556
846-VT	17,500 cP	ASTM D-2556
846-Gel	30,000 cP	ASTM D-2556
Color	Translucent/Straw	
Flash Point (1)	>200°F (93°C)	
Solubility	Isopropyl Alcohol, Chlorinated Solvents	
Toxicity	Low	

CURED PROPERTIES - (Using 540-ER Activator)

Maximum Cure through Gap Thickness	0.020"	
Thermal Range (1/2" overlap) (2)	-65 to 300°F	
Thermal Shock (3)	100% Strength Retention	
Side Impact (4)	>30in lb	
Tensile Shear	3,500 psi	ASTM D-1002
Moisture Resistance (8 hours exp. to steam)	70% Strength Retention	

Footnotes:

1. Pensky/Martins open cup method.
2. Stated range is for structural/load carrying applications. Strength loss will be experienced at the extremes of this range.
3. 5 cycles from ice water to 300°F stabilizing and tested at room temperature per ASTM D-1002.
4. Fisher Body side impact test (steel deforms at 30 in lbs.)

HOW TO USE

1. Apply a thin film of Activator over one of the surfaces to be bonded. Allow a few seconds for the solvent to evaporate, if needed. Surface will have an oily appearance. (See "Guidelines for Activator Curing" for complete instructions for all activators.)
2. Apply only a single drop or bead of adhesive to the center of the mating surface. **DO NOT SPREAD OVER THE BOND SURFACE.**
3. Assemble parts and clamp or hold immobilized until fixture occurs (30-60 seconds). Do not stress bonds until sufficient strength has been achieved. (This may be up to several minutes depending on requirements.)
4. All adhesive should be contained within the joint. Wet/tacky adhesive present outside of the joint can be cured with heat or cleaned up with recommended solvents.

CURING SPECIFICATIONS - TYPICAL LIQUID PROPERTIES

	<u>540-ER</u>	<u>535-A</u>
Color	Yellow to Amber	Yellow to Amber
Solvent Present	None	Isopropyl Alcohol
ODC Present	None	None
Solvent Flash Time	None	10-40 seconds
Viscosity (cP)	45-50	7.5
Toxicity	Moderate	Moderate
	TLV=None	TLV=400ppm
Flash Point (Closed Cup)	245°F	72°F
Specific Gravity	1.1	0.9
On-Part Activator Life	12 Hours	8 Hours

TYPICAL CURING PROPERTIES - (Using 540-ER Activator)

	Dymax Structural Adhesive 846	Dymax Multi-Cure Adhesive 602
<u>Fixture Time (2 Mil Gap)</u>	<u>15 Seconds</u>	<u>12 Seconds</u>
5 Minutes	1100 psi	2400 psi
10 Minutes	1300 psi	2700 psi
30 Minutes	1800 psi	3100 psi
24 Hours	3000 psi	3600 psi
72 Hours	3500 psi	3600 psi
1 Hour at 200°F	3500 psi	3800 psi
10 Mil Gap*	2000 psi	2600 psi
20 Mil Gap*	1500 psi	2100 psi
20 Mil Gap - 1 Hour at 200°F	2500 psi	2800 psi

* Certain procedures or porous surfaces may produce optimum results when activating both surfaces.

FACTORS AFFECTING CURING

Bondline Gap: The larger the gap between surfaces, the longer the fixture time.

Temperature During Cure: Bonds in the process of curing, exposed to temperatures between 200° and 300°F for 15 to 20 minutes, exhibit tensile and impact strength 10 to 30% above rated levels for complete cure.

Surface Cleanliness: Dymax adhesives exhibit a tolerance for dirty or oily surfaces. Clean surfaces, however, always result in optimum bond strengths. Waxes, greases and various release agents can inhibit or prevent bond formation.

Clamping: Suggested for assembly parts which need to be kept immobilized until fixture or sufficient bond strength has developed. Bonds moved or disturbed during fixture may be impaired.

HANDLING AND DISPENSING ADHESIVE

Dymax 846 is available packaged in 30ml, 1/4 liter, liter and bulk packaging. It may be dispensed with a variety of automatic bench-top syringe applicators or other equipment as required. Dymax 846 may separate after periods of storage. Gently stir or agitate prior to use. Questions relating to dispensing and curing systems for specific applications should be directed to Technical Service.

Repeated or continuous skin contact should be avoided. Do wear impervious gloves and/or use barrier hand cream. Do not wear absorbent gloves. Adhesive may be removed with soap and water. Avoid towels and remove residue with chlorinated solvents, Freon, methanol or ethanol.

STORAGE AND SHELF LIFE

ADHESIVE: Store material in cool dark place when not in use. Product has a one year minimum shelf life when stored below 90°F and in original container.

ACTIVATOR: Dymax Activators are oxygen sensitive. The container should remain closed at all times other than when activator is being removed for use. For maximum effectiveness, activator should not be exposed to the air for more than four (4) hours.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately flush with water for at least 15 minutes; for eyes, get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, vomiting should be induced at once and a physician called. For specific information, refer to the Material Safety Data Sheet before use.