

821-GEL Activator-Fixturing Structural Adhesive

Dymax 821-GEL is a high-performance structural adhesive that fixtures in 30-60 seconds. Strong, durable bonds form between metal, ferrite, and ceramic surfaces. Dymax 821-GEL adhesive is nonflammable and contains no volatiles, solvents, or ozone-depleting chemicals (ODCs). Dymax 821-GEL adhesive is used with activators 535-A or 501-E to form excellent bonds between close-fitting parts. Dymax adhesive/activator bonding systems comply with the Montreal Protocol and U.S. Clean Air Act of 1990. This product is in full compliance with RoHS directives 2015/863/EU.

FEATURES/BENEFITS

- **Twenty- to forty-second fixture/streamlines automation, increases productivity; meets J.I.T. goals**
- **Tensile shear strength to 1,000 psi in 60 seconds/allows 100% in line Q.C.**
- **Nonflammable, no solvents or ODCs/reduces regulatory compliance, insurance, and capital equipment cost**

TYPICAL UNCURED PROPERTIES (not specifications)

Composition	Urethane Oligomer/(Meth)Acrylate Monomer Blend	
Color	Translucent/Straw	
Flash Point	>200°F (93°C)	
Solubility	Isopropyl Alcohol, Chlorinated Solvents	
Viscosity (20 rpm)	30,000 cP (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES (not specifications)

PHYSICAL

Tensile Shear (steel laps)	3,700 psi	ASTM D-1002
Tensile Shear (aluminum laps)	2,900 psi	ASTM D-1002
Tensile Shear (stainless steel laps)	2,700 psi	ASTM D-1002
Moisture Resistance (85°C, 100% R.H.) 72 h		
Steel Laps	100% Retained Strength	ASTM D-1002
Aluminum Laps	100% Retained Strength	ASTM D-1002
Stainless Steel Laps	100% Retained Strength	ASTM D-1002
Two Thermal Shock Cycles (-20°/300°F) 1 h soak		DSTM D-201*
Steel Laps	100% Retained Strength	ASTM D-1002
Aluminum Laps	100% Retained Strength	ASTM D-1002
Stainless Steel Laps	100% Retained Strength	ASTM D-1002
Compressive Shear (glass-to-glass)	4,000 psi (exceeds the strength of the glue)	ASTM D-1002
Two Thermal Shock Cycles (-20°/300°F)	100% Retained Strength	DSTM D-201*
Side Impact	>21 in-lb ^[1]	Fisher Body
Maximum Cure Thickness	0.010"	

*DSTM refers to Dymax Standard Test Method

[1] Steel deforms at 30-in lb



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Technical Data Collection Prior to 2002

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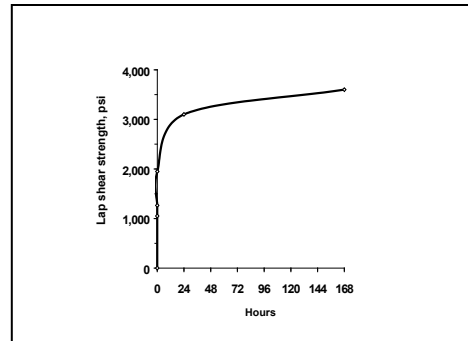
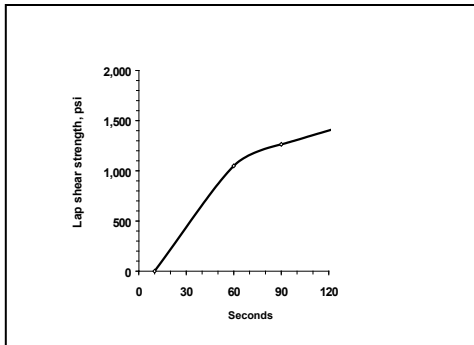
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HOW TO USE (See "Guidelines for Activator Curing" for complete instructions for all activators.)

1. Apply a thin film of activator over one of the surfaces to be bonded. Solvent-containing activators need a few seconds for the solvent to evaporate. Solvent-free activators may be used immediately.
2. Apply only a single drop or bead of adhesive to the center of the mating surface. **DO NOT SPREAD ADHESIVE OVER THE BOND SURFACE.**
3. Assemble parts and clamp or hold immobilized until fixture occurs (15-60 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.

BOND-STRENGTH DEVELOPMENT USING 501-E ACTIVATOR**FACTORS AFFECTING CURING**

Bondline Gap: The larger the gap between bonding 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 tolerate dirt and oil on many surfaces. Clean surfaces, however, always result in stronger and more durable bonds. 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. Parts moved or disturbed during fixture may be impaired.

DISPENSING AND HANDLING ADHESIVE

This material may be dispensed with a variety of manual and automatic applicators or other equipment as required. Questions relating to dispensing and curing systems for specific applications should be referred to Dymax Application Engineering.

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

STORAGE AND SHELF LIFE

ADHESIVE: Store material in a cool, dark place when not in use. This material has an 18-month shelf life from date of manufacture, unless otherwise specified, when stored between 10°C (50°F) and 35°C (90°F) in the original, unopened 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 air for more than four 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.

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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