

LOW VOLATILITY, HIGH STRENGTH STRUCTURAL ADHESIVE 846-GEL

DESCRIPTION

Dymax developmental adhesive, 846-GEL, forms excellent bonds to a wide variety of metal surfaces, glass, ceramics, filled nylon, thermoset plastics and epoxy board. Bonds form rapidly between close fitting substrates upon contact of adhesive with Activator 535-A or 500-E. Dymax 846-GEL exhibits good thermal shock characteristics and excellent adhesion to a wide variety of plated surfaces. Formulated as a low volatile adhesive, 846-GEL, greatly reduces or eliminates the possibility of adhesive vapor migration.

UNCURED PROPERTIES

Composition	Urethane Oligomer/(Meth)Acrylate monomer blend
Color	Translucent straw
Flash Point (2)	> 200°F (93.3°C)
Solubility	Alcohol/Chlorinated Solvents
Toxicity	Low
Viscosity ^[1]	Thixotropic Gel

CURED PROPERTIES

Maximum Cure through gap thickness	.020"	
Thermal Range (3) (1/2" overlap)	-65 to 300°F	
Thermal Shock (4)	100% strength retention	
Side Impact in/lbs (5)	30+	
Tensile/Shear	2,800 psi	ASTM D-1002
Moisture Resistance (8 hours exposure to steam)	70% strength retention	

Footnotes:

1. Brookfield viscometer (Model #RVF); viscosity taken in centipoise at 25°C at 20 rpm; standard and T grades spindle #4; VT grade spindle #6.
2. Pensky/Martins open cup method.
3. Stated range is for structural/load carrying applications. Strength loss will be experienced at the extremes of this range.
4. 5 cycles from ice water to 300°F stabilizing and tested at room temperature per ASTM D-1002.
5. Fisher Body side impact test (steel deforms at 30 in lbs.)

HOW TO USE

1. Apply a thin film of activator 535-A over one of the surfaces to be bonded. Allow a few seconds for the solvent to evaporate. 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.)

NOTE: All adhesive should be contained within the joint. Wet/tacky adhesive present outside of the joint can be cured with heat or cleaned away with recommended solvents.

FACTORS EFFECTING CURING

- **Bondline Gap:** The larger the gap between surfaces, the longer the fixture time.
- **Temperature of Substrates:** Very cold parts will cause long fixture times; warmer parts shorten 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-GEL is available packaged in 30 ml, 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-GEL 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 containers should remain closed at all times other than when activator is being removed for use.

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 additional information, refer to the Material Safety Data Sheet before use.

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