

3M™ Plastic Bonding Adhesive 2665B, Black

Product Description

3M™ Plastic Bonding Adhesive 2665B is a one-component, moisture curing, hot-melt urethane adhesive. This low viscosity adhesive has an intermediate open time and is ideal for structural bonding of plastics. It yields thin bond lines when used with appropriate processes and dispensing equipment and is black in color.

Features

- 100% solids
- One component
- Low viscosity
- High tack
- High strength bonds
- Bonds a variety of plastics
- Color: Black
- Re-workable after cured
- Excellent temperature humidity resistance

Typical Uncured Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Application Temperature	110°C (230°F)
Viscosity (@ 110°C/230°F)¹	4,000 - 9,000 cps
Color (solid)	Black
Open Time^{2,4}	2 - 5 minutes
Set Time^{3,4}	2 - 5 minutes

¹ Measured on Brookfield viscometer with Thermosel using spindle #27.

² The upper limit for bonding a 1/16" bead of molten adhesive on a plastic substrate in a room temperature environment. Open time is related to the solidification of the molten adhesive.

³ The minimum amount of time required between when a 1" x 1" bond is made and when it will support a 5 psi load on polycarbonate (PC) substrates.

⁴ Open times and set times are based on a room temperature environment. High temperatures will lengthen open times and set times while lower environmental temperatures will shorten open times and set times.

Handling/Application Information

Directions for Use

- Apply to clean, dried surfaces. Remove oil, grease and other contaminants by wiping with isopropyl alcohol.*
 - For materials that are often contaminated with mold release agents, it is recommended that the surface be solvent-wiped, abraded and solvent-wiped again.*
 - For additional information on surface preparation, see section on Surface Preparation.
- For best results, heat the syringe a minimum of 30 minutes at 110°C (230°F) before using.
- Apply adequate amount of adhesive to one of the substrates to be bonded. Join the substrates within the adhesive's specified open time and hold the bonded parts together until the adhesive has adequately set.

***Note:** When using solvents, extinguish all ignition sources, and follow the manufacturer's precautions and directions for use.

Safety Information

Warning: Hot syringes are a possible burn or explosion hazard.

To ensure safe handling of 3M™ Plastic Bonding Adhesive 2665B syringes:

1. Do not remove the aluminum label from the syringe. It is designed to make the temperature of the syringe more uniform.
2. The syringe heater must have an opening sufficient to accommodate easy insertion and removal of the syringe including the aluminum label.
3. Do not exceed 110°C (230°F) syringe temperature. Failure of the syringe could result.
4. Do not exceed 4.1 bar (60 psi) dispensing pressure. Failure of the syringe could result.
5. Remove air pressure from the dispensing unit before removing the syringe from the heater.
6. Use only dry air for dispensing to prevent premature curing of the product.
7. Adhesive dripping is sometimes caused by a cured adhesive skin at the syringe back, and can normally be dislodged using a probe. It is not necessary to remove the skin, merely breaking the seal to the syringe barrel normally cures the problem.
8. Use gloves and personal protective equipment when handling hot syringes to prevent burns or injury.

Dispensing Equipment

3M™ Plastic Bonding Adhesive 2665B can be dispensed using either a time-pressure dispenser system with Luer-Lok needle tips or a positive displacement or gear metering valve to yield thin glue lines. Please contact your local technical team for more application support.

Package Size Available: 30 mL syringes.

Cleanup: Allow product to solidify. Remove uncured waxy material (usually within the first 20 minutes after application) by scraping with a putty knife or similar tool. For cured material, remove by cutting or sanding. **Do not use heat or flame to remove adhesive.**

Cure Time: The cure rate will vary depending on air temperature, relative humidity, substrate type and bond line thickness. Refer to the section on Typical Performance Characteristics for an indication of strength build under one set of conditions.

Typical Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Overlap Shear Strength (psi), tested @ 23°C (73°F), Thermal Shock (TS)⁵ and Temperature/Humidity (TH)⁶:

Substrate	OLSS (psi)		
	23°C (73°F)	After TS	After TH
Polycarbonate	850	1210	950
EXL1414	840	895	1414
Acrylic	645	550	330
ABS	500	+	+
PVC	340	+	+
Stainless Steel	160	175	235
Etched Aluminum	570	1055	1130

⁵Condition for TS: -40° to 85°C, 30 minute dwell for 20 cycles.

⁶Condition for TH: 68°C/95% relative humidity for 3 days.

+ Not tested.

Rate of Overlap Shear Strength Build-up @ 23°C (73°F):

Substrate	OLSS (psi)	
	Curing Time (hours)	OLSS (psi)
Polycarbonate	0.25	60
	0.5	60
	1.0	90
	2.0	130
	3.0	200
	24.0	700
	168.0	850

Test Procedures

A. Overlap Shear Strength

Overlap shear (OLS) strengths were measured on 1" wide 1/2" overlap specimens. These bonds were made individually using 1" x 4" sample coupons. Thickness of the bond line was controlled with 125 ± 6% µm glass beads. The thickness of the substrates was 0.125". All strengths were measured at 23°C (73°F) except where noted. The separation rate of the testing jaws was 2" per minute for plastics and 0.1" per minute for metals.

B. Cure Cycle

All bonds were cured for a minimum period of 7 days at 25°C (77°F)/50% RH before testing. Bonds were prepared using the suggested surface preparation procedure for the particular substrate tested.

Surface Preparation

Plastic: Wipe with isopropyl alcohol-soaked cheesecloth.* Allow solvent to evaporate before bonding. For optimal performance, heptanes may be used. **Note:** 3M™ Plastic Bonding Adhesives are not recommended for bonding untreated polyolefins.

Plastic Contaminated with Mold Release: Wipe with isopropyl alcohol-soaked cheesecloth, abrade with fine grit abrasive, wipe with alcohol-soaked cheesecloth.* Allow solvent to evaporate before bonding. For optimal performance, heptanes may be used.

Metal (except etched AL): Wipe with methyl ethyl ketone (MEK)-soaked cheesecloth, abrade with fine grit abrasive, wipe with MEK-soaked cheesecloth.* Allow solvent to evaporate before bonding.

Etched AL: No surface preparation after etching but bonded within 7 days of etching treatment.

Glass: Wipe with methyl ethyl ketone (MEK)-soaked cheesecloth.* Allow solvent to evaporate before bonding. Priming may be necessary on glass if part will be subjected to hot/humid conditions.

***Note:** When using solvents, extinguish all ignition sources, and follow the manufacturer's precautions and directions for use.

Storage and Shelf Life

Shelf life is 12 months when stored at 16°C (60°F) to 27°C (80°F) within unopened foil pouches, indoors and protected from exposure to moisture.

Health and Safety

Refer to Product Label and Safety Data Sheet for Health and Safety Information before using this product.

Important Note

Please consult Federal, State, and Local Regulations. State Volatile Organic Compound (VOC) regulations may prohibit the use of certain alcohol solutions or solvents. You should check with your state environmental authorities to determine whether use of a solution or solvent is restricted or prohibited.

Regulatory

For regulatory information about this product, contact your 3M representative.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

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