Laminating Adhesives Data Page

FOD # 0351

3M™ 9442 Laminating Adhesive
9445 Laminating Adhesive

Product Construction

	Adhesive	**Liner**
9442	2.0 mils (51 microns) #350 “Hi-Holding” Acrylic Adhesive (fibered)	3.2 mils (81 microns) 55# Densified Kraft (White)
9445	5.0 mils (127 microns) #350 “Hi-Holding” Acrylic Adhesive (fibered)	3.2 mils (81 microns) 55# Densified Kraft (White)

Features

- Excellent bond to most surfaces including plastics.
- Excellent chemical and temperature resistance.
- Excellent resistance to label slippage or flagging.
- Densified kraft liner for excellent rotary die-cutting.

Applications

- High performance labels for the chemical industry.
- Label application to curved surfaces where flagging resistance is critical.
- Thick adhesive for bonding labels to moderate to heavy textured surfaces.

Physical Properties

(Typical values - not for specification use)

	Product	20 Minute Dwell	
		Oz./In.	N/100 mm
ASTM D-3330 (modified) (90 degree peel, 12”/min. 305 mm/min.) 2 mil aluminum to stainless steel	9442	44	48
	9445	67	73

	Product	72 Hr. Dwell		Ultimate Bond	
		Oz./In.	N/100mm	Oz./In.	N/100mm
3M Test(90 degree peel 12”/min. 305 mm/min.) 2 mil aluminum to various surfaces					
Metal (Stainless Steel)	9442	54	59	82	90
	9445	97	106	112	123
High Surface Energy Plastic (Polycarbonate)	9442	52	57		
	9445	77	84		
Low Surface Energy Plastic (Polypropylene)	9442	33	36		
	9445	50	55		

Environmental Performance

The properties defined are based on the attachment of impervious faceplate materials (such as aluminum) to an aluminum test surface.

Bond Build-up: The bond strength of 3M #350 “Hi-Holding” Acrylic Adhesive increases as a function of time and temperature.

Humidity Resistance: High humidity has minimal effect on adhesive performance. Bond strengths are generally higher after exposure for 7 days at 90 degrees F (32 degrees C) and 90% relative humidity.

U.V. Resistance: When properly applied, nameplates and decorative trim parts are not adversely affected by exposure to U.V. light.

Water Resistance: Immersion in water has no appreciable effect on the bond strength. After 100 hours at room temperature, the bond actually shows an increase in strength.

Temperature Cycling Resistance:	Bond strength generally increases after cycling four times through: 4 hours at 158 degrees F (70 degrees C) 4 hours at -20 degrees F (-29 degrees C) 16 hours at room temperature
Chemical Resistance:	When properly applied, adhesive backed parts will hold securely after exposure to numerous chemicals including gasoline, oil, sodium chloride solution, Freon TF, mild acids, and alkalis.
Heat Resistance:	The #350 “Hi-Holding” adhesive is usable for short periods (minutes, hours) at temperatures up to 350 degrees F (177 degrees C) and for intermittent longer periods of time (days, weeks) up to 250 degrees F (121 degrees C).
Low Service Temperature:	-40F (-40C)
Shelf Life:	Product retains its performance and properties for two years from date of manufacture if properly stored at room temperature conditions of 72 degrees F (22 degrees C) and 50% relative humidity.

Application Recommendations

For maximum bond strength, the surface should be thoroughly cleaned and dried. Typical cleaning solvents are heptane or isopropyl alcohol. Consult solvent manufacturer’s Material Safety Data Sheet for proper handling and storage instructions.

Bond strength can also be improved with firm application pressure and moderate heat, from 100 degrees F (38 degrees C) to 130 degrees F (54 degrees C), causing the adhesive to develop intimate contact with bonding surface.

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