



Laminating Adhesives/Data Page

FOD # 0278

932 and 932FL Roll Laminating Adhesive

Product Construction

	<u>Adhesive</u>	<u>Liner #1</u>	<u>Liner #2</u>
932	2 mils (50 microns) Utility Acrylic Adhesive	4 mils 58# Polycoated Kraft Paper	None
932FL	2 mils (50 microns) Utility Acrylic Adhesive	4 mils 58# Polycoated Kraft Paper	3 mil High-Density Polyethylene

Features:

932 and 932FL

- Good bond strength to many surfaces including high surface energy plastics.
- Temperature performance to 300 deg. F.
- 3M 932 and 932FL Laminating Adhesives are designed for application to smooth surfaces.
- Moisture stable liner for resistance to the effects of humidity.

932FL

- Clear, film liner enables inspection of parts.
- Liner strength resists breakage and provides one-piece removal, HDPE liner is primary liner (the adhesive stays with the HDPE).

Typical Applications

- Bonding of nameplates and decorative trim to metal and high surface energy plastics.
- Suitable for lamination to back printed Lexan™ polycarbonate or polyester graphic overlay materials.

Physical Properties:

(Typical values - not for specification use)

	<u>Product</u>	20 Minute Dwell		Ultimate Bond	
		<u>Oz./In.</u>	<u>N/100 mm</u>	<u>Oz./In.</u>	<u>N/100mm</u>
ASTM D-3330 (modified) (90 degree peel, 12"/min. 305 mm/min.) 2 mil aluminum to stainless steel	932	38	41		
	932FL	38	41		
		72 Hr. Dwell		Ultimate Bond	
	<u>Product</u>	<u>Oz./In.</u>	<u>N/100mm</u>	<u>Oz./In.</u>	<u>N/100mm</u>
ASTM D-3330 (modified) (90 degree peel, 12"/min. 305 mm/min.) 2 mil aluminum to various surfaces					
- Metal (Stainless Steel)	932	70	76	95	104
	932FL	70	76	95	104
- High Surface Energy	932	40	44		
Plastic (Polycarbonate)	932FL	40	44		
- Low Surface Energy Plastic	Not Recommended				

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 932 and 932FL increases as a function of time and temperature.
- Humidity Resistance:** High humidity has a minimal effect on adhesive performance. Bond strengths are generally higher after exposure for 7 days at 90 deg. F (32 deg. C) and 90% relative humidity.
- U.V. Resistance:** When properly applied, nameplates and decorative trim parts are not adversely affected by outdoor exposure.
- Water Resistance:** Immersion in water has no appreciable effect on the bond strength. After 100 hours in room temperature water the bond actually shows an increase in strength.
- Chemical Resistance:** When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including gasoline, oil, sodium chloride solution, mild acids and alkalis.
- Heat Resistance:** 932 and 932FL can be used for short periods (hours) at temperatures up to 300 deg. F (149 deg. C) and for intermittent longer periods of time (weeks) up to 250 deg. F (121 deg. C).
- Shelf Life:** Product retains its performance and properties for one year from date of receipt if properly stored at room temperature conditions of 72 deg. F (22 deg. C) and 50% relative humidity. Storage in plastic bag is recommended.

Processing:

- Die-Cutting: Good die-cutting and kiss-cutting properties. Lubricate dies with vanishing oil or similar low residue lubricants for improved processing.
- Roll Laminating: Use rubber over steel roll set up with moderate application pressure. Make adhesive to substrate contact at nip area only to avoid air entrapment in bond.

Special Considerations:

For maximum bond strength, surface should be thoroughly cleaned and dried. A typical cleaning solvent is heptane or isopropyl alcohol.

Consult the manufacturer's Material Safety Data Sheet for proper handling and storage of vanishing oils, lubricants and cleaning solvents.

Bond strength may be improved with firm application pressure and moderate heat causing adhesive to flow and develop intimate contact with bonding surface.

Ideal application temperature range is 70 deg. F to 100 deg. F (21 deg. C to 38 deg. C). Initial application to surfaces at temperatures below 50 deg. F (10 deg. C) is not recommended for most pressure-sensitive adhesives because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

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