



Laminating Adhesives/Data Page

FOD # 0034

Stamark™ 9502HL Laminating Adhesive 9505HL Laminating Adhesive

Product Construction

<u>Product</u>	<u>Adhesive</u>	<u>Liner</u>
9502HL	2.0 mil (50 microns) #220 Industrial Acrylic	6.5 mil (162.5 microns) 86# Polycoated Lay-Flat Kraft
9505HL	5.0 mil (125 microns) #220 Industrial Acrylic	6.5 mil (1625 microns) 86# Polycoated Lay-Flat Kraft

Features

- Provides excellent balance of properties needed to attach nameplates, appliques and decorative trim attachments to most surfaces.
- Performs in temperatures up to 350 degrees F (177 degrees C).
- 9502HL is designed for application to smoother surfaces.
- 9505HL is designed for bonding to rough or textured surfaces.
- Heavy lay-flat, moisture-stable liner offers ease of handling, improved kiss-cutting and resistance to the effects of humidity.
- Industrial acrylic adhesive provides excellent environmental resistance.

Applications

- Attachment of nameplates, appliques, and decorative trim to metal and high surface energy plastics.
- Suitable for lamination to back-printed polycarbonate or polyester graphic overlay materials.
- Used in the automotive, appliance and electronic industries for cost-effective, long-term bonding applications.

Physical Properties

(Typical values based on testing of 3 lots – not for specification use)

Adhesion: ASTM D-3330 (modified) 90 degree peel, 12"/min.
(305 mm/min.) 2 mil aluminum to stainless steel

<u>Product</u>	10 Minute Dwell	
	<u>Oz./In.</u>	<u>N/100mm</u>
9502HL	40	44
9505HL	53	58

Bond Build-up, ASTM D-3330 (modified) 90 degree peel,
12"/min. 305 mm/min.) 2 mil aluminum to various surfaces

<u>Surface</u>	<u>Product</u>	72 Hr. Dwell		Ultimate Bond	
		<u>Oz./In.</u>	<u>N/100mm</u>	<u>Oz./In.</u>	<u>N/100mm</u>
Metal (Stainless Steel)	9502HL	74	80	102	111
	9505HL	98	107	160	175
High Surface Energy Plastic (Polycarbonate)	9502HL	43	47		
	9505HL	54	59		
Low Surface Energy Plastic (Polypropylene)	(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 #220 industrial adhesive 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 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 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.
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, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including gasoline, oil, "Freon" TF, sodium chloride solution, mild acids and alkalis.

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Heat Resistance: #220 adhesive is usable for short periods (hours) at temperatures up to 350 degrees F (204 degrees C) and for intermittent longer periods of time (weeks) up to 250 degrees F (149 degrees 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 degrees F (22 degrees 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.

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