



# Technical Data Sheet

## 3M™ Adhesive Transfer Tape 9505



[Product Details](#)



[Regulatory Info/SDS](#)

### Product Description

3M™ Industrial Acrylic Adhesive 220 is an economical choice for most general industrial bonding in metal, painted metal, and high surface energy plastic applications.

### Product Features

- Up to 350°F short-term heat resistance
- Good chemical resistance
- Good shear strength

### Technical Information Note

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

### Typical Physical Properties

Attribute Name	Test Method	Value
Adhesive Type		Acrylic
Total Tape Thickness	ASTM D3652	0.12 mm (4.9 mil)
Liner Print		3M
Liner		58# Polycoated Kraft Paper (PCK)
Liner Thickness		0.11 mm (4.2 mil)
Primary Liner Color		Tan

### Typical Performance Characteristics

#### 90° Peel Adhesion

Temperature: 23 °C (73 °F)

Backing: 2 mil Aluminum Foil

Test Method: ASTM D3330

Dwell Time	Substrate	Value
15 min	Stainless Steel	5.8 N/cm (53 oz/in) <sup>1</sup>
72 h	ABS	7.1 N/cm (65 oz/in) <sup>1</sup>
72 h	Glass	9.7 N/cm (89 oz/in) <sup>1</sup>
72 h	Polycarbonate (PC)	7.1 N/cm (63 oz/in) <sup>1</sup>
72 h	Stainless Steel	11 N/cm (98 oz/in) <sup>1</sup>

<sup>1</sup> 304 mm/min (12 in/min)

#### Static Shear

Temperature	Test Condition	Value
23 °C (73 °F)	2000 g	5,000 min <sup>1</sup>
70 °C (158 °F)	1000 g	4,000 min <sup>1</sup>

<sup>1</sup> 25 x 25 mm (1 in x 1 in) sample area, test terminated after 10,000 minutes

Attribute Name	Value
Short Term Temperature Resistance	177 °C (350 °F) <sup>1</sup>
Long Term Temperature Resistance	93 °C (200 °F) <sup>2</sup>

<sup>1</sup> Short Term (minutes, hour)

<sup>2</sup> Long Term (day, weeks)

## **Typical Environmental Characteristics**

### **Environmental Resistance**

Humidity Resistance – High humidity has a minimal effect on adhesive performance. Bond strength shows no significant reduction after exposure for 7 days at 90°F (32°C) and 90% relative humidity.

UV 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 at room temperature, the high bond strength is maintained.

Temperature Cycling Resistance – High bond strength is maintained after cycling four times through:

4 hours at 158°F (70°C)

4 hours at -20°F (-29°C)

4 hours at 73°F (22°C)

Chemical Resistance – When properly applied, nameplate and decorative trim parts will hold securely after exposure to numerous chemicals including oil, mild acids and alkalis.

Bond Build-up: The bond strength of 3M™ Industrial Acrylic Adhesive 220 increases as a function of time and temperature

Temperature/Heat Resistance: 3M™ Industrial Acrylic Adhesive 220 is usable for short periods (minutes, hours) at temperatures up to 350°F (177°C) and for intermittent longer periods (days, weeks) up to 250°F (121°C).

**Lower Temperature Service Limit:** 40°F (-40°C). The glass transition temperature, TG, for 3M™ Industrial Acrylic Adhesive 220 is -31°F (-35°C). Many applications survive below this temperature. Factors to consider are: the materials being bonded, the dwell at RT before cold exposure and the stresses below the TG (ie. expansion/contraction stresses, impact). Optimum conditions are: bonding HSE materials, longer time at RT before cold exposure and little or no stress below the glass transition temperature.

## **Handling/Application Information**

### **Application Examples**

- Attaching nameplates, appliques, and decorative trim to metal and high surface energy plastics
- Laminating to sub-surface printed polycarbonate or polyester graphic overlay materials
- Used in the automotive, appliance and electronics industries for cost-effective, long-term bonding applications

## **Storage and Shelf Life**

Store under normal conditions of 16° to 27°C (60° to 80°F) and 40 to 60% relative humidity in the original packaging, out of direct sunlight. For best performance, use this product within 24 months from date of manufacture.

## **Available Sizes**

Attribute Name	Value
Master Width	1.22 m (48 in) <sup>1</sup>

<sup>1</sup> More sizes may be available. Please talk to your local 3M representative for more information.

## **Recognition/Certification**

**TSCA:** This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

**MSDS:** 3M has not prepared a MSDS for this product which is not subjected to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R.1910.1200(b)(6)(v). When

used under reasonable conditions or in accordance with the 3M directions for use, this product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

**UL:** These products have been recognized by Underwriters Laboratories, Inc. under UL 969. For more information on the UL Certification, please visit the website at <http://www.3M.com/converter>, select UL Recognized Materials, then select the specific product area.

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## **Automotive Disclaimer**

### **Select Automotive Applications:**

This product is an industrial product and has not been designed or tested for use in certain automotive applications, such as automotive electric powertrain battery or high voltage applications, which may require the product to be manufactured in a IATF certified facility, meet a Ppk of 1.33 for all properties, undergo an automotive production part approval process (PPAP), or fully adhere to automotive design or quality system requirements (e.g., IATF 16949 or VDA 6.3). Customer assumes all responsibility and risk if customer chooses to use this product in these applications.

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## **ISO Statement**

This product was manufactured under a 3M quality system registered to ISO 9001 standards.

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