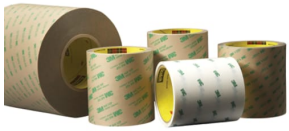

English-US

Last Revision Date: April, 2025

Supersedes: September, 2024

Technical Data Sheet

3M™ Ultra High Temperature 100 HT Adhesive Transfer Tape 9082

Product Details

Regulatory Info/SDS

Product Description

3M™ Ultra High Temperature 100HT Adhesive Transfer Tape 9082 utilizes a high performance and low outgassing adhesive system having excellent heat resistance in high temperature environments. Not only does it have excellent holding power, but also its adhesion strength is significantly higher than typical pressure sensitive tapes.

This adhesive transfer tape is ideal for use in many industrial applications subjected to higher temperature environments. Typical examples are for automotive under-hood applications that require both higher processing and operating temperatures. Other areas include printed circuit boards and heat sink bonding in many electronics applications subjected to high solder reflow temperatures.

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
Color		Clear
Density		0.98 g/cm³ (0.04 lb/in³)
Adhesive Type		Acrylic Adhesive System
Total Tape Thickness	ASTM D3652	0.05 mm (2 mil)
Liner		55# Densified Kraft
Liner Print		3M
Liner Thickness		0.08 mm (3.2 mil)
Primary Liner Color		White, with green “3M” print

Typical Performance Characteristics

180° Peel Adhesion

Backing: 2 mil Aluminum Foil
Test Method: ASTM D3330

Temperature	Value
23 °C (73 °F)	8.8 N/cm (80 oz/in) [1]
107 °C (225 °F)	7 N/cm (64 oz/in) [2]
149 °C (300 °F)	6.1 N/cm (56 oz/in) [2]
177 °C (350 °F)	5.3 N/cm (48 oz/in) [2]
230 °C (450 °F)	2.6 N/cm (24 oz/in) [2]

[1] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

[2] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

Overlap Shear Strength

Substrate: Stainless Steel
Test Method: ASTM D1002, ISO 4587

Temperature	Value
23 °C (73 °F)	620 kPa (90 lb/in²) [1]
107 °C (225 °F)	240 kPa (35 lb/in²) [2]
149 °C (300 °F)	210 kPa (30 lb/in²) [2]
177 °C (350 °F)	140 kPa (20 lb/in²) [2]
230 °C (450 °F)	100 kPa (15 lb/in²) [2]

[1] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

[2] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

Static Shear

Substrate: Aluminum
Test Condition: Hold weight for 10,000 min
Test Method: ASTM D3654

Temperature	Value
23 °C (73 °F)	1,000 g [1]
93 °C (200 °F)	1,000 g [2]
121 °C (250 °F)	1,000 g [2]
150 °C (300 °F)	1,000 g [2]
175 °C (350 °F)	1,000 g [2]

[1] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

[2] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

Normal Tensile

Substrate: Aluminum
Test Method: ASTM D897

Temperature	Value
23 °C (73 °F)	345 kPa (50 lb/in²) [1]
107 °C (225 °F)	100 kPa (15 lb/in²) [2]
149 °C (300 °F)	100 kPa (15 lb/in²) [2]
177 °C (350 °F)	70 kPa (10 lb/in²) [2]
230 °C (450 °F)	70 kPa (10 lb/in²) [2]

[1] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

[2] Adhesion performance generally increases with lower temp. At temps lower than -40°F [-40°C], the ability to absorb impact energy is reduced.
Note: Samples were conditioned at the desired temperature for two minutes before testing at that temperature.

Attribute Name	Value
Short Term Temperature Resistance	280 °C (540 °F) [1]
Long Term Temperature Resistance	177 °C (350 °F) [2]

[1] Short Term (minutes, hour)

[2] Long Term (day, weeks)

Electrical and Thermal Properties

Attribute Name	Test Method	Value
Thermal Conductivity	ASTM C177	0.16 W/m/K (1.1 (btu-in)/(h-ft²-°F))
Coefficient of Thermal Expansion		770 x 10^{-6} m/m/°C

Attribute Name	Test Method	Temperature	Value
Dielectric Strength	ASTM D149	125 °C (257 °F)	870 V
Dielectric Strength	ASTM D149	177 °C (350 °F)	770 V
Dielectric Strength	ASTM D149	23 °C (73 °F)	1,200 V
Insulation Resistance	ASTM D1000		>1 x 10^{6} MΩ/in²

Weight Loss and Outgassing Performance

Attribute Name	Temperature	Value
Isothermal TGA Analysis	149 °C (300 °F)	0.64 % [1]
Isothermal TGA Analysis	177 °C (350 °F)	1.09 % [1]
Ramped TGA Analysis	107 °C (225 °F)	0.15 % [2]
Ramped TGA Analysis	149 °C (300 °F)	0.21 % [2]
Ramped TGA Analysis	177 °C (350 °F)	0.26 % [2]
Ramped TGA Analysis	230 °C (450 °F)	0.61 % [2]
Ramped TGA Analysis	260 °C (500 °F)	1 % [2]
Ramped TGA Analysis	307 °C (585 °F)	5 % [2]

[1] Testing used constant temp Thermogravimetric Analysis (TGA). TA Instruments 2950 HI-RES Modulated Thermogravimetric, air atmosphere, standard mode. Temp ramp at highest rate and maintained for 3.5hr. Results: % weight loss at desired temp.

[2] The testing is done using a constant temperature Thermogravimetric Analysis (TGA). TA Instruments 2950 HI-RES Modulated Thermogravimetric, air atmosphere, standard mode. Temp 70 to 1,000°F (537°C), 10°C/min. Results: % weight loss at desired temp.

Handling/Application Information

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improve bond strength.

To obtain optimum adhesion, the bonding surfaces must be clean, dry, and well unified. Some typical surface cleaning solvents are isopropyl alcohol/water mixture or heptane.*

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

*Note: Be sure to follow the manufacturer’s precautions and directions for use when using solvents.

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	Width	Value
Maximum Length	1/2 in width	54.9 m (60 yd)
Maximum Length	1/2 in to 1 in widths	110 m (120 yd)
Maximum Length	1 in to 3 in	110 m (120 yd)
Maximum Length	3 in and wider	165 m (180 yd)
Normal Slitting Tolerance		± 0.8 mm (± 1/32 in)
Note		Subject to Minimum Order Requirements
Standard Roll Length		54.9 m (60 yd)

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.

3M™ Industrial Adhesives and Tapes Division
3M Center, St. Paul, MN 55144-1000
3M.com/iatd