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Technical Data Sheet

3M™ Nitrile High Performance Rubber & Gasket Adhesive 847

English-US
Last Revision Date: June, 2024
Supersedes: January, 2024

Product Details

Regulatory Info/SDS

Product Features

• 3M™ Nitrile High Performance Rubber & Gasket Adhesives 847 and 847H provide strong flexible bonds.
• Rubber & gasket adhesive 847 is a medium viscosity grade adhesive for many brush or flow applications.
• Rubber & gasket adhesive 847H is a high viscosity grade adhesive for many brush or flow applications requiring gap filling or reduced soak-in
• Quick drying.
• Excellent resistance to many fuels and oils.
• Bond leather, nitrile rubber, most plastics, and gasketing materials to a variety of substrates.
• May be heat cured to obtain improved physical properties.

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 Uncured Physical Properties

Attribute Name	Value
Net Weight	7.5 — 7.9 lb/gal
Base	Nitrile Rubber

Substrate: Birch to Birch
Temperature: 22 °C (72 °F)
Test Condition: 22°C (72°F)
Dwell Time: 3 week

Attribute Name	Value
Overlap Shear Strength	200 lb/in² [1]

[1] 1/8in thick substrates

Typical Physical Properties

Attribute Name	Temperature	Value
Color		Dark Brown
Solids Content by Weight		46 — 55 %
Carrier Solvent		Acetone
Bonding Range		Up — 10 min [1]
Flash Point		-18 °C (0 °F) [2]
Viscosity	27 °C (80 °F)	35,000-90,000 cP [3]

[1] 10 mil wet film 2 surfaces
[2] Closed Cup
[3] Brookfield Viscometer RVF #6 sp @ 4 rpm

Typical Performance Characteristics

180° Peel Adhesion

Substrate: Canvas to Steel

Dwell Time	Temperature	Value
24 h	22 °C (72 °F)	208 oz/in
72 h	22 °C (72 °F)	376 oz/in
120 h	22 °C (72 °F)	440 oz/in
168 h	22 °C (72 °F)	496 oz/in
2 week	22 °C (72 °F)	560 oz/in
3 week	22 °C (72 °F)	640 oz/in
3 week	1 °C (34 °F)	320 oz/in
3 week	66 °C (150 °F)	256 oz/in
3 week	82 °C (180 °F)	144 oz/in

Overlap Shear Strength

Substrate: Birch to Birch
Temperature: 22 °C (72 °F)
Dwell Time: 3 week

Test Condition	Value
1°C (30°F)	152 lb/in² [1]
66°C (150°F)	20 lb/in² [1]
82°C (180°F)	9 lb/in² [1]

[1] 1/8in thick substrates

Handling/Application Information

Directions for Use

1. Surface Preparation: Remove all dust, dirt, oil, grease, wax, loose paint, etc.
Wiping with a solvent such as methyl ethyl ketone (MEK) or 3M™ Citrus Base Cleaner will aid in preparing the surface for bonding.*
2. Application Temperature: For best results the temperature of the adhesive and surfaces to be bonded should be at least 65°F (18°C).

3. Application: Stir well before using

Porous Surface(s): Brush or flow a thin, even coat of adhesive to one or both surfaces. Coating both surfaces is preferred since it gives greater strength and permits longer open time before bonding. Very absorbent materials may require more than one coat. Bond while adhesive is still wet or aggressively tacky. Join surfaces with firm pressure.
Non-Porous Surfaces: Brush or flow a thin, even coat of adhesive to both surfaces. Allow adhesive to dry until tacky. Join surfaces with firm pressure.
4. Drying Time: Drying time depends on temperature, humidity, air movement, and porosity of the materials bonded. Greater immediate strength may be obtained by heat or solvent reactivation. See Reactivation below.

5. Reactivation: To solvent reactivate, coat both surfaces with adhesive. Allow to dry tack-free. Lightly wipe one surface with a solvent such as methyl ethyl ketone

(MEK)*.
Complete bond within 30 seconds.
To heat activate, coat both surfaces with adhesive. Allow adhesive to dry completely. Reactivate by heating one or both surfaces to a minimum of 180°F (82°C). Assemble immediately (while hot), using firm pressure to ensure contact.
6. Curing: 3M™ Nitrile High Performance Rubber & Gasket Adhesives 847 and 847H may be heat cured to obtain improved physical properties. Cure assembled parts at time and temperature listed using 100 psi pressure on the bond line.

Temperature of Bondline Time for Minimum Cure
200°F (93°C) 120 minutes
240°F (115°C) 40 minutes
280°F (138°C) 12 minutes

320°F (160°C) 8 minutes
360°F (182°C) 5 minutes
400°F (204°C) 2 minutes

7. Cleanup: Excess adhesive may be removed with a solvent such as methyl ethyl ketone (MEK) or acetone, preferably while adhesive is still wet.*

*When using solvents, extinguish all ignition sources, including pilot lights, and follow the manufacturer's precautions and directions for use.

Application Equipment

Note: Appropriate application equipment can enhance adhesive performance. We suggest the following application equipment for the user's evaluation in light of the user's particular purpose and method of application.

5 Gallon Pail Dispensing System:
1. Pump – 4:1 double acting ball type check pump, 4 cu. in/cycle 3 in air motor.
2. Pail cover required to reduce solvent loss.

55 Gallon Drum Dispensing System:
1. Pump – 4:1 ratio double acting ball type check pump, 4 cu. in/cycle 3 in air motor, bung style pump.

Accessories:
Brush: Typical brushes designed for oil based paints may be used.

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, unopened packaging, out of direct sunlight. Lower temperatures cause increased viscosity of a temporary nature. For best performance, use this product within 24 months from date of manufacture.

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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