

August, 2016

3M™ Nitrile High Performance Rubber & Gasket Adhesive 847

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 847 meets the requirements of Mil-C-4003.
- 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.



3M™ Nitrile High Performance Rubber & Gasket Adhesive 847

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

Property	Values		Notes	Test Condition
Color	Dark Brown			
Solids Content by Weight	33 to 39 %			
Flash Point	0 °F	-18 °C	Closed Cup	
Solvent	Acetone			
Viscosity	1500 to 3200 cP		Brookfield Viscometer RVF #3 Sp. @ 20 rpm	80°F(27°C)
Bonding Range	Up to 15 min		10 mil wet film 2 surfaces	

Typical Uncured Physical Properties

Property	Values
Base	Nitrile Rubber
Net Weight	7.4 to 7.8 lb/gal

Typical Performance Characteristics

180° Peel Adhesion	Dwell/Cure Time	Test Condition
208 oz/in	1 day @ Room Temperature	Room Temperature
376 oz/in	3 days @ Room Temperature	Room Temperature
440 oz/in	5 days @ Room Temperature	Room Temperature
496 oz/in	7 days @ Room Temperature	Room Temperature
560 oz/in	2 wk @ Room Temperature	Room Temperature
640 oz/in	3 wk @ Room Temperature	Room Temperature
320 oz/in	After 3 wk @ Room Temperature	30°F(1°C)
256 oz/in	After 3 wk @ Room Temperature	150°F(66°C)
144 oz/in	After 3 wk @ Room Temperature	180°F(82°C)

Property: 180° Peel Adhesion
Substrate: Canvas to Steel

Typical Performance Characteristics (continued)

Overlap Shear Strength	Test Condition
200 lb/in ²	Room Temperature
152 lb/in ²	30°F(1°C)
20 lb/in ²	150°F(66°C)
9 lb/in ²	180°F(82°C)

Property: Overlap Shear Strength
 Dwell/Cure Time: 3 wk @ Room Temperature
 Substrate: Birch to Birch
 Substrate Notes: 1/8in

Handling/Application Information

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.

1. Pumping:

3M™ Nitrile High Performance Rubber & Gasket Adhesives 847 and 847H

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:

1. Hose – nylon lined, 500 psi working pressure minimum.
2. Spray: Rubber & Gasket Adhesive 847 Production Type Spray Equipment

Spray Applicator	Air Cap	Fluid Tip	Air Pressure	Approximate Air Requirement*	Fluid Flow**
DeVilbiss JGA or MSA	777	FX	50 psi	14½ CFM	3 fl. oz./min.
Binks No. 95 or 2001	63PB	63BSS	40 psi	12½ CFM	1-2 fl. oz./min.

Airless Spray:

This adhesive is not recommended for airless spraying.

*2 H.P. Compressor for intermittent use. 3 H.P. Compressor for continuous use.

**To Measure Fluid Flow: Pressurize fluid source only; pull trigger; flow material into measuring device for 60 seconds; increase or decrease fluid source pressure to obtain desired fluid flow.

All material hoses should be nylon or PVA lined.

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

Handling/Application Information (continued)

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, flow or spray 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, flow or spray 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.

Storage and Shelf Life

Store product at 60-80°F (15-27°C) for maximum storage life. Higher temperatures reduce normal storage life. Lower temperatures cause increased viscosity of a temporary nature. Rotate stock on a "first in-first out" basis.

When stored in the original unopened container, under the conditions recommended, this product has a shelf life of 24 months from date of manufacture.

Industry Specifications

Mil-C-4003

Trademarks

3M is a trademark of 3M Company.

References

Safety Data Sheet (SDS)

https://www.3m.com/3M/en_US/company-us/SDS-search/results/?gsaAction=msdsSRA&msdsLocale=en_US&co=ptn&q=847

Family Group

	847	847H
Color	Dark Brown	Dark Brown
Solids Content by Weight (%)	33 to 39	46 to 55

ISO Statement

This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001 standards.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

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