Technical data sheet

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Manufacturer:	3M DEUTSCHLAND GMBH
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3M™ 847/847H RUBBER & GASKET ADHESIVE

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3M™
Nitrile High Performance Rubber & Gasket Adhesive
847 • 847H

Technical Data **May, 2019**

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.

Typical Physical Properties

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

	3M™ Nitrile High Performance Rubber & Gasket Adhesive	
	847	**847H**
Viscosity (approx.): Brookfield RVF @ 80°F (27°C)	1500-3200 cps. (#3 sp @ 20 rpm)	35,000-90,000 cps. (#6 sp @ 4 rpm)
Solids Content (by wt.):	33-39%	46-55%
Base:	Nitrile Rubber	Nitrile Rubber
Color (wet & dry):	Dark Brown	Dark Brown
Net wt. (approx.): (lbs/gallon)	7.4-7.8 lbs/gal	7.5-7.9 lbs/gal
Flashpoint (closed up):	0°F (-18°C)	0°F (-18°C)
Solvent:	Acetone	Acetone
Bonding Range: (10 mil wet film 2 surfaces)	Up to 15 minutes	Up to 10 minutes

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, 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.

Application Equipment Suggestions

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.

Typical Adhesive Performance Characteristics

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rubber & gasket adhesive 847 and 847H

180° Peel Strength Canvas/Steel			Overlap Shear Strength 1/8 in. / 1/8 in. Birch (Room temperature aged for 3 weeks)	
Time @ 75°F (14°C)	Test Temp	Value (piw)	Test Temp	Value (psi)
1 day	75°F (14°C)	13	30°F (1°C)	152
3 days	75°F (14°C)	23.5	75°F (14°C)	200
5 days	75°F (14°C)	27.5	150°F (66°C)	20
7 days	75°F (14°C)	31	180°F (82°C)	9
2 weeks	75°F (14°C)	35		
3 weeks	75°F (14°C)	40		
3 weeks	30°F (1°C)	20		
3 weeks	150°F (66°C)	16		
3 weeks	180°F (82°C)	9		

Storage

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.

Shelf Life

When stored in the original unopened container, under the conditions recommended, these products have a shelf life from date of manufacture as follows:

3M™ Nitrile High Performance Rubber & Gasket Adhesive 847	24 months
3M™ Nitrile High Performance Rubber & Gasket Adhesive 847H	24 months

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.

Product Use

Many factors beyond 3M’s control and uniquely within user’s knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user’s method of application.

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ISO 9001:2000

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