Scotch-Weld™ 847 Liquid Adhesive

Product Data Sheet

Updated : March 1996
Supersedes : November 1993

Product Description

847 adhesive is a high strength, fast setting nitrile based adhesive. It has excellent resistance to oil, fuel and other aliphatic hydrocarbons, and is resistant to most migratory plasticisers.

847 adhesive is suitable for bonding nitrile and other rubbers to metal, glass, plastics and most other surfaces. It is also suitable for bonding gaskets to oil filters etc.

847 adhesive is widely used in the electronic, radio and TV industries.

Physical Properties
Not for specification purposes

Base	Nitrile Rubber	
Solvent	Acetone	
Flash Point	-17℃	
Solids Content	36% typical	
Specific Gravity	0.89 typical	
Viscosity (Brookfield RVF)	1600 cps typical (#3 spindle, 20rpm)	
Colour	Dark Brown	
Shelf Life	15 months from date of despatch by 3M when stored in the original carton at 21℃ (70℉) & 50 % Relative Humid ity	

Performance Characteristics
Not for specification purposes

180 Peel Strength	Canvas/Aluminium (3M test method C 4013e)	**C 4013 e:** Speed of pulling : 50mm/min.
Time at 23℃	**Test Temperature**	**Value (daN/cm)**
1 hour 96 hours	23℃ 23℃	5.4 10.7

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Performance Characteristics
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Oil resistance

(3M test method C 4013g)

C 4013 g:
Canvas/alu peel samples are cured for 72 hours at 23℃, + 24 hours in oil at 70℃

Time at 70℃	Test Temperature	Value (daN/cm)
24 hours in oil	23℃	7.0

Heat Resistance

(3M test method C 4013 h)

C 4013 h:
Canvas/alu peel samples are cured for 18 hours at 23℃ + 24 hours at 70℃. A weight of 1 kg is applied on the canvas so as the angle between canvas and aluminium if of 90℃. The assembly is heated to 70℃ for 24 hours. After this time, the distance of failure is measured.

Time at 70℃	Test Temperature	Value (mm)
24 hours	70℃	10.0

Guide Line

Following are typical values obtained in 3M Laboratory.

Time at 24℃	Test Temperature	180°Peel Strength Canvas/Steel (daN/cm)	Overlap Shear Strength Birch/Birch (MPa)
1 day	24℃	2.2	-
3 days	24℃	4.0	-
5 days	24℃	4.8	-
7 days	24℃	5.4	-
2 weeks	24℃	6.0	-
3 weeks	24℃	7.0	1.0
3 weeks	-35℃	3.5	1.4
3 weeks	66℃	2.8	0.2
3 weeks	82℃	1.5	0.1

Drying Time

Application temperature range : 15 to 30℃.

Temperature of Film	Time for Cure (minutes)
95℃	120
115℃	40
135℃	12
160℃	8
180℃	5
200℃	2

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Storage Conditions

Store product between 16℃ and 27℃ for maximum storage life.

Directions for Use

Surface Preparation:
Surfaces must be clean, dry and free from oil or greasy film.

Application:
Stir well before using. Apply a thin even coat to one or both surfaces by brush, knife coater, flow gun, notched scraper or other spreading method. Coating both surfaces is preferred since it gives greater strength and permits longer open time before bonding.

Coverage:
Approximately 12m²/litre for a medium brush coat application (0.025mm dry film).

Porous Surface:
Very absorbent materials may require more than one coat. Bond while adhesive is still wet or aggressively tacky.

Non Porous Surface:
Allow adhesive to dry until it is tacky, but does not transfer when touched. Join surfaces with firm pressure.

Drying Time:
Open time for a one surface application is 3 to 10 minutes or 10 to 50 minutes for a two surfaces application.
Drying time depends on temperature, humidity, air movement and porosity of the materials bonded. This product in the bonded assembly may be heat cured to obtain bond strength.

Clean Up:
Excess adhesive may be removed with 3M Solvent No. 2 or Industrial Cleaner. When using solvents for clean up it is essential that safety precautions are observed.

Reactivation:
Greater immediate strength may be obtained by solvent reactivation or heat reactivation.

Solvent Reactivation:
Allow adhesive to dry completely. Wipe adhesive film rapidly with a cloth moistened in either ketone or ester type solvent and complete the bond in the regular manner. If coated areas are kept clean, films of 847 may be solvent reactivated up to six months after application.

Heat Reactivation:
Allow adhesive to air dry completely. Join surfaces and heat in oven, press, or under lamps at 120℃ to 150℃. Allowance must be made for transfer of heat through mating parts to the adhesive film.
Enough pressure should be applied during heating to ensure intimate contact.
Surfaces may be pre-coated up to 7 days in advance of complete bonding.
If desired, to obtain superior properties, heat cure the adhesive.

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Health and Safety Information	Refer to product label and Material Safety Data Sheet for health and safety information before using the product. For information please contact your local 3M Office www.3M.com

3M

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