



ECCOBOND[®] SF 40 A/B

Lightweight, Two Component Epoxy Adhesive

RUDOLPH BROS. & CO.
 Authorized Distributor
 1-800-375-0605
 www.rudolphbros.com
 ADHERING TO QUALITY

Key Feature:	Benefit:
• Lightweight	• Low added weight for airborne applications
• Non-sag paste	• No flow or sag even on vertical surfaces
• Room temperature cure	• Simplified production process

Product Description:

ECCOBOND SF 40 A/B is a two component, thixotropic, syntactic foam epoxy adhesive. It has good bond strength to ceramics, metals, and plastics. ECCOBOND SF 40 A/B is easy to machine, making it a good choice for repairing vertical surfaces with little added weight.

Applications:

ECCOBOND SF 40 A/B is designed for use in aerospace and hydrospace applications where lightweight is desirable.

Instructions For Use:

Thoroughly read the information concerning health and safety contained in this bulletin before using. Observe all precautionary statements that appear on the product label and/or contained in individual Material Safety Data Sheets (MSDS).

To ensure the long term performance of the bonded assembly, complete cleaning of the substrates should be performed to remove contamination such as oxide layers, dust, moisture, salt, and oils which can cause poor adhesion or corrosion in a bonded part. For information on proper substrate preparation, refer to the reprint "Good Adhesive Bonding Starts With Surface Preparation" available from Emerson & Cuming.

Some filler settling is common during shipping and storage. For this reason, it is recommended that the contents of the shipping container be thoroughly mixed prior to use.

Accurately weigh resin and hardener into a clean container in the recommended ratio. Weighing apparatus having an accuracy in proportion to the amounts being weighed should be used.

Blend components by hand, using a kneading motion, for 2-3 minutes. Scrape the bottom and sides of the mixing container frequently to produce a uniform mixture. If possible, power mix for an additional 2-3 minutes. Avoid high mixing speeds which could entrap excessive amounts of air or cause overheating of the mixture resulting in reduced working life.

Apply the adhesive to all surfaces to be bonded and join together. In most applications only contact pressure is required.

Properties of Material As Supplied:

Property	Test Method	Unit	Value - Part A	Value - Part B
Chemical Type			Epoxy	Amine
Appearance	Visual		White paste	Amber liquid
Density	ASTM-D-792	g/cm ³	0.61	0.98
Brookfield Viscosity	ASTM-D-2393	Pa.s cP	Thixotropic Paste	0.095 95

Properties of Material As Mixed:

Property	Test Method	Unit	Value
Mix Ratio - Amount of Part B per 100 parts of Part A		By Weight	9
Working Life (100 g @ 25°C)	ERF 13-70	minutes	>30
Density	ASTM-D-792	g/cm ³	0.64

Cure Schedule:

Cure at any one of the recommended cure schedules. For optimum performance, follow the initial cure with a post cure of 2 - 4 hours at the highest expected use temperature. Alternate cure schedules may also be possible. Contact your Emerson & Cuming Technical Representative for further information.

Temperature	Cure Time
°C	Time
25	2-3 days
65	2-4 hours

"Our service engineers are available to help purchasers obtain best results from our products, and recommendations are based on tests and information believed to be reliable. However, we have no control over the conditions under which our products are transported to, stored, handled, or used by purchasers and, in any event, all recommendations and sales are made on condition that we will not be held liable for any damages resulting from their use. No representative of ours has any authority to waive or change this provision. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program."

Properties of Material After Application:

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240	Shore D	70
Tensile Lap Shear Strength aluminum to aluminum @ 25°C	ASTM D-1002	mPa	14.5
aluminum to aluminum @ 65°C		psi	2,100
		mPa	12.4
		psi	1,800
Water Absorption	ASTM-D-570	%	2.0
Coefficient of Thermal Expansion	ASTM-D-3386	10 ⁻⁶ /°C	33
α^1		10 ⁻⁶ /°C	107
α^2			
Glass Transition Temperature	ASTM-D-3418	°C	107
Temperature Range of Use		°C	-40 to +120
Outgassing ⁽¹⁾	ASTM-E-595		
TML		%	0.23
CVCM		%	0.04
Dielectric Strength	ASTM-D-149	kV/mm	13.8
		V/mil	350
Dielectric Constant @ 1 MHz	ASTM-D-150	-	2.5
Dissipation Factor @ 1 MHz	ASTM-D-150	-	0.02
Volume Resistivity @ 25°C	ASTM-D-257	Ohm-cm	>10 ¹²

⁽¹⁾ per NASA Reference Publication 1124. Sample tested was cured for 48 hours @ 25°C.

Storage and Handling:

The shelf life of ECCOBOND SF 40 Parts A and B are 12 months at 25°C. For best results, store in original, tightly covered containers. Storage in cool, clean and dry areas is recommended. Usable shelf life may vary depending on method of application and storage conditions. Certain resins and hardeners are prone to crystallization. If crystallization does occur, warm the contents of the shipping container to 50-60°C until all crystals have dissolved. Be sure the shipping container is loosely covered during the warming stage to prevent any pressure build-up. Allow contents to cool to room temperature before continuing.

Health and Safety:

The ECCOBOND SF 40 Part A, like most epoxy compounds, possesses the ability to cause skin and eye irritation upon contact. Certain individuals may also develop an allergic reaction after exposure (skin contact, inhalation of vapors, etc.) which may manifest itself in a number of ways including skin rashes and an itching sensation. Handling this product at elevated temperatures may also generate vapors irritating to the respiratory system.

The ECCOBOND SF 40 Part B is classified as a corrosive material. Direct contact with unprotected

eyes or skin can cause severe burns. Certain individuals may also develop an allergic skin or respiratory reaction after exposure. These reactions may manifest themselves in a number of ways including skin rashes, itching sensation and breathing difficulties. Handling this product may also generate vapors irritating to the respiratory system.

Good industrial hygiene and safety practices must be used when handling this product. Proper eye protection and appropriate chemical resistant clothing must be worn to prevent contact. Consult the Material Safety Data Sheet (MSDS) for detailed recommendations on the use of engineering controls, personal protective equipment and first aid procedures.

This information is only a brief summary of the available safety and health data. Thoroughly review the MSDS for more complete information before using this product.

Attention Specification Writers:

The values contained herein are considered typical properties only and are not intended to be used as specification limits. For assistance in preparing specifications, please contact Emerson & Cuming Quality Assurance for further details.

■ Underfills Solder Alternatives C.O.B. Materials

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■ Encapsulants Coatings Adhesives

Electrically Conductive Coatings and Adhesives ■



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