

Hysol

ECCOBOND® 285 / Catalyst 17M-1

Very High Temperature Resistant,
Epoxy Adhesive

Key Feature:	Benefit:
• Very high temperature properties	• Finished assemblies withstand temperatures up to 230 °C
• High thermal conductivity	• Provides conductive heat path between bonded components
• Thixotropic paste	• No flow or sag even on vertical surfaces

Product Description:

ECCOBOND 285 is a thixotropic paste, epoxy resin adhesive. It produces a rigid, high temperature bond to metals, glass, ceramics, and most engineering plastics. ECCOBOND 285 features high thermal conductivity and a low coefficient of thermal expansion, well matched to brass, copper and aluminum.

Applications:

ECCOBOND 285 is designed as a very high temperature resistant adhesive and sealant which yields high strength bonds to metals, ceramics and other high temperature substrates.

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

Properties of Material As Supplied:

Property	Test Method	Unit	Value – ECCOBOND 285	Value – Catalyst 17 M-1
Chemical Type			Epoxy	Anhydride
Appearance	Visual		Black Paste	Tan Slurry
Density	TP-13	g/cm ³	2.4	1.40

Properties of Material As Mixed:

Property	Test Method	Unit	Value
Mix Ratio - Amount of Catalyst per 100 parts of ECCOBOND 285		By Weight	10
Working Life (100 g @ 25°C)	ERF 13-70	hours	>24
Density	TP-13	g/cm ³	2.24

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 Henkel Corporation.

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. Power mixing is preferred to ensure a homogeneous product.

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.

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.

Temperature (°C)	Cure Time (hours)
120	8
150	6
175	3
205	2

Properties of Material After Application:

Property	Test Method	Unit	Value
Hardness	TP-311	Shore D	90
Flexural Strength	ASTM-D-790	mPa psi	117 17,000
Tensile Lap Shear Strength aluminum to aluminum @ 25°C	ASTM D-1002	mPa psi	18.6 2,700
aluminum to aluminum @ 150°C		mPa psi	14.5 2,100
Coefficient of Thermal Expansion	TMA	10 ⁻⁶ /°C	27
Thermal Conductivity	ASTM-D-2214	W/m.K	1.38
		Btu-in/hr-ft ² -°F	9.6
Temperature Range of Use		°C	-40 to +230
Volume Resistivity @ 25°C	TP-183	Ohm-cm	10 ¹⁵

TP's are internal test procedures typically derived from ASTM or other norms. Copies of these tests procedures can be obtain upon request.

Storage and Handling:

The shelf life of ECCOBOND 285 is 12 months at 25°C. For best results, store in original, tightly covered containers. Storage in a clean, dry area. 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 285, 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.

Good industrial hygiene and safety practices should be followed when handling this product. Proper eye protection and appropriate chemical resistant clothing should be worn to minimize direct contact. Consult the Material Safety Data Sheet (MSDS) for detailed recommendations on the use of engineering controls and personal protective equipment.

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.

Medical Implantable Disclaimer

"In the event this product is intended by you for use in implantation in the human body, you are hereby advised that Henkel Corporation has not performed clinical testing of these materials for implantation in the human body nor has Henkel Corporation sought, nor received, approval from the FDA for the use of these material in implantation in the human body. It is YOUR responsibility, as a manufacturer of any such device, to ensure that all materials and processes relating to the manufacture of any medical device fully comply with all applicable federal, state and local laws, rules, regulations and requirements as well as any such laws, rules, regulations, directives or other orders of any foreign country where such product is sold. If you have not undertaken the necessary investigations to ensure compliance you are advised NOT TO USE this product in the manufacture of any device which is to be implanted in the human body. No representative of ours has any authority to change the foregoing provisions."

Hysol

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 // Electrically Conductive Coatings and Adhesives



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