



ECCOBOND[®] A 359

Aluminum Filled, Thixotropic, Non-Sag, Epoxy Adhesive

Key Feature:	Benefit:
<ul style="list-style-type: none"> One component 	<ul style="list-style-type: none"> Ease of use
<ul style="list-style-type: none"> Non-sag paste 	<ul style="list-style-type: none"> No flow or sag even on vertical surfaces
<ul style="list-style-type: none"> Heat Resistance 	<ul style="list-style-type: none"> Assemblies can survive severe environmental conditions

Product Description:

ECCOBOND A 359 is a one component, aluminum filled, thixotropic, non-sag paste epoxy adhesive. It has exceptional thermal stability and resistance to water and solvents. ECCOBOND A 359 has high bond strength at elevated temperatures and can also be cured via induction or dielectric heating.

Applications:

ECCOBOND A 359 is designed for magnet and speaker assemblies, batteries, compressors and as a replacement for brazing in pipe and air conditioner tube assemblies.

Properties of Material As Supplied:

Property	Test Method	Unit	Value
Chemical Type			Epoxy
Appearance	Visual		Gray, thixotropic paste
Density	TP-13	g/cm ³	1.50
Press Flow	TP 31	seconds	100 - 200
Sag Resistance	TP 29	mils	380

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

Cure Schedule:

Cure at any one of the recommended cure schedules. This product may generate excessive heat if cured rapidly in thicknesses greater than 0.250 inches (10 mm) at temperatures above 120°C.

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.

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

Temperature	Cure Time
°C	Time
100	90 minutes
120	30 minutes
160	5 minutes
200	40 seconds

"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 @ 25°C @ 120°C	TP-311	Shore D	85 80
Tensile Lap Shear Strength aluminum to aluminum @ 25°C	TP-21	mPa psi	20.6 3,000
aluminum to aluminum @ 150°C		mPa psi	24.0 3,500
steel to steel @ 25°C		mPa psi	22.6 3,300
steel to steel @ 150°C		mPa psi	24.7 3,600
Temperature Range of Use		°C	-40 to +180
Outgassing ⁽¹⁾ TML CVCM	NASA OUTGASSING	% %	0.39 0.00

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⁽¹⁾ per NASA Reference Publication 1124. Sample tested was cured for 1 hour @ 121°C.

Storage and Handling:

The shelf life of ECCOBOND A 359 is 2 months at 25°C. For best results, store in original, tightly covered containers. Storage in cool, clean and dry areas is recommended.

Health and Safety:

The ECCOBOND A 359, 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 National Starch (or Emerson & Cuming) has not performed clinical testing of these materials for implantation in the human body nor has National Starch (Emerson & Cuming) 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."