Hysol

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ECCOBOND 104 A/B

August 2010

PRODUCT DESCRIPTION

ECCOBOND 104 A/B provides the following product characteristics:

Technology	Epoxy
Technology (Part B)	Anhydride
Appearance (Part A)	Black liquid
Appearance (Part B)	White powder
Components	Two component - requires mixing
Mixing Ratio, by weight Part A: Part B	100 : 64
Product Benefits	• Excellent chemical resistance • Non-conductive • High shear strength • High temperature resistance • Long pot life
Cure	Heat cure
Application	Assembly
Key Substrates	Metals, Glass, Ceramic and Thermoset plastic
Operating Temperature	-25 to 230ºC

ECCOBOND 104 A/B adhesive is designed for applications requiring very high temperature exposures. This adhesive can withstand continuous exposure at temperatures as high as 230 ºC. It has also been tested to withstand short term exposures up to 280ºC.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Part A Properties :

Viscosity @ 25 °C, mPa·s (cP)	25,000
Specific Gravity	1.35
Shelf Life @ 25°C, months	6

Flash Point - See MSDS

Part B Properties:

Shelf Life @ 25°C, months	6

Mixed Properties:

Working Time, 100 g mass @ 25 °C, hours	>12
Density , g/cm³	1.4

TYPICAL CURING PERFORMANCE

Cure Schedule

1 hour @ 200°C
2 hours @ 175°C
3 hours @ 150°C
6 hours @ 120°C

For optimum performance, follow the initial cure with a post cure of 2 to 4 hours at the highest expected use temperature.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties:

Hardness, Shore D	90
Coefficient of Thermal Expansion TMA, 10^{-6}/ºC	60
Glass Transition Temperature DSC/TMA, °C	>225

Electrical Properties:

Volume Resistivity @ 25ºC, ohm-cm	10^{15}
Dielectric Strength, kV/mm	15.7

Outgassing Properties:

Outgassing , per NASA Reference Publication 1124, %:
sample cured 6 hours @ 120°C

TML	0.52
CVCM	0.08

Chemical Resistance:

Typical Solvent and Chemical Resistance % Weight Change After 7days Immersion @ 24ºC

Chemical	% Weight Change	Chemical	% Weight Change
30% H2so4	+ 0.19	10% NaCl	+ 0.21
3% H2so4	+ 0.26	5% Phenol	+ 0.23
10% NaOH	+ 0.11	Distilled H2O	+ 0.20
1% NaOH	+ 0.22	10% Hno3	+ 0.23
95% c2h5oh	+ 0.7	10% HCl	+ 0.22
50% c2h5oh	+ 0.18	5% ch2cooh	+ 0.24
Acetone	+ 0.06	10% nh4oh	+ 0.76
Ethyl Acetate	+ 0.00	2% Na2CO3	+ 0.22
CCl4	+ 0.04	3% h2o2	+ 0.23
Toluene	+ 0.04	10% Citric Acid	+ 0.22
Heptane	+ 0.02	Oleic Acid	+ 0.09
JP-4	+ 0	JP-5	0

TYPICAL PERFORMANCE OF CURED MATERIAL

Miscellaneous:

Tensile Lap Shear Strength :
Aluminum to Aluminum

Temp °C	MPa	psi
@ 25ºC	12.4	1,800
@ 150ºC	11.7	1,700
@ 230ºC	9.7	1,400

GENERAL INFORMATION

For safe handling information on this product, consult the Material Safety Data Sheet, (MSDS).

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DIRECTIONS FOR USE

1. 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.
2. 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.
3. Blend components by hand, using a kneading motion, for 2 to 3 minutes and scrape the bottom and sides of the mixing container frequently to produce a uniform mixture.
4. If possible, power mix for an additional 2 to 3 minutes. Avoid high mixing speeds which could entrap excessive amounts of air or cause overheating of the mixture resulting in reduced working life.
5. Apply adhesive to all surfaces to be bonded and join together.
6. In most applications only contact pressure is required.

Storage

Store in original, tightly covered containers in clean, dry areas. Storage information may be indicated on the product container labeling.

Optimal Storage: 25°C. Storage below 25°C or greater than 25°C can adversely affect product properties.

Material removed from containers may be contaminated during use. Do not return product to the original container. Henkel Corporation cannot assume responsibility for product which has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or Customer Service Representative.

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

Conversions

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = inches
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·m x 0.738 = lb·ft
N·mm x 0.142 = oz·in
mPa·s = cP

Note

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Reference 0.1