Technical Data Sheet

LOCTITE ECCOBOND F 253

September 2012

PRODUCT DESCRIPTION

LOCTITE ECCOBOND F 253 provides the following product characteristics:

Technology	Epoxy
Appearance (Unmixed)	Light yellow
Appearance (Mixture)	Green/Blue
Appearance (cured)	Reddish-amber
Cure	Heat cure
Product Benefits	• Low stress • Low viscosity • Excellent wicking • Good high temperature performance • Resistant to mechanical impact • Excellent thermal shock resistance • Tough adhesion to a wide variety of fiber optic and optic materials • Color keyed formulation that indicates cure status
Mix Ratio, by weight - Resin : Hardener	100 : 10
Operating Temperature	-60 to 175 °C
Application	Assembly
Typical Optic Application	Fiber optic assembly and Other optic applications
Substrates	Most metals, Ceramic, Glass and Plastics

LOCTITE ECCOBOND F 253 two-part epoxy is formulated to change color during the cure process to indicate the cure statusLOCTITE ECCOBOND F 253 bonds offer resistance to water and weathering, gasses and vapors, petroleum products and other organic and inorganic compounds

LOCTITE ECCOBOND F 253 passes NASA outgassing standards.

TYPICAL PROPERTIES OF UNCURED MATERIAL

Thixotropic Index	1.0
Viscosity @ 25 °C, cP:	
After Mixing	1,750
Specific Gravity, mixed	1.2
Reactive solids contents, %	100
Pot Life 25 grams, hour	1
Work Life25 grams, hours	2
Flash Point - See SDS	

TYPICAL CURING PERFORMANCE

Cure Schedule

15 minutes @ 100°C or
5 minutes @ 125°C or
1 minute @ 150°C

Percent Volatiles

VOC, grams/liter	19.6

An additional post cure of 30 minutes @ 150ºC is recommended when application temperatures higher than 150ºC are anticipated.

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 :

Coefficient of Thermal Expansion ppm/°C:	
Below Tg	2.02×10^{02}
Above Tg	6.27×10^{01}
Glass Transition Temperature (Tg), °C	116
Hardness, Shore D	88
Refractive Index	1.56
Water Absorption , after 24 hours saturation, %	0.004

TYPICAL PERFORMANCE OF CURED MATERIAL

Outgassing Properties

Total Mass Loss, %	0.57
Collected Volatile Condensable Material, %	0.04

Miscellaneous

Lap Shear Strength, psi:

Substrate	
Aluminum to Aluminum	2700

GENERAL INFORMATION

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

DIRECTIONS FOR USE

1. Carefully clean and dry all surfaces to be bonded.
2. Remove clamp and thoroughly mix the LOCTITE ECCOBOND F 253 epoxy adhesive system components in the handy BIPAX mixing-dispenser package until color is uniform throughout.
3. Apply this completely mixed adhesive to the prepared surfaces, and gently press these surfaces together. Contact pressure is adequate for strong, reliable bonds; however, maintain contact until adhesive is completely cured.
4. Some separation of components 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.
5. Some ingredients in this formulation provided in BIPAX, TRA-PAX and bulk packaging may crystallize when subjected to low temperature storage. A gentle warming cycle of 52ºC for 30 minutes prior to mixing components may be necessary. Crystallized epoxy components do not react as well as liquid components and should be redissolved prior to use for best results.

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.

Storage
The expiration date for pre-mixed and frozen materials is based upon dry storage conditions at or below the temperature indicated on each package. Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage : 27 °C

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. Contents may separate during storage. Resin or hardener in bulk containers (e.g., quarts, gallons) should be thoroughly mixed prior to combining them to obtain all the benefits of the properties designed into the formulation.

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
psi x 145 = N/mm²
MPa = N/mm²
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:
The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.
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Reference 0.4