ANGSTROM SCIENCES
40 S. Linden Street, Duquesne, PA 15110 USA T: +1-412-469-8466 F: +1-412-469-8511 angstromsciences.com

ON-1109 Product Data Sheet

Room Temperature Conductive Silver Epoxy Adhesive

DESCRIPTION

ON-1109 is an electrically conducting silver-filled epoxy compound recommended for electronic bonding and sealing applications that require a combination of good mechanical and electrical properties. This two-part, smooth paste formulation of refined pure silver and epoxy is free of solvents and copper or carbon additives. It develops strong, durable, electrically and thermally conducting bonds and coatings between many different and dissimilar materials such as metals ceramics, glass and plastic laminates. ON-1109 cures at room temperature and can be used as a “cold solder” for heat sensitive components where hot-soldering is impractical. It also can be used for the assembly and repair of electrical modules, printed circuits, wave guidelines, flat cables and high frequency shields. This adhesive complies with the requirements of NASA’s Outgassing Specification.

Application Directions

① Carefully clean and dry all surfaces to be bonded.

② Remove clamp and thoroughly mix the ON-1109 epoxy adhesive system components in the mixing dispenser package until the 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.

PROPERTY	***TYPICAL VALUES***
Color	Silver
Specific Gravity	2.45
Viscosity, (after mixing) cps, @ 25° C	100,000
Thixotropic Index (5 rpm/10 rpm)	3.5
Operating Temperature range, °C	-60 to 110
Hardness, Shore D	80
Mix Ratio, parts by weight, Resin/Hardener	100/6
Coefficient of expansion, cm/cm/°C	$49 \bullet 10^{-6}$
Thermal conductivity, cal-cm/cm^{2}sec°C	$37 \bullet 10^{-4}$
Glass transition (Tg),°C, room temp cure	52
Ultimate	70
Volume resistivity, ohm-cm @ 25°C	
24 hours @ 25°C	0.0010
2 hours @ 65°C	0.0009
1 hour @ 110°C	0.0006
15 minutes @ 150°C	0.0005
5 minutes @ 160°C	0.0003
Lap Shear, alum. To alum., psi	
24 hours @ 25°C	700
2 hours @ 65°C	1000
1 hour @ 110°C	1600
15 minutes @ 150°C	1600
Outgassing (NASA)	Passes
VCM (volatile condensable materials NASA)%	0.40

Cure Directions

ON-1109 has a 60 minute pot life thorough mixing in the accurately proportioned package and a low exotherm during the cure cycle. This superior adhesive develops most of its major physical properties after 18 hours at room temperature (overnight at 25°C), however longer cures up to 72 hours at 25°C are required for fully matured bonds. The overall properties can also be attained more rapidly by curing for 4 hours at 65°C when higher cure temperatures are possible.

WARNING: THIS MATERIAL IS SOLD FOR INDSUTRIAL USE ONLY

Uncured epoxy adhesives - consisting of resin and hardener components - may cause dermatitis, skin sensitization or other allergic responses. Prevent all contact with skin and eyes. If contact occurs, flush immediately with plenty of water (get prompt medical attention for eyes). Keep away from heat and open flames. KEEP OUT OF REACH OF CHILDREN. Immediately clean up any spills that may occur.

Updated January 1996