



PNU-46201

(Formerly EGE-201™)

UL RECOGNIZED ENCAPSULANT/ADHESIVE

ELECTRONICS GRADE, POLYURETHANE, ROOM TEMPERATURE REPAIRABLE,
ANTISTATIC, CLEAR ADHESIVE/ENCAPSULANT

The two component polyurethane compound described in this data sheet is specifically designed for the encapsulation by casting of completed circuit board. The cured material meets the flammability requirements of UL 94, V-O at thickness of 0.070 in. and greater (UL File Number E116296) and provides long term circuit protection from -55°C. to 125°C.. The material bonds well to most metals, ceramics and plastics as well as to epoxy and paper phenolic circuit boards and, when necessary, allows repair by cutting away material in the area of the affected component, replacing the component and repotting. Some of the important properties of PNU 46201 are highlighted below:

- * LOW SHRINKAGE DURING CURE
- * EXCELLENT FLEXIBILITY AT LOW AND HIGH TEMPERATURE
- * EXCELLENT FLOW BEFORE AND DURING CURE
- * WATER WHITE COLOR AND SMOOTH SURFACE AFTER CURE
- * EXCELLENT HEAT RESISTANCE
- * ROOM TEMPERATURE REPAIRABILITY
- * EXCELLENT ADHESION TO MOST SUBSTRATES WITHOUT PRIMERS
- * FLAME RETARDANT
- * EXCELLENT HUMIDITY RESISTANCE

TYPICAL PROPERTIES

Uncured, Mixed System

PROPERTY TESTED	PNU 46201
Mix Ratio By Weight	100 Part A \ 15.4 Part B
By Volume	6.5 Part A \ 1.0 Part B
Viscosity At 77°F.	Approx. 30,000 Cp
Pot Life At 77°F.	>1hr. Viscosity Double
RECOMMENDED CURE CYCLES: 24-48 Hr./RT (77°F.) or 3 Hr./180°F. or 2 Hr./212°F. or 1/2 Hr/250°F.	
CURE	
2 Hour at 212°F.	
Specific Gravity	1.2
Hardness, Shore (ASTM A 2240, Note 8)	A/45/1, A/45/10
Color	Water White
(May be modified to meet your requirements)	
Glass Transition Temperature, °F.	-40
% Linear Shrinkage on Cure	1.4



Heat Resistance (Aged 1 week at 250°F.)	
% Weight Loss	1.0
Hardness	A/45/1, A/45/10
Steam Resistance (Aged 1 week at 5PSI Sat. Steam)	
% Weight Change	+1.3
Hardness	A/45/1, A/45/10
Flammability (1/16"-1/2")	
UL94	VO

ELECTRICAL PROPERTIES

Dielectric Constant	
1.0kHz	7.60
100.0kHz	6.85
Dissipation Factor	
1.0kHz	0.051
100.0kHz	0.124
Volume Resistivity (DC), Ohm-cm	
10 V	4.7×10^{12}
100 V	1.5×10^{12}
500 V	8.3×10^{11}

APPLICATION INSTRUCTIONS

PNU 46201 contains no MDI or TDI and all active isocyanate is polymeric in nature. Neither Part A nor Part B should be exposed to ambient air for prolonged periods of time, and the containers should be covered when not in use. If the components are to be used in a continuous mixer, the feed tanks should be vented through a dessicated air vent or dry Nitrogen. Components to be encapsulated should be clean and dry, and should not be contaminated with solder flux, silicone grease or other uncured materials.

For evaluation or small production runs, warm 100 g of Part A to 35°C. (95°F) and mix thoroughly with 15.4 g of Part B in a metal or plastic container (no more than 1/3 full) with a metal or plastic spatula. Degas for 10 to 15 minutes at 0.5mmHg or less. This step gets rid of air that was incorporated during mixing and can be eliminated in actual production if meter mix machines are used. IPN can recommend suppliers of Meter mix machines specifically for PNU 46201. Cure per instructions above.



Alternate cures are: 24-48 Hrs. at RT (>77°F.)
 3 Hrs. at 180°F. or
 1/2 Hr. at 250°F (Forced Convection Oven).

AVAILABILITY

PNU 46201 is available in two part kits. Part numbers for quotation and ordering purposes are:

EGE-01-201	1 Pint (1 LB.)
EGE-02-201	1 Quart (2 LBS.)
EGE-04-201	1 Gallon (8 LBS.)
EGE-06-201	10 Gallon (90 LBS.)
EGE-08-201	55 Gallon (Available in drums, but not as kits)

NOTE:

The safe use of the products or procedures described above requires proper ventilation, cleanliness, protective clothing and minimum contact. The products are for industrial use only, and it is assumed that the uncurled materials will contact only properly trained persons competent to work with the resins and hardeners. Workers and the work area should be cleaned with soap and water immediately after contamination. Use protective gloves and goggles or face masks. In case of eye contact, irrigate eyes immediately with large volumes of water for at least 15 minutes and obtain prompt medical attention. Product safety data sheets are available on request. The information contained herein is believed to be reliable. Properties given are typical values and are not intended for use in preparing specifications. For information concerning specification preparation, contact IPN INDUSTRIES, INC.™