

LOCTITE® PE 8083 AB

November 2020

PRODUCT DESCRIPTION

LOCTITE® PE 8083 provides the following product characteristics:

Technology	Epoxy
Chemical Type	Epoxy
Appearance - Part A	Black
Appearance - Part B	Light yellow
Component	Two components
Mixing Ratio, by weight Part A : Part B	9 : 1
Curing Condition	Heat cure
Application	Encapsulation of motor stators, transformer coils, transmission actuators

LOCTITE® PE 8083 are solvent free, thermal conductive potting product. This material has high thermal conductivity while achieving low mixed viscosity for easy processing, has excellent electrical insulation and Automatic Transmission Fluid (ATF) oil resistance

LOCTITE® PE 8083 is recommended for encapsulation of components that require heat dissipation and good thermal shock resistance.

TYPICAL PROPERTIES OF UNCURED MATERIAL**Part A Properties**

Specific Gravity @ 25°C, g/cc	2.3 to 2.6
Viscosity @ 25°C, mPa·s (Rheometer, PP25)	80,000 to 130,000

Part B Properties

Specific Gravity @ 25°C, g/cc	1.1 to 1.2
Viscosity @ 25°C, mPa·s (Brookfield LVT, 1#, 30 rpm)	60 to 160

Mixed Properties

Viscosity @ 25°C, mPa·S (Rheometer, PP25)	15,000 to 25,000
Viscosity @ 40°C, mPa·S (Rheometer, PP25)	6,000 to 10,000
Viscosity @ 60°C, mPa·S (Rheometer, PP25)	2,000 to 5,000
Working life, 100 grams @ 25°C, minutes	>240
Working life, 100 grams @ 60°C, minutes	>60

TYPICAL PROPERTIES OF CURED MATERIAL

Cured @ 80°C 1 h + @ 120°C 2 h

Physical Properties

Thermal Conductivity, W/(m·K)	0.8 to 1.2
Hardness, Shore D	80 to 90
Glass Transition Temperature, °C	85 to 100
Density, gm/cc	2.2 to 2.4
Lap Shear Strength (Al/Al), MPa	15 to 20
Breakdown Voltage (2mm), kV/mm	>15
Volume resistivity, ohm·cm 25°C	>1×10 ¹⁴
Volume resistivity, ohm·cm 90°C	>1×10 ¹³
Volume resistivity, ohm·cm 150°C	>1×10 ¹²

GENERAL INFORMATION

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

Product Benefits

- Excellent electrical insulation at room & high temperature.
- Excellent Automatic Transmission Fluid(ATF) oil resistance 150°C.
- High thermal conductivity, low mixed viscosity for easy process.
- Solvent free, no VOC produced during cured process.
- Excellent thermal shock resistance -40 to 150°C.
- Good adhesion to metal.

Directions For Use:

- Complete cleaning of the components and substrates should be performed to remove contamination such as dust, moisture, salts and oils which may decrease adhesion and electrical insulation.
- To ensure a void-free embedment, vacuum deairing should be used to remove any entrapped air during the mixing operation.
- Advice deairing at a controlled vacuum, foam may rise from the material multiple times, deairing can be completed until most of the bubbling has ceased.
- Gentle warming of the assembled components will help to reduce material viscosity and improve the flow the material into the components, but material pot life may be shortened.
- For optimum performance, the recommended curing conditions are one hour at 80°C plus two hours at 120°C. Curing conditions (time and temperature) may vary based on customer's experience and their application

requirements, as well as customer curing equipment, oven loading and actual oven temperature.

- More specific operation please contact Technical Service Center.

Storage

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 5 to 35°C

Part A is highly filled and fillers may slightly settle down after long time storage. Before mixing, part A must be homogeneous and should be stirred appropriately before use. Stirring can also be done at 40 or 60°C.

Part B store at cool and dry place. Keep the container tightly sealed after using.

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.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$

$\text{kV/mm} \times 25.4 = \text{V/mil}$

$\text{mm} / 25.4 = \text{inches}$

$\mu\text{m} / 25.4 = \text{mil}$

$\text{N} \times 0.225 = \text{lb}$

$\text{N/mm} \times 5.71 = \text{lb/in}$

$\text{N/mm}^2 \times 145 = \text{psi}$

$\text{MPa} \times 145 = \text{psi}$

$\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$

$\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$

$\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$

$\text{mPa}\cdot\text{s} = \text{cP}$

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Reference 1.0