# Epoxies, Ect. 20-2330

### Polyurethane

Epoxies, Etc.

#### Message:

This two component urethane series are low durometer (30-90 Shore A), potting, casting, and encapsulating compounds. They are unfilled materials engineered to provide excellent hydrolytic stability and low moisture permeability. They have outstanding thermal cycling properties, low glass transition temperatures and low embedment stress to sensitive electronic components.

These unique urethane formulations maintain their integrity over a wide operating temperature range. The low glass transition temperature of approximately -70°C makes these urethanes ideal for low temperature potting applications. These systems exhibit very little hardness increase when cooled to -72°C.

Features: Maintains flexibility at low temperatures Thermal cycling stability Excellent electrical insulation Chemical resistance Low stress on sensitive components Hydrolytic stability

| General Information            |                                    |          |  |  |
|--------------------------------|------------------------------------|----------|--|--|
| Features                       | Electrically Insulating            |          |  |  |
|                                | Good Chemical Resistance           |          |  |  |
|                                | Good Flexibility                   |          |  |  |
|                                | Hydrolytically Stable              |          |  |  |
|                                | Low to No Water Absorpt            | on       |  |  |
|                                |                                    |          |  |  |
| Uses                           | Electrical/Electronic Applications |          |  |  |
| Appearance                     | Black                              |          |  |  |
| Processing Method              | Casting                            |          |  |  |
|                                | Encapsulating                      |          |  |  |
|                                | Potting                            |          |  |  |
|                                |                                    |          |  |  |
| Thermal                        | Nominal Value                      | Unit     |  |  |
| Glass Transition Temperature   | -70.0                              | °C       |  |  |
| CLTE - Flow                    | 2.3E-4                             | cm/cm/°C |  |  |
| Electrical                     | Nominal Value                      | Unit     |  |  |
| Surface Resistivity            | 1.0E+16                            | ohms     |  |  |
| Thermoset                      | Nominal Value                      | Unit     |  |  |
| Thermoset Mix Viscosity (25°C) | 3000                               | cP       |  |  |
| Additional Information         | Nominal Value                      | Unit     |  |  |
| Operating Temperature          | -40.0 to 125                       | °C       |  |  |
| Uncured Properties             | Nominal Value                      | Unit     |  |  |
| Color                          | Black                              |          |  |  |
| Mix Ratio by Weight (PBW)      |                                    |          |  |  |
| Part A                         | 100                                |          |  |  |

| Part B   | 15  |          |  |
|--|---|----------|--|
| Density  |   |          |  |
| 25℃ <sup>1</sup>   | 0.908   | g/cm³    |  |
| 25°C <sup>2</sup>  | 1.13  | g/cm³    |  |
| Curing Time  |   |          |  |
| 85°C   | 0.66  | hr       |  |
| 65°C   | 1.5   | hr       |  |
| 45°C   | 2.5   | hr       |  |
| 25°C   | 24 to 48  | hr       |  |
| Pot Life <sup>3</sup> (25°C)   | 150   | min      |  |
| Cured Properties   | Nominal Value                                   | Unit     |  |
| Cureu Properties   | Nominal value                                   | Onit     |  |
| Shore Hardness (Shore A)   | 30  |          |  |
|  |   | МРа      |  |
| Shore Hardness (Shore A)   | 30  |          |  |
| Shore Hardness (Shore A)<br>Tensile Strength   | 30<br>0.779                                     | МРа      |  |
| Shore Hardness (Shore A)<br>Tensile Strength<br>Tensile Elongation at Break  | 30<br>0.779<br>110                              | МРа      |  |
| Shore Hardness (Shore A)<br>Tensile Strength<br>Tensile Elongation at Break<br>Relative Permittivity (1 kHz, 25°C)                                     | 30<br>0.779<br>110<br>4.50                      | MPa<br>% |  |
| Shore Hardness (Shore A)<br>Tensile Strength<br>Tensile Elongation at Break<br>Relative Permittivity (1 kHz, 25°C)<br>Volume Resistivity               | 30<br>0.779<br>110<br>4.50                      | MPa<br>% |  |
| Shore Hardness (Shore A)<br>Tensile Strength<br>Tensile Elongation at Break<br>Relative Permittivity (1 kHz, 25°C)<br>Volume Resistivity<br>NOTE       | 30<br>0.779<br>110<br>4.50<br>6.0E+16           | MPa<br>% |  |
| Shore Hardness (Shore A)<br>Tensile Strength<br>Tensile Elongation at Break<br>Relative Permittivity (1 kHz, 25°C)<br>Volume Resistivity<br>NOTE<br>1. | 30<br>0.779<br>110<br>4.50<br>6.0E+16<br>Part A | MPa<br>% |  |

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