

## Lord Adhesives Thermosetâ„¢ ME-542 Underfill Encapsulant

Category : Polymer , Thermoset , Epoxy , Epoxy Encapsulant, Unreinforced

### Material Notes:

LORD Thermosetâ„¢ ME-542 encapsulant is an anhydridefree, thermally conductive, semiconductor grade epoxy underfill product developed for the encapsulation of densely populated area array flip chip devices. It is formulated with the necessary structural strength to handle over-molding processes. Thermoset ME-542 encapsulant is engineered to withstand 260Â°C peak reflow temperatures of lead-free solders. All information provided by Lord.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Lord-Adhesives-Thermoset-ME-542-Underfill-Encapsulant.php](http://www.lookpolymers.com/polymer_Lord-Adhesives-Thermoset-ME-542-Underfill-Encapsulant.php)

| Physical Properties | Metric                               | English                           | Comments     |
|---------------------|--------------------------------------|-----------------------------------|--------------|
| Specific Gravity    | 1.90 g/cc                            | 1.90 g/cc                         |              |
| Water Absorption    | <= 0.80 %                            | <= 0.80 %                         |              |
| Viscosity           | 20000 cP<br>@Temperature 25.0<br>Â°C | 20000 cP<br>@Temperature 77.0 Â°F | TA Rheometer |

| Mechanical Properties | Metric   | English  | Comments |
|-----------------------|----------|----------|----------|
| Modulus of Elasticity | 5.00 GPa | 725 ksi  | Storage  |
| Shear Strength        | 62.0 MPa | 8990 psi | Die      |

| Thermal Properties        | Metric         | English                     | Comments |
|---------------------------|----------------|-----------------------------|----------|
| CTE, linear               | 30.0 Âµm/m-Â°C | 16.7 Âµin/in-Â°F            | Alpha 1  |
|                           | 120 Âµm/m-Â°C  | 66.7 Âµin/in-Â°F            | Alpha 2  |
| Thermal Conductivity      | 0.800 W/m-K    | 5.55 BTU-in/hr-ftÂ²-<br>Â°F |          |
| Glass Transition Temp, Tg | 135 Â°C        | 275 Â°F                     | TMA      |

| Component Elements Properties | Metric    | English   | Comments |
|-------------------------------|-----------|-----------|----------|
| Potassium, K                  | 0.00040 % | 0.00040 % |          |
| Sodium, Na                    | 0.00050 % | 0.00050 % |          |

| Electrical Properties | Metric                                  | English            | Comments |
|-----------------------|-----------------------------------------|--------------------|----------|
| Volume Resistivity    | >= 1.00e+15 ohm-cm<br>@Temperature 25.0 | >= 1.00e+15 ohm-cm |          |

| Electrical Properties | °C<br>Metric          | @Temperature 77.0 °F<br>English | Comments |
|-----------------------|-----------------------|---------------------------------|----------|
| Processing Properties | Metric                | English                         | Comments |
| Cure Time             | 60.0 min              | 1.00 hour                       |          |
|                       | @Temperature 165 °C   | @Temperature 329 °F             |          |
|                       | 90.0 min              | 1.50 hour                       |          |
|                       | @Temperature 150 °C   | @Temperature 302 °F             |          |
| Pot Life              | 2160 min              | 2160 min                        |          |
|                       | @Temperature 25.0 °C  | @Temperature 77.0 °F            |          |
| Gel Time              | 3.00 min              | 3.00 min                        |          |
|                       | @Temperature 150 °C   | @Temperature 302 °F             |          |
| Shelf Life            | 6.00 Month            | 6.00 Month                      |          |
|                       | @Temperature -40.0 °C | @Temperature -40.0 °F           |          |

| Descriptive Properties | Value  | Comments |
|------------------------|--------|----------|
| Appearance             | Black  |          |
| Chloride (%)           | 0.01   |          |
| Consistency            | Liquid |          |

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