

## Epoxy Technology EPO-TEK® 301-2FL Low Stress, Optical Epoxy

Category : Polymer , Thermoset , Epoxy

### Material Notes:

**Product Description:** EPO-TEK® 301-2FL is a two component optical, medical, and semiconductor grade epoxy resin. It is a more flexible version of EPO-TEK® 301-2. **Advantages & Application Notes:** Suggested for LCD optical lamination and sealing of glass plates. The product can resist yellowing over 17 days of continuous UV light exposure. Suitable for LED encapsulation. **Ease of use:** potting and casting, encapsulation, and adhesive. **Semiconductor applications:** underfill for flip chips, glob top encapsulation over wire bonds, spin coating at wafer level. **Compliant adhesive** that will be resistant to impact or vibrations. Low stress adhesive for bonding optics inside OEM / scientific instruments. **Fiber optic adhesive;** bundling fibers, terminating fiber into ferrule, adhesive for mounting optics inside fiber components, bonding glass cover slip over V-groove; spectral transmission of visible and IR light. **BIOCOMPATIBLE and NON-TOXIC;** complies with USP Class VI biocompatibility standards for medical devices and implantation applications. Adhesion to glass, quartz, metals, wood and most plastics is very good. May also be used for impregnating wooden or porous objects for artifact restoration. Capable of both heat cure and room temperature cure. **Information Provided by Epoxy Technology**

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Epoxy-Technology-EPO-TEK-301-2FL-Low-Stress-Optical-Epoxy.php](http://www.lookpolymers.com/polymer_Epoxy-Technology-EPO-TEK-301-2FL-Low-Stress-Optical-Epoxy.php)

| Physical Properties | Metric               | English              | Comments |
|---------------------|----------------------|----------------------|----------|
| Specific Gravity    | 0.890 g/cc           | 0.890 g/cc           | Part B   |
|                     | 1.06 g/cc            | 1.06 g/cc            | Part A   |
| Viscosity           | 100 - 200 cP         | 100 - 200 cP         | 100 rpm  |
|                     | @Temperature 23.0 °C | @Temperature 73.4 °F |          |

| Mechanical Properties | Metric      | English     | Comments |
|-----------------------|-------------|-------------|----------|
| Hardness, Shore D     | 70          | 70          |          |
| Tensile Modulus       | 1.05 GPa    | 153 ksi     | Storage  |
| Shear Strength        | >= 13.8 MPa | >= 2000 psi | Lap      |
|                       | >= 23.4 MPa | >= 3400 psi | Die      |

| Thermal Properties               | Metric       | English        | Comments     |
|----------------------------------|--------------|----------------|--------------|
| CTE, linear                      | 56.0 µm/m-°C | 31.1 µin/in-°F | Below Tg     |
|                                  | 211 µm/m-°C  | 117 µin/in-°F  | Above Tg     |
| Maximum Service Temperature, Air | 150 °C       | 302 °F         | Continuous   |
|                                  | 250 °C       | 482 °F         | Intermittent |
| Minimum Service Temperature, Air | -55.0 °C     | -67.0 °F       | Continuous   |

| Thermal Properties        | Metric     | English   | Comments                                                       |
|---------------------------|------------|-----------|----------------------------------------------------------------|
| Glass Transition Temp, Tg | >= 45.0 °C | >= 113 °F | Dynamic Cure 20—200°C /ISO 25 Min;<br>Ramp 10—200°C @ 20°C/Min |
| Decomposition Temperature | 325 °C     | 617 °F    | Degradation Temperature                                        |

| Optical Properties    | Metric                                | English                               | Comments |
|-----------------------|---------------------------------------|---------------------------------------|----------|
| Refractive Index      | 1.5115<br>@Wavelength 589 nm          | 1.5115<br>@Wavelength 589 nm          | uncured  |
| Transmission, Visible | >= 97 %<br>@Wavelength 1000 - 1600 nm | >= 97 %<br>@Wavelength 1000 - 1600 nm | Spectral |
|                       | >= 99 %<br>@Wavelength 400 - 1000 nm  | >= 99 %<br>@Wavelength 400 - 1000 nm  | Spectral |

| Electrical Properties | Metric                      | English                     | Comments |
|-----------------------|-----------------------------|-----------------------------|----------|
| Volume Resistivity    | >= 6.00e+11 ohm-cm          | >= 6.00e+11 ohm-cm          |          |
| Dielectric Constant   | 3.54<br>@Frequency 1000 Hz  | 3.54<br>@Frequency 1000 Hz  |          |
| Dissipation Factor    | 0.013<br>@Frequency 1000 Hz | 0.013<br>@Frequency 1000 Hz |          |

| Chemical Properties              | Metric  | English | Comments |
|----------------------------------|---------|---------|----------|
| Ionic Impurities - Na (Sodium)   | 58 ppm  | 58 ppm  |          |
| Ionic Impurities - K (Potassium) | 19 ppm  | 19 ppm  |          |
| Ionic Impurities - Cl (Chloride) | 105 ppm | 105 ppm |          |

| Processing Properties | Metric                           | English                           | Comments |
|-----------------------|----------------------------------|-----------------------------------|----------|
| Cure Time             | 180 min<br>@Temperature 80.0 °C  | 3.00 hour<br>@Temperature 176 °F  |          |
|                       | 4320 min<br>@Temperature 23.0 °C | 72.0 hour<br>@Temperature 73.4 °F |          |
| Pot Life              | 600 min                          | 600 min                           |          |

| Processing Properties | 12.0 Month<br>Metric | 12.0 Month<br>English | Comments |
|-----------------------|----------------------|-----------------------|----------|
|                       | @Temperature 25.0 °C | @Temperature 77.0 °F  |          |

| Descriptive Properties | Value           | Comments |
|------------------------|-----------------|----------|
| Color                  | Clear/Colorless | Part A   |
|                        | Clear/Colorless | Part B   |
| Consistency            | Pourable liquid |          |
| Ionic Impurities NH4   | 8 ppm           |          |
| Mix Ratio By Weight    | 100:35          |          |
| Number of Components   | Two             |          |
| Weight Loss            | 0.5%            | 200°C    |
|                        | 0.96%           | 250°C    |
|                        | 3.52%           | 300°C    |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China