

# EPO-TEK® 353ND-T Black

Epoxy; Epoxide

Epoxy Technology Inc.

## Message:

EPO-TEK® 353ND-T Black is a two component, high temperature, thixotropic epoxy for fiber optic, PCB and various medical applications.

| General Information                       |                                    |          |
|-------------------------------------------|------------------------------------|----------|
| Features                                  | High Heat Resistance               |          |
|                                           | Thixotropic                        |          |
| Uses                                      | Adhesives                          |          |
|                                           | Bonding                            |          |
|                                           | Electrical/Electronic Applications |          |
|                                           | Medical/Healthcare Applications    |          |
|                                           | Optical Applications               |          |
| Agency Ratings                            | EC 1907/2006 (REACH)               |          |
|                                           | EU 2003/11/EC                      |          |
|                                           | EU 2006/122/EC                     |          |
| RoHS Compliance                           | RoHS Compliant                     |          |
| Forms                                     | Paste                              |          |
| Physical                                  | Nominal Value                      | Unit     |
| Particle Size                             | < 20.0                             | µm       |
| Degradation Temperature                   | 409                                | °C       |
| Die Shear Strength - > 15 kg (23°C)       | 35.2                               | MPa      |
| Operating Temperature                     |                                    |          |
| Continuous                                | -55 to 225                         | °C       |
| Intermittent                              | -55 to 325                         | °C       |
| Storage Modulus (23°C)                    | 3.86                               | GPa      |
| Thixotropic Index                         | 3.80                               |          |
| Weight Loss on Heating                    |                                    |          |
| 200°C                                     | 0.53                               | %        |
| 250°C                                     | 1.2                                | %        |
| 300°C                                     | 2.4                                | %        |
| Thermal                                   | Nominal Value                      | Unit     |
| Glass Transition Temperature <sup>1</sup> | > 90.0                             | °C       |
| CLTE - Flow                               |                                    |          |
| -- <sup>2</sup>                           | 4.3E-5                             | cm/cm/°C |
| -- <sup>3</sup>                           | 2.3E-4                             | cm/cm/°C |

| Optical                       | Nominal Value                                                  | Unit              |             |
|-------------------------------|----------------------------------------------------------------|-------------------|-------------|
| Transmittance                 |                                                                |                   |             |
| 300 to 1460 nm                | < 5.0                                                          | %                 |             |
| 1550 nm                       | < 7.0                                                          | %                 |             |
| Thermoset                     | Nominal Value                                                  | Unit              | Test Method |
| Thermoset Components          |                                                                |                   |             |
| Part A                        | Mix Ratio by Weight: 10                                        |                   |             |
| Part B                        | Mix Ratio by Weight: 1.0                                       |                   |             |
| Shelf Life (23°C)             | 52                                                             | wk                |             |
| Uncured Properties            | Nominal Value                                                  | Unit              | Test Method |
| Color                         |                                                                |                   |             |
| -- 4                          | Amber                                                          |                   |             |
| -- 5                          | Black                                                          |                   |             |
| Density                       |                                                                |                   |             |
| Part B                        | 1.02                                                           | g/cm <sup>3</sup> |             |
| Part A                        | 1.12                                                           | g/cm <sup>3</sup> |             |
| Viscosity <sup>6</sup> (23°C) | 9.0 to 15                                                      | Pa · s            |             |
| Curing Time (150°C)           | 1.0                                                            | hr                |             |
| Pot Life                      | 180                                                            | min               |             |
| Cured Properties              | Nominal Value                                                  | Unit              | Test Method |
| Shore Hardness (Shore D)      | 80                                                             |                   |             |
| Lap Shear Strength (23°C)     | > 13.8                                                         | MPa               |             |
| Relative Permittivity (1 kHz) | 3.21                                                           |                   |             |
| Volume Resistivity (23°C)     | > 4.0E+12                                                      | ohms · cm         |             |
| Dissipation Factor (1 kHz)    | 3.0E-3                                                         |                   |             |
| NOTE                          |                                                                |                   |             |
| 1.                            | Dynamic Cure 20-200°C/ISO 25<br>Min; Ramp -10-200°C @ 20°C/Min |                   |             |
| 2.                            | Below Tg                                                       |                   |             |
| 3.                            | Above Tg                                                       |                   |             |
| 4.                            | Part B                                                         |                   |             |
| 5.                            | Part A                                                         |                   |             |
| 6.                            | 20 rpm                                                         |                   |             |

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