# LNP™ THERMOCOMP™ COMPOUND DX14354X

REGION ASIA

## DESCRIPTION

LNP Thermocomp compound DX14354X is an improved flow, colorable compound based on PC copolymer resin developed for applications that require Laser Direct Structuring (LDS) for antenna, or electronic circuit manufacturing. Thermocomp compound DX14354X helps customers to improve productivity with stable plating and RF performance, excellent impact strength and surface finish.

## TYPICAL PROPERTY VALUES

Revision 20170913

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| **MECHANICAL** | | | |
| **Tensile Stress, yld, Type I, 50 mm/min** | 54 | MPa | ASTM D 638 |
| **Tensile Stress, brk, Type I, 50 mm/min** | 49 | MPa | ASTM D 638 |
| **Tensile Strain, yld, Type I, 50 mm/min** | 5 | % | ASTM D 638 |
| **Tensile Strain, brk, Type I, 50 mm/min** | 70 | % | ASTM D 638 |
| **Tensile Modulus, 50 mm/min** | 2500 | MPa | ASTM D 638 |
| **Flexural Stress, yld, 1.3 mm/min, 50 mm span** | 85 | MPa | ASTM D 790 |
| **Flexural Stress, brk, 1.3 mm/min, 50 mm span** | 83 | MPa | ASTM D 790 |
| **Flexural Modulus, 1.3 mm/min, 50 mm span** | 2500 | MPa | ASTM D 790 |
| **Tensile Stress, yield, 50 mm/min** | 54 | MPa | ISO 527 |
| **Tensile Stress, break, 50 mm/min** | 47 | MPa | ISO 527 |
| **Tensile Strain, yield, 50 mm/min** | 5 | % | ISO 527 |
| **Tensile Strain, break, 50 mm/min** | 80 | % | ISO 527 |
| **Tensile Modulus, 1 mm/min** | 2460 | MPa | ISO 527 |
| **Flexural Stress, yield, 2 mm/min** | 86 | MPa | ISO 178 |
| **Flexural Modulus, 2 mm/min** | 2560 | MPa | ISO 178 |
| **IMPACT** | | | |
| **Izod Impact, notched, 23°C** | 750 | J/m | ASTM D 256 |
| **Izod Impact, notched 80*10*3 +23°C** | 60 | kJ/m² | ISO 180/1A |
| **THERMAL** | | | |
| **Vicat Softening Temp, Rate A/50** | 128 | °C | ASTM D 1525 |
| **Vicat Softening Temp, Rate B/50** | 128 | °C | ASTM D 1525 |
| **HDT, 1.82 MPa, 3.2mm, unannealed** | 111 | °C | ASTM D 648 |
| **CTE, -40°C to 40°C, flow** | 5.7E-05 | 1/°C | ASTM E 831 |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| CTE, -40°C to 40°C, xflow | 6.E-05 | 1/°C | ASTM E 831 |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm | 113 | °C | ISO 75/Af |
| PHYSICAL | | | |
| Density | 1.29 | g/cm³ | ASTM D 792 |
| Mold Shrinkage, flow, 24 hrs (5) | 0.5 – 0.7 | % | ASTM D 955 |
| Mold Shrinkage, xflow, 24 hrs (5) | 0.5 – 0.7 | % | ASTM D 955 |
| Moisture Absorption (23°C / 50% RH) | 0.05 | % | ISO 62 |
| Melt Volume Rate, MVR at 260°C/5.0 kg | 25 | cm³/10 min | ISO 1133 |
| Melt Volume Rate, MVR at 280°C/2.16 kg | 27 | cm³/10 min | ISO 1133 |
| Melt Volume Rate, MVR at 280°C/21.6 kg | 22 | cm³/10 min | ISO 1133 |
| ELECTRICAL | | | |
| Volume Resistivity | 1.2E+16 | Ohm-cm | ASTM D 257 |
| Surface Resistivity | 1.2E+16 | Ohm | ASTM D 257 |
| Relative Permittivity, 1 GHz | 3.1 | - | ASTM D 150 |
| Dissipation Factor, 1 GHz | 0.006 | - | ASTM D 150 |
| Dielectric Constant, 1.1 GHz | 3.06 | - | SABIC method |
| Dielectric Constant, 1.9 GHz | 3.08 | - | SABIC method |
| Dielectric Constant, 5 GHz | 3.08 | - | SABIC method |
| Dissipation Factor, 1.1 GHz | 0.0063 | - | SABIC method |
| Dissipation Factor, 1.9 GHz | 0.0061 | - | SABIC method |
| Dissipation Factor, 5 GHz | 0.0059 | - | SABIC method |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-1 Flame Class Rating (3) | 1 | mm | UL 94 |
| AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS III | | | |
| Tensile Strain, brk, Type I, 50 mm/min | 70 | % | ASTM D 638 |
| AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS IV | | | |
| Tensile Stress, brk, Type I, 50 mm/min | 44 | MPa | ASTM D 638 |
| INJECTION MOLDING | | | |
| Drying Temperature | 110 – 120 | °C | |
| Drying Time | 2 – 4 | hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 250 – 270 | °C | |
| Nozzle Temperature | 240 – 260 | °C | |
| Front - Zone 3 Temperature | 245 – 265 | °C | |
| Middle - Zone 2 Temperature | 240 – 255 | °C | |
| Rear - Zone 1 Temperature | 230 – 245 | °C | |
| Hopper Temperature | 40 – 60 | °C | |
| Mold Temperature | 40 – 100 | °C | |

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