



## LNP™ THERMOCOMP™ Compound Noryl\_FM4025

### Europe-Africa-Middle East: COMMERCIAL

LNP THERMOCOMP NORYL\_FM4025 compound is GR/MR 40%, high modulus structural foam. 10% weight reduction, 0.250" wall thickness.

| TYPICAL PROPERTIES <sup>1</sup>          | TYPICAL VALUE | Unit                | Standard     |
|------------------------------------------|---------------|---------------------|--------------|
| <b>MECHANICAL</b>                        |               |                     |              |
| FOAM - MECHANICAL 6.4 mm Wt Reduction    | 10            | %                   | -            |
| Tensile Stress, yield, 6.35 mm           | 840           | kgf/cm <sup>2</sup> | ASTM D 638   |
| Tensile Strain, yield, 6.35 mm           | 1.5           | %                   | ASTM D 638   |
| Flexural Stress, yield, 6.4 mm           | 1230          | kgf/cm <sup>2</sup> | ASTM D 790   |
| Flexural Modulus, 6.4 mm                 | 80800         | kgf/cm <sup>2</sup> | ASTM D 790   |
| Hardness, Rockwell M                     | 85            | -                   | ASTM D 785   |
| Taber Abrasion, CS-17, 1 kg              | 100           | mg/1000cy           | ASTM D 1044  |
| Coefficient of Friction on self, Static  | 0.55          | -                   | ASTM D 1894  |
| Coefficient of Friction on steel, Static | 0.52          | -                   | ASTM D 1894  |
| <b>IMPACT</b>                            |               |                     |              |
| FOAM - IMPACT 6.4 mm Wt Reduction        | 10            | %                   | -            |
| Izod Impact, notched, 23°C, 6.4mm        | 7             | cm-kgf/cm           | ASTM D 256   |
| <b>THERMAL</b>                           |               |                     |              |
| FOAM - THERMAL 6.4mm Wt Reduction        | 10            | %                   | -            |
| HDT, 0.45 MPa, 6.4 mm, unannealed        | 118           | °C                  | ASTM D 648   |
| HDT, 1.82 MPa, 6.4 mm, unannealed        | 110           | °C                  | ASTM D 648   |
| CTE, -40°C to 95°C, flow                 | 2.34E-05      | 1/°C                | ASTM E 831   |
| CTE, -40°C to 95°C, xflow                | 3.42E-05      | 1/°C                | ASTM E 831   |
| Relative Temp Index, Elec                | 50            | °C                  | UL 746B      |
| Relative Temp Index, Mech w/impact       | 50            | °C                  | UL 746B      |
| Relative Temp Index, Mech w/o impact     | 50            | °C                  | UL 746B      |
| <b>PHYSICAL</b>                          |               |                     |              |
| FOAM - PHYSICAL 6.4mm Wt Reduction       | 10            | %                   | -            |
| Weight Reduction                         | 10            | %                   | SABIC Method |



## LNP™ THERMOCOMP™ Compound Noryl\_FM4025

### Europe-Africa-Middle East: COMMERCIAL

| TYPICAL PROPERTIES <sup>1</sup>             | TYPICAL VALUE | Unit              | Standard     |
|---------------------------------------------|---------------|-------------------|--------------|
| <b>PHYSICAL</b>                             |               |                   |              |
| Specific Gravity                            | 1.43          | -                 | ASTM D 792   |
| Specific Gravity, foam molded               | 1.29          | -                 | ASTM D 792   |
| Water Absorption, 24 hours                  | 0.08          | %                 | ASTM D 570   |
| Mold Shrinkage, flow, 6.4 mm (5)            | 0.15          | %                 | SABIC Method |
| Mold Shrinkage, xflow, 6.4 mm (5)           | 0.25          | %                 | SABIC Method |
| <b>ELECTRICAL</b>                           |               |                   |              |
| FOAM - ELECTRICAL 6.4 mm Wt Reduction       | 20            | %                 | -            |
| Volume Resistivity                          | 1.E+17        | Ohm-cm            | ASTM D 257   |
| Surface Resistivity                         | 1.E+17        | Ohm               | ASTM D 257   |
| Arc Resistance, Tungsten {PLC}              | 6             | PLC Code          | ASTM D 495   |
| Hot Wire Ignition {PLC}                     | 0             | PLC Code          | UL 746A      |
| High Voltage Arc Track Rate {PLC}           | 4             | PLC Code          | UL 746A      |
| High Ampere Arc Ign, surface {PLC}          | 4             | PLC Code          | UL 746A      |
| Comparative Tracking Index (UL) {PLC}       | 4             | PLC Code          | UL 746A      |
| <b>FLAME CHARACTERISTICS</b>                |               |                   |              |
| FOAM - Flame Class Minimum Density          | 1.26          | g/cm <sup>3</sup> | -            |
| UL Recognized, 94V-1 Flame Class Rating (3) | 2.89          | mm                | UL 94        |
| UL Recognized, 94V-0 Flame Class Rating (3) | 5             | mm                | UL 94        |
| UL Recognized, 94-5VA Rating (3)            | 2.89          | mm                | UL 94        |



## LNP™ THERMOCOMP™ Compound Noryl\_FM4025

### Europe-Africa-Middle East: COMMERCIAL

| PROCESSING PARAMETERS                     | TYPICAL VALUE | Unit |
|-------------------------------------------|---------------|------|
| <b>Structural Foam Molding</b>            |               |      |
| Blowing Agent, Physical System            | Nitrogen Gas  | -    |
| Concentration Range (Blowing Agent)       | 1 - 3         | %    |
| Recommended Concentration (Blowing Agent) | 2             | %    |
| Drying Temperature (Resin)                | 105 - 110     | °C   |
| Drying Time (Resin)                       | 2 - 4         | hrs  |
| Drying Time (Resin, Cumulative)           | 8             | hrs  |
| Melt Temperature                          | 270 - 310     | °C   |
| Nozzle Temperature                        | 270 - 305     | °C   |
| Front Temperature                         | 270 - 305     | °C   |
| Middle Temperature                        | 270 - 305     | °C   |
| Rear Temperature                          | 260 - 290     | °C   |
| Mold Temperature                          | 65 - 80       | °C   |

- Drying is not required/recommended.