



**NORYL™ Resin TPN9221**  
**Asia Pacific: COMMERCIAL**

Transparent NORYL grade with 90dc and V-2 FR

| TYPICAL PROPERTIES <sup>1</sup>             | TYPICAL VALUE   | Unit                | Standard             |
|---------------------------------------------|-----------------|---------------------|----------------------|
| <b>MECHANICAL</b>                           |                 |                     |                      |
| Tensile Stress, yield                       | 680             | kgf/cm <sup>2</sup> | SABIC - Japan Method |
| Tensile Strain, break                       | 15 - 15         | %                   | SABIC - Japan Method |
| Flexural Stress                             | 740             | kgf/cm <sup>2</sup> | ASTM D 790           |
| Flexural Modulus                            | 22400           | kgf/cm <sup>2</sup> | ASTM D 790           |
| <b>IMPACT</b>                               |                 |                     |                      |
| Izod Impact, notched, 23°C                  | 4               | cm-kgf/cm           | ASTM D 256           |
| <b>THERMAL</b>                              |                 |                     |                      |
| HDT, 1.82 MPa, 6.4 mm, unannealed           | 90              | °C                  | ASTM D 648           |
| CTE, -30°C to 30°C                          | 7.E-05 - 7.E-05 | 1/°C                | TMA                  |
| <b>PHYSICAL</b>                             |                 |                     |                      |
| Specific Gravity                            | 1.08            | -                   | ASTM D 792           |
| Water Absorption, 24 hours                  | 0.07            | %                   | ASTM D 570           |
| Mold Shrinkage, flow, 3.2 mm (5)            | 0.5 - 0.7       | %                   | SABIC Method         |
| <b>FLAME CHARACTERISTICS</b>                |                 |                     |                      |
| UL Recognized, 94V-2 Flame Class Rating (3) | 1.5             | mm                  | UL 94                |