

# Texin® DP7-1049

Thermoplastic Polyurethane Elastomer (Polyether)

Covestro - PUR

## Message:

Texin DP7-1049 resin is an aromatic polyether-based thermoplastic polyurethane with a Shore hardness of approximately 45D. It can be processed by injection molding, extrusion, or blow molding.

| General Information             |                             |                   |                     |
|---------------------------------|-----------------------------|-------------------|---------------------|
| Features                        | Impact resistance, good     |                   |                     |
|                                 | Good flexibility            |                   |                     |
|                                 | Good wear resistance        |                   |                     |
|                                 | Hydrolysis resistance       |                   |                     |
|                                 | Good toughness              |                   |                     |
|                                 | Compliance of Food Exposure |                   |                     |
|                                 | Medium transparency         |                   |                     |
| Uses                            | Cable sheath                |                   |                     |
|                                 | Pipe fittings               |                   |                     |
|                                 | Seals                       |                   |                     |
|                                 | Molded Ear Label            |                   |                     |
|                                 | Sheet                       |                   |                     |
|                                 | Footwear                    |                   |                     |
|                                 | Profile                     |                   |                     |
| Agency Ratings                  | FDA 21 CFR 177.1680         |                   |                     |
|                                 | FDA 21 CFR 177.2600         |                   |                     |
| Processing Method               | Blow molding                |                   |                     |
|                                 | Extrusion                   |                   |                     |
|                                 | Injection molding           |                   |                     |
| Physical                        | Nominal Value               | Unit              | Test Method         |
| Specific Gravity                | 1.14                        | g/cm <sup>3</sup> | ASTM D792, ISO 1183 |
| Molding Shrinkage               |                             |                   |                     |
| Flow: 2.54mm                    | 0.80                        | %                 | ASTM D955           |
| Transverse flow: 2.54mm         | 0.80                        | %                 | ASTM D955           |
| Vertical flow direction: 2.54mm | 0.80                        | %                 | ISO 2577            |
| Flow direction: 2.54mm          | 0.80                        | %                 | ISO 2577            |
| Hardness                        | Nominal Value               | Unit              | Test Method         |
| Durometer Hardness (Shore D)    | 45                          |                   | ASTM D2240, ISO 868 |

| Mechanical                        | Nominal Value | Unit | Test Method         |
|-----------------------------------|---------------|------|---------------------|
| Flexural Modulus                  |               |      | ASTM D790, ISO 178  |
| 23°C                              | 103           | MPa  | ASTM D790, ISO 178  |
| 70°C                              | 34.5          | MPa  | ASTM D790, ISO 178  |
| Taber Abrasion Resistance         |               |      |                     |
| 1000 Cycles, 1000g, H-18 wheel    | 60.0          | mg   | ISO 4649            |
| 1000 Cycles, 1000g, H-18 wheel    | 60.0          | mg   | ASTM D1044          |
| Elastomers                        | Nominal Value | Unit | Test Method         |
| Tensile Stress                    |               |      |                     |
| 50% strain                        | 9.70          | MPa  | ISO 37, ASTM D412   |
| 100% strain                       | 11.0          | MPa  | ASTM D412, ISO 37   |
| 300% strain                       | 24.1          | MPa  | ASTM D412, ISO 37   |
| Tensile Strength (Yield)          | 41.4          | MPa  | ASTM D412, ISO 37   |
| Tensile Elongation (Break)        | 400           | %    | ASTM D412, ISO 37   |
| Tear Strength                     |               |      |                     |
| -- <sup>1</sup>                   | 127           | kN/m | ASTM D624           |
| --                                | 130           | kN/m | ISO 34-1            |
| Compression Set                   |               |      | ASTM D395B, ISO 815 |
| 23°C, 22 hr <sup>2</sup>          | 20            | %    | ASTM D395B, ISO 815 |
| 23°C, 22 hr                       | 22            | %    | ASTM D395B, ISO 815 |
| 70°C, 22 hr <sup>3</sup>          | 40            | %    | ASTM D395B, ISO 815 |
| 70°C, 22 hr                       | 75            | %    | ASTM D395B, ISO 815 |
| Bayshore Resilience               | 35            | %    | ASTM D2632          |
| Aging                             | Nominal Value | Unit | Test Method         |
| Change in Tensile Strength in Air |               |      |                     |
| 100°C, 70 hr                      | 0.0           | %    | ASTM D573, ISO 216  |
| 100% strain, 100°C, 70 hr         | 7.0           | %    | ASTM D573           |
| 300% strain, 100°C, 70 hr         | 5.0           | %    | ASTM D573           |
| 100°C, 168 hr                     | -4.0          | %    | ASTM D573, ISO 216  |
| 100% strain, 100°C, 168 hr        | 6.0           | %    | ASTM D573           |
| 300% strain, 100°C, 168 hr        | -1.0          | %    | ASTM D573           |
| 100°C, 336 hr                     | -4.0          | %    | ASTM D573, ISO 216  |
| 100% strain, 100°C, 336 hr        | 6.0           | %    | ASTM D573           |
| 300% strain, 100°C, 336 hr        | -1.0          | %    | ASTM D573           |
| 100°C, 504 hr                     | -8.0          | %    | ASTM D573, ISO 216  |
| 100% strain, 100°C, 504 hr        | 5.0           | %    | ASTM D573           |
| 300% strain, 100°C, 504 hr        | -3.0          | %    | ASTM D573           |
| 100% strain 100°C, 70 hr          | 7.0           | %    | ISO 216             |
| 300% strain 100°C, 70 hr          | 5.0           | %    | ISO 216             |
| 100% strain 100°C, 168 hr         | 6.0           | %    | ISO 216             |
| 300% strain 100°C, 168 hr         | -1.0          | %    | ISO 216             |
| 100% strain 100°C, 336 hr         | 6.0           | %    | ISO 216             |

|                                                  |      |   |                    |
|--------------------------------------------------|------|---|--------------------|
| 300% strain 100°C, 336 hr                        | -1.0 | % | ISO 216            |
| 100% strain 100 c, 504 hr                        | 5.0  | % | ISO 216            |
| 300% strain 100 c, 504 hr                        | -3.0 | % | ISO 216            |
| Change in Ultimate Elongation in Air             |      |   | ASTM D573, ISO 216 |
| 100°C, 70 hr                                     | 9.0  | % | ASTM D573, ISO 216 |
| 100°C, 168 hr                                    | 14   | % | ASTM D573, ISO 216 |
| 100°C, 336 hr                                    | 13   | % | ASTM D573, ISO 216 |
| 100°C, 504 hr                                    | 17   | % | ASTM D573, ISO 216 |
| Change in Durometer Hardness in Air              |      |   | ASTM D573, ISO 216 |
| Support d, 100°C, 70 hr                          | -1.0 |   | ASTM D573, ISO 216 |
| Support d, 100°C, 168 hr                         | 0.0  |   | ASTM D573, ISO 216 |
| Support d, 100 c, 336 hr                         | -1.0 |   | ASTM D573, ISO 216 |
| Support d, 100 c, 504 hr                         | 0.0  |   | ASTM D573, ISO 216 |
| Change in Tensile Strength                       |      |   |                    |
| 23°C, 70 hr, Class C Standard Fuel               | -25  | % | ASTM D471          |
| 100% strain, 23°C, 70 hr, Class C standard fuel  | -32  | % | ASTM D471          |
| 300% strain, 23°C, 70 hr, Class C standard fuel  | -33  | % | ASTM D471          |
| 23°C, 70 hr, in reference fuel A                 | 10   | % | ASTM D471          |
| 100% strain, 23°C, 70 hr, in reference fuel A    | -2.0 | % | ASTM D471          |
| 300% strain, 23°C, 70 hr, in reference fuel A    | -3.0 | % | ASTM D471          |
| 23°C, 168 hr, Class C Standard Fuel              | -26  | % | ASTM D471          |
| 100% strain, 23°C, 168 hr, Class C standard fuel | -28  | % | ASTM D471          |
| 300% strain, 23°C, 168 hr, Class C standard fuel | -30  | % | ASTM D471          |
| 23°C, 168 hr, in reference fuel A                | 4.0  | % | ASTM D471          |
| 100% strain, 23°C, 168 hr, in reference fuel a   | 8.0  | % | ASTM D471          |
| 300% strain, 23°C, 168 hr, in reference fuel a   | 0.0  | % | ASTM D471          |
| 23°C, 336 hr, Class C Standard Fuel              | -28  | % | ASTM D471          |
| 100% strain, 23°C, 336 hr, Class C standard fuel | -27  | % | ASTM D471          |
| 300% strain, 23°C, 336 hr, Class C standard fuel | -30  | % | ASTM D471          |
| 23°C, 336 hr, in reference fuel A                | 8.0  | % | ASTM D471          |
| 100% strain, 23°C, 336 hr, in reference fuel A   | 1.0  | % | ASTM D471          |
| 300% strain, 23°C, 336 hr, in reference fuel A   | -5.0 | % | ASTM D471          |
| 23°C, 504 hr, Class C Standard Fuel              | -24  | % | ASTM D471          |

|                                                  |      |   |                    |
|--------------------------------------------------|------|---|--------------------|
| 100% strain, 23°C, 504 hr, Class C standard fuel | -27  | % | ASTM D471          |
| 300% strain, 23°C, 504 hr, Class C standard fuel | -28  | % | ASTM D471          |
| 23°C, 504 hr, in reference fuel A                | 7.0  | % | ASTM D471          |
| 100% strain, 23°C, 504 hr, in reference fuel A   | -4.0 | % | ASTM D471          |
| 300% strain, 23°C, 504 hr, in reference fuel A   | -8.0 | % | ASTM D471          |
| 100°C, 70 hr, in ASTM #1 oil                     | -4.0 | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 70 hr, in ASTM #1 oil        | 10   | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 70 hr, in ASTM #1 oil        | 8.0  | % | ASTM D471, ISO 175 |
| 100°C, 70 hr, in ASTM #3 oil                     | 10   | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 70 hr, in ASTM #3 oil        | 2.0  | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 70 hr, in ASTM #3 oil        | -1.0 | % | ASTM D471, ISO 175 |
| 100°C, 168 hr, in ASTM #1 oil                    | -11  | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 168 hr, in ASTM #1 oil       | 4.0  | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 168 hr, in ASTM #1 oil       | -4.0 | % | ASTM D471, ISO 175 |
| 100°C, 168 hr, in ASTM #3 oil                    | 9.0  | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 168 hr, in ASTM #3 oil       | -7.0 | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 168 hr, in ASTM #3 oil       | -10  | % | ASTM D471, ISO 175 |
| 100°C, 336 hr, in ASTM #1 oil                    | -11  | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 336 hr, in ASTM #1 oil       | 11   | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 336 hr, in ASTM #1 oil       | 0.0  | % | ASTM D471, ISO 175 |
| 100°C, 336 hr, in ASTM #3 oil                    | 7.0  | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 336 hr, in ASTM #3 oil       | 2.0  | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 336 hr, in ASTM #3 oil       | -7.0 | % | ASTM D471, ISO 175 |
| 100°C, 504 hr, in ASTM #1 oil                    | -14  | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 504 hr, in ASTM #1 oil       | 5.0  | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 504 hr, in ASTM #1 oil       | -9.0 | % | ASTM D471, ISO 175 |
| 100°C, 504 hr, in ASTM #3 oil                    | -9.0 | % | ASTM D471, ISO 175 |
| 100% strain, 100°C, 504 hr, in ASTM #3 oil       | -4.0 | % | ASTM D471, ISO 175 |
| 300% strain, 100°C, 504 hr, in ASTM #3 oil       | -15  | % | ASTM D471, ISO 175 |
| 23°C, 70 hr, in Reference Fuel C                 | -25  | % | ISO 175            |
| 100% strain, 23 c, 70 hr, in Reference Fuel C    | -32  | % | ISO 175            |

|                                                            |      |   |           |
|------------------------------------------------------------|------|---|-----------|
| 300% strain, 23 c, 70 hr, in Reference Fuel C              | -33  | % | ISO 175   |
| 23°C, 70 hr, in reference fuel A (isooctane)               | 10   | % | ISO 175   |
| 100% strain, 23°C, 70 hr, in reference fuel A (isooctane)  | -2.0 | % | ISO 175   |
| 300% strain, 23°C, 70 hr, in reference fuel A (isooctane)  | -3.0 | % | ISO 175   |
| 23°C, 168 hr, in Reference Fuel C                          | -26  | % | ISO 175   |
| 100% strain, 23 c, 168 hr, in Reference Fuel C             | -28  | % | ISO 175   |
| 300% strain, 23 c, 168 hr, in Reference Fuel C             | -30  | % | ISO 175   |
| 23°C, 168 hr, in reference fuel A (isooctane)              | 4.0  | % | ISO 175   |
| 100% strain, 23°C, 168 hr, in reference fuel A (isooctane) | 8.0  | % | ISO 175   |
| 300% strain, 23°C, 168 hr, in reference fuel A (isooctane) | 0.0  | % | ISO 175   |
| 23°C, 336 hr, in Reference Fuel C                          | -28  | % | ISO 175   |
| 100% strain, 23 c, 336 hr, in Reference Fuel C             | -27  | % | ISO 175   |
| 300% strain, 23 c, 336 hr, in Reference Fuel C             | -30  | % | ISO 175   |
| 23°C, 336 hr, in reference fuel A (isooctane)              | 8.0  | % | ISO 175   |
| 100% strain, 23°C, 336 hr, in reference fuel A (isooctane) | 1.0  | % | ISO 175   |
| 300% strain, 23°C, 336 hr, in reference fuel A (isooctane) | -5.0 | % | ISO 175   |
| 23°C, 504 hr, in Reference Fuel C                          | -24  | % | ISO 175   |
| 100% strain, 23 c, 504 hr, in Reference Fuel C             | -27  | % | ISO 175   |
| 300% strain, 23 c, 504 hr, in Reference Fuel C             | -28  | % | ISO 175   |
| 23°C, 504 hr, in reference fuel A (isooctane)              | 7.0  | % | ISO 175   |
| 100% strain, 23°C, 504 hr, in reference fuel A (isooctane) | -4.0 | % | ISO 175   |
| 300% strain, 23°C, 504 hr, in reference fuel A (isooctane) | -8.0 | % | ISO 175   |
| Change in Ultimate Elongation                              |      |   |           |
| 23°C, 70 hr, Class C Standard Fuel                         | -5.0 | % | ASTM D471 |
| 23°C, 70 hr, in reference fuel A                           | 5.0  | % | ASTM D471 |
| 23°C, 168 hr, Class C Standard Fuel                        | -4.0 | % | ASTM D471 |
| 23°C, 168 hr, in reference fuel A                          | 1.0  | % | ASTM D471 |
| 23°C, 336 hr, Class C Standard Fuel                        | -6.0 | % | ASTM D471 |
| 23°C, 336 hr, in reference fuel A                          | 4.0  | % | ASTM D471 |

|                                               |      |   |                    |
|-----------------------------------------------|------|---|--------------------|
| 23°C, 504 hr, Class C Standard Fuel           | -6.0 | % | ASTM D471          |
| 23°C, 504 hr, in reference fuel A             | 6.0  | % | ASTM D471          |
| 100°C, 70 hr, in ASTM #1 oil                  | 11   | % | ASTM D471, ISO 175 |
| 100°C, 70 hr, in ASTM #3 oil                  | 19   | % | ASTM D471, ISO 175 |
| 100°C, 168 hr, in ASTM #1 oil                 | 21   | % | ASTM D471, ISO 175 |
| 100°C, 168 hr, in ASTM #3 oil                 | 32   | % | ASTM D471, ISO 175 |
| 100°C, 336 hr, in ASTM #1 oil                 | 20   | % | ASTM D471, ISO 175 |
| 100°C, 336 hr, in ASTM #3 oil                 | 25   | % | ASTM D471, ISO 175 |
| 100°C, 504 hr, in ASTM #1 oil                 | 24   | % | ASTM D471, ISO 175 |
| 100°C, 504 hr, in ASTM #3 oil                 | 30   | % | ASTM D471, ISO 175 |
| 23°C, 70 hr, in Reference Fuel C              | -5.0 | % | ISO 175            |
| 23°C, 70 hr, in reference fuel A (isooctane)  | 5.0  | % | ISO 175            |
| 23°C, 168 hr, in Reference Fuel C             | -4.0 | % | ISO 175            |
| 23°C, 168 hr, in reference fuel A (isooctane) | 1.0  | % | ISO 175            |
| 23°C, 336 hr, in Reference Fuel C             | -6.0 | % | ISO 175            |
| 23°C, 336 hr, in reference fuel A (isooctane) | 4.0  | % | ISO 175            |
| 23°C, 504 hr, in Reference Fuel C             | -6.0 | % | ISO 175            |
| 23°C, 504 hr, in reference fuel A (isooctane) | 6.0  | % | ISO 175            |
| Change in Durometer Hardness                  |      |   |                    |
| Support D, 23°C, 70 hr, in Reference Fuel C   | -6.0 |   | ASTM D471, ISO 175 |
| Support D, 23°C, 70 hr, in reference fuel A   | -1.0 |   | ASTM D471          |
| Support D, 23°C, 168 hr, in Reference Fuel C  | -5.0 |   | ASTM D471, ISO 175 |
| Support D, 23°C, 168 hr, in reference fuel A  | -1.0 |   | ASTM D471          |
| Support d, 23 c, 336 hr, in Reference fuel c  | -7.0 |   | ASTM D471, ISO 175 |
| Support D, 23°C, 336 hr, in reference fuel A  | 0.0  |   | ASTM D471          |
| Support D, 23°C, 504 hr, in Reference Fuel C  | -6.0 |   | ASTM D471, ISO 175 |
| Support D, 23°C, 504 hr, in reference fuel A  | -1.0 |   | ASTM D471          |
| Support D, 100°C, 70 hr, in ASTM #1 oil       | -1.0 |   | ASTM D471          |
| Support D, 100°C, 70 hr, in ASTM #3 oil       | -4.0 |   | ASTM D471          |
| Support D, 100°C, 168 hr, in ASTM #1 oil      | 2.0  |   | ASTM D471          |
| Support D, 100°C, 168 hr, in ASTM #3 oil      | -4.0 |   | ASTM D471          |
| Support D, 100°C, 336 hr, in ASTM #1 oil      | -1.0 |   | ASTM D471          |
| Support D, 100°C, 336 hr, in ASTM #3 oil      | -4.0 |   | ASTM D471          |
| Support D, 100°C, 504 hr, in ASTM #1 oil      | 0.0  |   | ASTM D471          |

|                                                          |      |   |           |
|----------------------------------------------------------|------|---|-----------|
| Support D, 100°C, 504 hr, in ASTM #3 oil                 | -4.0 |   | ASTM D471 |
| Support D, 23°C, 70 hr, in reference fuel A (isooctane)  | -1.0 |   | ISO 175   |
| Support D, 23°C, 168 hr, in reference fuel A (isooctane) | -1.0 |   | ISO 175   |
| Support D, 23°C, 336 hr, in reference fuel A (isooctane) | 0.0  |   | ISO 175   |
| Support D, 23°C, 504 hr, in reference fuel A (isooctane) | -1.0 |   | ISO 175   |
| Support D, 100°C, 70 hr, in ASTM #1 oil                  | -1.0 |   | ISO 175   |
| Support D, 100°C, 70 hr, in ASTM #3 oil                  | -4.0 |   | ISO 175   |
| Support D, 100°C, 168 hr, in ASTM #1 oil                 | 2.0  |   | ISO 175   |
| Support D, 100°C, 168 hr, in ASTM #3 oil                 | -4.0 |   | ISO 175   |
| Support D, 100°C, 336 hr, in ASTM #1 oil                 | -1.0 |   | ISO 175   |
| Support D, 100°C, 336 hr, in ASTM #3 oil                 | -4.0 |   | ISO 175   |
| Support D, 100°C, 504 hr, in ASTM #1 oil                 | 0.0  |   | ISO 175   |
| Support D, 100°C, 504 hr, in ASTM #3 oil                 | -4.0 |   | ISO 175   |
| Change in Volume                                         |      |   |           |
| 23°C, 70 hr, Class A standard fuel                       | 1.0  | % | ASTM D471 |
| 23°C, 70 hr, Class C Standard Fuel                       | 30   | % | ASTM D471 |
| 23°C, 168 hr, Class A standard fuel                      | 2.0  | % | ASTM D471 |
| 23°C, 168 hr, Class C Standard Fuel                      | 32   | % | ASTM D471 |
| 23°C, 336 hr, Class A standard fuel                      | 3.0  | % | ASTM D471 |
| 23°C, 336 hr, Class C Standard Fuel                      | 33   | % | ASTM D471 |
| 23°C, 504 hr, Class A standard fuel                      | 3.0  | % | ASTM D471 |
| 23°C, 504 hr, Class C Standard Fuel                      | 31   | % | ASTM D471 |
| 100°C, 70 hr, ASTM Standard Oil (No.1)                   | 1.0  | % | ASTM D471 |
| 100°C, 70 hr, ASTM Standard Oil (No.3)                   | 12   | % | ASTM D471 |
| 100°C, 168 hr, ASTM Standard Oil (No.1)                  | -1.0 | % | ASTM D471 |
| 100°C, 168 hr, ASTM Standard Oil (No.3)                  | 13   | % | ASTM D471 |
| 100°C, 336 hr, ASTM Standard Oil (No.1)                  | 0.0  | % | ASTM D471 |
| 100°C, 336 hr, ASTM Standard Oil (No.3)                  | 17   | % | ASTM D471 |
| 100°C, 504 hr, ASTM Standard Oil (No.1)                  | 0.0  | % | ASTM D471 |
| 100°C, 504 hr, ASTM Standard Oil (No.3)                  | 16   | % | ASTM D471 |
| 23°C, 70 hr, in reference fuel A                         | 1.0  | % | ISO 175   |
| 23°C, 70 hr, in reference fuel C                         | 30   | % | ISO 175   |
| 23°C, 168 hr, in reference fuel A                        | 2.0  | % | ISO 175   |
| 23°C, 168 hr, in reference fuel C                        | 32   | % | ISO 175   |
| 23°C, 336 hr, in reference fuel A                        | 3.0  | % | ISO 175   |
| 23°C, 336 hr, in reference fuel C                        | 33   | % | ISO 175   |
| 23°C, 504 hr, in reference fuel A                        | 3.0  | % | ISO 175   |
| 23°C, 504 hr, in reference fuel C                        | 31   | % | ISO 175   |
| 100°C, 70 hr, in ASTM #1 oil                             | 1.0  | % | ISO 175   |

| 100°C, 70 hr, in ASTM #3 oil         | 12                | %                  | ISO 175                             |
|--------------------------------------|-------------------|--------------------|-------------------------------------|
| 100°C, 168 hr, in ASTM #1 oil        | -1.0              | %                  | ISO 175                             |
| 100°C, 168 hr, in ASTM #3 oil        | 13                | %                  | ISO 175                             |
| 100°C, 336 hr, in ASTM #1 oil        | 0.0               | %                  | ISO 175                             |
| 100°C, 336 hr, in ASTM #3 oil        | 17                | %                  | ISO 175                             |
| 100°C, 504 hr, in ASTM #1 oil        | 0.0               | %                  | ISO 175                             |
| 100°C, 504 hr, in ASTM #3 oil        | 16                | %                  | ISO 175                             |
| Thermal                              | Nominal Value     | Unit               | Test Method                         |
| Brittleness Temperature              | < -68.0           | °C                 | ASTM D746, ISO 974                  |
| Glass Transition Temperature         | -40.0             | °C                 | DMA                                 |
| Vicat Softening Temperature          | 116               | °C                 | ISO 306/50, ASTM D1525 <sup>4</sup> |
| Additional Information               | Nominal Value     | Unit               | Test Method                         |
| Compressive Load                     |                   |                    | ASTM D575                           |
| 10% Deflection                       | 3.79              | MPa                | ASTM D575                           |
| 15% Deflection                       | 5.34              | MPa                | ASTM D575                           |
| 2% Deflection                        | 0.896             | MPa                | ASTM D575                           |
| 20% Deflection                       | 6.89              | MPa                | ASTM D575                           |
| 25% Deflection                       | 8.38              | MPa                | ASTM D575                           |
| 5% Deflection                        | 2.10              | MPa                | ASTM D575                           |
| 50% Deflection                       | 21.5              | MPa                | ASTM D575                           |
| Injection                            | Nominal Value     | Unit               |                                     |
| Drying Temperature - Desiccant Dryer | 99.0 - 110        | °C                 |                                     |
| Drying Time - Desiccant Dryer        | 2.0               | hr                 |                                     |
| Suggested Max Moisture               | < 0.030           | %                  |                                     |
| Suggested Shot Size                  | 40 - 80           | %                  |                                     |
| Suggested Max Regrind                | 20                | %                  |                                     |
| Rear Temperature                     | 182 - 199         | °C                 |                                     |
| Middle Temperature                   | 182 - 204         | °C                 |                                     |
| Front Temperature                    | 182 - 210         | °C                 |                                     |
| Nozzle Temperature                   | 188 - 213         | °C                 |                                     |
| Processing (Melt) Temp               | 196 - 207         | °C                 |                                     |
| Mold Temperature                     | 16.0 - 38.0       | °C                 |                                     |
| Injection Pressure                   | 41.4 - 103        | MPa                |                                     |
| Injection Rate                       | Slow-Moderate     |                    |                                     |
| Back Pressure                        | < 1.38            | MPa                |                                     |
| Screw Speed                          | 40 - 80           | rpm                |                                     |
| Clamp Tonnage                        | 4.1 - 6.9         | kN/cm <sup>2</sup> |                                     |
| Cushion                              | < 3.18            | mm                 |                                     |
| Screw L/D Ratio                      | 20.0:1.0          |                    |                                     |
| Screw Compression Ratio              | 2.5:1.0 - 3.0:1.0 |                    |                                     |
| Injection instructions               |                   |                    |                                     |

Hold Pressure: 60 to 80% of Injection Pressure  
Timers (per 0.125 in cross section):

Boost: 5 to 10 sec

2nd Stage: 10 to 30 sec

Cool: 30 to 50 sec

| Extrusion             | Nominal Value | Unit |
|-----------------------|---------------|------|
| Drying Temperature    | 99.0 - 110    | °C   |
| Drying Time           | 2.0           | hr   |
| Cylinder Zone 1 Temp. | 182 - 199     | °C   |
| Cylinder Zone 2 Temp. | 182 - 204     | °C   |
| Cylinder Zone 3 Temp. | 182 - 210     | °C   |
| Adapter Temperature   | 182 - 210     | °C   |
| Melt Temperature      | 191 - 204     | °C   |
| Die Temperature       | 188 - 210     | °C   |

#### NOTE

1. C mould
2. Post-cured 16 hr at 230°F
3. Post-cured 16 hr at 230°F
4. 速率 A (50°C/h)

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