

# KEYFLEX BT 1055D

Injection Molding, TPC-ET

## Description

General Purpose, Medium Modulus

## Application

Injection Parts for Automotives, Leisure & Sports

| Properties                                      | Test Condition | Test Method | Unit               | Typical Value |
|---|----------------|-------------|--------------------|---------------|
| <b>Physical</b>                                 |                |             |                    |               |
| Specific Gravity                                |                | ASTM D792   | -                  | 1.20          |
| Molding Shrinkage (Flow), 3.2mm                 |                | ASTM D955   | %                  | 1.1 ~ 1.5     |
| Melt Flow Rate                                  | 230 °C/2.16kg  | ASTM D1238  | g/10min            | 25            |
| Water Absorption                                | 23 °C, 24hrs   | ASTM D570   | %                  | 0.6           |
| <b>Mechanical</b>                               |                |             |                    |               |
| Tensile Strength, 2mm                           |                | ASTM D638   |                    |               |
| @ Yield   | 50mm/min       |             | kg/cm <sup>2</sup> | 140           |
| @ Break   | 50mm/min       |             | kg/cm <sup>2</sup> | 350           |
| Tensile Elongation, 2mm                         |                | ASTM D638   |                    |               |
| @ Yield   | 50mm/min       |             | %                  |               |
| @ Break   | 50mm/min       |             | %                  | 500           |
| Flexural Strength, 6.4mm                        | 15mm/min       | ASTM D790   | kg/cm <sup>2</sup> |               |
| Flexural Modulus, 6.4mm                         | 15mm/min       | ASTM D790   | kg/cm <sup>2</sup> | 2,000         |
| Tear Strength @ Break                           | 50mm/min       | ASTM D624   | kg/cm              | 150           |
| IZOD Impact Strength, 6.4mm (Notched)           |                | ASTM D256   |                    |               |
|   | 23 °C          |             | kg·cm/cm           | No break      |
|   | -40 °C         |             | kg·cm/cm           | 15            |
| Shore Hardness                                  | Shore D        | ASTM D2240  | -                  | 54            |
| Shore Hardness                                  | Shore A        | ASTM D2240  | -                  |               |
| <b>Thermal</b>                                  |                |             |                    |               |
| Melt Temperature @ Peak                         |                | ASTM D3418  | °C                 | 205           |
| Heat Deflection Temperature, 6.4mm (Unannealed) | 4.6kg          | ASTM D648   | °C                 | 100           |
| Flammability                                    |                | UL94        |                    |               |
| 1.5mm   |                |             | class              | HB            |
| 3.0mm   |                |             | class              | HB            |
| <b>Electrical</b>                               |                |             |                    |               |
| Comparative Tracking Index(CTI)                 | Solution A     | IEC 60112   | Volts              | 600           |
| Surface Resistivity                             |                | IEC 60093   | Ohm                |               |
| Volume Resistivity                              | 23 °C          | ASTM D257   | Ohm·m              | >E13          |
| Dielectric Strength, 1mm                        | 23 °C          | ASTM D149   | kV/mm              | 26            |
| Dielectric Constant (10 <sup>6</sup> Hz)        | 23 °C          | ASTM D150   | sec                |               |

Note) Typical values are only for material selection purpose, and variation within normal tolerances are for various colors.

Values given should not be interpreted as specification and not be used for part or tool design.

All properties, except melt flow rate are measured on injection molded specimens and after 48 hours storage at 23°C, 50% relative humidity.

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### Processing Guide (Injection Molding)

| Processing Parameters    | Unit               | Value     |           |
|--------------------------|--------------------|-----------|-----------|
| Drying Temperature       | °C                 | 80 ~ 90   |           |
| Drying Time              | hrs                | 3 ~ 4     |           |
| Minimum Moisture Content | %                  | 0.01      |           |
| Melt Temperature         | °C                 | 200 ~ 240 |           |
| Cylinder Temperature     | Rear               | °C        | 200 ~ 220 |
|                          | Middle             | °C        | 210 ~ 230 |
|                          | Front              | °C        | 220 ~ 240 |
| Nozzle Temperature       | °C                 | 220 ~ 240 |           |
| Mold Temperature         | °C                 | 20 ~ 40   |           |
| Back Pressure            | kg/cm <sup>2</sup> |           |           |
| Screw Speed              | rpm                |           |           |

Note) Back Pressure & Screw Speed are only mentioned as general guidelines.

These may not apply or need adjustment in specific situations such as low shot sizes, thin wall molding and gas-assist molding.

### Processing Guide (Extrusion Molding)

| Processing Parameters    | Unit   | Value     |           |
|--------------------------|--------|-----------|-----------|
| Drying Temperature       | °C     | 80 ~ 90   |           |
| Drying Time              | hrs    | 3 ~ 4     |           |
| Minimum Moisture Content | %      | 0.01      |           |
| Melt Temperature         | °C     | 200 ~ 240 |           |
| Barrel Temperature       | Zone 1 | °C        | 200 ~ 220 |
|                          | Zone 2 | °C        | 210 ~ 230 |
|                          | Zone 3 | °C        | 215 ~ 235 |
|                          | Zone 4 | °C        | 220 ~ 240 |
| Adapter Temperature      | °C     | 220 ~ 240 |           |
| Die Temperature          | °C     | 210 ~ 250 |           |

Note) Recommend initial lower temperatures settings to avoid material degradation/hang-up in die & purge material from extruder prior to shutdown.

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