

# Starex BF-0677HF

Methyl Methacrylate / ABS

SAMSUNG SDI CO., LTD.

## Message:

Scratch resistant material that can be applied to TV housing and the exterior material for cleaner and air purifier

| General Information |                         |  |  |
|---------------------|-------------------------|--|--|
| UL YellowCard       | E115797-460972          |  |  |
| Features            | High Scratch Resistance |  |  |
| Uses                | Electrical Housing      |  |  |
|                     | Household Goods         |  |  |

| Physical                                  | Nominal Value | Unit              | Test Method          |
|-------------------------------------------|---------------|-------------------|----------------------|
| Specific Gravity                          | 1.13          | g/cm <sup>3</sup> | ASTM D792, ISO 1183  |
| Melt Mass-Flow Rate (MFR) (220°C/10.0 kg) | 19            | g/10 min          | ASTM D1238, ISO 1133 |
| Molding Shrinkage                         |               |                   | ASTM D955, ISO 2577  |
| Flow : 3.20 mm                            | 0.40          | %                 |                      |
| Across Flow : 3.20 mm                     | 0.50          | %                 |                      |

| Hardness                     | Nominal Value | Unit | Test Method |
|------------------------------|---------------|------|-------------|
| Rockwell Hardness            |               |      |             |
| R-Scale                      | 114           |      | ASTM D785   |
| R-Scale                      | 116           |      | ISO 2039-2  |
| Pencil Hardness <sup>1</sup> | H             |      | JIS K5401   |

| Mechanical         | Nominal Value | Unit | Test Method  |
|--------------------|---------------|------|--------------|
| Tensile Modulus    |               |      |              |
| -- <sup>2</sup>    | 2400          | MPa  | ASTM D638    |
| --                 | 2600          | MPa  | ISO 527-2/50 |
| Tensile Strength   |               |      |              |
| Yield <sup>3</sup> | 47.0          | MPa  | ASTM D638    |
| Yield              | 53.0          | MPa  | ISO 527-2/50 |
| Break <sup>4</sup> | 29.0          | MPa  | ASTM D638    |
| Break              | 38.0          | MPa  | ISO 527-2/50 |
| Tensile Elongation |               |      |              |
| Break <sup>5</sup> | 15            | %    | ASTM D638    |
| Break              | 20            | %    | ISO 527-2/50 |
| Flexural Modulus   |               |      |              |
| -- <sup>6</sup>    | 2500          | MPa  | ASTM D790    |
| -- <sup>7</sup>    | 2600          | MPa  | ISO 178      |
| Flexural Strength  |               |      |              |

|                                                     |                      |                   |                    |
|-----------------------------------------------------|----------------------|-------------------|--------------------|
| -- 8                                                | 69.0                 | MPa               | ASTM D790          |
| -- 9                                                | 80.0                 | MPa               | ISO 178            |
| <b>Impact</b>                                       | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Charpy Notched Impact Strength <sup>10</sup> (23°C) | 10                   | kJ/m <sup>2</sup> | ISO 179/1eA        |
| Notched Izod Impact                                 |                      |                   |                    |
| 23°C, 3.18 mm                                       | 120                  | J/m               | ASTM D256          |
| 23°C, 6.35 mm                                       | 88                   | J/m               | ASTM D256          |
| 23°C <sup>11</sup>                                  | 10                   | kJ/m <sup>2</sup> | ISO 180/1A         |
| <b>Thermal</b>                                      | <b>Nominal Value</b> | <b>Unit</b>       | <b>Test Method</b> |
| Deflection Temperature Under Load                   |                      |                   |                    |
| 0.45 MPa, Unannealed, 6.40 mm                       | 93.0                 | °C                | ASTM D648          |
| 0.45 MPa, Unannealed, 4.00 mm                       | 88.0                 | °C                | ISO 75-2/B         |
| 1.8 MPa, Unannealed, 6.40 mm                        | 84.0                 | °C                | ASTM D648          |
| 1.8 MPa, Unannealed, 4.00 mm                        | 76.0                 | °C                | ISO 75-2/A         |
| Vicat Softening Temperature                         |                      |                   |                    |
| --                                                  | 95.0                 | °C                | ISO 306/B50        |
| --                                                  | 98.0                 | °C                | ISO 306/B120       |
| <b>Flammability</b>                                 | <b>Nominal Value</b> |                   | <b>Test Method</b> |
| Flame Rating                                        |                      |                   | UL 94              |
| 1.50 mm                                             | HB                   |                   |                    |
| 3.00 mm                                             | HB                   |                   |                    |
| <b>Injection</b>                                    | <b>Nominal Value</b> | <b>Unit</b>       |                    |
| Drying Temperature                                  |                      |                   |                    |
| --                                                  | 85.0                 | °C                |                    |
| Desiccant Dryer                                     | 80.0                 | °C                |                    |
| Drying Time                                         |                      |                   |                    |
| --                                                  | 2.0 to 4.0           | hr                |                    |
| Desiccant Dryer                                     | 2.0 to 3.0           | hr                |                    |
| Suggested Max Moisture                              | < 0.050              | %                 |                    |
| Rear Temperature                                    | 190 to 200           | °C                |                    |
| Middle Temperature                                  | 210 to 220           | °C                |                    |
| Front Temperature                                   | 230 to 240           | °C                |                    |
| Nozzle Temperature                                  | 240                  | °C                |                    |
| Mold Temperature                                    | 40.0 to 80.0         | °C                |                    |
| Injection Pressure                                  | 49.0 to 245          | MPa               |                    |
| Back Pressure                                       | 0.490 to 1.96        | MPa               |                    |
| Screw Speed                                         | 50 to 150            | rpm               |                    |
| <b>NOTE</b>                                         |                      |                   |                    |
| 1.                                                  | Condition: 500g      |                   |                    |
| 2.                                                  | 5.0 mm/min           |                   |                    |
| 3.                                                  | 5.0 mm/min           |                   |                    |
| 4.                                                  | 5.0 mm/min           |                   |                    |

|     |                 |
|-----|-----------------|
| 5.  | 5.0 mm/min      |
| 6.  | 2.8 mm/min      |
| 7.  | 2.0 mm/min      |
| 8.  | 2.8 mm/min      |
| 9.  | 2.0 mm/min      |
| 10. | Thickness: 4 mm |
| 11. | Thickness: 4 mm |

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