



Polyacetal Resin

|                                         |                   |                    |                        | Standard                    |                             |                             |                    |                             |                              |
|-----------------------------------------|-------------------|--------------------|------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------|-----------------------------|------------------------------|
| Properties                              | Test Method       | Terms              | Units                  | F20-52                      | F20-54                      | F20-51                      | F20-61             | FV-30                       | F20-73R1                     |
|                                         |                   |                    |                        | Weather Resistance Improved | Weather Resistance Improved | Weather Resistance Improved | Antistatic         | Antistaic and Low Viscosity | Low Emission of Formaldehyde |
|                                         |                   |                    |                        | General                     | General                     | Black                       | -                  | -                           | -                            |
|                                         |                   |                    |                        | -                           | -                           | -                           | -                  | -                           | -                            |
| Physical properties                     |                   |                    |                        |                             |                             |                             |                    |                             |                              |
| Density                                 | ISO 1183          | -                  | g/cm <sup>3</sup>      | 1.41                        | 1.41                        | 1.41                        | 1.41               | 1.41                        | 1.41                         |
| Water absorption                        | -                 | 23degC, 60%RH      | %                      | 0.22                        | 0.22                        | 0.22                        | 0.22               | 0.22                        | 0.22                         |
| Rheological properties                  |                   |                    |                        |                             |                             |                             |                    |                             |                              |
| Melt Mass-flow Rate                     | ISO 1133          | Temperature Load   | g/10min                | 9.0                         | 9.0                         | 9.0                         | 9.0                | 31                          | 9                            |
| Melt Volume-flow Rate                   |                   |                    | cm <sup>3</sup> /10min | 7.7                         | 7.7                         | 7.7                         | 7.7                | 27                          | 8                            |
|                                         |                   |                    | degC                   | 190                         | 190                         | 190                         | 190                | 190                         | 190                          |
|                                         |                   |                    | kg                     | 2.16                        | 2.16                        | 2.16                        | 2.16               | 2.16                        | 2.16                         |
| Moulding shrinkage (3mmt)               | -                 | MD                 | %                      | 2.0                         | 2.0                         | 2.0                         | 2.0                | 2.0                         | 2.0                          |
|                                         |                   | TD                 |                        | -                           | -                           | -                           | -                  | -                           | 2.0                          |
| Mechanical properties                   |                   |                    |                        |                             |                             |                             |                    |                             |                              |
| Tensile modulus                         | ISO 527-1 , 527-2 | -                  | MPa                    | 2800                        | 2800                        | 2800                        | 2800               | 2800                        | 2900                         |
| Yield stress                            |                   |                    |                        | 62                          | 62                          | 62                          | 63                 | 63                          | 65                           |
| Yield strain                            |                   |                    | %                      | 8.5                         | 8.5                         | 8.5                         | 8.5                | 8.5                         | 8.5                          |
| Nominal strain at break                 |                   |                    |                        | 30                          | 30                          | 30                          | 30                 | 30                          | 30                           |
| Stress at break                         |                   |                    | MPa                    | -                           | -                           | -                           | -                  | -                           | -                            |
| Strain at break                         |                   |                    | %                      | -                           | -                           | -                           | -                  | -                           | -                            |
| Flexural strength                       | ISO 178           | -                  | MPa                    | 88                          | 88                          | 88                          | 88                 | 88                          | 91                           |
| Flexural modulus                        |                   |                    |                        | 2500                        | 2500                        | 2500                        | 2500               | 2500                        | 2610                         |
| Charpy impact strength                  | ISO 179-1 , 179-2 | 23 degC            | kJ/m <sup>2</sup>      | 240                         | 240                         | 150                         | 230                | 150                         | 250                          |
| Charpy notched impact strength          |                   | 23 degC            | kJ/m <sup>2</sup>      | 6.5                         | 6.5                         | 6.5                         | 6.0                | 6.0                         | 7.0                          |
| Thermal properties                      |                   |                    |                        |                             |                             |                             |                    |                             |                              |
| Melting temperature                     | ISO 11357-3       |                    | degC                   | 166                         | 166                         | 166                         | 166                | 166                         | 166                          |
| Temperature of deflection under load    | ISO 75-1 , 75-2   | 1.80MPa<br>0.45MPa | degC                   | 105<br>156                  | 105<br>156                  | 105<br>156                  | 105<br>156         | 105<br>156                  | 107<br>160                   |
| Coefficient of Linear thermal expansion | ISO 11359-2       | MD<br>TD           | 1/degC                 | 1.1E-04<br>1.1E-04          | 1.1E-04<br>1.1E-04          | 1.1E-04<br>1.1E-04          | 1.1E-04<br>1.1E-04 | 1.1E-04<br>1.1E-04          | 1.1E-04<br>1.1E-04           |
| Flammability                            | UL94              | 0.8mmt             | -                      | HB                          | HB                          | HB                          | HB                 | HB                          | -                            |
| Electrical properties                   |                   |                    |                        |                             |                             |                             |                    |                             |                              |
| Relative permittivity                   | IEC 60250         | 100Hz<br>1MHz      | -                      | -                           | -                           | -                           | -                  | -                           | -                            |
| Dissipation factor                      | IEC 60250         | 100Hz<br>1MHz      | -                      | -                           | -                           | -                           | -                  | -                           | -                            |
| Volume resistivity                      | IEC 60093         | -                  | ohm-m                  | -                           | -                           | -                           | -                  | -                           | 1.E+12                       |
| Surface resistivity                     | IEC 60093         | -                  | ohm                    | -                           | -                           | -                           | -                  | -                           | 1.0E+16                      |
| Electric strength                       | IEC 60243-1       | 1mmt<br>3mmt       | MV/m                   | -                           | -                           | -                           | -                  | -                           | -                            |
| Comparative tracking index              | IEC 60112         | -                  | -                      | -                           | -                           | -                           | -                  | -                           | -                            |
|                                         |                   |                    |                        |                             |                             |                             |                    |                             |                              |

The listed properties are portrayed as general information only and are not product specifications.

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