

# GELOY™ RESIN HRA170D

REGION EUROPE

## DESCRIPTION

GELOY HRA170D resin is a PC-ASA blend with permanent antistatic behavior. It is typically used in applications that require antidust properties and high impact retention. GELOY HRA170D resin is typically used in various outdoor and indoor applications requiring superior heat aging properties and colour stability.

## TYPICAL PROPERTY VALUES

Revision 20190925

| PROPERTIES                                  | TYPICAL VALUES | UNITS             | TEST METHODS |
|---|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                           |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min      | 54             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min      | 59             | MPa               | ASTM D 638   |
| Tensile Stress, yld, Type I, 5 mm/min       | 50             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 5 mm/min       | 58             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min      | 5              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min      | 140            | %                 | ASTM D 638   |
| Tensile Strain, yld, Type I, 5 mm/min       | 5              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 5 mm/min       | 160            | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                   | 2160           | MPa               | ASTM D 638   |
| Tensile Stress, yield, 5 mm/min             | 51             | MPa               | ISO 527      |
| Tensile Stress, break, 5 mm/min             | 65             | MPa               | ISO 527      |
| Tensile Stress, yield, 50 mm/min            | 54             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min            | 58             | MPa               | ISO 527      |
| Tensile Strain, yield, 5 mm/min             | 130            | %                 | ISO 527      |
| Tensile Strain, yield, 50 mm/min            | 5              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min            | 130            | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                   | 2150           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min            | 80             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                  | 2100           | MPa               | ISO 178      |
| Ball Indentation Hardness, H358/30          | 63             | MPa               | ISO 2039-1   |
| Hardness, Rockwell L                        | 57             | -                 | ISO 2039-2   |
| Hardness, Shore D                           | 77             | -                 | ISO 868      |
| <b>IMPACT</b>                               |                |                   |              |
| Izod Impact, notched, 23°C                  | 450            | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                 | 140            | J/m               | ASTM D 256   |
| Izod Impact, notched 80*10*4 +23°C          | 45             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C          | 14             | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm  | 45             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm | 17             | kJ/m <sup>2</sup> | ISO 179/1eA  |
| <b>THERMAL</b>                              |                |                   |              |
| HDT, 1.82 MPa, 3.2mm, unannealed            | 106            | °C                | ASTM D 648   |
| Vicat Softening Temp, Rate A/50             | 137            | °C                | ISO 306      |
| Vicat Softening Temp, Rate A/120            | 138            | °C                | ISO 306      |

| PROPERTIES                             | TYPICAL VALUES | UNITS                   | TEST METHODS |
|--|----------------|-------------------------|--------------|
| Vicat Softening Temp, Rate B/50        | 121            | °C                      | ISO 306      |
| Vicat Softening Temp, Rate B/120       | 122            | °C                      | ISO 306      |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 127            | °C                      | ISO 75/Bf    |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm  | 104            | °C                      | ISO 75/Af    |
| <b>PHYSICAL</b>                        |                |                         |              |
| Specific Gravity                       | 1.16           | -                       | ASTM D 792   |
| Melt Flow Rate, 220°C/10.0 kgf         | 8.5            | g/10 min                | ASTM D 1238  |
| Melt Flow Rate, 260°C/5.0 kgf          | 30             | g/10 min                | ASTM D 1238  |
| Density                                | 1.16           | g/cm <sup>3</sup>       | ISO 1183     |
| Melt Flow Rate, 220°C/10.0 kg          | 8              | g/10 min                | ISO 1133     |
| Melt Volume Rate, MVR at 220°C/10.0 kg | 8              | cm <sup>3</sup> /10 min | ISO 1133     |
| Melt Volume Rate, MVR at 260°C/5.0 kg  | 29             | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>ELECTRICAL</b>                      |                |                         |              |
| Surface Resistivity, ROA               | 1.E+13         | Ohm                     | IEC 60093    |
| <b>INJECTION MOLDING</b>               |                |                         |              |
| Drying Temperature                     | 85 – 95        | °C                      |              |
| Drying Time                            | 3 – 4          | hrs                     |              |
| Drying Time (Cumulative)               | 8              | hrs                     |              |
| Maximum Moisture Content               | 0.04           | %                       |              |
| Melt Temperature                       | 255 – 270      | °C                      |              |
| Nozzle Temperature                     | 235 – 255      | °C                      |              |
| Front - Zone 3 Temperature             | 245 – 260      | °C                      |              |
| Middle - Zone 2 Temperature            | 235 – 255      | °C                      |              |
| Rear - Zone 1 Temperature              | 230 – 250      | °C                      |              |
| Mold Temperature                       | 60 – 85        | °C                      |              |
| Back Pressure                          | 0.3 – 1        | MPa                     |              |
| Screw Speed                            | 30 – 80        | rpm                     |              |
| Shot to Cylinder Size                  | 40 – 80        | %                       |              |
| Vent Depth                             | 0.038 – 0.076  | mm                      |              |

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