

# GELOY™ RESIN HRA170E

REGION EUROPE

## DESCRIPTION

GELOY HRA170E is a high heat resistant ASA+PC. It shows high impact retention, which can be positioned for various outdoor and indoor applications requiring superior heat aging properties and colour stability.

## TYPICAL PROPERTY VALUES

Revision 20170816

| PROPERTIES                                  | TYPICAL VALUES | UNITS             | TEST METHODS   |
|---------------------------------------------|----------------|-------------------|----------------|
| <b>MECHANICAL</b>                           |                |                   |                |
| Taber Abrasion, CS-17, 1 kg                 | 95             | mg/1000cy         | SABIC method   |
| Tensile Stress, yield, 5 mm/min             | 55             | MPa               | ISO 527        |
| Tensile Stress, break, 5 mm/min             | 60             | MPa               | ISO 527        |
| Tensile Stress, yield, 50 mm/min            | 62             | MPa               | ISO 527        |
| Tensile Stress, break, 50 mm/min            | 62             | MPa               | ISO 527        |
| Tensile Strain, yield, 5 mm/min             | 5              | %                 | ISO 527        |
| Tensile Strain, break, 5 mm/min             | 125            | %                 | ISO 527        |
| Tensile Strain, yield, 50 mm/min            | 4              | %                 | ISO 527        |
| Tensile Strain, break, 50 mm/min            | > 50           | %                 | ISO 527        |
| Tensile Modulus, 1 mm/min                   | 2500           | MPa               | ISO 527        |
| Flexural Stress, yield, 2 mm/min            | 85             | MPa               | ISO 178        |
| Flexural Modulus, 2 mm/min                  | 2400           | MPa               | ISO 178        |
| Hardness, H358/30                           | 106            | MPa               | ISO 2039-1     |
| Hardness, Rockwell R                        | 120            | -                 | ISO 2039-2     |
| <b>IMPACT</b>                               |                |                   |                |
| 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          | 15             | 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 | 12             | kJ/m <sup>2</sup> | ISO 179/1eA    |
| <b>THERMAL</b>                              |                |                   |                |
| Thermal Conductivity                        | 0.2            | W/m-°C            | ISO 8302       |
| CTE, 23°C to 60°C, flow                     | 8.E-05         | 1/°C              | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C           | PASSES         | -                 | IEC 60695-10-2 |
| Vicat Softening Temp, Rate B/50             | 131            | °C                | ISO 306        |
| Vicat Softening Temp, Rate B/120            | 134            | °C                | ISO 306        |
| HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm     | 123            | °C                | ISO 75/Be      |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm     | 114            | °C                | ISO 75/Ae      |



| PROPERTIES                                    | TYPICAL VALUES | UNITS                   | TEST METHODS      |
|-----------------------------------------------|----------------|-------------------------|-------------------|
| <b>PHYSICAL</b>                               |                |                         |                   |
| Mold Shrinkage on Tensile Bar, flow (2) (5)   | 0.4 – 0.6      | %                       | SABIC method      |
| Density                                       | 1.15           | g/cm <sup>3</sup>       | ISO 1183          |
| Water Absorption, (23°C/sat)                  | 0.6            | %                       | ISO 62            |
| Moisture Absorption (23°C / 50% RH)           | 0.2            | %                       | ISO 62            |
| Melt Volume Rate, MVR at 260°C/5.0 kg         | 17             | cm <sup>3</sup> /10 min | ISO 1133          |
| <b>ELECTRICAL</b>                             |                |                         |                   |
| Volume Resistivity                            | > 1.E+15       | Ohm-cm                  | IEC 60093         |
| Surface Resistivity, ROA                      | > 1.E+15       | Ohm                     | IEC 60093         |
| Dielectric Strength, in oil, 3.2 mm           | 17             | kV/mm                   | IEC 60243-1       |
| Relative Permittivity, 1 MHz                  | 2.8            | -                       | IEC 60250         |
| Dissipation Factor, 1 MHz                     | 0.013          | -                       | IEC 60250         |
| Comparative Tracking Index                    | 225            | V                       | IEC 60112         |
| <b>FLAME CHARACTERISTICS</b>                  |                |                         |                   |
| UL Compliant, 94HB Flame Class Rating (3)(4)  | 1.6            | mm                      | UL 94 by SABIC-IP |
| Glow Wire Flammability Index 750°C, passes at | 3.2            | mm                      | IEC 60695-2-12    |
| Oxygen Index (LOI)                            | 22             | %                       | ISO 4589          |
| <b>INJECTION MOLDING</b>                      |                |                         |                   |
| Drying Temperature                            | 100 – 110      | °C                      |                   |
| Drying Time                                   | 2 – 4          | hrs                     |                   |
| Maximum Moisture Content                      | 0.02           | %                       |                   |
| Melt Temperature                              | 260 – 290      | °C                      |                   |
| Nozzle Temperature                            | 240 – 280      | °C                      |                   |
| Front - Zone 3 Temperature                    | 250 – 290      | °C                      |                   |
| Middle - Zone 2 Temperature                   | 250 – 290      | °C                      |                   |
| Rear - Zone 1 Temperature                     | 230 – 260      | °C                      |                   |
| Hopper Temperature                            | 60 – 80        | °C                      |                   |
| Mold Temperature                              | 60 – 90        | °C                      |                   |

## DISCLAIMER

The information contained herein may include typical properties of our products or their typical performances when used in certain typical applications. Actual properties of our products, in particular when used in conjunction with any third party material(s) or for any non-typical applications, may differ from typical properties.

It is the customer's responsibility to inspect and test our product(s) in order to satisfy itself as to the suitability of the product(s) for its and its customers particular purposes. The customer is responsible for the appropriate, safe and legal use, processing and handling of all product(s) purchased from us.

Nothing herein is intended to be nor shall it constitute a warranty whatsoever, in particular, warranty of merchantability or fitness for a particular purpose.

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