

# Aristech GPA

Acrylic  
Aristech Acrylics LLC

## Message:

Aristech Acrylics LLC Acrylic Sheet GPA is a "general purpose" cast acrylic sheet derived from a unique formulation which is easily fabricated and solvent cementable. The following physical properties were determined using 0.125" (3.17 mm) thickness clear Aristech Acrylics LLC Acrylic Sheet. Properties may vary somewhat on other thicknesses and/or colors (translucent, transparent or opaque).

| General Information                             |                        |                   |                 |
|-------------------------------------------------|------------------------|-------------------|-----------------|
| Features                                        | General Purpose        |                   |                 |
|                                                 | Good Thermal Stability |                   |                 |
|                                                 | Low to No Odor         |                   |                 |
|                                                 | Low to No Taste        |                   |                 |
| Uses                                            | General Purpose        |                   |                 |
| Appearance                                      | Clear/Transparent      |                   |                 |
|                                                 | Opaque                 |                   |                 |
|                                                 | Translucent            |                   |                 |
| Forms                                           | Sheet                  |                   |                 |
| Processing Method                               | Thermoforming          |                   |                 |
| Physical                                        | Nominal Value          | Unit              | Test Method     |
| Specific Gravity <sup>1</sup>                   | 1.19                   | g/cm <sup>3</sup> | ASTM D792       |
| Water Absorption (Saturation, 3.18 mm)          | 0.35                   | %                 | ASTM D570       |
| Hardness                                        | Nominal Value          | Unit              | Test Method     |
| Rockwell Hardness (M-Scale, 3.18 mm)            | 90 to 100              |                   | ASTM D785       |
| Barcol Hardness (3.18 mm)                       | 48 to 52               |                   | ASTM D2583      |
| Mechanical                                      | Nominal Value          | Unit              | Test Method     |
| Tensile Modulus (3.18 mm)                       | 3170                   | MPa               | ASTM D638       |
| Tensile Strength (Yield, 3.18 mm)               | 68.9                   | MPa               | ASTM D638       |
| Tensile Elongation (Break, 3.18 mm)             | 5.0                    | %                 | ASTM D638       |
| Flexural Modulus (3.18 mm)                      | 3100                   | MPa               | ASTM D790       |
| Flexural Strength (3.18 mm)                     | 110                    | MPa               | ASTM D790       |
| Impact                                          | Nominal Value          | Unit              | Test Method     |
| Charpy Unnotched Impact Strength (3.18 mm)      | 304                    | J/m               | ASTM D6110      |
| Thermal Stability <sup>2</sup> (180°C, 3.18 mm) | No degradation         |                   | ASTM D4802      |
| UV Transmittance <sup>3</sup> (3.18 mm)         | < 1.0                  | %                 |                 |
| Hot Forming Temperature (3.18 mm)               | 160 to 193             | °C                | Internal Method |
| Notched Izod Impact (3.18 mm)                   | 21                     | J/m               | ASTM D256A      |
| Instrumented Dart Impact <sup>4</sup> (3.18 mm) | > 5.42                 | J                 | Internal Method |

| Thermal                                                          | Nominal Value                                            | Unit     | Test Method     |
|------------------------------------------------------------------|----------------------------------------------------------|----------|-----------------|
| Deflection Temperature Under Load (1.8 MPa, Unannealed, 3.18 mm) | 87.8                                                     | °C       | ASTM D648       |
| CLTE - Flow (3.18 mm)                                            | 7.4E-5                                                   | cm/cm/°C | ASTM D696       |
| Specific Heat <sup>5</sup>                                       | 1460                                                     | J/kg/°C  | ASTM C351       |
| Thermal Conductivity <sup>6</sup>                                | 0.20                                                     | W/m/K    | Internal Method |
| Flammability                                                     | Nominal Value                                            |          | Test Method     |
| Flame Rating (3.18 mm)                                           | HB                                                       |          | UL 94           |
| Optical                                                          | Nominal Value                                            | Unit     | Test Method     |
| Refractive Index <sup>7</sup>                                    | 1.490                                                    |          | ASTM D542       |
| Transmittance                                                    |                                                          |          | ASTM D1003      |
| 3180 μm <sup>8</sup>                                             | 93.0                                                     | %        |                 |
| 3180 μm <sup>9</sup>                                             | 93.0                                                     | %        |                 |
| Haze                                                             |                                                          |          | ASTM D1003      |
| 3180 μm <sup>10</sup>                                            | < 2.0                                                    | %        |                 |
| 3180 μm <sup>11</sup>                                            | 0.80                                                     | %        |                 |
| Yellowness Index <sup>12</sup> (3.18 mm)                         | 0.50                                                     | YI       | ASTM D1925      |
| NOTE                                                             |                                                          |          |                 |
| 1.                                                               | 0.125 in                                                 |          |                 |
| 2.                                                               | 30 min                                                   |          |                 |
| 3.                                                               | Unaged, (250 to 370 nanometers),<br>UV Spectrophotometer |          |                 |
| 4.                                                               | FTMS 406-M-1074                                          |          |                 |
| 5.                                                               | 0.125 in                                                 |          |                 |
| 6.                                                               | 0.125 in                                                 |          |                 |
| 7.                                                               | 0.125 in, Unaged                                         |          |                 |
| 8.                                                               | Aged                                                     |          |                 |
| 9.                                                               | Unaged                                                   |          |                 |
| 10.                                                              | Aged                                                     |          |                 |
| 11.                                                              | Unaged                                                   |          |                 |
| 12.                                                              | Aged                                                     |          |                 |

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