

# Ardel®

(polyarylate)

Stock shapes extruded from Ardel® resin are specifically formulated to endure the damaging effects of UV light. When exposed to UV light, this unique material undergoes a molecular rearrangement resulting in the formation of a protective layer that essentially serves as a UV stabilizer. This inherent UV stability combined with superior retention of optical and mechanical properties make polyarylate an ideal choice for any application where weathering effects could pose a problem.

The following physical property information is based on typical values of the base Ardel® polyarylate resin (PAR).

|                                  | Units                             | ASTM Test      | Result               |
|----------------------------------|-----------------------------------|----------------|----------------------|
| <b>Mechanical</b>                |                                   |                |                      |
| Tensile Strength @yield          | psi                               | D638           | 10,000               |
| Tensile Strength @break          | psi                               | D638           | —                    |
| Tensile Modulus                  | psi                               | D638           | 300,000              |
| Tensile Elongation @yield        | %                                 | D638           | 8.4                  |
| Tensile Elongation @break        | %                                 | D638           | 50.0                 |
| Flexural Strength @yield         | psi                               | D790           | 11,000               |
| Flexural Modulus                 | psi                               | D790           | 310,000              |
| Compressive Strength @yield      | psi                               | D695           | 12,180               |
| Compressive Modulus              | psi                               | D695           | —                    |
| Izod Impact Strength             |                                   |                |                      |
| Un-Notched                       | ft•lbs/in                         | D256           | —                    |
| Notched @73°F                    | ft•lbs/in                         | D256           | 3.8                  |
| Hardness (R, M, L or D)          | —                                 | D7852<br>D2240 | R125                 |
| <b>Thermal</b>                   |                                   |                |                      |
| Heat Deflection Temperature      |                                   |                |                      |
| @66 psi                          | °F                                | D648           | 356                  |
| @264 psi                         | °F                                | D648           | 345                  |
| Coefficient of Thermal Expansion | in/in/°F                          | D696           | 6.1x10 <sup>-5</sup> |
| Flammability Rating—UL94 @.125"  | —                                 | —              | V-0                  |
| Thermal Conductivity             | (BTU•in)/(hr•ft <sup>2</sup> •°F) | C177           | 1.48                 |
| Limiting Oxygen Index            | %                                 | D2863          | 36.0                 |
| <b>Electrical</b>                |                                   |                |                      |
| Dielectric Strength              | V/mil                             | D149           | 400                  |
| Dielectric Constant @1kHz        | —                                 | D150           | 3.32                 |
| Dissipation Factor @1kHz         | —                                 | D150           | 0.0040               |
| Volume Resistivity               | ohm•cm                            | D257           | 2x10 <sup>14</sup>   |
| <b>Optical</b>                   |                                   |                |                      |
| Haze                             | %                                 | D1746          | 2.3                  |
| Transparency                     | %                                 | D1746          | 87                   |
| <b>Other</b>                     |                                   |                |                      |
| Specific Gravity                 | —                                 | D792           | 1.21                 |
| Water Absorption @24 hours       | %                                 | D570           | 0.26                 |

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## Westlake Product Bulletin



### Applications Include:

- Semiconductor components
- Solar energy components
- Appliance parts
- Snap lock connectors

### Advantages of Polyarylate:

- Exceptional UV stability
- Transparency
- Good electrical properties
- Toughness
- Excellent flexural recovery

### Manufacturing Capabilities:

- Rod:** 3/16" to 6" diameter  
**Sheet:** .035" to 3/16" thick  
**Slab:** 1/4" to 4" thick  
**Film:** .001" to .029" thick

### Color/Grades:

Transparent light amber

\*In addition to our standard capabilities, Westlake also has the ability to process custom resins in various sizes and colors with some exceptions.

### Polyarylate Outgassing:

| Sample               | Temp. °C | % TML | % CVCM |
|----------------------|----------|-------|--------|
| 1" Thick Polyarylate | 40       | 0.05  | 0.00   |
|                      | 70       | 0.06  | 0.00   |
|                      | 85       | 0.07  | 0.00   |

Note: Test conducted in accordance with ASTM method F1227—Analysis of Total Mass Loss (TML) and Collected Volatile Condensable Materials (CVCM).

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