

Schematic Grade Diagram

Position among Engineering Plastics

Available Grades

U-100 (neat polymer)

P Series

U Series

AX Series

AX Series Resins

Technical Data Composite Grades

Precautions in molding

Applications

Contact Us

## U-polymer

## AX series (Opaque chemical-resistant grade)

AX series resins are opaque polymer alloys with a high deflection temperature under load without reinforcement and a chemical resistance as high as those of crystalline resins. They are excellent in moldability and provide molded products fewer in the number of sink marks, warps, and run-offs.

## Characteristics

- **Nonreinforced heat resistance:** Deflection temperature under load without reinforcement: 1.8 MPa at 150°C
- **Chemical resistance:** As high as those of polyamide resins, except alkali resistance
- **Adhesiveness:** Chemical resistance and adhesiveness as high as those of crystalline resins
- **Lubrication:** As high as those of polyamide resins
- **Molding accuracy:** Fewer in the number of sink marks and warps, and lower (less than 1/3) in water absorption than polyamide resins

## Properties

Print Table on A4 Paper

|                       | Item  | ASTM   | Unit: SI<br>(conventional)                         | When<br>absolutely dry | When equilibrium<br>moisture<br>absorption  |
|-----------------------|---|--------|--|------------------------|---|
|                       | Density   | D-792  | -  | 1.17                   | -   |
|                       | Water absorption (1/8", 24hrs)  | D-570  | %  | 0.75                   | -   |
|                       | Light transmittance (Thickness: 3mm)                                  | D-1003 | %  | -                      | -   |
| Mechanical Properties | Tensile strength  | D-638  | MPa {kg/cm <sup>2</sup> }                          | 72 {730}               | 53 {540}                                    |
|                       | Elongation at break   | D-638  | %  | 50                     | 70  |
|                       | Bending strength  | D-790  | MPa {kg/cm <sup>2</sup> }                          | 103 {1,050}            | 76 {770}                                    |
|                       | Bending modulus   | D-790  | GPa {kg/cm <sup>2</sup> }                          | 2.6 {26,000}           | 1.2 {12,000}                                |
|                       | Compressive strength (Yield)  | D-695  | MPa {kg/cm <sup>2</sup> }                          | -                      | -   |
| Thermal properties    | Izod impact strength<br>(1/8", with notch)                            | D-256  | J/m<br>{kg-Ecm/cm}                                 | 78 {8}                 | 196 {20}                                    |
|                       | Rockwell hardness   | D-785  | R  | 105                    | -   |
|                       | Deflection temperature under load<br>1.8MPa {18.6kg/cm <sup>2</sup> } | D-648  | °C   | 150                    | -   |
|                       | Linear expansion coefficient  | D-696  | 10 <sup>-5</sup> /K<br>{10 <sup>-5</sup> cm/cm/°C} | 7.7                    | -   |
|                       | Dielectric breakdown strength   | D-149  | MV/m {kv/mm}                                       | -                      | 25  |
| Electrical Properties | Specific volume resistivity   | D-257  | Ωm {Ωcm}   | -                      | 1x10 <sup>12</sup><br>{1x10 <sup>14</sup> } |
|                       | Dielectric constant (10 <sup>6</sup> Hz)                              | D-150  | PF/m   | -                      | 32 {3.6}                                    |
|                       | Dielectric dissipation factor(10 <sup>6</sup> Hz)                     | D-150  | -  | -                      | 0.04  |
|                       | Arc resistance  | D-495  | s  | -                      | 84  |
| Other properties      | Tracking resistance   | IEC    | V  | -                      | 600<  |
|                       | Molding shrinkage<br>(Thickness: 3mm)                                 | -      | %  | 1.0                    | -   |
|                       | Flow direction, orthogonal direction                                  |        |  |                        |   |

To Page Top

Copyright (C) 2000-2007, UNITIKA LTD. All Rights Reserved.