

## Material data

### List of Properties

|   | Unit       | Testing methodology<br>(ASTM) | PC                 | PPS                | RENY                 | AURUM     | PEEK                 | PP                 | POM                | PA6                | PA66               |
|---|------------|-------------------------------|--------------------|--------------------|----------------------|-----------|----------------------|--------------------|--------------------|--------------------|--------------------|
| Physical properties                               |            |                               |                    |                    |                      |           |                      |                    |                    |                    |                    |
| Specific gravity                                  |            | D792                          | 1.20               | 1.66               | 1.65                 | 1.33      | 1.30                 | 0.91               | 1.41               | 1.14               | 1.14               |
| Water absorption rate<br>(In water at 23°C x 24h) | %          | D570                          | 0.150              | 0.015              | 0.140                | 0.34      | 0.500                | 0.010              | 0.220              | 1.800              | 2.500              |
| Glass fiber Content percentage                    | %          |                               | -                  | 40                 | 50                   | -         | -                    | -                  | -                  | -                  | -                  |
| Mechanical properties                             |            |                               |                    |                    |                      |           |                      |                    |                    |                    |                    |
| Tensile strength                                  | Mpa        | D638                          | 62                 | 196                | 285                  | 92        | 91                   | 36                 | 60                 | 84                 | 79                 |
| Tensile elongation                                | %          | D638                          | 110                | 2.2                | 2.1                  | 90        | 50~120               | 500                | 60                 | 25                 | 50                 |
| Bending strength                                  | Mpa        | D790                          | 88.2               | 255                | 380                  | 137       | 147                  | -                  | 96                 | 127                | 118                |
| Bend elastic constant                             | Gpa        | D790                          | 2.3                | 13.2               | 17.4                 | 2.9       | 3.9                  | 1.5                | 2.6                | 3.1                | 2.8                |
| Izod Impact strength<br>(with notch)              | J/m        | D256                          | 880                | 98                 | 110                  | 88        | 88                   | 30                 | 63                 | 39                 | 39                 |
| Rockwell Hardness                                 | R, M scale | D785                          | R120               | M100               | M111                 | 129       | R126                 | R100               | M80                | R119               | R120               |
| Thermal properties                                |            |                               |                    |                    |                      |           |                      |                    |                    |                    |                    |
| Deflection under load<br>Temperature (1.82MPa)    | °C         | D648                          | 135                | 270                | 234                  | 238       | 152                  | 120                | 110                | 71                 | 70                 |
| Continuous use Temperature<br>(Mech.with imp.)    | °C         | UL746B                        | 115                | 200                | 105                  | 260       | 180                  | 65                 | 95                 | 65                 | 75                 |
| Combustiblness                                    |            | UL94                          | HB                 | V-0                | HB                   | V-0       | V-0                  | HB                 | HB                 | V-2                | V-2                |
| Electrical properties                             |            |                               |                    |                    |                      |           |                      |                    |                    |                    |                    |
| Volume Resistance                                 | Ω · cm     | D257                          | 4×10 <sup>16</sup> | 1×10 <sup>16</sup> | 1.3×10 <sup>16</sup> | 1019~1020 | 4.9×10 <sup>16</sup> | 1×10 <sup>16</sup> | 1×10 <sup>14</sup> | 3×10 <sup>15</sup> | 1×10 <sup>15</sup> |
| Insulation breakdown Strength                     | MV/mm      | D149                          | 16                 | 12                 | 32                   |           | 17                   | 31                 | 24                 | 20                 | 21                 |
| Arc resistance                                    | sec        | D495                          | 120                | 120                | 129                  |           | 23                   | -                  | 240                | 195                | 118                |
| Permittivity (106Hz)                              |            | D150                          | 2.9                | 4.6                | 4.0                  | 3.1       | 3.3                  | -                  | 3.7                | 3.0                | 3.3                |
| Dielectric tangent(106Hz)                         |            | D150                          | 0.009              | 0.002              | 0.009                | 0.0034    | 0.004                | -                  | 0.007              | 0.020              | 0.020              |

\*Values provided in the table are for reference purpose only, and they are not guaranteed values.



|                         |   |   |   |   |   |   |   |   |   |   |   |
|-------------------------|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia                 | x | o | o | o | o | o | x | o | o | o | o |
| Sodium hydroxide 10%    | - | o | o | o | o | o | △ | o | o | o | o |
| Potassium hydroxide 10% | x | △ | o | o | o | o | △ | o | o | o | o |
| Calcium hydroxide       | o | △ | x | o | o | o | o | x | x | o | o |
| Halogenated organics    |   |   |   |   |   |   |   |   |   |   |   |
| Carbon tetrachloride    | - | - | - | o | - | - | - | - | - | - | o |
| Perchloro ethylene      | - | - | - | o | - | - | - | - | - | - | o |
| Freon 12                | - | - | - | o | - | - | - | - | - | - | - |
| Hydrocarbon             |   |   |   |   |   |   |   |   |   |   |   |
| Benzene                 | x | - | - | o | - | - | - | - | - | - | o |
| Toluene                 | x | o | - | o | - | - | - | - | - | - | o |
| Xylene                  | - | - | - | o | - | - | - | - | - | - | o |
| Cyclohexane             | - | - | - | o | - | - | - | - | - | - | △ |
| Naphthalene             | - | - | - | o | - | - | - | - | - | - | o |
| Inorganic chemicals     |   |   |   |   |   |   |   |   |   |   |   |
| Water absorption rate   | o | o | △ | o | o | o | o | △ | △ | o | o |
| Hydrogen sulfide (gas)  | o | o | o | o | - | o | △ | o | o | o | o |
| Sulfur dioxide          | o | △ | o | o | - | o | o | o | o | o | o |
| Sodium chloride         | - | - | o | o | - | o | o | o | o | o | o |
| Ammonium nitrate        | o | o | o | o | o | o | △ | o | o | o | o |
| Sodium nitrate          | x | o | o | o | o | o | △ | o | o | o | o |
| Sodium acetate          | - | - | o | o | - | o | o | o | o | o | o |
| Calcium carbonate       | x | o | o | o | o | o | o | o | o | o | o |
| Calcium chloride        | o | o | o | o | o | o | o | o | o | o | o |
| Magnesium chloride      | o | o | o | o | o | o | o | o | o | o | o |
| Magnesium sulfate       | o | o | o | o | o | o | o | o | o | o | o |
| Zinc sulfate            | o | o | o | o | o | o | △ | o | o | o | o |
| Hydrogen peroxide       | o | △ | △ | o | - | o | x | △ | △ | o | o |
| Chemicals               |   |   |   |   |   |   |   |   |   |   |   |
| Urea                    | o | - | - | o | - | - | o | - | - | - | - |
| Detergent               | o | - | o | o | - | o | △ | o | o | - | - |

o Can be used △ Can be used depending on conditions x Can not be used - No data

\*Test data shown in the table above is for the test conducted at room temperature (23°C) using test specimen. As chemical resistance changes according to use conditions, ensure to test under actual use conditions beforehand.

## Main properties comparison data

