



Property Table (Flame retardant PC grade) ①



| Features | Transparency | | | Transparency | Transparency | Transparency | Transparency | Transparency | Transparency | Transparency |
|--|------------------------|-------------------------------|----------------------|---|--|--|--|--|--|---|
| | Grades | AZ1900T | RY1900 | RY2200 | IRY2200 | VRV2200 | IVV2200R | RE1900 | RE2200 | |
| Properties | Units | Test Method | condition | >PC< | >PC< | >PC< | >PC< | >PC< | >PC< | >PC< |
| Density | g/cm ³ | ISO 1183 (JIS K7112) | | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Water Absorption | % | ISO 62 (JIS K7209) | 24h 50%RH | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 |
| Fluidity | | | | | | | | | | |
| Melt Volume-Flow Rate (MVR) | cm ³ /10min | ISO 1133 (JIS K7210) | | 300°C 1.20kg 5 | 300°C 1.20kg 18 | 300°C 1.20kg 12 | 300°C 1.20kg 12 | 300°C 1.20kg 12 | 300°C 1.20kg 12 | 300°C 1.20kg 12 |
| Spiral Flow Length | cm | Idemitsu Method | | Thickness:3mm/Width:10mm Cylinder:300°C/Mold:40°C Inj.Pressure:125MPa 48 | - | - | - | - | - | Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:128MPa 22 |
| Mechanical properties | | | | | | | | | | |
| Tensile Stress at Yield*1 | MPa | ISO 527-1,2 (JIS K7161, 7162) | | Y65 | Y65 | Y65 | Y65 | Y65 | Y65 | Y65 |
| Nominal tensile strain at break*2 | % | | | tB70 | tB95 | tB95 | tB95 | tB95 | tB95 | tB95 |
| Flexural Strength | MPa | ISO 178 (JIS K7171) | | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Flexural Modulus | GPa | | | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 | 2.3 |
| Charpy Impact Strength | kJ/m ² | ISO 179-1 (JIS K7111) | notched at 23°C | - | 70 | 80 | 80 | 80 | 80 | 70 |
| Rockwell Hardness | - | ISO 2039-2 (JIS K7202-2) | R scale/ M scale | R120/M50 | R120/M50 | R120/M50 | R120/M50 | R120/M50 | R120/M50 | R120/M50 |
| Thermal properties | | | | | | | | | | |
| Temperature of deflection under load | °C | ISO 75-1,2 (JIS K7191-1,2) | 0.45MPa 1.8MPa | 140 125 | - 125 | - 125 | - 125 | - 125 | - 125 | - 125 |
| Vicat Softening Point | °C | ISO 306 | | - | - | - | - | - | - | - |
| Linear Thermal Expansion coefficient | ×10 ⁻⁵ /°C | ISO 11359-2 | | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |
| Mould Shrinkage | % | Idemitsu Method | 2mm MD 2mm TD | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 | 0.5~0.7 0.5~0.7 |
| Optical properties | | | | | | | | | | |
| Total Luminous Transmittance | % | ISO 13468-1 (JIS K7361-1) | 3mm | 85~89 | 85~89 | 85~89 | 85~89 | 85~89 | 85~89 | 85~89 |
| Flammability | | | | | | | | | | |
| Flammability Rating | mm thickness | UL94 | class/mini-thickness | V-0/1.5 V-2/0.40 5VA/4.0 | V-0/3.0 | V-0/3.0 | V-0/3.0 | V-0/3.0 | V-0/3.0 | V-2/0.38 V-2/0.39 |
| Comparative tracking index(CTI) | PLC level | UL746A | | - | - | - | - | - | - | 2 |
| UV light, Water exposure and immersion | - | UL746C | | - | - | - | - | f1 | f1 | - |
| Thermal Index RTI Elec RTI Imp RTI Str | °C | UL746B | | 80 80 80 | 130(1.5mm) 125(1.5mm) 130(1.5mm) | 130(1.5mm) 125(1.5mm) 130(1.5mm) | 130(1.5mm) 125(1.5mm) 130(1.5mm) | 130(1.5mm) 125(1.5mm) 130(1.5mm) | 130(1.5mm) 125(1.5mm) 130(1.5mm) | 130 125 130 |
| Electrical properties | | | | | | | | | | |
| Dielectric Strength | kV/mm | IEC 60243-1 (JIS C2110) | | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Arc Resistance | PLC level | ASTM D495 | | - | - | - | 6 | 6 | 6 | 6 |
| Volume Resistivity | Ω·cm | ASTM D257 | | - | - | - | - | - | - | 1E+16< |
| Dielectric Constant | - | IEC 60250 | 1MHz | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 | 2.85 |
| Dielectric dissipation Factor | - | | 1MHz | - | - | - | - | - | - | 0.0092 |
| Standard Molding Parameters | | | | | | | | | | |
| Cylinder Temperature | | | | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) |
| Mold Temperature | | | | 80~120°C | 80~120°C | 80~120°C | 80~120°C | 80~120°C | 80~120°C | 80~120°C |
| Pre-drying condition | | | | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours |

*1 Y:Yield strength

*2 tB : Nominal tensile strain at break

◇Data in this Catalogue shows sample figures measured under certain specific conditions.

◇Usage of the products in this catalogue does not warrant any successful results of applications of the products for specific usage.

◇In case of the products being used for purpose and usage introduced in this Catalogue, please pay attention not to infringe of industrial property rights (patent, utility model, design, etc.) of third party which may relate to such use. (IDEMITSU SHALL NOT BE LIABLE TO SUCH INFRINGEMENTS.)

◇You should not use the products in medical equipment and medical product applications.

◇Flammability rating in this Catalogue was evaluated with small-scale test method and it is not intended to reflect fire proof performance in case of actual fire.

◇Please verify whether the grade of products to be used for food utensils, cookware or packaging applications supplied by Idemitsu will meet the requirement of applicable laws (ex. food sanitation law in Japan, etc.) and ordinances in advance.

◇Please verify whether products using raw materials supplied by Idemitsu with applicable laws and ordinances.

◇Please agree to the quality specification in advance if you purchase our products.

◇Figures of physical characteristics of other producer's resins have been referred from their catalogues and information source thereof.

◇Please note that the content of this Catalogue may be altered from time to time according to the improvement of the products without prior notice.

◇In case of exporting the product, please pay attention to the laws and regulations of chemical substances and other substances in the exporting country. For inquiries regarding the applicability of our products to individual laws and regulations, please consult our HP contact or sales staff.

| Features | | | | Standard Flame retardant | Flame retardant | Flame retardant agent free Flame retardant | Flame retardant agent free High flow Flame-retardant 5 V | High flow Non-bromine Flame-retardantV-0 | Filler reinforced High Stiffness Dimensional Precision |
|---------------------------------------|------------------------|-------------------------------|----------------------|---|---|--|---|--|---|
| Grades | | | | AZ1900 | AZ2201 | AC1030 | AC1080 | AK3020 | DK3722 |
| Properties | Units | Test Method | condition | >PC< | >PC< | >PC< | >PC< | >PC-FR(40)< | >PC-(TD+PD)20-FR(40)< |
| Density | g/cm ³ | ISO 1183 (JIS K7112) | | 1.2 | 1.2 | 1.2 | 1.22 | 1.19 | 1.38 |
| Water Absorption | % | ISO 62 (JIS K7209) | 24h 50%RH | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | — |
| Fluidity | | | | | | | | | |
| Melt Volume-Flow Rate (MVR) | cm ³ /10min | ISO 1133 (JIS K7210) | | 300°C 1.20kg 18 | 300°C 1.20kg 12 | 300°C 1.20kg 27 | 260°C 2.16kg 11 | 280°C 2.16kg 23 | 260°C 2.16kg 5 |
| Spiral Flow Length | cm | Idemitsu Method | | Thickness:2mm/Width:10mm Cylinder:300°C/Mold:80°C Inj.Pressure:125MPa 29 | Thickness:2mm/Width:10mm Cylinder:300°C/Mold:80°C Inj.Pressure:125MPa 25 | — — | Thickness:2mm/Width:10mm Cylinder:260°C/Mold:40°C Inj.Pressure:125MPa 30 | — — | Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa 30 |
| Mechanical properties | | | | | | | | | |
| Tensile Stress at Yield*1 | MPa | ISO 527-1,2 (JIS K7161, 7162) | | Y65 | Y65 | Y60 | Y60 | Y65 | 80 |
| Nominal tensile strain at break*2 | % | | | tB95 | tB95 | tB90 | tB90 | tB60 | tB3 |
| Flexural Strength | MPa | ISO 178 (JIS K7171) | | 90 | 90 | 90 | 90 | 90 | 120 |
| Flexural Modulus | GPa | | | 2.3 | 2.3 | 2.2 | 2.9 | 2.5 | 6.3 |
| Charpy Impact Strength | kJ/m ² | ISO 179-1 (JIS K7111) | notched at 23°C | — | — | — | 20 | — | 4 |
| Rockwell Hardness | — | ISO 2039-2 (JIS K7202-2) | R scale/ M scale | R120/M50 | R120/M50 | R120/M50 | — | R120 | — |
| Thermal properties | | | | | | | | | |
| Temperature of deflection under load | °C | ISO 75-1,2 (JIS K7191-1,2) | 0.45MPa 1.8MPa | — 125 | 138 125 | — 125 | — 117 | 110 100 | — 110 |
| Vicat Softening Point | °C | ISO 306 | | — | — | — | — | — | — |
| Linear Thermal Expansion coefficient | ×10 ⁻⁵ /°C | ISO 11359-2 | | 6.5 | 6.5 | 6.5 | — | — | 3.6 |
| Mould Shrinkage | % | Idemitsu Method | 2mm MD | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.22 |
| | % | | 2mm TD | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.5~0.7 | 0.26 |
| Optical properties | | | | | | | | | |
| Total Luminous Transmittance | % | ISO 13468-1 (JIS K7361-1) | 3mm | — | — | — | — | — | — |
| Flammability | | | | | | | | | |
| Flammability Rating | mm thickness | UL94 | class/mini-thickness | V-0/1.5 | V-0/1.0 V-2/0.40 | V-0/1.2 5VA/2.5 | V-0/1.5 5VA/2.0 | V-0/0.75 | V-1/0.5(BK) V-2/0.35(BK) |
| Comparative tracking index(CTI) | PLC level | UL746A | | 2 | 2 | — | — | — | — |
| UV light,Water exposure and immersion | — | UL746C | | — | — | — | — | — | — |
| Thermal Index RTI Elec | °C | UL746B | | 80 | 130(1.2mm) | 130(1.5mm) | 80 | 80 | 80 |
| RTI Imp | | | 80 | 125(1.2mm) | 115(1.5mm) | 80 | 80 | 80 | |
| RTI Str | | | 80 | 130(1.2mm) | 130(1.5mm) | 80 | 80 | 80 | |
| Electrical properties | | | | | | | | | |
| Dielectric Strength | kV/mm | IEC 60243-1 (JIS C2110) | | 30 | 30 | 30 | — | — | — |
| Arc Resistance | PLC level | ASTM D495 | | — | — | — | — | — | — |
| Volume Resistivity | Ω·cm | ASTM D257 | | — | — | — | — | — | — |
| Dielectric Constant | — | IEC 60250 | 1MHz | 2.85 | 2.85 | 2.85 | — | — | — |
| Dielectric dissipation Factor | — | | 1MHz | — | — | — | — | — | — |
| Standard Molding Parameters | | | | | | | | | |
| Cylinder Temperature | | | | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~300°C (Maximum320°C) | 260~280°C (Maximum290°C) | 260~280°C (Maximum300°C) | 260~300°C (Maximum320°C) |
| Mold Temperature | | | | 80~120°C | 80~120°C | 80~120°C | 60~90°C | 60~80°C | 60~95°C |
| Pre-drying condition | | | | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 120°C, 5~8hours | 100°C, 5~8hours | 80~100°C, 5~8hours |

*1 Y:Yield strength

*2 tB : Nominal tensile strain at break

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