# Leona™ Series Data Sheet

AsahiKASEI

| | | | | PA Non reinforced | | | | PA High molecular weight | | | | | | | | | | PA Impact | | | | PA Friction modified | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | General | | Heat stabillized | | General | | | | | | Heat stabilized | | | | Heat stabilized | | | | Heat stabilized | | | |
| | | | | 1300S | | 1402S | | 1500 | | 1700S | | 9400S | | 1502S | | 1702 | | TR161 | | TR382 | | 1442 BK | | 1542 BK | |
| | Test method | Units | Condition | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Density | ISO 1183 | g/cm$^3$ | | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.11 | - | 1.08 | - | 1.17 | - | 1.17 | - |
| Equilibrium moisture content | ISO 62 | % | | - | 2.5 | - | 2.5 | - | 2.5 | - | 2.5 | - | 2.8 | - | 2.5 | - | 2.5 | - | 1.9 | - | 1.7 | - | 2.4 | - | 2.4 |
| Tensile stress at yield | ISO 527 | MPa | 23°C50%RH | 82 | 52 | 82 | 52 | 84 | 51 | 84 | 50 | 80 | 40 | 84 | 51 | 84 | 50 | 72 | 46 | 53 | 35 | 79 | 55 | 78 | 52 |
| Tensile strain at yield | ISO 527 | % | 23°C50%RH | 4 | 24 | 4 | 24 | 4.5 | 26 | 4.5 | 27 | 4 | 22 | 4.5 | 26 | 4.5 | 27 | 4.5 | 22 | 5.5 | 28 | 4 | 18 | 4 | 27 |
| Tensile stress at break | ISO 527 | MPa | 23°C50%RH | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 64 | - | 45 | - | - | - | - | - |
| Tensile strain at break | ISO 527 | % | 23°C50%RH | - | >100 | - | >100 | - | >100 | - | >100 | - | >100 | - | >100 | - | >100 | 15 | >100 | 60 | >100 | - | - | - | - |
| Tensile modulus | ISO 527 | Gpa | 23°C50%RH | 3 | 1.2 | 3 | 1.2 | 2.9 | 1.0 | 3 | 1.1 | 2.7 | 0.7 | 2.9 | 1.0 | 3 | 1.1 | 2.4 | 1.1 | 1.9 | 0.7 | 3.3 | 1.5 | 3.3 | 1.3 |
| Flexural strength | ISO 178 | MPa | 23°C50%RH | 113 | 42 | 113 | 42 | 110 | 39 | 115 | 39 | 97 | 30 | 110 | 39 | 115 | 39 | 88 | 38 | 73 | 30 | 115 | 51 | 114 | 46 |
| Flexural modulus | ISO 178 | Gpa | 23°C50%RH | 2.7 | 1.1 | 2.7 | 1.1 | 2.7 | 0.9 | 2.8 | 0.9 | 2.3 | 0.7 | 2.7 | 0.9 | 2.8 | 0.9 | 2.2 | 1 | 2 | 0.7 | 2.9 | 1.4 | 2.9 | 1.2 |
| Charpy impact strength (Notched) | ISO 179 | KJ/㎡ | | 6 | 15 | 6 | 15 | 5 | 30 | 7 | 28 | 7 | 41 | 5 | 30 | 7 | 28 | 15 | NB | 80 | NB | 6 | 12 | 6 | 18 |
| Charpy impact strength (un-Notched) | ISO 179 | KJ/㎡ | | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | N B | N B | N B | N B | N B | N B | N B | N B |
| Rockwell hardness | ISO 2039 | | scale R | 120 | 108 | 120 | 108 | 120 | 105 | 120 | 105 | 120 | - | 120 | 105 | 120 | 105 | 114 | 98 | 107 | 89 | - | - | - | - |
| Rockwell hardness | ISO 2039 | | scale M | 80 | 55 | 80 | 55 | 80 | 55 | 80 | 55 | 80 | - | 80 | 55 | 80 | 55 | - | - | - | - | - | - | - | - |
| Coefficient of liner thermal expantion | ASTMD 696 | ×10$^{-5}$/k | | 8 | - | 8 | - | 8 | - | 8 | - | - | - | 8 | - | 8 | - | 7 | - | 11 | - | 7 | - | 7 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 1.8 MPa | 70 | - | 70 | - | 65 | - | 70 | - | 60 | - | 65 | - | 70 | - | 66 | - | 58 | - | 73 | - | 64 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 0.45 MPa | 190 | - | 190 | - | 195 | - | 215 | - | 165 | - | 195 | - | 215 | - | 209 | - | 183 | - | 210 | - | 201 | - |
| UL-94 | UL-94 | PLC | 1.5 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 0.75 mm | V2 | - | V2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| GWFI | IEC 60695-2-12 | ℃ | 3 mm | 960 | | 960 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Comparative tracking index | IEC 60112 | V | 3 mm | 600 | - | 525 | - | 600 | - | - | - | - | - | 525 | - | - | - | - | - | - | - | - | - | - | - |
| Dielectric | IEC 60243 | KV/㎜ | | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | - | - | - | - | - | - | - | - |
| Surface resistivity | IEC 60093 | Ω | 23°C50%RH | 10$^{13}$ | - | 10$^{13}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | - | - | - | - | - | - | - | - |
| Volume resistivity | IEC 60093 | Ω・㎝ | 23°C50%RH | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | - | - | - | - | - | - |
| Mold shrinkage (para/perp to flow) | AsahiKasei method | % | | 1.3～2.0 | - | 1.3～2.0 | - | 1.3～2.0 | - | 1.3～2.0 | - | - | - | 1.3～2.0 | - | 1.3～2.0 | - | 1.7～2.2 | - | 1.7～2.5 | - | 1.9/2.3 | - | 1.8/2.2 | - |
| | | | | | | | | | | | | | | | | | | | | | | ＊Provisional | | ＊Provisional | |

- Please note that all data and values are given as typical results obtained with the indicated test methods for purposes of basic reference in grade selection only, and not as any product specification or warranty of any nature, and are subject to change with out notice.
- Be sure to read the relevant SDS before handling and use, and always follow the Important Precautions.
- Equilibrium moisture content: at 23°C, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

# Leona™ Series Data Sheet

AsahiKASEI

| | | | | PA GF reinforced | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | General | | | | | | | | Heat stabilized | | | | | | | | | | | | | | | |
| | | | | 13G15 | | 1300G | | 13G43 | | 13G50 | | 14G15 | | 14G30 BK | | 1402G | | 14G33 | | 14G35 | | 14G43 | | 14G50 | | 14G50 BK | |
| | Test method | Units | Condition | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Density | ISO 1183 | g/cm$^3$ | - | 1.25 | - | 1.39 | - | 1.5 | - | 1.58 | - | 1.25 | - | 1.36 | - | 1.39 | - | 1.39 | - | 1.41 | - | 1.5 | - | 1.58 | - | 1.56 | - |
| Equilibrium moisture content | ISO 62 | % | - | - | 2.1 | - | 1.7 | - | 1.4 | - | 1.3 | - | 2.1 | - | 1.8 | - | 1.7 | - | 1.7 | - | 1.7 | - | 1.4 | - | 1.3 | - | 1.3 |
| Tensile stress at yield | ISO 527 | MPa | 23°C50%RH | - | 77 | - | - | - | - | - | - | - | 77 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile strain at yield | ISO 527 | % | 23°C50%RH | - | 6 | - | - | - | - | - | - | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile stress at break | ISO 527 | MPa | 23°C50%RH | 107 | 73 | 190 | 135 | 207 | 150 | 237 | 183 | 107 | 73 | 202 | 135 | 190 | 135 | 208 | 143 | 210 | 149 | 221 | 160 | 237 | 183 | 246 | 177 |
| Tensile strain at break | ISO 527 | % | 23°C50%RH | 2.5 | 11 | 3 | 5 | 3 | 4.5 | 2 | 4 | 2.5 | 11 | 3 | 6 | 3 | 5 | 4 | 6 | 3 | 5 | 2 | 4 | 2 | 4 | 3 | 4 |
| Tensile modulus | ISO 527 | Gpa | 23°C50%RH | 5.8 | 3.6 | 10 | 8 | 12.7 | 10.2 | 16.9 | 13 | 5.8 | 3.6 | 10.5 | 7.4 | 10 | 8 | 9.8 | 7.8 | 11.7 | 8.6 | 14.9 | 11.5 | 16.9 | 13 | 17 | 12 |
| Flexural strength | ISO 178 | MPa | 23°C50%RH | 162 | 116 | 275 | 202 | 303 | 225 | 371 | 269 | 162 | 116 | 300 | 218 | 275 | 202 | 302 | 213 | 316 | 235 | 352 | 261 | 371 | 269 | 387 | 284 |
| Flexural modulus | ISO 178 | Gpa | 23°C50%RH | 4.8 | 3.3 | 9.0 | 6.8 | 11.7 | 8.7 | 13.6 | 11.0 | 4.8 | 3.3 | 9.4 | 7.1 | 9.0 | 6.8 | 9.6 | 6.7 | 11.2 | 8.6 | 13.1 | 10.6 | 13.6 | 11.0 | 15.7 | 12.1 |
| Charpy impact strength (Notched) | ISO 179 | KJ/㎡ | - | 6 | 5 | 11 | 16 | 12 | 18 | 14 | 21 | 6 | 5 | 13 | 16 | 11 | 16 | 13 | 16 | 14 | 17 | 14 | 20 | 14 | 21 | 18 | 21 |
| Charpy impact strength (un-Notched) | ISO 179 | KJ/㎡ | - | 26 | 38 | 72 | 83 | 84 | 85 | N B | 95 | 26 | 38 | - | - | 72 | 83 | 90 | 97 | 93 | - | N B | 101 | N B | 95 | - | - |
| Rockwell hardness | ISO 2039 | - | scale R | 120 | - | 120 | 112 | 118 | - | 118 | - | 120 | - | - | - | 120 | 112 | 120 | - | - | - | 118 | - | 118 | - | - | - |
| Rockwell hardness | ISO 2039 | - | scale M | 94 | 71 | 96 | 75 | 96 | 80 | 95 | 80 | 94 | 71 | - | - | 96 | 75 | 96 | 75 | - | - | 95 | 80 | 95 | 80 | - | - |
| Coefficient of liner thermal expantion | ASTMD 696 | ×10$^{-5}$/k | - | 4 | - | 3 | - | 3 | - | 2 | - | 4 | - | 3 | - | 3 | - | 2 | - | 2 | - | 2 | - | 2 | - | 2 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 1.8 MPa | 235 | - | 250 | - | 255 | - | 255 | - | 235 | - | 251 | - | 250 | - | 250 | - | 252 | - | 255 | - | 255 | - | 253 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 0.45 MPa | 260 | - | 265 | - | 260 | - | 260 | - | 260 | - | 260 | - | 265 | - | 260 | - | 261 | - | 260 | - | 260 | - | 260 | - |
| UL-94 | UL-94 | PLC | 1.5 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 0.75 mm | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | - | - | - | - | HB | - | HB | - |
| GWFI | IEC 60695-2-12 | ℃ | 3 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Comparative tracking index | IEC 60112 | V | 3 mm | 600 | - | 600 | - | 600 | - | 525 | - | 425 | - | 500e | - | 425 | - | 425 | - | 500 | - | - | - | 525 | - | - | - |
| Dielectric | IEC 60243 | KV/㎜ | - | 26 | - | 28 | - | 30 | - | 21 | - | 26 | - | 42.5 | - | 28 | - | 33 | - | 43 | - | - | - | 21 | - | - | - |
| Surface resistivity | IEC 60093 | Ω | 23°C50%RH | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | - | - | 10$^{15}$ | - | - | - |
| Volume resistivity | IEC 60093 | Ω・㎝ | 23°C50%RH | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | - | - | 10$^{15}$ | - | - | - |
| Mold shrinkage (para/perp to flow) | AsahiKasei method | % | - | 0.7/1.2 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.4/0.7 | - | 0.7/1.2 | - | *0.4/1.0 | - | 0.4/0.9 | - | 0.4/0.8 | - | *0.3/1.0 | - | 0.4/0.7 | - | 0.4/0.7 | - | 0.4/0.7 | - |
| | | | | | | | | | | | | | | ＊ISO294-4 | | | | | | ＊ISO294-4 | | | | | | ＊Provisional | |

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- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

# Leona™ Series Data Sheet

AsahiKASEI

| | | | | PA Special | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | GF reinforced, Excellent surface, Enhanced strength and stiffness | | | | | | | | | | | | High stiffness after absorption of water | | | | | | MF reinforced, Excellent surface, Enhanced strength and stiffness | | | | Hydrosis resistance | | | |
| | | | | 90G33 | | 90G50 | | 90G55 | | 90G60 | | 93G33 | | 54G33 | | 54G43 | | SG104 BK | | SG105 BK | | SG106 BK | | 91G55 | | 91G60 | | BG230 | | 53G33 | |
| | Test method | Units | Condition | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Density | ISO 1183 | g/cm$^3$ | - | 1.39 | - | 1.58 | - | 1.64 | - | 1.72 | - | 1.39 | - | 1.39 | - | 1.5 | - | 1.46 | - | 1.59 | - | 1.72 | - | 1.68 | - | 1.72 | - | 1.32 | - | 1.35 | - |
| Equilibrium moisture content | ISO 62 | % | - | - | 1.4 | - | 1.2 | - | 1.1 | - | 1 | - | 1.9 | - | 1.9 | - | 1.6 | - | 1.5 | - | 1.2 | - | 1.0 | - | - | - | 1.0 | - | 0.9 | - | 1.1 |
| Tensile stress at yield | ISO 527 | MPa | 23°C50%RH | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile strain at yield | ISO 527 | % | 23°C50%RH | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile stress at break | ISO 527 | MPa | 23°C50%RH | 180 | 150 | 250 | 200 | 232 | 163 | 246 | 176 | 174 | 107 | 183 | 113 | 200 | 131 | 230 | 200 | 270 | 230 | 280 | 240 | 180 | 150 | 173 | 142 | 170 | 130 | 203 | 161 |
| Tensile strain at break | ISO 527 | % | 23°C50%RH | 2.5 | 3 | 2 | 3 | 2 | 3 | 2 | 3 | 5.5 | 9.5 | 4 | 9 | 4 | 7.5 | 3 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | 3 | 4 | 3 | 5.4 | 4 | 6 | 4 | 6 |
| Tensile modulus | ISO 527 | Gpa | 23°C50%RH | 10.2 | 9.3 | 18.0 | 17.0 | 18.6 | 14.8 | 22.6 | 13.7 | 9.4 | 5.3 | 9.7 | 6.1 | 12.2 | 7.7 | 13 | 13 | 18 | 18 | 21 | 21 | 15 | 14 | 17.5 | 16.4 | 9.5 | 8.0 | 9.5 | 7.5 |
| Flexural strength | ISO 178 | MPa | 23°C50%RH | 238 | 216 | 355 | 239 | 394 | 269 | 397 | 291 | 233 | 150 | 270 | 165 | 290 | 191 | 320 | 310 | 380 | 350 | 400 | 380 | 250 | 220 | 255 | 235 | 268 | 211 | 296 | 250 |
| Flexural modulus | ISO 178 | Gpa | 23°C50%RH | 10 | 8.1 | 14.2 | 12.0 | 15.4 | 12.3 | 18.7 | 17.3 | 7.3 | 4.8 | 9.0 | 5.3 | 10.6 | 7.0 | 13 | 12 | 16 | 15 | 20 | 19 | 14.0 | 12.0 | 16.4 | 15.7 | 9.3 | 7.8 | 9.7 | 7.8 |
| Charpy impact strength (Notched) | ISO 179 | KJ/㎡ | - | 6 | 12 | 16 | 16 | 13 | 13 | 14 | 15 | 12 | 23 | 12 | 19 | 14 | 21 | 15 | 14 | 17 | 16 | 17 | 17 | 5 | 6 | 6 | 6.1 | 10 | 12 | 13 | 15 |
| Charpy impact strength (un-Notched) | ISO 179 | KJ/㎡ | - | 55 | 54 | 88 | 84 | 82 | 71 | - | - | 98 | 98 | 98 | 98 | 99 | 109 | - | - | - | - | - | - | - | - | - | - | - | - | 92 | 92 |
| Rockwell hardness | ISO 2039 | - | scale R | 120 | - | 120 | - | 120 | 115 | - | - | - | - | 120 | 110 | 118 | - | - | - | - | - | - | - | 120 | - | 120 | 117 | - | - | 121 | 112 |
| Rockwell hardness | ISO 2039 | - | scale M | 90 | - | 100 | - | 95 | 88 | 95 | - | 90 | - | 93 | 68 | 93 | - | 102 | 98 | 103 | 100 | 102 | 99 | 102 | - | 95 | 88 | 94 | 83 | 97 | 88 |
| Coefficient of liner thermal expantion | ASTMD 696 | ×10$^{-5}$/k | - | 3 | - | 2 | - | 2 | - | 2 | - | 3 | - | 3 | - | - | - | 1.2 | - | 1.2 | - | 1 | - | - | - | 2 | - | 2 | - | 2 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 1.8 MPa | 220 | - | 225 | - | 225 | - | 221 | - | 210 | - | 230 | - | 230 | - | 235 | - | 240 | - | 240 | - | 220 | - | 200 | - | 207 | - | 208 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 0.45 MPa | 235 | - | 240 | - | 240 | - | - | - | 230 | - | 250 | - | 245 | - | 250 | - | 250 | - | 250 | - | - | - | 217 | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 1.5 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 0.75 mm | - | - | HB | - | - | - | - | - | HB | - | HB | - | HB | - | - | - | - | - | - | - | - | - | HB | - | - | - | - | - |
| GWFI | IEC 60695-2-12 | ℃ | 3 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Comparative tracking index | IEC 60112 | V | 3 mm | - | - | - | - | 450 | - | 475 | - | - | - | 600 | - | 600 | - | 575 | - | 600 | - | 600 | - | - | - | - | - | - | - | - | - |
| Dielectric | IEC 60243 | KV/㎜ | - | - | - | - | - | 28 | - | 28 | - | - | - | 31 | - | 32 | - | 40 | - | 38 | - | 36 | - | - | - | - | - | - | - | - | - |
| Surface resistivity | IEC 60093 | Ω | 23°C50%RH | - | - | - | - | $10^{13}$ | - | $10^{13}$ | - | - | - | $10^{15}$ | - | $10^{15}$ | - | $10^{16}$ | - | $10^{16}$ | - | $10^{15}$ | - | - | - | - | - | - | - | - | - |
| Volume resistivity | IEC 60093 | Ω・cm | 23°C50%RH | - | - | - | - | - | - | - | - | - | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | - | - | - | - | - | - | - | - |
| Mold shrinkage (para/perp to flow) | AsahiKasei method | % | - | 0.4/0.9 | - | 0.2/0.5 | - | 0.2/0.5 | - | 0.2/0.5 | - | 0.3/0.8 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.2/0.7 | - | 0.2/0.5 | - | 0.2/0.5 | - | 0.2/1.0 | - | 0.2/0.6 | - | 0.2/0.8 | - | 0.3/0.9 | - |
| | | | | | | | | | | | | | | | | | | ＊Provisional | | ＊Provisional | | ＊Provisional | | | | | | | | |

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- Be sure to read the relevant SDS before handling and use, and always follow the Important Precautions.
- Equilibrium moisture content: at 23℃, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

# Leona™ Series Data Sheet

AsahiKASEI

| | | | | PA Special composites | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | MF reinforced | | | | Fluoroplastic | | MF reinforced, Heat stabilized | | | |
| | | | | CR301 | | CR302 | | 1330G | | CR103 | | MR001 | |
| | Test method | Units | Condition | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Density | ISO 1183 | g/cm$^3$ | - | 1.48 | - | 1.52 | - | 1.48 | - | 1.45 | - | 1.52 | - |
| Equilibrium moisture content | ISO 62 | % | - | - | 1.5 | - | 1.4 | - | 1.4 | - | 1.5 | - | 1.5 |
| Tensile stress at yield | ISO 527 | MPa | 23°C50%RH | - | - | - | - | - | - | - | - | - | 59 |
| Tensile strain at yield | ISO 527 | % | 23°C50%RH | - | - | - | - | - | - | - | - | - | 14 |
| Tensile stress at break | ISO 527 | MPa | 23°C50%RH | 85 | 59 | 140 | 92 | 144 | 107 | 131 | 100 | 93 | 58 |
| Tensile strain at break | ISO 527 | % | 23°C50%RH | 2 | 11 | 2 | 2.5 | 4 | 6 | 4 | 7 | 5.5 | 19 |
| Tensile modulus | ISO 527 | Gpa | 23°C50%RH | 7 | 4.1 | 10 | 7.6 | 9.8 | 6.7 | 8.1 | 5.2 | 5.9 | 3.4 |
| Flexural strength | ISO 178 | MPa | 23°C50%RH | 140 | 92 | 197 | 148 | 235 | 165 | 203 | 143 | 150 | 84 |
| Flexural modulus | ISO 178 | Gpa | 23°C50%RH | 7.4 | 4.1 | 9.8 | 7.1 | 8.7 | 6.0 | 6.7 | 4.2 | 5.8 | 3.1 |
| Charpy impact strength (Notched) | ISO 179 | KJ/㎡ | - | 3 | 3 | 4 | 5 | 10 | 13 | 4.6 | 5.5 | 3 | 3 |
| Charpy impact strength (un-Notched) | ISO 179 | KJ/㎡ | - | 51 | 90 | 38 | 46 | 71 | 78 | - | - | 62 | 125 |
| Rockwell hardness | ISO 2039 | - | scale R | - | - | - | - | 120 | 108 | 120 | 94 | 120 | 108 |
| Rockwell hardness | ISO 2039 | - | scale M | 85 | - | 90 | - | 89 | 60 | 94 | 74 | 85 | 60 |
| Coefficient of liner thermal expantion | ASTMD 696 | ×10$^{-5}$/k | - | 4 | - | - | - | 3 | - | 4 | - | 6 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 1.8 MPa | - | - | - | - | 246 | - | 240 | - | 118 | - |
| Temperature of distortion under load | ISO 75 | ℃ | 0.45 MPa | 249 | - | 260 | - | 261 | - | 250 | - | 229 | - |
| UL-94 | UL-94 | PLC | 1.5 mm | - | - | - | - | - | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 0.75 mm | Equivalent to HB | - | Equivalent to HB | - | H B | - | H B | - | H B | - |
| GWFI | IEC 60695-2-12 | ℃ | 3 mm | - | - | - | - | - | - | - | - | - | - |
| Comparative tracking index | IEC 60112 | V | 3 mm | - | - | - | - | - | - | - | - | - | - |
| Dielectric | IEC 60243 | KV/㎜ | - | - | - | - | - | - | - | - | - | 22 | - |
| Surface resistivity | IEC 60093 | Ω | 23°C50%RH | - | - | - | - | - | - | - | - | $10^{13}$ | - |
| Volume resistivity | IEC 60093 | Ω・㎝ | 23°C50%RH | - | - | - | - | - | - | - | - | $10^{14}$ | - |
| Mold shrinkage (para/perp to flow) | AsahiKasei method | % | - | 0.5～1.3 | - | 0.5～1.0 | - | 0.5/1.0 | - | 0.5～1.1 | - | 1.0～1.1 | - |

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- Equilibrium moisture content: at 23°C, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

# Leona™ Series Data Sheet

AsahiKASEI

| | | | | PA Flame retardant | | | | | | | | | | | | | | | | PA Special | | PA Special Halogen Free | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Non reinforced | | | | | | GF reinforced | | | | | | | | | | | | | | | |
| | | | | FR200 | | FR370 | | FR650 | | FG170 | | FG171 | | FG172 | | FG173 | | FH772 | | SH10E | | SN10B | | SN103 | |
| | Test method | Units | Condition | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Density | ISO 1183 | g/cm$^3$ | - | 1.16 | - | 1.16 | - | 1.26 | | 1.48 | - | 1.54 | - | 1.52 | - | 1.65 | - | 1.41 | - | 1.86 | - | 1.38 | - | 1.41 | - |
| Equilibrium moisture content | ISO 62 | % | - | - | 2.4 | - | 2.3 | - | 1.4 | - | 1.2 | - | 0.8 | - | 1.1 | - | 0.8 | - | 1.3 | - | 0.70 | - | 1.6 | - | 1.7 |
| Tensile stress at yield | ISO 527 | MPa | 23°C50%RH | 75 | 44 | 83 | 55 | 50 | 33 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile strain at yield | ISO 527 | % | 23°C50%RH | 3.5 | 24 | 4.5 | 22 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tensile stress at break | ISO 527 | MPa | 23°C50%RH | 69 | - | 80 | - | 51 | - | 131 | 100 | 154 | 121 | 136 | 107 | 174 | 137 | 136 | 94 | 238 | 209 | 157 | 132 | 163 | 137 |
| Tensile strain at break | ISO 527 | % | 23°C50%RH | 10 | >100 | 15 | >50 | 1 | 6 | 2.5 | 3.5 | 2.5 | 3 | 2.5 | 3 | 2 | 2 | 3 | 5 | 1.4 | 1.4 | 3.3 | 3.3 | 2.2 | 2.2 |
| Tensile modulus | ISO 527 | Gpa | 23°C50%RH | 3.5 | 1.1 | 3.6 | 1.6 | - | - | 7.5 | 5.7 | 10.2 | 8.2 | 9.1 | 6.6 | 11.7 | 10.5 | 9.8 | 6.7 | 22.6 | 22.6 | 9.9 | 9.4 | 11.6 | 11.2 |
| Flexural strength | ISO 178 | MPa | 23°C50%RH | 117 | 37.2 | 124 | 54.1 | 84 | 60 | 188 | 146 | 244 | 180 | 208 | 152 | 259 | 188 | 209 | 154 | 365 | 320 | 246 | 207 | 244 | 213 |
| Flexural modulus | ISO 178 | Gpa | 23°C50%RH | 2.9 | 1.0 | 3.6 | 1.5 | 4.5 | 2.2 | 7.5 | 4.7 | 9.7 | 7.9 | 8 | 5 | 10.3 | 8.7 | 9.6 | 6.6 | 22.0 | 22.0 | 9.6 | 8.9 | 11.3 | 10.7 |
| Charpy impact strength (Notched) | ISO 179 | KJ/㎡ | - | 4 | 11 | 4 | 6 | 1 | 1 | 6 | 5 | 11 | 12 | 7 | 11 | 11 | 10 | 8 | 10 | 18 | 18 | 11 | 11 | 10 | 10 |
| Charpy impact strength (un-Notched) | ISO 179 | KJ/㎡ | - | N B | N B | 58 | N B | - | - | 44 | 45 | 67 | 67 | 64 | 62 | 50 | 52 | 58 | 58 | - | - | - | - | - | - |
| Rockwell hardness | ISO 2039 | - | scale R | 118 | 90 | 120 | 110 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Rockwell hardness | ISO 2039 | - | scale M | 80 | - | 85 | 55 | - | - | 95 | 55 | 95 | 55 | 95 | 55 | 100 | 60 | - | - | - | - | - | - | - | - |
| Coefficient of liner thermal expantion | ASTMD 696 | ×10$^{-5}$/k | - | 8 | - | 7 | - | - | - | 3 | - | 3 | - | 3 | - | 3 | - | 3 | - | - | - | - | - | - | - |
| Temperature of distortion under load | ISO 75 | °C | 1.8 MPa | 62 | - | 78 | - | 110 | - | 240 | - | 240 | - | 240 | - | 245 | - | 241 | - | 233 | - | 231 | - | 241 | - |
| Temperature of distortion under load | ISO 75 | °C | 0.45 MPa | 203 | - | 239 | - | 239 | - | 256 | - | 256 | - | 256 | - | 262 | - | 258 | - | - | - | 254 | - | 258 | - |
| UL-94 | UL-94 | PLC | 1.5 mm | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | V0(WT) | - | - | - | - | - |
| UL-94 | UL-94 | PLC | 0.75 mm | V0 | - | V0 | - | V0 | - | V0 | - | V0 | - | V0 | - | V0 | - | V0 | - | - | - | V0(BK) | - | V0(BK) | - |
| GWFI | IEC 60695-2-12 | °C | 3 mm | 960 | | 960 | | 960 | | 960 | | 960 | | 960 | | 960 | | 960 | | - | - | - | - | - | - |
| Comparative tracking index | IEC 60112 | V | 3 mm | 600 | - | 600 | - | 600 | - | 200 | - | 275 | - | 250 | - | 275 | - | 600 | - | 300 | - | 500 | - | 600 | - |
| Dielectric | IEC 60243 | KV/㎜ | - | 19 | - | 22 | - | - | - | 27 | - | 28 | - | 28 | - | 28 | - | - | - | | - | | - | | - |
| Surface resistivity | IEC 60093 | Ω | 23°C50%RH | 10$^{13}$ | - | 10$^{13}$ | - | - | - | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | 10$^{14}$ | - | - | - | - | - | - | - | - | - |
| Volume resistivity | IEC 60093 | Ω・㎝ | 23°C50%RH | 10$^{14}$ | - | 10$^{14}$ | - | - | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | 10$^{15}$ | - | - | - | - | - | - | - | - | - |
| Mold shrinkage (para/perp to flow) | AsahiKasei method | % | - | 1.3～2.0 | - | 0.9～1.6 | - | - | - | 0.6/1.0 | - | 0.4/0.9 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.4/1.2 | - | 0.2/0.6 | - | 0.2/0.8 | - | 0.2/1.0 | - |
| | | | | | | | | | | | | | | | | | | | | ＊Provisional | | ＊Provisional | | ＊Provisional | |

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# Leona™ Series Data Sheet

AsahiKASEI

| | | | PA Non reinforced | | | | PA High molecular weight | | | | | | | | | | PA Impact | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | Heat stabillized | | General | | | | | | Heat stabilized | | | | Heat stabilized | | | |
| | | | 1300S | | 1402S | | 1500 | | 1700S | | 9400S | | 1502S | | 1702 | | TR161 | | TR382 | |
| | Test method | Unit | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Specific gravity | ASTMD792 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.14 | - | 1.11 | - | 1.08 | - |
| Water absorption | - | % | - | 2.5 | - | 2.5 | - | 2.5 | - | 2.5 | - | 2.8 | - | 2.5 | - | 2.5 | - | 1.9 | - | 1.7 |
| Tensile strength | ASTMD638 | MPa | 79 | 57 | 79 | 57 | 79 | 57 | 80 | 59 | 79 | 44 | 79 | 57 | 80 | 59 | 70 | 47 | 54 | 37 |
| Elongation(at break) | ASTMD638 | % | 50 | 250 | 50 | 250 | 80 | 270 | 100 | 300 | 60 | 260 | 80 | 270 | 100 | 300 | 20 | 220 | 70 | 220 |
| Flexural strength | ASTMD790 | MPa | 118 | 54 | 118 | 54 | 118 | 54 | 118 | 54 | 108 | 44 | 118 | 54 | 118 | 54 | 98 | 49 | 79 | 39 |
| Flexural modulus | ASTMD790 | GPa | 2.8 | 1.2 | 2.8 | 1.2 | 2.8 | 1.2 | 2.8 | 1.2 | 2.6 | 0.8 | 2.8 | 1.2 | 2.8 | 1.2 | 2.5 | 1.4 | 2.0 | 1.0 |
| Izod impact strength (notched) | ASTMD256 | J/m | 39 | 147 | 39 | 147 | 49 | 176 | 49 | 245 | 54 | 274 | 49 | 176 | 49 | 245 | 167 | 1200 | 1110 | 1320 |
| Rockwell hardness (scale M) | ASTMD785 | - | 80 | 55 | 80 | 55 | 80 | 55 | 80 | 55 | 75 | - | 80 | 55 | 80 | 55 | - | - | - | - |
| Rockwell hardness (scale R) | ASTMD785 | - | 120 | 108 | 120 | 108 | 120 | 105 | 120 | 105 | - | - | 120 | 105 | 120 | 105 | 114 | 98 | 107 | 89 |
| Taber abrasion | ASTMD1044 | $\times 10^{-6}$kg/1000 times | - | 7 | - | 7 | - | 5 | - | 4 | - | - | | 5 | - | 4 | - | 7 | - | 6 |
| Coefficient of liner expantion (para to flow) | ASTMD696 | $\times 10^{-5}$/K | 8 | - | 8 | - | 8 | - | 8 | - | - | - | 8 | - | 8 | - | 7 | - | 11 | - |
| Temperature of deflection under load (1.82 MPa) | ASTMD648 | ℃ | 70 | - | 70 | - | 70 | - | 70 | - | - | - | 70 | - | 70 | - | 77 | - | 73 | - |
| Temperature of deflection under load (0.46 MPa) | ASTMD648 | ℃ | 230 | - | 230 | - | 230 | - | 230 | - | 190 | - | 230 | - | 230 | - | 225 | - | 215 | - |
| Termal conductivity | - | W/(m・K) | 0.2 | - | 0.2 | - | 0.2 | - | 0.2 | - | - | - | 0.2 | - | 0.2 | - | - | - | - | - |
| Specific heat | - | J/(kg・K) | 1670 | - | 1670 | - | 1670 | - | 1670 | - | - | - | 1670 | - | 1670 | - | - | - | - | - |
| UL (0.75mm) | UL-94 | - | V-2 | - | V-2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Oxygen index | ASTMD2863 | % | 26 | - | 26 | - | - | - | 23 | - | - | - | - | - | 23 | - | - | - | - | - |
| Volume resistivity（23℃ 50% RH） | ASTMD257 | Ω・cm | $10^{14}$ | - | $10^{14}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | - | - | - | - |
| Surface resistivity（23℃ 50% RH） | ASTMD257 | Ω | $10^{13}$ | - | $10^{13}$ | - | $10^{14}$ | - | $10^{14}$ | - | $10^{14}$ | - | $10^{14}$ | - | $10^{14}$ | - | - | - | - | - |
| Dielectic strength | ASTMD149 | KV/㎜ | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | 20 | - | - | - | - | - |
| Mold shrinkage（para／perp to flow）(3 mm) | AsahiKasei | % | 1.3～2.0 | - | 1.3～2.0 | - | 1.3～2.0 | - | 1.3～2.0 | - | - | - | 1.3～2.0 | - | 1.3～2.0 | - | 1.7～2.2 | - | 1.7～2.5 | - |

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# Leona™ Series Data Sheet

AsahiKASEI

| | | | PA GF reinforced | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | General | | | | | | | | Heat stabilized | | | | | | | | | | | |
| | | | 13G15 | | 1300G | | 13G43 | | 13G50 | | 14G15 | | 1402G | | 14G25 | | 14G33 | | 14G43 | | 14G50 | |
| | Test method | Unit | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Specific gravity | ASTMD792 | - | 1.25 | - | 1.39 | - | 1.50 | - | 1.58 | - | 1.25 | - | 1.39 | - | 1.32 | - | 1.39 | - | 1.50 | - | 1.58 | - |
| Water absorption | - | % | - | 2.1 | - | 1.7 | - | 1.4 | - | 1.3 | - | 2.1 | - | 1.7 | - | 1.9 | - | 1.7 | - | 1.4 | - | 1.3 |
| Tensile strength | ASTMD638 | MPa | 108 | 79 | 186 | 132 | 196 | 157 | 235 | 170 | 108 | 79 | 186 | 132 | 180 | 110 | 210 | 135 | 230 | 160 | 235 | 170 |
| Elongation(at break) | ASTMD638 | % | 2.5 | 8 | 3 | 5 | 3 | 4 | 2.5 | 4 | 2.5 | 8 | 3 | 5 | 3 | 6 | 3 | 5 | 2.5 | 4 | 2.5 | 4 |
| Flexural strength | ASTMD790 | MPa | 167 | 108 | 289 | 216 | 314 | 235 | 390 | 280 | 167 | 108 | 289 | 216 | 290 | 175 | 325 | 210 | 360 | 250 | 390 | 280 |
| Flexural modulus | ASTMD790 | GPa | 4.9 | 2.5 | 9.3 | 6.3 | 11.8 | 8.3 | 14.5 | 9.8 | 4.9 | 2.5 | 9.3 | 6.3 | 8.1 | 4.7 | 10.4 | 6.3 | 13 | 9.5 | 14.5 | 9.8 |
| Izod impact strength (notched) | ASTMD256 | J/m | 49 | 59 | 127 | 147 | 127 | 206 | 140 | 190 | 49 | 59 | 127 | 147 | 105 | 160 | 130 | 170 | 140 | - | 140 | 190 |
| Rockwell hardness (scale M) | ASTMD785 | - | 94 | 71 | 96 | 75 | 96 | 80 | 95 | 80 | 94 | 71 | 96 | 75 | 96 | 74 | 96 | 75 | 95 | 80 | 95 | 80 |
| Rockwell hardness (scale R) | ASTMD785 | - | 120 | - | 120 | 112 | 118 | - | 118 | - | 120 | - | 120 | 112 | 120 | - | 120 | - | 118 | - | 118 | - |
| Taber abrasion | ASTMD1044 | $\times 10^{-6}$kg/1000 times | - | 9 | - | 15 | - | 19 | - | 22 | - | 9 | - | 15 | - | 12 | - | 15 | - | 19 | - | 22 |
| Coefficient of liner expantion (para to flow) | ASTMD696 | $\times 10^{-5}$/K | 4 | - | 3 | - | 3 | - | 2 | - | 4 | - | 3 | - | 3 | - | 2 | - | 2 | - | 2 | - |
| Temperature of deflection under load (1.82 MPa) | ASTMD648 | ℃ | 240 | - | 250 | - | 250 | - | 250 | - | 240 | - | 250 | - | 250 | - | 250 | - | 250 | - | 250 | - |
| Temperature of deflection under load (0.46 MPa) | ASTMD648 | ℃ | 258 | - | 260 | - | 260 | - | 260 | - | 258 | - | 260 | - | 260 | - | 260 | - | 260 | - | 260 | - |
| Termal conductivity | - | W/(m･K) | - | - | 0.3 | - | 0.4 | - | 0.4 | - | - | - | 0.3 | - | 0.3 | - | 0.3 | - | 0.4 | - | 0.4 | - |
| Specific heat | - | J/(kg・K) | - | - | 1590 | - | - | - | - | - | - | - | 1590 | - | - | - | - | - | - | - | - | - |
| UL (0.75mm) | UL-94 | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - | HB | - |
| Oxygen index | ASTMD2863 | % | - | - | 23 | - | - | - | - | - | - | - | 23 | - | - | - | - | - | - | - | - | - |
| Volume resistivity（23℃ 50% RH） | ASTMD257 | Ω･cm | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | - | - | $10^{15}$ | - |
| Surface resistivity（23℃ 50% RH） | ASTMD257 | Ω | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | - | - | $10^{15}$ | - |
| Dielectic strength | ASTMD149 | KV/㎜ | 26 | - | 28 | - | 30 | - | 21 | - | 26 | - | 28 | - | 29 | - | 33 | - | - | - | 21 | - |
| Mold shrinkage（para／perp to flow）(3 mm) | AsahiKasei | % | 0.7/1.2 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.4/0.7 | - | 0.7/1.2 | - | 0.4/0.9 | - | 0.5/0.9 | - | 0.4/0.8 | - | 0.4/0.7 | - | 0.4/0.7 | - |

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# Leona™ Series Data Sheet

AsahiKASEI

| | | | PA Special | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | GF reinforced, Excellent surface, Enhanced strength and stiffness | | | | | | | | | | | | | | MF reinforced, Excellent surface, Enhanced strength and stiffness | | | | Hydrosis resistance | |
| | | | 90G33 | | 90G50 | | 90G55 | | 90G60 | | 93G33 | | 54G33 | | 54G43 | | 91G55 | | 91G60 | | 53G33 | |
| | Test method | Unit | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Specific gravity | ASTMD792 | - | 1.39 | - | 1.58 | - | 1.64 | - | 1.71 | - | 1.39 | - | 1.39 | - | 1.50 | - | 1.68 | - | 1.72 | - | 1.35 | - |
| Water absorption | - | % | - | 1.4 | - | 1.2 | - | 1.1 | | 1.0 | - | 1.9 | - | 1.9 | - | 1.6 | - | | - | 1.0 | - | 1.1 |
| Tensile strength | ASTMD638 | MPa | 194 | 157 | 235 | 196 | 221 | 181 | 190 | 148 | 167 | 108 | 181 | 118 | 186 | 132 | 191 | 159 | 183 | 150 | 215 | 170 |
| Elongation(at break) | ASTMD638 | % | 3 | 4 | 2.5 | 3 | 2 | 3 | 2 | 3 | 4 | 9 | 3 | 7 | 3 | 4 | 4 | 6 | 3.3 | 7.6 | 3 | 5 |
| Flexural strength | ASTMD790 | MPa | 294 | 245 | 373 | 304 | 348 | 284 | 300 | 234 | 275 | 157 | 289 | 167 | 304 | 177 | 262 | 231 | 267 | 246 | 309 | 261 |
| Flexural modulus | ASTMD790 | GPa | 9.6 | 7.6 | 15.5 | 12.1 | 15.7 | 12.7 | 16.0 | 12.9 | 8.6 | 4.5 | 9.1 | 5.0 | 11.0 | 5.9 | 13.9 | 11.9 | 16.2 | 15.5 | 8.4 | 6.7 |
| Izod impact strength (notched) | ASTMD256 | J/m | 98 | 118 | 127 | 133 | 110 | 118 | 95 | 100 | 132 | 240 | 137 | 196 | 147 | 226 | 54 | 63 | 63 | 64 | 135 | 158 |
| Rockwell hardness (scale M) | ASTMD785 | - | 90 | - | 90 | - | 95 | 88 | 95 | 88 | 90 | - | 93 | 68 | 93 | - | 102 | - | 95 | 88 | - | - |
| Rockwell hardness (scale R) | ASTMD785 | - | 120 | - | 120 | - | 120 | 115 | 120 | 117 | - | - | 120 | 110 | 118 | - | 120 | - | 120 | 117 | 118 | - |
| Taber abrasion | ASTMD1044 | $\times 10^{-6}$kg/1000 times | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Coefficient of liner expantion (para to flow) | ASTMD696 | $\times 10^{-5}$/K | 3 | - | 2 | - | 2 | - | 2 | - | 3 | - | 3 | - | - | - | - | - | 2 | - | 2 | - |
| Temperature of deflection under load (1.82 MPa) | ASTMD648 | ℃ | 220 | - | 225 | - | 225 | - | 225 | - | 210 | - | 240 | - | 240 | - | - | - | - | - | 208 | - |
| Temperature of deflection under load (0.46 MPa) | ASTMD648 | ℃ | - | - | - | - | - | - | - | - | - | - | 250 | - | 250 | - | - | - | - | - | - | - |
| Termal conductivity | - | W/(m・K) | - | - | - | - | 0.3 | - | 0.3 | - | - | - | - | - | - | - | - | - | - | - | 0.4 | - |
| Specific heat | - | J/(kg・K) | - | - | - | - | 1930 | - | 1840 | - | - | - | - | - | - | - | - | - | - | - | 1.3 | - |
| UL (0.75mm) | UL-94 | - | - | - | HB | - | - | - | - | - | HB | - | HB | - | HB | - | - | - | HB | - | - | - |
| Oxygen index | ASTMD2863 | % | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Volume resistivity（23℃ 50% RH） | ASTMD257 | Ω・cm | - | - | - | - | - | - | - | - | - | - | $10^{15}$ | - | $10^{15}$ | - | - | - | - | - | - | - |
| Surface resistivity（23℃ 50% RH） | ASTMD257 | Ω | - | - | - | - | $10^{13}$ | - | $10^{13}$ | - | - | - | $10^{15}$ | - | $10^{15}$ | - | - | - | - | - | - | - |
| Dielectic strength | ASTMD149 | KV/㎜ | - | - | - | - | 28 | - | 28 | - | - | - | 31 | - | 32 | - | - | - | - | - | - | - |
| Mold shrinkage（para／perp to flow）(3 mm) | AsahiKasei | % | 0.4/0.9 | - | 0.2/0.5 | - | 0.2/0.5 | - | 0.2/0.5 | - | 0.3/0.8 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.2/1.0 | - | 0.2/0.6 | - | 0.2/0.6 | - |

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# Leona™ Series Data Sheet

AsahiKASEI

| | | | PA Special composites | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | MF reinforced | | | | Fluoroplastic | | MF reinforced, Heat stabilized | | | |
| | | | CR301 | | CR302 | | 1330G | | CR103 | | MR001 | |
| | Test method | Unit | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Specific gravity | ASTMD792 | - | 1.48 | - | 1.52 | - | 1.48 | - | 1.45 | - | 1.52 | - |
| Water absorption | - | % | - | 1.5 | - | 1.4 | - | 1.4 | - | 1.0 | - | 1.5 |
| Tensile strength | ASTMD638 | MPa | 88 | 64 | 128 | 98 | 157 | 118 | 139 | 106 | 98 | 67 |
| Elongation(at break) | ASTMD638 | % | 3 | 3.5 | 3 | 3.5 | 3 | 3 | 6 | 9 | 6 | 7 |
| Flexural strength | ASTMD790 | MPa | 147 | 93 | 191 | 157 | 245 | 177 | 213 | 151 | 157 | 98 |
| Flexural modulus | ASTMD790 | GPa | 5.9 | 2.9 | 8.8 | 5.8 | 8.0 | 6.3 | 6.6 | 4.2 | 5.6 | 3.3 |
| Izod impact strength (notched) | ASTMD256 | J/m | 34 | 39 | 36 | 39 | 98 | 118 | 51 | 59 | 34 | 39 |
| Rockwell hardness (scale M) | ASTMD785 | - | 85 | - | 90 | - | 89 | 60 | 94 | 74 | 85 | 60 |
| Rockwell hardness (scale R) | ASTMD785 | - | - | - | - | - | 120 | 108 | 120 | 94 | 120 | 108 |
| Taber abrasion | ASTMD1044 | $\times 10^{-6}$kg/1000 times | - | 8 | - | - | - | 9 | - | - | - | 22 |
| Coefficient of liner expantion (para to flow) | ASTMD696 | $\times 10^{-5}$/K | 4 | - | - | - | 3 | - | 4 | - | 6 | - |
| Temperature of deflection under load (1.82 MPa) | ASTMD648 | ℃ | 191 | - | 245 | - | 248 | - | - | - | 160 | - |
| Temperature of deflection under load (0.46 MPa) | ASTMD648 | ℃ | 250 | - | 250 | - | 260 | - | - | - | 240 | - |
| Termal conductivity | - | W/(m･K) | - | - | - | - | - | - | - | - | - | - |
| Specific heat | - | J/(kg・K) | - | - | - | - | - | - | - | - | - | - |
| UL (0.75mm) | UL-94 | - | equivalent to HB | - | equivalent to HB | - | HB | - | HB | - | HB | - |
| Oxygen index | ASTMD2863 | % | - | - | - | - | - | - | - | - | - | - |
| Volume resistivity（23℃ 50% RH） | ASTMD257 | Ω･cm | - | - | - | - | - | - | - | - | $10^{14}$ | - |
| Surface resistivity（23℃ 50% RH） | ASTMD257 | Ω | - | - | - | - | - | - | - | - | $10^{13}$ | - |
| Dielectic strength | ASTMD149 | KV/㎜ | - | - | - | - | - | - | - | - | 22 | - |
| Mold shrinkage（para／perp to flow）(3 mm) | AsahiKasei | % | 0.5～1.3 | - | 0.5～1.0 | - | 0.5/1.0 | - | 0.5～1.1 | - | 1.0～1.1 | - |

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- Be sure to read the relevant SDS before handling and use, and always follow the Important Precautions.
- Equilibrium moisture content: at 23℃, 50% relative humidity
- Dry: Values for specimens in the as-molded condition. Wet: Values for specimens with equibrium moisture content at 23, 50&% relative humidity.

# Leona™ Series Data Sheet

AsahiKASEI

| | | | PA Flame retardant | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Non reinforced | | | | GF reinforced | | | | | | | | | |
| | | | FR200 | | FR370 | | FG170 | | FG171 | | FG172 | | FG173 | | FH772 | |
| | Test method | Unit | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET | DRY | WET |
| Specific gravity | ASTMD792 | - | 1.16 | - | 1.16 | - | 1.48 | - | 1.54 | - | 1.52 | - | 1.65 | - | 1.41 | - |
| Water absorption | - | % | - | 2.4 | - | 2.3 | - | 1.2 | - | 0.8 | - | 1.1 | - | 0.8 | - | 1.3 |
| Tensile strength | ASTMD638 | MPa | 79 | 47 | 83 | 58 | 132 | 108 | 162 | 127 | 153 | 123 | 167 | 142 | 150 | - |
| Elongation(at break) | ASTMD638 | % | 25 | 80 | 7 | 70 | 2.5 | 2.7 | 2.5 | 3.5 | 2.5 | 2.7 | 2.5 | 3.5 | 2.3 | - |
| Flexural strength | ASTMD790 | MPa | 118 | 44 | 128 | 56 | 191 | 152 | 256 | 190 | 216 | 177 | 250 | 221 | 220 | - |
| Flexural modulus | ASTMD790 | GPa | 2.9 | 1.1 | 3.3 | 1.3 | 6.4 | 4.9 | 8.9 | 7.2 | 7.6 | 5.9 | 10.8 | 8.3 | 9.3 | - |
| Izod impact strength (notched) | ASTMD256 | J/m | 29 | 118 | 29 | 98 | 49 | 59 | 92 | 110 | 75 | 92 | 88 | 98 | 75 | - |
| Rockwell hardness (scale M) | ASTMD785 | - | 80 | - | 85 | 55 | 95 | 55 | 95 | 55 | 95 | 55 | 100 | 60 | - | - |
| Rockwell hardness (scale R) | ASTMD785 | - | 118 | 90 | 120 | 110 | - | - | - | - | - | - | - | - | - | - |
| Taber abrasion | ASTMD1044 | $\times 10^{-6}$kg/1000 times | - | 8 | - | 7 | - | 24 | - | - | - | 24 | - | 29 | - | - |
| Coefficient of liner expantion (para to flow) | ASTMD696 | $\times 10^{-5}$/K | 8 | - | 7 | - | 3 | - | 3 | - | 3 | - | 3 | - | 3 | - |
| Temperature of deflection under load (1.82 MPa) | ASTMD648 | ℃ | 66 | - | 80 | - | 248 | - | 250 | - | 248 | - | 252 | - | 248 | - |
| Temperature of deflection under load (0.46 MPa) | ASTMD648 | ℃ | 209 | - | 240 | - | 255 | - | 255 | - | 255 | - | 260 | - | - | - |
| Termal conductivity | - | W/(m・K) | 0.2 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Specific heat | - | J/(kg・K) | 1670 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| UL (0.75mm) | UL-94 | - | V-0 | - | V-0 | - | V-0 | - | V-0 | - | V-0 | - | V-0 | - | V-0 | - |
| Oxygen index | ASTMD2863 | % | 32 | - | 36 | - | 38 | - | - | - | 37 | - | - | - | - | - |
| Volume resistivity（23℃ 50% RH） | ASTMD257 | Ω・cm | $10^{14}$ | - | $10^{14}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | $10^{15}$ | - | - | - |
| Surface resistivity（23℃ 50% RH） | ASTMD257 | Ω | $10^{13}$ | - | $10^{13}$ | - | $10^{14}$ | - | $10^{14}$ | - | $10^{14}$ | - | $10^{14}$ | - | - | - |
| Dielectic strength | ASTMD149 | KV/㎜ | 19 | - | 22 | - | 27 | - | 28 | - | 28 | - | 28 | - | - | - |
| Mold shrinkage（para／perp to flow）(3 mm) | AsahiKasei | % | 1.3～2.0 | - | 0.9～1.6 | - | 0.6/1.0 | - | 0.4/0.9 | - | 0.4/0.9 | - | 0.3/0.7 | - | 0.4/1.2 | - |

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