Technical Literature B-03

# Temperature Dependence of Tensile Strength and Flexural Modulus of AURUM®

The short-term heat resistance of a resin basically depends greatly on the glass transition temperature of the resin.

The glass transition temperature of AURUM® is as high as 250ºC, or considerably higher than that of the conventional non-crystalline and crystalline engineering plastics. Consequently, AURUM® retains high strength and stiffness up to a temperature range exceeding 200ºC, and therefore AURUM® can be applied to various engineering parts requiring excellent mechanical properties in a high-temperature atmosphere. Refer to Table 1.

Fig. 1 shows the temperature dependence of the flexural modulus of AURUM® in a non-crystalline state, a representative non-crystalline engineering plastic PES and a crystalline engineering plastic PEEK. AURUM® shows better heat resistance than PES and PEEK.

Fig. 1 Temperature Dependence of Flexural Modulus of Various Engineering Plastics

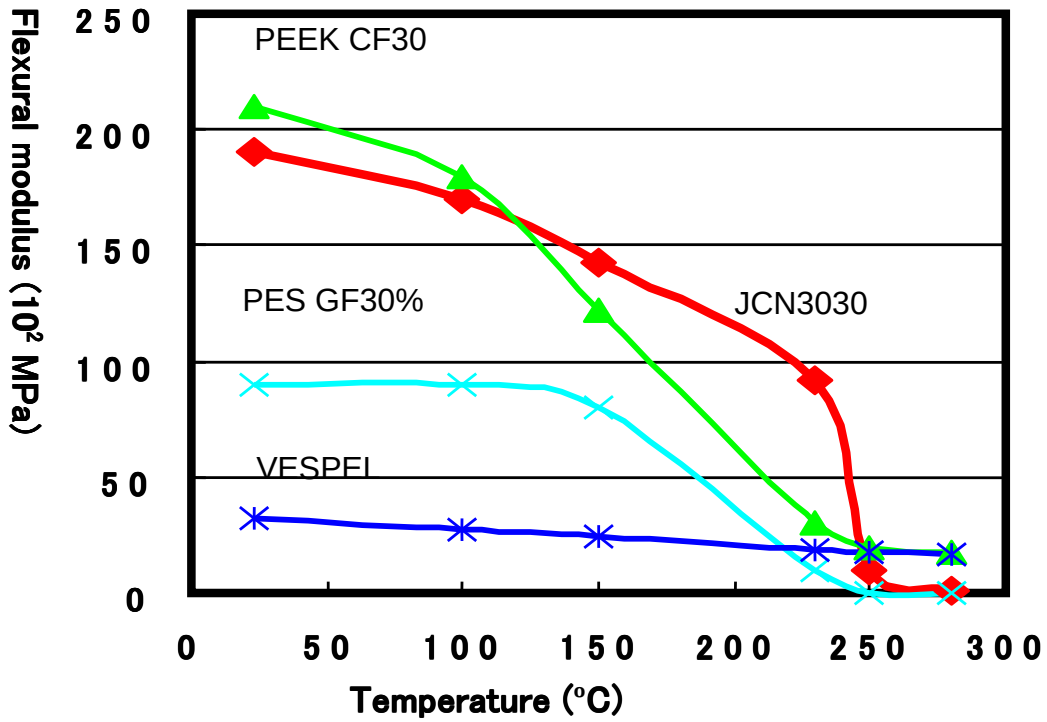

Table 1 Temperature Dependence of Mechanical Strength of AURUM® (RT up to 230ºC)

• Temperature dependence of tensile strength ($kg/cm^2$)

| | R.T. | 100ºC | 150ºC | 200ºC | 230ºC |
|---|---|---|---|---|---|
| JGN3030 | 1680 | 1270 | 1080 | 890 | 640 |
| JCN3030 | 2330 | 1780 | 1440 | 1110 | 870 |

• Temperature dependence of flexural strength ($kg/cm^2$)

| | R.T. | 100ºC | 150ºC | 200ºC | 230ºC |
|---|---|---|---|---|---|
| JGN3030 | 2460 | 2020 | 1760 | 1310 | 850 |
| JCN3030 | 3260 | 2690 | 2200 | 1610 | 1090 |

• Temperature dependence of flexural modulus ($kg/cm^2$)

| | R.T. | 100ºC | 150ºC | 200ºC | 230ºC |
|---|---|---|---|---|---|
| JGN3030 | 97000 | 84000 | 82000 | 78000 | 69000 |
| JCN3030 | 194000 | 171000 | 171000 | 164000 | 143000 |