Properties Affected by Glass Fiber Content. (No.2 Thermal Property & Others)

3. Thermal Property

DTUL (Distortion Temperature Under Load) is also improved extremely by a glass fiber reinforcement. The relation between DTUL and glass fiber content under the fiber stress 1.82MPa is shown in Fig.1.

4. Thermal expansion and mold shrinkage

Thermal expansion, mold shrinkage and dimensional stability that is very important properties for engineering polymers are also improved by glass fiber reinforcement. Especially thermal expansion is affected by glass transition temperature: Tg of a resin. In Figs.2 and 3, the relation between thermal expansion and glass content are shown for mold direction (MD) and transverse direction (TD).

Mold shrinkage affected by glass content is shown in Fig.4, in this data the measurement of shrinkage has been using disc molding with diameter 50mm, thickness 2mm and one side gating.

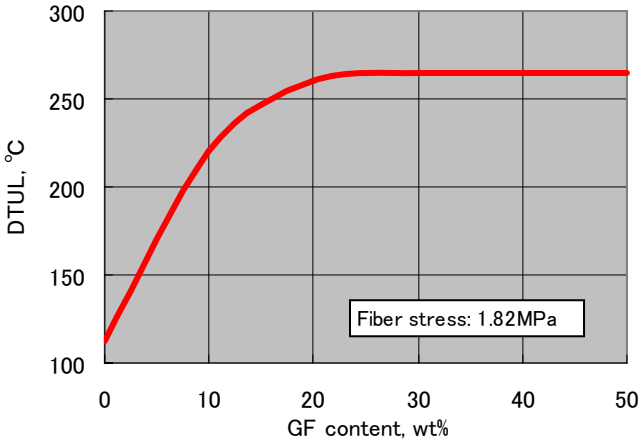

Fig.1 DTUL vs. GF content

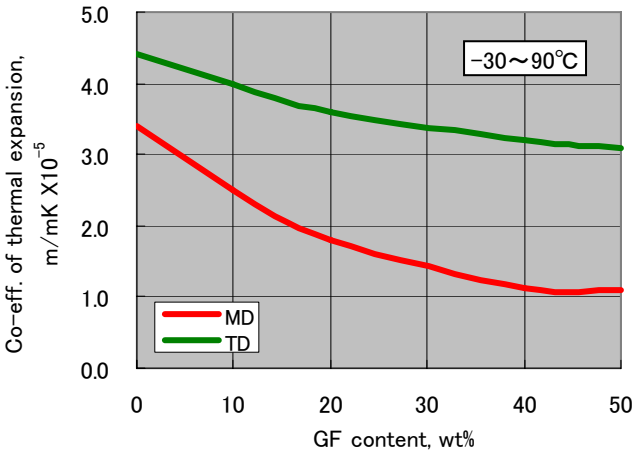

Fig.2 Thermal expansion vs. GF content.

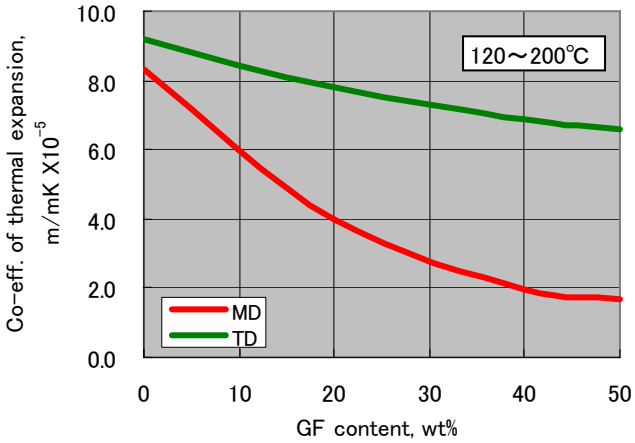

Fig.3 Thermal expansion vs. GF content

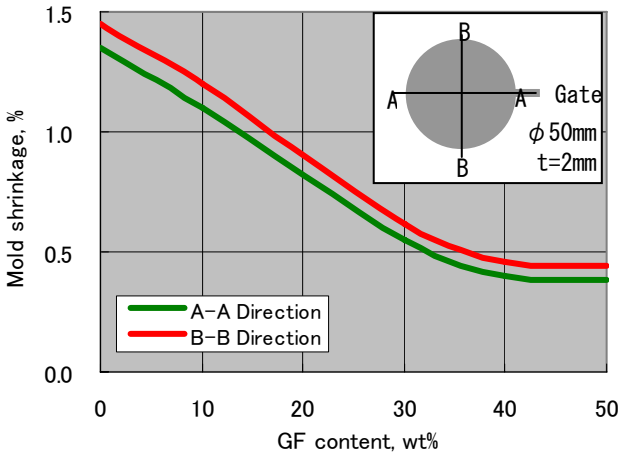

Fig.4 Mold shrinkage vs. GF content.