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Technical Literature G-02

Spiral Flow of AURUM®

Spiral flow is generally used as a technique for evaluating the flowability of a molding material in a mold. A mold so designed that it has such spiral (Archimedean spiral) that the distance from the center increases in proportion to rotation angle is used for determining spiral flow. This is a value of resin properties that is very useful in designing or molding those articles having a complex shape.

(1) Fig. 1 shows the relationship between molding temperature and flow length. It is necessary to set molding temperature at a high level because AURUM® is a heat-resistant resin. It is possible to obtain about the sample flow length as that of PES by setting molding temperature at a level approximately 40ºC higher than that of PES.

(2) Flow length also varies significantly with pressure. Fig. 2 shows changes in flow length according to pressure. AURUM® and PES tend to display a similar tendency for flow length to be dependent on pressure.

(3) Flow length also varies with mold temperature. But the extent of such variation is relatively smaller than in the cases of resin temperature and pressure. A change of 30ºC in mold temperature is equivalent to a change of 5ºC in resin temperature. Fig. 3 shows changes in flow length with mold temperature.

(4) Flow length is also affected significantly by the wall thickness of molded articles as well as the above molding conditions. Fig. 4 shows changes in flow length with the thickness of molded articles.

Note: AURUM®

400: High-flow grade
450: Standard grade
500: Low-flow grade

Fig. 1 Molding Temperature Dependence of Flow Length
Wall thickness: 1 mm, injection pressure: 1000 kg/cm^2

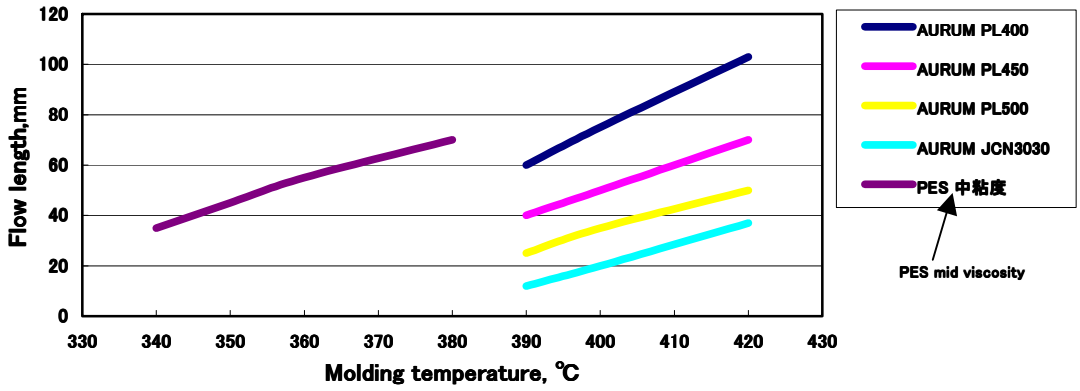


Fig. 2 Injection Pressure Dependence of Flow Length
Wall thickness 1 mm, molding temp. 410℃

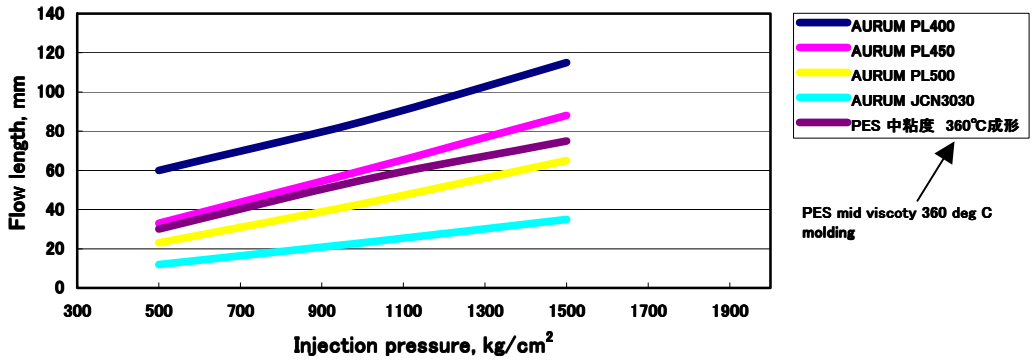
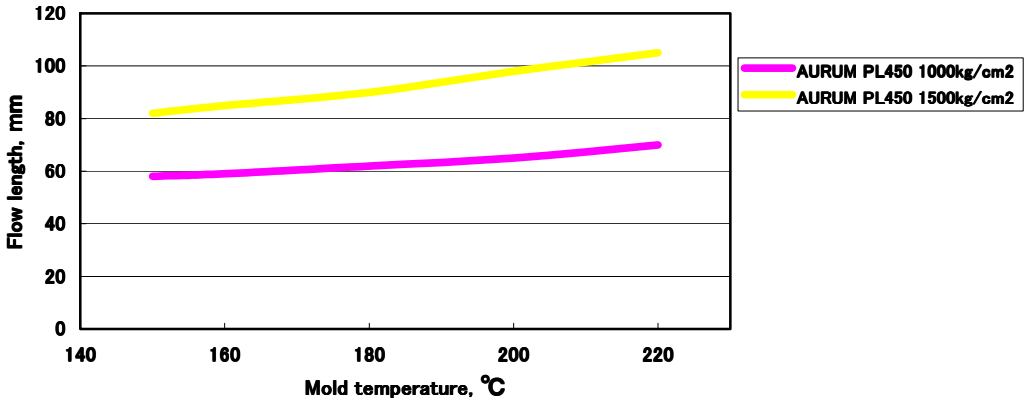


Fig. 3 Mold Temperature Dependence of Low Length
Wall thickness 1mm, molding temp. 410℃



The information contained herein is based on the information and data available at this moment, but none of the data or evaluation results contained herein provide any warranty whatsoever.

Fig. 4 Molded Article Wall Thickness Depended of Flow Length: Molding temp. 410℃, mold temp. 180℃, injection pressure 1500 kg/cm^2

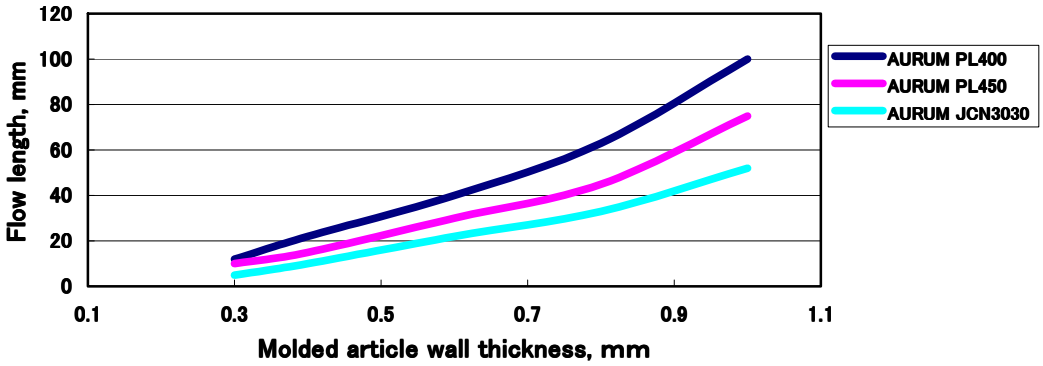


Fig. 5 Injection Pressure and Wall Thickness Dependence of Flow Length: Molding temp. 400℃, mold temp. 180℃