DIC Corporation

**DIC.PPS** *Technical information*

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# Flash Affected by Mold Temperature

1. General

A formation and growth of flash are governed by the following injection conditions.

- ***Injection holding pressure:***
  Holding pressure is significant for generating a flash. The lower pressure minimizes flash.
- ***Mold block temperature:***
  Mold temperature is the most significant for generating a flash, however mold temperature of 120-150C is necessary to secure heat resistance, however flash may not be avoided. If mold block temperature is settled under Tg (90C), flash will be dramatically reduced. However, PPS heat resistance and glossy surface will be lost.
- ***Cylinder temperature:***
  Influence to flash is insignificant. However, excess of low cylinder temperature is not suitable because it will cause increase of injection pressure.
- ***Injection speed:***
  Influence is insignificant.

2. Flash depend on mold temperature

As shown in Figs. 1 to 3, in the case that mold temperature is lower than 90C and mold clearance is less than 20μ, PPS flash length is minimized, as same level as that of PBT. However, PPS heat resistance property will be lost caused by lower crystallization. Additionally, part surface will be rough.

*Injection Condition:*

Molding parts size: 70mm length, average wall thickness is 1.5mm connector
Gate size: Φ1.2mm, 2 pin gate
Mold clearance size: 10μm, 20μm, 50μm
Cylinder temperature: 310C (PPS), 260C (PBT)
Injection filling time: 0.7 sec.

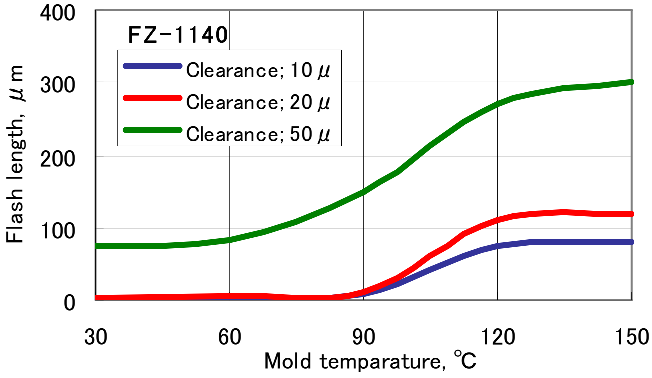

Fig.1 Flash length of FZ-1140 vs. mold temparature.

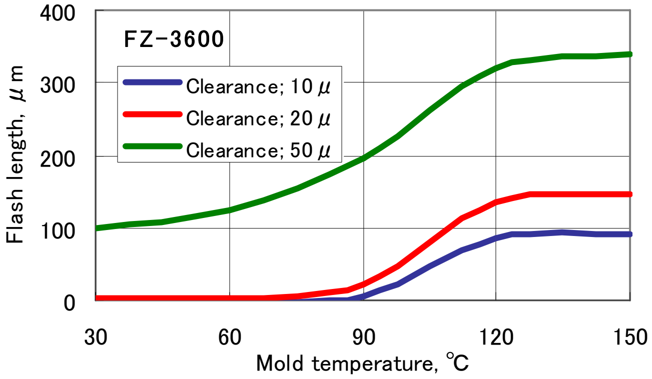

Fig.2 Flash length of FZ-3600 vs. mold temparature.

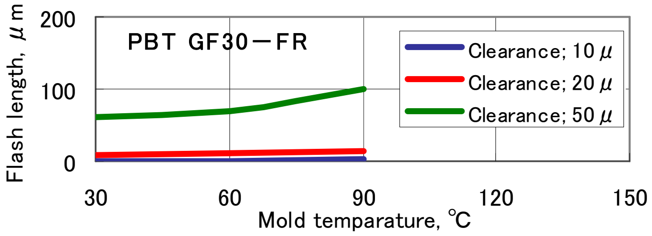

Fig.3 Flash length of PBT GF30-FR vs. mold temparature.