



## Melt Flow Index (MFI) 膠料溶流指數

### Melt Flow Rate (MFR)

範圍：熔體流動速率擠出熱塑性塑料，通過一個小孔，按規定的溫度和負荷。它提供了一個簡便流量測量參數與流質，可以用來區分等級與聚乙烯、聚丙烯、硬膠、不碎及 ABS 原料等或任何程度遭注塑後呈現降解塑料。注塑後呈降解材料通常流更低分子量，並可能呈現減退之物理性能。通常，注塑後流質部份 MFI 會增加；隨後百分比分別可達 2.8%。另外，比較"好"的地方，"壞"零件可被計算剩餘價值。測試程序：大約 700 克材料裝入筒內熔體儀器 一直加熱到指定溫度的物質。重量指明的物質應用到一個柱塞和熔融物質強行通過的模具。定時擠出收集和權衡。熔體流速值計算  $g/10min$ 。試樣大小：至少 14 克的物質需要。資料：流動比率 =  $(600 / t \times \text{體重 extrudate})$   $t$  = 時間擠出秒熔體流率 =  $g/10min$ 。設備使用的塑料技術實驗室股份有限公司：csi 熔體 indexer (擠出 plastometer)

注意 ASTM D1238 (Procedure A) 美國技師及機械師協會測試條件 D1238 為壓重量為 2.16 公斤



## Scope:

Melt Flow Rate measures the rate of extrusion of thermoplastics through an orifice at a prescribed temperature and load. It provides a means of measuring flow of a melted material which can be used to differentiate grades as with polyethylene, or determine the extent of degradation of the plastic as a result of molding. Degraded materials would generally flow more as a result of reduced molecular weight, and could exhibit reduced physical properties. Typically, flow rates for a part and the resin it is molded from are determined, then a percentage difference can be calculated. Alternatively, comparisons between "good" parts and "bad" parts may be of value.

## Test Procedure:

Approximately 7 grams of the material is loaded into the barrel of the melt flow apparatus, which has been heated to a temperature specified for the material. A weight specified for the material is applied to a plunger and the molten material is forced through the die. A timed extrudate is collected and weighed. Melt flow rate values are calculated in g/10 min.