

TA NO. 13 JUN.1981 Heat Resistance of Polymers

1. Introduction

TG measurements are widely used for the evaluation of the heat resistance of various polymer materials because the thermal decomposition of polymers is accompanied by weight changes.

TG/DTA can be applied to the evaluation of heat resistance and thermal stability of various polymers.

In this brief, the following polymers are measured: polyvinyl chloride (PVC), polyacetal (POM), epoxy resin (EP), polystyrene (PS), polypropylene (PP), low density polyethylene (LDPE) and polytetrafluoroethylene (PTFE).

2. Measurement

Figure 1 shows the TG results for the various polymers. These results show that thermal decomposition behavior differs by polymer type. The heat resistance and thermal stability of these polymers can be inferred from their TG curves.

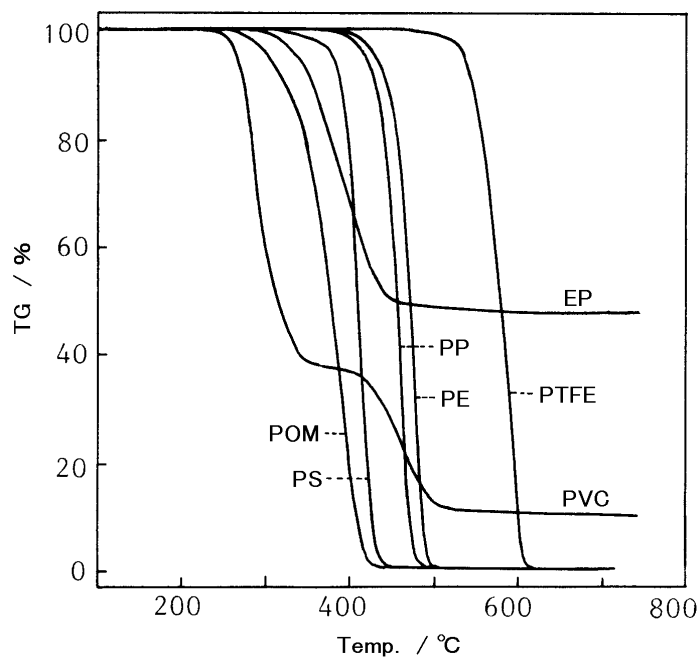


Figure 1 TG Results for the Polymer Samples

Sample weight : 10 to 20mg

Heating rate : 10°C/min

Atmosphere : N₂ 200ml/min