

Analysis of Structural Change of Polymer during the Temperature Rise Process

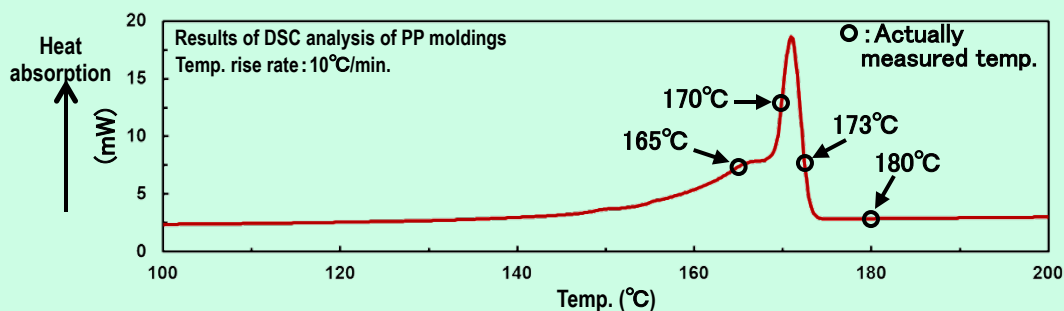
Summary

There are crystals of polymer present in moldings of polypropylene (PP). The physical properties (heat resistance, strength, etc.) of such moldings vary according to the amount, quality, size and arrangement of these crystals of the polymer. Information on the crystals of polymer can be obtained by X-ray structural analysis. Such information is useful for the development of materials and the resolution of troubles.

● Structural analysis of polymer by use of X-rays

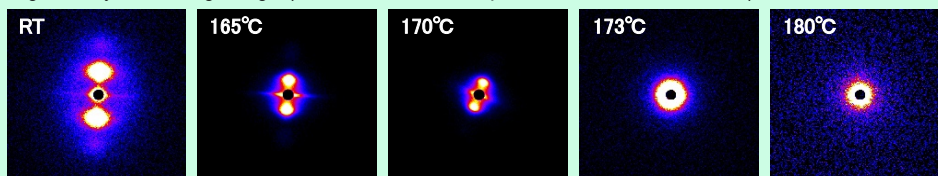
- Our equipment using high brightness X-rays and a high-sensitivity detector is capable of performing an analysis in a short time.
- Our equipment is capable of analyzing structural changes that are taking place during heating and stretching, which is impossible with general equipment.

● Analysis of structural changes at the time of DSC analysis (example: PP moldings)

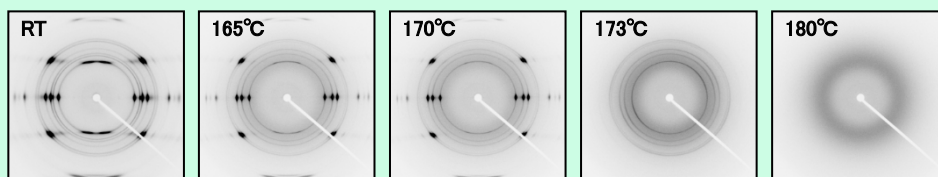


● Analysis of Structural Change of Polymer in the Temperature Rise Process

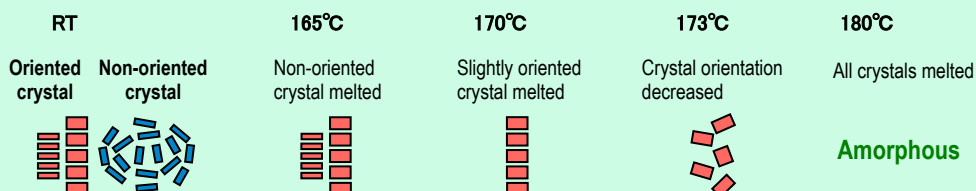
Small angle X-ray scattering image (measured while temp. was raised at 10°C/min.)



Wide angle X-ray diffraction image (measured while temp. was raised at 10°C/min.)



Models of presumed structural changes



Structural changes occurring during DSC analysis were elucidated by performing analysis while raising the temperature under the same conditions as DSC analysis.