1. Manufacturing Process and Grades

1・1 Manufacturing Process

Polycarbonate is polyester generally formed by condensation of dihydroxy compound and carbonic acid.

Such polyester was known from long ago, but it has not been considered as an intersting resin industrially, because the degree of polymerization was not sufficiently high and the melting point was low.

In 1956, Dr. Schnell reported that thermoplastic resin having superior heat resisting property could be obtained by using aromatic compounds as the dihydroxy compound and this attracted the attention of the industry.

The following two methods are known as the manufacturing process.

One of these is the so-called solution method or the solvent method, in which gasified phosgene is blown into a suspension of an alkaline aqueous solution of dihydroxy compund and an organic solvent (for example, methylene chloride) to obtain polycarbonate of high degree of polymerization.

The feature of this method is that products up to a high degree of polymerization can be obtained, but on the other hand, the process of refining and separating the resin dissolved in the organic solvent becomes necessary.

The second method is called the ester substitution method or the melt method, in which polycarbonate is obtained by polycondensation of dihydroxy compund and diester carbonate compound in the melted state.The feature of this method is that the product can be obtained as a uniform molten substance, but it is difficult to obtain products with high degree of polymerization.