

ABSTRACT

An epoxy resin encapsulating material for molding in a semiconductor chip by the use of a transfer molding device. The material has constituents of an epoxy resin, a curing agent, an inorganic filler, and a release agent. The material consists of 99 wt % or more of granules having a diameter of 0.1 to 5.0 mm and 1 wt % or less of minute particles having a diameter of less than 0.1 mm. The mass of the material exhibit an angle of slide of 20 to 40°, which demonstrates good flowability free from clogging a passage leading to a mold cavity in the transfer molding device, thereby assuring enhanced encapsulation quality.

The material is prepared firstly by kneading the encapsulating composition having the above constituents and by solidifying the composition into a semi-cured solid body of B-stage condition. The sem-cured solid body is then pulverized into pieces having a diameter of 5.0 mm or less. The pieces are composed of granules having a diameter of 0.1 mm to 5.0 mm and minute particles having a diameter of less than 0.1 mm. Subsequently, heat is applied to melt a resin component of the encapsulating composition in the surfaces of the granules while continuously moving the granules so as to entrap the minute particles in a molten phase of the resin component. Thereafter, the molten phase is cooled to obtain epoxy resin encapsulating grains coated with a resin layer incorporating the minute particles having the diameter of less than 0.1 mm.