

ABSTRACT

EXPANDED FOAMED BEAD OF A RUBBER-MODIFIED STYRENE POLYMER

Disclosed is an expanded foamed bead for a rubber-modified styrene polymer, comprising a plurality of closed cells defined by cell walls which constitute a matrix for the bead, wherein each of the cell walls comprises two surfaces separated by a distance equal to the thickness of the cell wall. The matrix comprises: (a) a continuous styrene polymer phase; (b) a rubber phase dispersed in said continuous styrene polymer phase (a), wherein the rubber phase comprises a plurality of substantially flat, butadiene polymer rubber particles each having at least one styrene polymer particle occluded therein; wherein the flat rubber particles are arranged in lamellar configuration along the thickness of the cell wall and are oriented so that the long axis of a cross section of each flat rubber particle, as viewed in a cross section of the cell wall, taken along the thickness of the cell wall, is substantially parallel to the two surfaces of the cell wall, and wherein the cell wall and each flat rubber particle satisfies specific dimensional relationships. The expanded foamed bead of the present invention is not only excellent in its ability to retain a foaming agent gas within the closed cells, but also can advantageously be employed for producing, for example, packaging materials and cushioning materials or packings, as ultimate foamed, molded products, having excellent mechanical properties.

(Figure 1)