CLAIMS

1. A foamed polypropylene bead, wherein the raw material comprises the following ingredients in parts by weight: 87-100 parts of random propylene-butene copolymer polypropylene, 0-13 parts of homo-polypropylene, 1-5 parts of blowing promoter, 0.01-2 parts of special porous auxiliary agent, and 5-14 parts of other auxiliary agent, wherein the random propylene-butene copolymer polypropylene contains comonomer butene in a molar ratio of 3-5%, has a melting point of 140-147 °C, a melt index of 6- 8 g/10 min, and a bending modulus of greater than 900 MPa; the melting point of the homo-polypropylene is 160-165 °C; and the special porous auxiliary agent is one or two of porous silicon dioxide and porous titanium dioxide.

2. The foamed polypropylene bead according to claim 1, wherein the porous silicon dioxide or the porous titanium dioxide has an aperture of 70-80 nm and a porosity of 65-86%.

3. The foamed polypropylene bead according to claim 1, wherein the blowing promoter is one or more of zinc borate, kaolin, montmorillonite, calcium carbonate, barium sulfate, white carbon black, carbon nanotube, graphene, talcum powder, citric acid and metal powder.

4. The foamed polypropylene bead according to claim 1, wherein the other auxiliary agent is one or more of fire retardant, color master batch, dispersing agent, antioxidant, lubricant, antistatic agent, coupling agent, stabilizer and ultraviolet light absorber.

5. The foamed polypropylene bead according to claim 1, wherein the other auxiliary agent comprises 500-2000ppm of fire retardant, 6%-10% of color master batch, 1%-3% of antistatic agent, 200-1000 ppm of stabilizer, and 500-1000 ppm of antioxidant.

6. A preparation method of the foamed polypropylene bead according to any one of claims 1-5, comprising the following steps:

step 1, performing mixing, extrusion and wire drawing on random propylene-butene copolymer polypropylene, homo-polypropylene and auxiliary agents according to a

proportion of parts by weight via an extruding machine, and performing grain cutting via a grain cutting device to form modified polypropylene microparticles, wherein the random propylene-butene copolymer polypropylene accounts for 87-100 parts, the homo-polypropylene accounts for 0-13 parts, a blowing promoter accounts for 1-5 parts, a special porous auxiliary agent accounts for 0.01-2 parts, and other auxiliary agent accounts for 5-14 parts; in the step 1, the random propylene-butene copolymer polypropylene contains comonomer butene in a molar ratio of 3-5%, has a melting point of 140-147 ℃, a melt index of 6- 8 g/10 min, and a bending modulus of greater than 900 MPa; the melting point of the homo-polypropylene is 160-165 ℃; and the special porous auxiliary agent is one or two of porous silicon dioxide and porous titanium dioxide; and

step 2, throwing the modified polypropylene microparticles into a reaction kettle, adding a dispersion medium, and then performing heating pressurization, so that the polypropylene microparticles generate an outwardly expanding internal pressure under high temperature and high pressure and release the same to the atmospheric pressure instantly, and obtaining a high-expansibility foamed polypropylene material by treating the foamed particles in a constant temperature environment at a certain temperature for a certain time, wherein the finally formed pore size is 250-450 μm.

7. The preparation method of the foamed polypropylene bead according to claim 6, wherein in the step 1, the wire drawing diameter is 1 mm, the grain cutting length is 1.8-2.5 mm, and the single grain mass is 0.5-2 mg.

8. The preparation method of the foamed polypropylene bead according to claim 6, wherein in the step 2, the temperature of the reaction kettle is 145-160 ℃, the pressure is 1.5-2.4 MPa, and the heating time is 60-100 minutes.

9. The preparation method of the foamed polypropylene bead according to claim 6, wherein the temperature of the reaction kettle is 149-157 ° C, the pressure is 1.8-2.3 MPa, and the heating time is 65-97 minutes.

10. The preparation method of the foamed polypropylene bead according to any one of claims 6-9, wherein in the step 2, the dispersion medium is one or two of kaolin and butter.

11. The preparation method of the foamed polypropylene bead according to claim 6, wherein in the step 2, the selected pressurization gas is one or more of air, nitrogen, water vapor and carbon dioxide.

12. The preparation method of the foamed polypropylene bead according to claim 6, wherein a foaming tube is connected in the reaction kettle in the step, and the foaming tube is 2-4 meters.

13. The preparation method of the foamed polypropylene bead according to claim 6, wherein a foaming tube is connected in the reaction kettle in the step, and the temperature of the foaming tube is controlled at 90-110 °C.