

Amended Claims

- 5 1. Process for producing a polyetherimide (PEI) particle foam, characterized in that the foamed PEI has a glass transition temperature between 180 and 220°C, measured according to DIN EN ISO 6721-1: 2011-08, and that the average cell diameter of the particle foam is less than 1 mm, with a density of 20 - 200 kg/m³ determined according to DIN EN ISO 1183-1: 2013-04 and in the molded part with a thickness of 2-60 mm the energy release according to AITM 2. 0006 is a maximum of 65
10 kW/m² (HRR) and within 2 minutes 2 - 65 kW/min/m² (HR), the sample size is 150 mm x 150 mm x installation thickness, by flushing the particle foam with a fluid during the mold foaming process and discharging the blowing agent and, if necessary, subsequently thermally treated.
- 15 2. Process for the production of a PEI particle foam according to claim 1, characterized in that the thermal treatment is a tempering at a temperature of 50-200°C for 0.1 h to 72 h.
3. Process for the production of a PEI particle foam according to claim 1, characterized in that steam or hot air is used as fluid.
- 20 4. Process for the production of a PEI particle foam according to claim 1, characterized in that in the molded part with a thickness of 5-20 mm, the energy release according to AITM 2.0006 is at most 65 kW/min² (HRR) and within 2 minutes test duration is 10- 65 kW/min/m² (HR).
- 25 5. Process for producing a PEI particle foam according to claim 1, characterized in that a polymer mixture consisting of 77.01 to 99.5% by weight of PEI, 0.49 to 19.99% by weight of a blowing agent, 0.01 to 3% by weight of a nucleating agent and 0 to 10% by weight of additives is obtained, foamed, flushed with a fluid and optionally tempering.
- 30 6. Process for the production of a PEI particle foam according to claim 1, characterized in that the additives are flame-retardant additives, plasticizers, pigments, UV stabilizers, nucleating agents, impact strength modifiers, adhesion promoters, rheology modifiers, chain extenders, fibers and/or nanoparticles.
- 35 7. A process for producing a PEI particulate foam according to claim 1, characterized in that the blowing agents are an alcohol, a ketone, an alkane, an alkene, CO₂, N₂, water, an ether, an aldehyde, chemical blowing agents or mixtures of several of these substances.

8. Use of a particle foam according to at least one of Claims 1 to 7, characterized in that the particle foam is installed in the interior of an aircraft.
- 5 9. Method for producing a composite component, characterized in that the particle foam produced by a method according to Claims 1 to 7 is bonded, sewn or welded to covering materials.
10. Use of composite components obtainable according to claim 9 in the aerospace industry, shipbuilding, rail vehicle construction or automotive vehicle construction.