

POLYCARBONATE FOAM MATERIAL, PRECURSOR COMPOSITION AND KIT THEREOF

A process for the preparation of polycarbonate foam and a kit of parts for the preparation of polycarbonate foam.

TYPE OF DEVELOPMENT

Process for the preparation of a polycarbonate foam.

DESCRIPTION

The present invention relates to a composition useful for the formation of polycarbonate foams with no need of external blowing agent. The invention also relates to a process for the preparation of a polycarbonate foam, to a polycarbonate foam resulting from said process and to a kit of parts for the preparation of a polycarbonate foam.

INDICATION

- Polymer foam materials are used worldwide in a broad range of applications, for example, insulation, sealants, packaging, safety, cushioning
- The cellular structure in a polymer foam provides a material with low density, increased thermal and acoustic insulation, and increased relative stiffness with respect to the original polymer

NOVELTY/ADVANTAGE

The inventors have developed a composition suitable for forming a polycarbonate foam material without the need for addition of a gaseous external blowing agent.

- The decarboxylation ability of isocyanates in the presence of water allows for the fabrication of polyurethane foams in a one-step process involving simultaneous reactions of polyurethane formation and gas generation. In this regard, such polyurethane foams are called self-blowing foams, as no external blowing agent needs to be added to promote the formation of the cellular structure of the foam material. However, the use of hazardous and toxic isocyanate compounds is of concern and there is a need for more sustainable alternative precursors of polymer foam materials.
- To create cells inside matrices, the addition of an external physical or chemical blowing agent is mandatory. Externally-blown foams cannot mimic cell uniformity and properties of self-blowing foams, and the addition of external blowing agents increase the cost and complexity of the industrial production process.

Reference: FOAMS



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COOPERATION GOAL

License agreement.