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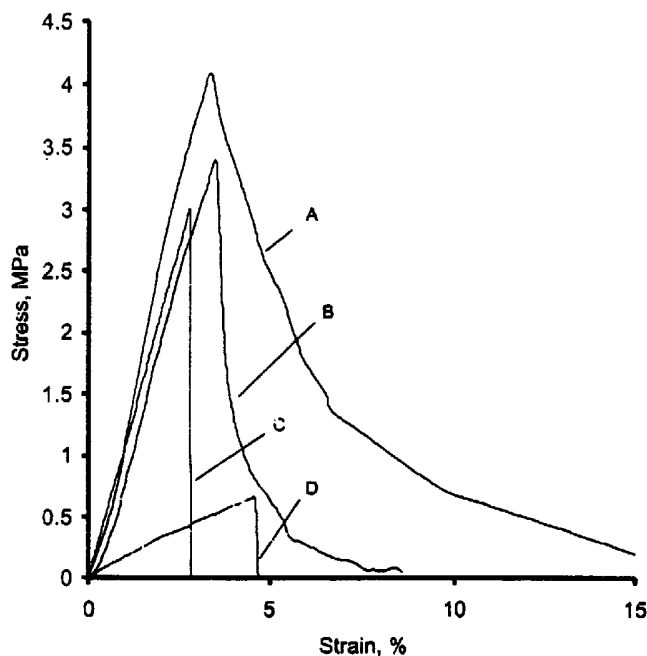
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[Continued on next page]

(54) Title: COMPOSITE FOAM MADE FROM POLYMER MICROSpheres REINFORCED WITH LONG FIBERS



Tensile stress-strain plot for PVC foam samples with density ≈ 100 kg / m³:

- a) Foam reinforced with 10 wt % aramid fibers treated with 3 wt % phenolic resin,
- b) Foam reinforced with 4 wt % aramid fibers treated with 1.2 wt % phenolic resin,
- c) Cross-linked commercial PVC foam, d) Unreinforced PVC foam based on microspheres.

(57) Abstract: Composite foam based on expandable microspheres reinforced with fibers is described (Fig. 3). Also disclosed are methods of making microsphere foam reinforced with fibers and methods of use thereof. The disclosure provides foam that performs equally and better than the performance of most thermoplastic foams commercially available.

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B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 106/122; 521/53, 54, 55; 523/218, 219 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,879,163 A (WOICESHYN et al) 07 November 1989 (07.11.1989) column 2 and column 3 lines 48-56	1-24
A	US 4,995,545 A (WYCECH) 26 February 1991 (26.02.1991) entire document	1-24
A	US 4,067,829 A (GARRETT) 10 January 1978 (10.01.1978) entire document	1-24
A	US 4,855,170 A (DARVELL et al) 08 August 1989 (08.08.1989) entire document	1-24
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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"E"	earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
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