

Title (en)

A neutron-shielding composite fiber and a method of manufacturing same.

Title (de)

Eine gegen Neutronenstrahlung abschirmende Mischfaser und Verfahren zu deren Herstellung.

Title (fr)

Fibre mixte de protection contre les radiations et procédé pour sa fabrication.

Publication

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Application

EP 82107384 A 19820813

Priority

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Abstract (en)

The invention relates to new fibrous neutron-shielding material in the form of composite or bicomponent fibers having a core-and-sheath structure, comprising a fiber-forming polymer (A) as the core component, which contains at least 5% by weight of neutron-absorbing particles of up to 25 μ m, preferably 15 μ m and less in diameter, and at least one kind of fibre-forming polymer (B) as the sheath component, said polymer (B) being compatible with said polymer (A). The polymers (A) and (B) are preferably polyethylene or copolymers containing a major amount of polyethylene. The neutron-absorbing particles contain ^6Li and/or ^{10}B . The new fibers are conventionally melt spun bicomponentially, the ratio of the melt viscosities under the spinning conditions being from 0.2 to 0.9 of the sheath polymer to the core polymer. The fibers obtained are highly flexible and do not show any significant generation of secondary radioactive radiation so that they are highly advantageous with respect to being manufactured into protective clothing.

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IPC 8 full level

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CPC (source: EP)

D01F 1/106 (2013.01); **D01F 8/06** (2013.01); **G21F 1/10** (2013.01)

Citation (search report)

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- [A] EP 0002227 A1 19790613 - CARBORUNDUM CO [US]
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