

Title (en)
Loudspeaker diaphragm of an injection foam molded body

Title (de)
Formkörper-Schaumstoffspritzung-Lautsprechermembran

Title (fr)
Membrane de haut-parleur en corps moulé par injection de plastiques expansés

Publication
EP 0944292 A3 20050302 (EN)

Application
EP 99105479 A 19990317

Priority
JP 7101198 A 19980319

Abstract (en)
[origin: EP0944292A2] An inorganic or organic filler in an amount of 3 to 30 % by weight is added to a resin containing a foaming agent. The resulting resin mixture material is injection molded into a loudspeaker diaphragm (1) having a three-layer structure in which a foamed layer (3) is covered with unfoamed skin layers (2). For forming the three-layer structure, a resin mixture material of polypropylene containing a foaming agent is injected into a cavity of a mold (20). Immediately after the injection and the completion of forming the skin layers (2), the mold (20) is separated so that the material may start foaming at its inside to form the foamed layer (3). Since the surfaces of the resin mixture material are in contact with the inner surfaces of the mold in the injection, the surfaces of the resin mixture material have solidified before the foaming takes place, so as to form the unfoamed skin layers (2). By adjusting the filler to the appropriate content, the loudspeaker diaphragm (1) is improved in appearance quality while keeping the other physical properties with favourable characteristics. <IMAGE>

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H04R 7/00; **H04R 7/12**

IPC 8 full level
H04R 7/02 (2006.01); **H04R 7/06** (2006.01); **H04R 7/10** (2006.01); **H04R 31/00** (2006.01)

CPC (source: EP)
H04R 7/10 (2013.01); **H04R 31/003** (2013.01); **H04R 2307/029** (2013.01)

Citation (search report)
• [YA] EP 0481306 A1 19920422 - SUMITOMO CHEMICAL CO [JP]
• [A] US 3930979 A 19760106 - VALLANCE CHRISTOPHER
• [A] US 5650105 A 19970722 - YOCUM FRED D [US]
• [DX] PATENT ABSTRACTS OF JAPAN vol. 1997, no. 04 30 April 1997 (1997-04-30)

Cited by
CN112511957A; US7332215B2; CN110256767A; GB2358545A; GB2358545B; US2018324526A1; US10484794B2

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