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BASE MATERIAL FOR GRAMMOPHONE RECORDS AND OTHER SOUND RECORDS

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This invention relates to a base material for grammophone records and other sound records and to the manufacture of same, said records bearing on one or both surfaces mechanical sound registrations in form of grooves cut into the material by means of a stylus according to the Edison or to the Berlin method.

It is kown to manufacture grammophone records and sound records on film strips from synthetic materials consisting of vinyl polymers.

Compared with grammophone records manufactured from Celluloid and shellac mixtures, such records have the advantage to be less fragile and chemically more resistant. They are true to scale, but they, too, have the disadvantage to be thermoplastic and to become useless already at relatively low temperatures, for instance slightly above 100°C.

A number of other artificial materials not possessing these disadvantages are not suited for sound records on account of difficulties arising during the manufacturing process.

It is an object of the invention to provide a new and more suitable base material of the above mentioned type for the manufacture of sound records, especially grammophone records.

A further object is to provide a base material highly resistant towards wear and tear and atmospheric influences.

A further object is the provision of an unbreakable material for said records.

These and other objects will become apparent from the following description.

The present invention is based on the observation that grammophone records and other carriers for sound recording are most advantageously manufactured from linear synthetic condensation products, for instance superpolyamides, superpolyesters, superpolyethers, sunperpolyanhydrides, superpolyacetals, polyureas, polyurethanes, polyhydrazides. Such base material for sound records possesses excellent hardness in the finished state, which increases the resistance towards wear and tear and reduces the surface noises to a minimum. Such records are unbreakable, chemically very resistant and, generally speaking, not at all sensitive towards atmospheric influences, for instance moist air. Also their resistance towards higher temperatures is excellent.

These carriers for sound recording according to the present invention may be obtained by casting, if necessary centrifugal casting, by pressing, forming or dye-casting. The grammophone records may be embossed by pressing in the matrix or by cutting with a stylus which may be heated, if so desired. In this case it is advantageous to use a plasticized material. As plasticizers are cited by way of example monomeric ε-capro lactam, also solvents in a quantity up to 20%, for instance phenol, o- or p-cresol, o-oxydiphenyl and the like, furthermore high polmeric vinylethers, for instance polymerized bornylvinylether.

Most suitable as base material used in the manufacture of grammophone records according to this invention are for instance the superpolyamides, superpolyesters, superdyethers, superpolyanhydrides and superpolyacetals produced according to U. S. Patents Nos. 2,071,250, 2,071,251, 2,071,252, 2,071,253. Also the polyamides according to U. S. Patent application Ser. No. 225,266, filed July 20, 1938, and the polyamides and polyurethanes according to U. S. Patent application Ser. No. 277,948, filed June 7, 1939, may be employed. Most practical are the interpolymers according to German Patent applications I.63 683, filed February 3, 1939, and I.63 684, filed February 3, 1939, which are completely transparent and most flexible; also interpolymers soluble in alcohol according to German Patent application I.64 433 (24.4.39) which are especially useful for casting grammophone records.

To the substances mentioned above plasticizers, fillers, pigments and the like may be added. Film strips for sound recording consisting of linear synthetic polycondensation products may be oriented by cold drawing which increases their tenacity considerably.

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