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**(71) Applicant(s):**

PRX IMPORTADORA E EXPORTADORA LTDA. [BR/BR]; Rua VP-7D, S/N, Quadra 12, MOD. 13, SL. 01, Distrito Agroindustrial De Anapolis 75.123-140 Anápolis (BR) *(for all designated states)*

**(72) Inventor(s):**

BRENNER, Augusto Dietrich; Rua Campos Salles, N. 250 93.548-430 Novo Hamburgo (BR)

**(74) Agent(s):**

CAPELLA & VELOSO ADVOGADOS ASSOCIADOS; AV. Osvaldo Aranha, N. 440, Sala 601/602, Bom Fim 90.035-190 Porto Alegre (BR)

**(54) Title (EN):** THERMOPLASTIC MATERIAL FOR VETERINARY USE

**(54) Title (FR):** MATÉRIAU THERMOPLASTIQUE À USAGE VÉTÉRINAIRE

**(54) Title (PT):** MATERIAL TERMOPLÁSTICO PARA USO VETERINÁRIO

**(57) Abstract:**

**(EN):** The present invention patent relates to a novel thermoplastic material for veterinary use as an orthopedic immobilizer, which consists of a combination of specially treated textile materials with a polymer structure that has a low melting point, is thermally self-adhesive, easy to mould and stabilizes immobilized regions once it has cooled. The aim of the present invention patent relates to a novel thermoplastic material for veterinary use as an orthopedic immobilizer which allows an orthosis to be directly prepared which reflects the anatomy of the animal patient. This is achieved by combining specially treated textile materials with a polymer structure that has a low melting point, which is thermally self-adhesive, easy to mould and stabilizes immobilized regions in an easy, quick and functional manner once it has cooled. The thermoplastic material of the invention contains, within its composition, a woven and/or non-woven textile base material specially treated by a process of impermeabilization and by adding antimicrobial additives; such treatment of the textile components of the thermoplastic material resulting in a product that has unique performance when used and is capable of minimizing damage and lesions to immobilized members. The material of the invention contains a combination of special polymers, wherein, due to the characteristics of low heat reactivation temperature (between 60°C and 90°C) and low recrystallization rate of said special polymers, i.e. after being heated until the softening point, the polymer(s) remain malleable and adhesive for a long period of time (in general more than 60 seconds) and the material, once it has cooled to room temperature, goes back to having its original hardness and toughness.

**(FR):** La présente invention concerne un nouveau matériau thermoplastique à usage vétérinaire utilisé comme immobilisateur orthopédique, et consistant en une combinaison de matières textiles spécialement traitées avec structure polymère à faible point de fusion, thermiquement autocollante, à moulage facile, assurant une stabilisation des zones immobilisées après refroidissement. La présente invention a pour objet un nouveau matériau thermoplastique à usage vétérinaire utilisé comme immobilisateur orthopédique en vue de la fabrication d'une orthèse directement avec l'anatomie du sujet animal. À cet effet, un réalise une combinaison de matières textiles spécialement traitées avec structure polymère à faible point de fusion,

thermiquement autocollante, à moulage facile, assurant une stabilisation facile, rapide et fonctionnelle des zones immobilisées après refroidissement. Le matériau thermoplastique de l'invention possède dans sa composition une matière textile de base tissu et/ou nanotissu spécialement traitée au moyen d'un procédé d'imperméabilisation et d'addition d'agent antimicrobien. Grâce à ces traitements dans la ou les parties textiles, le produit présente une performance différenciée en termes de procédé d'application, permettant en outre de réduire les endommagements et les lésions des membres immobilisés. Le matériau selon l'invention possède une combinaison de polymères spéciaux qui, du fait de leurs propriétés de basse température de réactivation thermique (entre 60°C et 90°C) et de faible taux de recristallisation. En d'autres termes, après un chauffage jusqu'à la température de ramollissement, le ou les polymères restent malléables et présentent une adhésivité pendant une durée prolongée (généralement supérieure à 60 secondes), et après le refroidissement du matériau à température ambiante, il retrouve sa rigidité et sa dureté initiales.

**(PT):** O presente privilégio de invenção refere-se a um inovador material termoplástico para uso veterinário como imobilizador ortopédico, que consiste na combinação de materiais têxteis especialmente tratados com estrutura polimérica de baixo ponto de fusão, termicamente autocolante, de fácil moldagem que proporciona estabilização das áreas imobilizadas após seu resfriamento. O objetivo do presente privilégio de invenção refere-se a um inovador material termoplástico para uso veterinário como imobilizador ortopédico de forma a confeccionar uma órtese diretamente com a anatomia de paciente animal. Isto é conseguido através da combinação de materiais têxteis especialmente tratados com estrutura polimérica de baixo ponto de fusão, termicamente autocolante, de fácil moldagem que proporciona fácil, rápida e funcional estabilização das áreas imobilizadas após seu resfriamento. O material termoplástico da invenção possui em sua composição material têxtil base tecido e/ou não tecido especialmente tratados com um processo de impermeabilização e aditivação antimicrobiana; estes tratamentos em sua(s) porções têxteis permitem que o produto tenha uma performance diferenciada em seu processo de aplicação e a capacidade de minimizar danos e lesões aos membros imobilizados. O material da invenção possui uma combinação de polímeros especiais que, devido à suas características de baixa temperatura de reativação térmica (entre 60°C a 90°C), taxa de recristalização baixa, ou seja, após aquecido até sua temperatura de amolecimento, o(s) polímero(s) permanecem maleáveis e com adesividade por um longo período de tempo (em geral superior a 60 segundos) e após o resfriamento do material à temperatura ambiente, retorna à rigidez e dureza original.

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