

ALIEN PROPERTY CUSTODIAN

PROCESS FOR THE MAKING COMPACT, IMPREGNATING AND/OR DYEING OF OXIDIC PROTECTIVE LAYERS ON MAGNESIUM AND ITS ALLOYS

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Objects of magnesium or magnesium alloys have been protected in various ways against corrosion, e. g. by providing the objects with oxidic protective layers by etching them in bichromate solutions or by anodic treatment in electrolytes.

It is also known subsequently to impregnate the thus obtained surface layers with lacquers, oils, fats and the like or to carry out dyeing of the oxidic protective layer, by dipping into solutions of organic dyestuffs. However it has been found that the protective layers thus obtained have large pores and holes which strongly affect their stability to corrosion and that the dyeings of the oxidic layers are very non uniform.

Series of experiments carried out have shown that it depends principally on the absorptive power of the oxidic whether or not compact coatings or dyeings are obtained on magnesium, but that also certain conditions in the choice of lacquers, dyestuffs and other impregnating agents have to be fulfilled. Systematic testing of the lacquers led to the recognition that pores and holes in the coating layer may often be caused by a subsequent formation of little bubbles, within the

layer which can only then with certainty be avoided if the lacquer or the other impregnating agent shows a pH number of above 6 in order to exclude any reaction with the magnesium metal or oxide. Almost all the hitherto used kinds of lacquer in particular those which give good results in the impregnation of aluminium are with regard to this point of view unsuitable for objects of magnesium and its alloys.

10 The same holds true for solutions of organic dyestuffs. In so far as this pH number lies under 6.0 there occurs with superficially oxidised magnesium almost exclusively no dyeing, or there are produced by the decomposition reactions unsightly colours.

15 The object of the invention is accordingly a process for the making compact, impregnating and/or dyeing of oxidic protective layers on magnesium and its alloys which overcomes the above mentioned disadvantages by using lacquers, dyestuffs and other impregnating solutions of which
20 the pH value is over 6.0.

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