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Study of Electrochemical Behaviour of ZK21 Alloy

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Abstract : This paper aims to show that the ZK21 and its alloy are not highly corrosive and can be used in many areas and thus to popularize the use of this alloy and project it as future materials[1]. Magnesium alloys possess lucrative properties such as high strength to weight ratio, low machining cost, low thermal stress modules and superior hot forming properties. Because of these advantageous characteristics they are used in many areas such as in corrosion protection, aeronautics and automobiles sectors [2]. Hence it has been recommended to make use of this alloy as one of the important material for most of the applications. In this present analysis, it has been attempted to investigate the electrochemical behaviour of ZK21 alloy, particularly its unusual behaviour in certain aqueous environments is studied by using galvano-gasometry. It is also intended to show that the magnesium alloy is not as corrosive as expected from the standard potential[3]. The general perception of magnesium and its alloys as highly corroding materials is derived from certain extreme environmental conditions prevailing only at high salt contents[4], humid and wet conditions. This is not at all valid in many other conditions where magnesium and its alloy resist corrosive attack and serve the decide purpose most satisfactorily.[5.]

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