New magnesium alloy resists corrosion

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Magnesium's low weight, high strength, and abundance in the Earth means it is widely used in automotive, aerospace, biomedical and energy-storage applications. Magnesium is lighter than aluminium, so replacing aluminium with stainless magnesium in cars and aeroplanes could reduce fuel consumption and carbon dioxide emissions. However, using magnesium on an industrial scale has been limited because it corrodes in aqueous environments.

Scientists have created an alloy with a very low corrosion rate by alloying pure magnesium with tiny amounts of calcium. By using only tiny amounts of calcium, the new alloy retains the properties of pure magnesium. However, it can resist corrosion because of the development of a protective surface film.

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1. Define the words 'alloy' and 'corrosion'.
2. Give an advantage of using a magnesium alloy in a car.
3. Suggest how this new alloy resists corrosion.