

# **MAGNESIUM ALLOYS WITH HIGH IGNITION TEMPERATURE FOR THE AEROSPACE INDUSTRY**

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The most commonly used lightweight materials in the transport industry are aluminium alloys. However, due to their low density and corresponding strength-to-weight ratio, magnesium alloys are increasingly used. The application of magnesium alloys can lead to a significant reduction in the weight of vehicle weight by up to 30 %. This translates into lower fuel consumption and reduced emissions. The disadvantages of magnesium are related to its high reactivity with oxygen, poorer corrosion properties and low flammability. Until 2015, the use of magnesium alloys in aircraft cabins was banned from a safety perspective. In 2015, this ban was removed and Mg alloys can be used in aircraft seat construction but must meet the requirements of the ignition temperature test.

In the presented work, we have created Mg-Y based alloys with Ca, Al and improve the properties of materials. These elements offer the advantages of the formation of resistant oxide layers, thus increasing the ignition temperature (Y and Ca). Besides mechanical properties are increased (Y, Al) and prices are kept acceptable (Ca, Al). This work was supported from the grant of Specific university research – grant No. A1\_FCHT\_2022\_007.