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Study of addition effect of Tantalum Carbide on reinforcement of properties of sintered stainless steel.

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Sintered stainless steels have a wide range of applications, mainly in the automotive industry. The properties such density, strength, corrosion and wear resistance can be improved through addition of amount of particles of carbides.

This work present a study of sintering of stainless steel with additive of Tantalum Carbide with a goal to reinforce the properties of final product. The samples were prepared by mixing the powder with 0,6 wt % of wax, compacting in steel die and sintered in a atmosfere of H₂ – N₂ mixture. The result is evaluated through measurements of sintering density, hardness, tensile, strength and microstructural analisys. Also is presented a study of corrosion from salt spray test. The particles of carbide were obtained in our laboratory and has grain size distribution of nanoparticles, theirs effects improve corrosion resistance without degrading mechanical properties.