

Abstract: In the present paper an AlCrCuFeNi alloy was prepared by induction melting and an AlCrFeMnNi alloy by mechanical alloying (MA) using a high energy planetary ball mill (stainless steel jars and balls). Chemical and structural characterization was performed on the resulted samples. The as-cast samples revealed a homogenous chemical composition and a fine dendrite microstructure. The SEM-EDAX analysis showed a Widmanstatten type dendrite structure in the as-cast alloy, composed of Cr-Fe rich phases, whereas the mechanical alloyed powders presented a fine grain structure and homogenous elemental distribution. The phase content analyzed through XRD revealed dominant BCC structures in both alloys.