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旋转造粒制备Al-Pb合金颗粒

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摘 要: 研究了用旋转造粒法制备Al-8Pb-3Si-2Sn-Cu合金颗粒的宏观特征与微观组织. 研究表明: Al-Pb合金颗粒的形状受合金熔体表面张力的影响, 呈近球形, 颗粒直径随熔体旋转速度的提高而减小; 当颗粒直径小于3.9 mm时, 合金的非平衡凝固可以克服Pb重力偏析, 随颗粒直径的减小, 合金凝固过程从非平衡过偏晶状态转变为非平衡亚偏晶状态, 在微观上Pb分布更加均匀.

关键字: 铝-铅合金; 颗粒; 特征; 微观组织

Research of Al-Pb alloy particles by rotating melted metal

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Abstract: The research of Al-8Pb-3Si-2Sn-Cu alloy particles by rotating melted metal is carried out. The results show that the shape of Al-Pb alloy particle is close to sphere because of surface tension, and that the dimension of alloy particle decreases with increasing the rate of rotation. When the diameter of the alloy particle is less than 3.9 mm, non-equilibrium solidification of Al-Pb alloy particles can restrain gravity segregation of lead. The attitude of solidification changes from the hypermonotectic to hypomonotectic with decreasing the dimension of alloy particle, and the distribution of Pb is more homogeneous on optical microstructure.

Key words: Al-Pb alloy; particle; characteristics; microstructure

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