

材料特点与应用

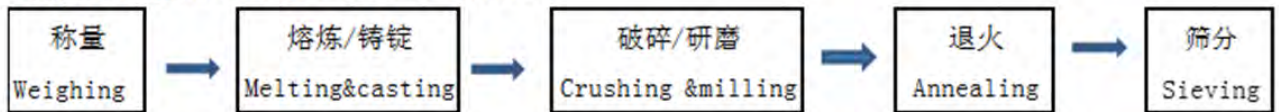
Material Characteristics and Applications

金属软磁合金粉末制造流程介绍

Introduction to the manufacturing process flow of soft magnetic alloy powder

制造流程图 manufacturing flow chart

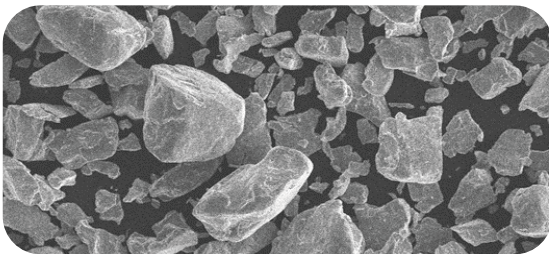
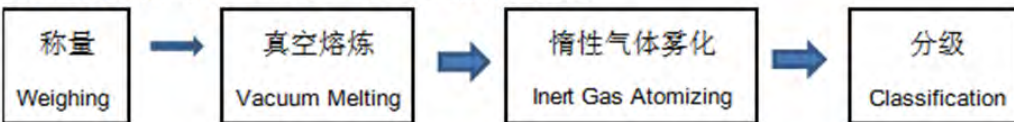
机械破碎化法 (Mechanical crushed process)



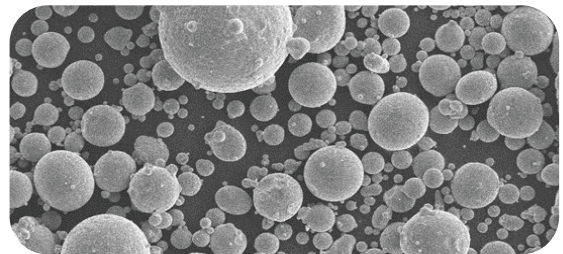
气雾化法 (Gas Atomizing process)



真空气雾化法 (Vacuum Gas Atomizing process)



机械破碎法粉末形貌
morphology of mechanical crushed powder



气雾化法粉末形貌
morphology of gas atomized powder

机械破碎法工艺主要用于制造传统的铁硅铝磁粉心粉末。粉末形貌为不规则多边形，成型性好，磁心的损耗相对较低，直流叠加特性良好。易于大规模生产，制造成本较低。

气雾化法工艺可用于制造铁硅和铁硅铝磁粉心粉末，粉末形貌为球形，直流叠加特性很好。真空气雾化法工艺主要用于制造铁镍磁粉心粉末。粉末形貌为球形，直流叠加特性和损耗都很好。

Mechanical crushing process mainly applies to manufacture traditional sendust powder. The morphology of the powder is irregular polyhedron. The moldability of the powder is good. The power loss is relatively lower. The DC bias is good. The process is easy for mass production and has lower manufacturing cost.

The gas atomized process mainly applies to manufacture silicon iron powder and silicon aluminum iron powder. The morphology of the powder is spherical. The core made of the powder has excellent DC bias. The vacuum gas atomized process mainly applies to manufacture the nickel iron powder. The morphology of the powder is spherical as well. Both the DC bias and power loss are all very well.

材料特点与应用

Material Characteristics and Applications

金属磁粉心制造流程介绍

Introduction to the manufacturing process of magnetic powder core

制造流程图 manufacturing flow chart



绝缘包覆工序是通过化学和物理方法在每个金属粉末表面包覆一层膜，提高粉末表面的电阻率和粘接性；成型工序是将绝缘包覆好的粉末压制成各种形状的磁心；烧结工序是将压制好的磁心在一定温度下进行热处理，释放压应力，提高磁心的机械强度，达到一定要求的电磁特性；浸渍工序是将烧结后的磁心浸泡在树脂溶液中，然后在一定温度下固化，以进一步提高磁心的机械强度；喷涂工序是在烧结好的磁心表面涂覆一层树脂，以提高磁心的表面电阻；分检包装工序是对喷涂后的磁心进行外观检验，将合格品喷码、包装后入库。

Insulation is the process to coat an insulating layer on the surface of each particle by chemical and physical method to increase the surface resistivity and adhesive property of the powder. Pressing is the process to put the insulated powder in a mold and compact the powder together by a huge pressure to get a core with specific shape. Sintering is the process to put the green cores into a kiln to strengthen the mechanical strength and release the stress, meanwhile to get the objective electromagnetic properties. Soaking is the process to put the sintered cores in a resin solution tank and cure them in a certain temperature to enhance the broken strength further. Coating is the process to coat an insulated layer on the surface of the sintered cores to get the objective resistivity for copper wire winding. Inspection & packing is the process to have a final visual inspection, mark on the core, pack and release to warehouse.