

题目：年产 20 万吨电解铜的火法精炼厂一座

摘 要

铜和铜的其他合金材料也因为它的优良的性能而在电气，电子产业，机械制造业等等产生了广泛的用途。如今，人们对精铜的要求也愈发愈高，所以我们不能停止对铜研究的步伐。粗铜的精炼是铜的冶炼工序中重要的步骤之一。造铕熔炼出来的粗铜的机械性能以及导电性不能满足工业上应用的要求，必须要对其进行精炼。粗铜的精炼产品，对后面的电解铜的电解精炼有着直接的影响。粗铜的精炼目的是除去粗铜里的有害杂质然后回收里面金，银等有价金属。粗铜的火法精炼方式目前主要分为三种：固定式反射炉，回转式精炼炉，倾动式精炼炉。此次设计拟采用回转式阳极炉进行生产。本文主要内容为对年产 20 万吨电解铜的火法精炼厂进行设计，其设计内容包了：括厂址的选择；工艺流程选择与论证；冶金部分的计算如：物料平衡，金属平衡和热平衡。以及对主体设备辅助设备的设计选型的计算；生产组织和技术经济方面上的分析以及环保安全。

关键词： 铜；火法精炼；回转炉

Design a fire refinery with an annual output of 20t/a electrolytic copper.

Abstract: Other alloy materials of copper and copper have also been widely used in the electrical, electronics, and mechanical manufacturing industries because of their excellent properties. Nowadays, people's requirements for refined copper are getting higher and higher, so we can't stop the pace of copper research. The refining of blister copper is one of the important steps in the copper smelting process. The mechanical properties and electrical conductivity of the flash blowing copper cannot meet the requirements of industrial applications and must be refined. The refined product of blister copper has a direct impact on the electrolytic refining of electrolytic copper later. The purpose of refining blister copper is to remove harmful impurities from the blister copper and then recover valuable metals such as gold and silver. The method of refining crude copper is mainly divided into three types: fixed reverberatory furnace, rotary refining furnace, and tilting refining furnace. The design is intended to be produced using a rotary anode furnace. The main content of this paper is to design a fire refinery with an annual output of 200,000 tons of electrolytic copper. The design content includes: selection of the site; process selection and demonstration; calculation of metallurgical parts such as material balance, metal balance and heat balance . And the calculation of the design and selection of the auxiliary equipment of the main equipment; the analysis of production organization and technical economy as well as environmental safety.

Key words: copper; pyro-refining; rotary anode furnace

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