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辉钼精矿熔盐氧化工艺研究 —— Na_2MoO_4 - Na_2SO_4 体系

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摘 要: 对辉钼精矿在 Na_2MoO_4 - Na_2SO_4 体系的熔盐氧化过程进行了研究, 探索了不同的工艺参数对钼的转化率和脱硫率的影响. 研究表明, 在熔盐组成 Na_2MoO_4 与 Na_2SO_4 质量比为3:1, 配料比为1:10(质量比), 温度为 700°C , 鼓风速度为 1.66 m/s , 鼓风时间为 20 min 的条件下, 脱硫率可达99%以上; 得到的熔盐经水浸和碱浸后, 钼以 Na_2MoO_4 形态进入溶液, 钼的总浸出率可达95.5%以上; 硫以 SO_2 的形态进入气相, 烟气中的 SO_2 体积分数可达5.4%以上, 可用于制酸; 含钼渣和浸出液蒸发结晶得到的 Na_2SO_4 晶体可返回再用; 熔盐氧化过程采用连续操作分批加料方式, 可提高生产能力.

关键字: 辉钼精矿; Na_2MoO_4 - Na_2SO_4 体系; 熔盐氧化

Melting salt oxidation technology of molybdenite concentrate

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Abstract: The melting salt oxidation of molybdenite in Na_2MoO_4 - Na_2SO_4 system was studied. The effect of processing parameters on the conversion ratio of molybdenum and sweetening ratio was explored. The results show that, under the conditions of melting salt constitution 3:1 (quality ratio), burden ratio 1:10, 700°C , the velocity of air blast 1.66 m/s , and the time of air blast 20 min , the sweetening ratio could reach over 99%. When melting products were leached with water and soda solution, the molybdenum in the concentrate was transferred into the solution in the form of Na_2MoO_4 , and the leaching ratio of molybdenum could reach over 95.5%. The amount of sulfur in flue gas in the form of SO_2 could reach 5.4% and could be used to prepare acid. The residue containing molybdenum and Na_2SO_4 crystal obtained by evaporation of leaching solution could be reused. Using continuative processing and batch burden could increase production.

Key words: molybdenite concentrate; Na_2MoO_4 - Na_2SO_4 system; melting salt oxidation

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