

The effect of extraction of vanadium chromium slag adding on Cr-bearing vanadium and titanium sinter magnetite

Mi Zhou^{1, 2}, Tao Jiang^{1, 2}, Songtao Yang, Xiangxin Xue^{1, 2}

1. School of Metallurgy, Northeastern University, Shenyang 110819

2. Liaoning Provincial Key Laboratory of resource recycling science and Engineering, Shenyang 110819

Abstract: The characteristic of extraction of vanadium chromium slag of raw materials were analyzed and explored the effect of extraction of vanadium chromium slag adding on Cr-bearing vanadium and titanium sinter magnetite. Being based on miniature sintering, the characters of extraction of vanadium chromium slag and Cr-bearing vanadium and titanium sinter magnetite of the assimilation, the liquid phase fluidity, the strength of binding phase and the crystal strength were measured and analyzed. On this basis, besides, adding extraction of vanadium chromium slag with 1.0%-3.0%, the fluidity, assimilation, liquid phase fluidity the strength of the binding phase and crystal strength were measured and analyzed. From the point of view of the physicochemical properties of high temperature analyzed effect of extraction of vanadium chromium slag adding on chromium vanadium titanium compound. And the sinter pot test was carried out. The results of experiment indicate that the extraction of vanadium chromium slag can reduce assimilation temperature of Cr-bearing vanadium and titanium sinter magnetite, the liquid phase fluidity of the mixture can be improved at high temperature. But, it reduces strength of binding phase of sinter material and strength of crystal phase. The results of sinter pot test indicate that extraction of vanadium chromium slag adding will debase quality of Cr-bearing vanadium and titanium magnetite.

Keywords: Cr-bearing vanadium and titanium sinter magnetite; optimization of matching ores; blast furnace; sinter; melting