

Effect of aluminum fluoride in High calcium fluoride content in aluminum electrochemical cell

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Abstract: It is important to control the chemical composition ratio of bath because the highest efficiency and performance are achieved at the best selection and at the suitable temperature, which leads to an increase in production and longer lifetime. The stability of the pot performance is necessary to improve the conditions and precise control to increase production. In al-Mahdi Aluminum Factory in Bandar Abbas (anodizing unit), due to poor storage of raw materials, climate in the factory environment and calcareous soil in the Middle East, a high percentage of calcium oxide was introduced into raw materials and the calcium oxide level was more than acceptable limit. This led to an increase in the calcium fluoride content of the production line. In this paper, we examine the effects of spars 7.5% and above, and comparison it with the production line and the impact of other additives in these conditions. We also examine the best selection and analysis under this condition. Direct analysis of the effect of spar requires the removal of other variables, including the anode conditions and its physical and chemical quality or aluminum fluoride changes, which have been applied in this study. For this purpose, we classified the changes based on the upward changes of Spar, and we examined other variables in this condition. The concentration of aluminum fluoride in the bath decreases with increasing spar.

Keywords: “aluminum fluoride; calcium fluoride, aluminium smelter”