IS 17441 (Part 2) : 2021 Calcined Alumina – Specification Part 2 Metallurgical Grade

This standard covers the requirements and method of test for metallurgical grade calcined alumina. Metallurgical grade calcined alumina is aluminium oxide that has been produced by heating aluminium hydroxide, commonly known as hydrate (Al_2O_3.3H2O), at temperature in excess of 1050° C to drive off nearly all chemically combined water. In aluminium hydroxide form, alumina has higher chemically combined water. In calcined form, alumina has higher chemical purity, extreme hardness, high density and a high melting point (slightly above 2050° C). The metallurgical grade alumina contains predominantly gamma – phase and is used for the separation of Aluminium by smelting. However, by controlling the calcinations temperature and time, properties of alumina can be controlled. With increasing the temperature during calcinations, alumina transforms to α-alumina which is chemically stable with high melting temperature.

Metallurgical grade calcined alumina is generally manufactured using the stationary flash calciner, gas suspension, fluid bed or rotary. The residence time in the flash calciner is very low so that the temperature sensitive gamma phase is maintained..

BIS first published IS 17441 for calcined alumina in the year 2020. This standard has been revised in 2021 keeping in view the requirements of the Industry and based on the inputs received from Aluminium Industry. It was also decided to segregate the Standard into 2 parts:

Part 1 Non-metallurgical grade calcined alumina

Part 2 Metallurgical grade calcined alumina

This standard prescribes the requirements and methods of test for metallurgical grade calcined alumina. Various physico-chemical properties including aluminium oxide content and various impurities and their test methods have been stipulated. The standard also specifies the packing and marking requirements for the product.