

# Characteristic Analysis of Bulk Graphite according to Mixing Ratio of Carbon-based Filler and Organic Binder

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The manufacturing process of the bulk graphite is produced by mixing the carbon-based filler and the organic binder, forming, carbonizing, impregnating and re-carbonizing treatment and graphitizing it at a high temperature of 2500 to 3000 °C [1]. The mechanical, electrical and thermal properties of bulk graphite determined by the content of the filler, the dispersion form of the particles, the size of the particles and the mixing ratio between the filler and the binder material [2]. The purpose of this research was to analyze the properties of bulk graphite on the mixing ratio.

The filler used in this study was graphite waste that remained after the bulk graphite machining process (hereinafter referred to as “graphite scraps”). The proportion of graphite scraps and organic binder was divided into 5 groups at 95: 5, 90: 10, 85: 15, 80: 20, 75: 25. Mixed materials prepared to bulk graphite through the forming, the carbonization process. The prepared bulk graphite conducted the density and specific resistance for analyzing the characteristics of bulk graphite. Density was measured by the Archimedes method and specific resistance was measured by a voltage drop method. The characteristics of bulk graphite on the mixing ratio were investigated.

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## References

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