

Characteristics of Diamonds from Cretaceous Kimberlite Placers (Seguela, Ivory Coast)

Marc Ephrem Allialy*, Myriam Tessia, Allou Gnanzou, Yacouba Coulibaly

Université Félix Houphouët-Boigny de Cocody-Abidjan, UFR-STRM, Côte d'Ivoire

*Corresponding Author

ABSTRACT

The Séguéla diamondiferous placers located in the center-west of the Ivory Coast derive from altered kimberlites of the Cretaceous. The mineralogical composition of kimberlites is mainly composed of olivine, enstatite, phlogopite, amphibole, chromite, Mg - ilmenite, and diamond. Twenty-six (26) diamond samples were respectively observed and analyzed under a microscope and SEM to determine the following morphological characteristics: shape, size, color, weight, fluorescence and inclusions. The most important information is that Séguéla diamonds are essentially dodecahedral to octahedral in shape. Dissolution is the main mechanism responsible for these different morphological characteristics. The Séguéla diamond prospect produces stones whose weight varies from 0.3 carat to 4 carats. The largest diamond analyzed is 24 carats. Several micro-diamonds are very weakly fluorescent or not. The concentrations of the minerals in inclusion present a color index varying from pale green to black. Some have been identified as garnet, olivine, pyroxene, chromite, spinel, and graphite.

Keywords: Kimberlite, Diamond Dodecahedron, Octahedron, Dissolution, Séguéla, Ivory Coast

