

SOME MINERALOGICAL AND GEMMOLOGICAL CHARACTERISTICS OF ESPINHAÇO DIAMONDS (MINAS GERAIS, BRAZIL)

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Population from four diamond districts were statistically studied. The most frequently occurring growth form is the octahedron. Sometimes the octahedral crystals occur with stepped and block development of {111}-planes. Development of this type converts octahedral into pseudo-rhombic-dodecahedral crystals. During ascension to surface, diamonds are subject to diverse dissolution degrees. Consequently crystals with curved-faces or rounded-shape habits are common. One of the most frequent Espinhaço habit, indicating dissolution, is the dodecahedroide. About 95% of Espinhaço diamonds are cuttable, ranging from Vs to Si, and from i to k. Greenish and brownish coated diamonds occur frequently (14-90%), caused by radioactive fluids. and are restricted to defects like trigons and channels. Each diamond district show characteristic frequency of coated crystals due to the geologic history of its deposits. Fancy diamonds are absent probably due to degree of regional metamorphism in the greenschist-facies (cloritoide). Consequently it is postulated that solutions reacted subsequently to the last geotectonic cycle. The usual luminescence colour caused by structural defects, e.g. NL, N3, N3(111), LN2L(t), and LN2L(g), is green to greenish-yellow (22-35%) and milky-blue (29-34%). About 99% of crystals show an IR-spectrum of the 1a diamond type (1aA + 1aB). 50% of these diamonds show an 1aB-aggregation (0-10%). About 27% show an aB-aggregation of 10-20%.