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Features of Diamond in Ophiolite

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Ophiolitic diamonds can be distinguished from kimberlitic diamonds, ultrahigh pressure (UHP) metamorphic diamonds and meteorite impact diamonds by their character and mode of occurrence. Most ophiolitic diamonds small (mostly about 200-500 um across), contain distinctive inclusions and have extremely light carbon isotope compositions. All occur in oceanic mantle rocks within ophiolites emplaced in suture zones. Kimberlitic diamonds are famous for their large size (gem quality), inclusions of mantle minerals and slightly light carbon isotopes. These all occur within continental cratons. In contrast, UHP metamorphic diamonds are very small, a few microns in size, and are accompanied by carbonates and crustal minerals in subduction complexes formed during deep subduction of continental or oceanic crust. Meteorite impact diamonds are very rare, mostly a few microns in size and accompanied by minerals related to the site of impact. These four categories of diamond are obviously different in their main features and tectonic setting of formation. Thus, the newly confirmed ophiolitic diamonds represent a new occurrence of diamond on Earth.

Key words: diamond, peridotite, chromitite, ophiolilte, Tibet

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