

SPINEL



The Mg - Al member of the spinel group of minerals which also includes such species as magnetite, chromite and gahnite, with the general formula $\text{R}^{2+} \text{R}^{3+}_2 \text{O}_4$, where, most commonly, $\text{R}^{2+} = \text{Mg}^{2+}, \text{Fe}^{2+}$ and $\text{R}^{3+} = \text{Al}^{3+}, \text{Fe}^{3+}, \text{Cr}^{3+}$. Spinel is widespread as an accessory in various metamorphic and mafic to ultramafic igneous rocks. It also occurs in kimberlites and as a detrital accessory mineral in sandstones. Northern and Southern Peninsulas.

Huron County: Wells township, section 29: A few grains of a green spinel in sand were found in a well between 150 and 216 feet (Lane, 1900).

Iron County: A single specimen of a spinel-pyroxenite-peridotite has been found in the mantle-derived xenolithic assemblage of the Lake Ellen kimberlite in SW $\frac{1}{4}$ section 27, T44N, R31W. The black spinel, occurring with clinopyroxene and serpentized olivine, tends to be concentrated in layers. Spinel also occurs in garnet pyroxenite, another type of mantle xenolith, as red-brown to dark brown grains 0.5 mm across, nearly enclosed in garnet. Both are chromian, and an analysis of each is given by McGee and Hearn (1983).

Marquette County: 1. Yellow Dog peridotite, sections 11 and 12, T50N, R29W: A rare, colorless spinel (?) is one member of a complex alteration suite in a partly serpentized plagioclase lherzolite (Klasner et al., 1979). See olivine, augite, enstatite, and serpentine. **2.** Tiny black crystals of chromian spinel associated with talc and dolomite have been identified by P. Hlava from a small road cut occurrence on the Ropes Gold mine property, NW $\frac{1}{4}$ section 29, T48N, R27W (Ramon DeMark, personal communication, 1998).

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