

Vivianite - $\text{Fe}^{2+}\text{Fe}^{2+}_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$

Hardness: 1.5 - 2. Cleavage: Perfect. Soft; fragile; easily cleaved. Insoluble in water. Said in one report to rapidly darken in water but this change not supported by other reports. Readily attacked by HCl and other acids but insoluble in acetic acid. Green vivianite (Bolivia) retained luster and color after 24 hours in Iron OUT/EDTA. Irreversibly photosensitive; changes color from green to dark blue then black in strong light and splits apart. (This process likely requires O_2 as well.) Humidity is said to accelerate this destruction. A recent article suggests the oxidative decomposition may not be photocatalyzed. Store in sealed container, with inert atmosphere (N_2 , Ar, etc.) if possible. Protect from evil.

References

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