

Magnetite - $\text{Fe}^{2+}\text{Fe}^{3+}_2\text{O}_4$

Hardness: 5.5 - 6.5. Cleavage: No data. Insoluble in water. Slightly attacked by very long immersion in cold concentrated HCl; somewhat faster when hot. Nearly inert to other acids. Tolerates oxalic acid (6 grams per liter) at room temperature for two weeks but higher concentrations or temperatures may be problematic. Becomes pitted and matte after 24 hours with NH_4HF_2 . Generally stable to dithionite but some samples are attacked. Insoluble in ethanol. Some apparent magnetite crystals are actually hematite; test before treatment.

References

Mindat: <https://www.mindat.org/min-2538.html>

Handbook of Mineralogy: <https://www.handbookofmineralogy.org/pdfs/magnetite.pdf>

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