

Goethite - $\text{Fe}^{3+}\text{O}(\text{OH})$

Hardness: 5 - 5.5. Cleavage: Perfect. Slowly attacked by cold concentrated HCl; more rapidly when warm. Bright crystals only very slowly attacked by HCl; warm, concentrated HCl will dissolve hematite without much alteration to goethite. Attacked by HNO_3 . Slowly attacked by oxalic acid with earthy material (limonite) being more susceptible. Some samples stable to dithionite while others are attacked; varies with locality. Replacements after pyrite often stable to Iron OUT/EDTA but best to use Jacquard Hydro. Some samples become somewhat 'rusty' with NH_4HF_2 even 'highly stable' goethite replacements of pyrite.

References

Mindat: <https://www.mindat.org/min-1719.html>

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

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