

Limonite - Iron hydroxides/oxides with variable composition ('rust')

Hardness: Varies; often soft and porous. Cleavage: None observed. Very thin films best removed with dithionite; exact recipe depends on what other species are present. Thicker crusts are dissolved by dilute oxalic acid (a hot solution is usually used), tartaric acid or acetic acid. Soluble in HCl, the concentrated acid often being used. Mechanical methods (sonication, textile gun, vibratory impact tool, etc.) for removal are usually partially effective requiring chemical treatment to finish the process.

A general term used for iron hydroxide/oxides of indeterminate composition. Some samples labeled as limonite (replaces after pyrite, etc.) are actually [goethite](#) which often has greater chemical resistance than true limonite.

References

Mindat: <https://www.mindat.org/min-2402.html>

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