

## Apatite group - $\text{Ca}_5(\text{PO}_4)_3(\text{Cl/F/OH})$

Hardness = 5. Cleavage: Poor/indistinct. Soft, brittle. Many specimens rapidly attacked by HCl but some resist for hours. (Attractive etch patterns may result.) Less rapidly attacked by  $\text{H}_2\text{SO}_4$ . Tolerates long exposure to acetic acid (use for removing enclosing calcite) but eventually etched. Becomes dull and acquires an unattractive coating when treated with oxalic acid. Derust with pure sodium dithionite or Jacquard Hydro; avoid recipes with chelators (Iron OUT, Waller's solution or Bridge's solution). Generally stable to detergents and soaps. Limited tolerance to  $\text{NH}_4\text{HF}_2$ . May be attacked by hot alkali.

A group of closely related species. Data given for fluorapatite, the most abundant member.

### References

Mindat: <https://www.mindat.org/min-1572.html>

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

Hardinger, S. (2025) Mineral Specimen Cleaning and Development for the Amateur, 339 p.

Sinkankas, J. (1972) Gemstone & Mineral Data Book, 346 p. Winchester Press, New York.