

Boulangerite - $\text{Pb}_5\text{Sb}_4\text{S}_{11}$

Hardness = 2.5 - 3. Cleavage: Distinct/good. Acicular crystals may mat in water; rinse in ethanol or rubbing alcohol. Avoiding sonication sometimes recommended. Decomposed in acids especially in hot concentrated HCl.

References

Mindat: <https://www.mindat.org/min-738.html>

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

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

King, R. (1982) The cleaning of minerals. Journal of the Russell Society, 1 (1), 42–48.

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