Halloysite - $Al_2(Si_2O_5)(OH)_4$

Hardness: 1–2. Cleavage: No data. Porous; may absorb water then crack and disintegrate upon drying. Insoluble in water. Slowly decomposed by acids especially by concentrated H_2SO_4 (but Crawford reports insoluble in HNO_3 or H_2SO_4). HCl used to dissolve calcite but Kipfer, Rohner and Deeson report HCl attacks this mineral with gel formation. Derust with oxalic acid.

References

Mindat: https://www.mindat.org/min-1808.html

Handbook of Mineralogy: https://www.handbookofmineralogy.org/pdfs/halloysite.pdf

Crawford, J. (2009) Solubility data on 646 common and not so common minerals. www.mindat.org/article.php/553/

Deeson, A., Ed. (1973) The Collector's Encyclopedia of Rocks & Minerals, 288 p. Clarkson N. Potter, Inc., New York.

King, R. (1982) The cleaning of minerals. Journal of the Russell Society, 1 (1), 42–53. https://www.mindat.org/jrs/JRS%20Vol%2001-1.pdf

Kipfer, A. (1972) The Micromounter, 211 p. Ott Verlag Thun, Switzerland. In German.

Pearl, R. (1982) Cleaning and Preserving Minerals, Fifth Revised Edition, 87 p. Earth Science Publishing Company, Colorado Springs.

Rohner, T. (2000) Properly clean minerals online cleaning book. www.strahlen.org/stepbystep/mineralien-reinigung2.pdf. In German.

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