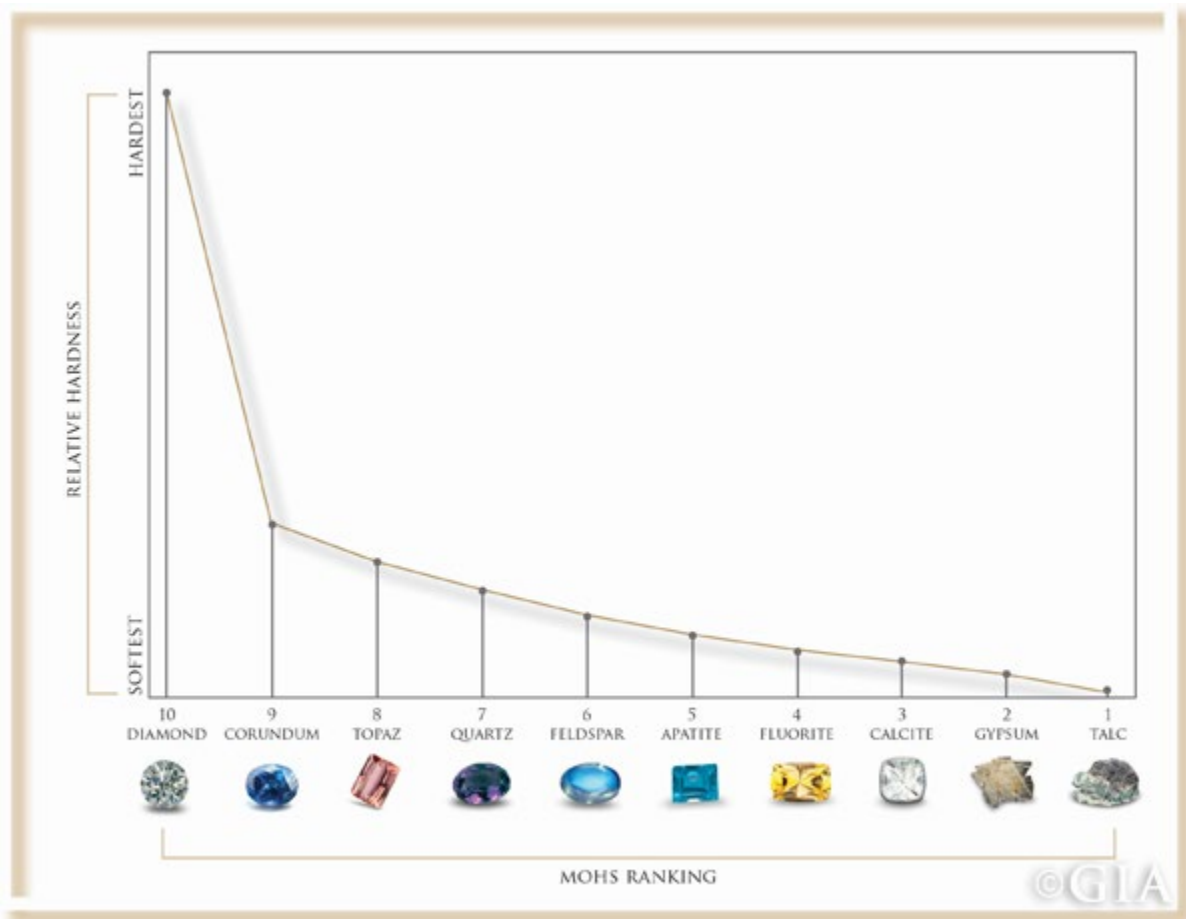


Metallurgy Lab: Mohs Hardness Scale Background Reading

The Mohs scale of mineral hardness is based on the ability of one natural sample of mineral to scratch another mineral visibly. The samples of matter used by Mohs are all different minerals. Minerals are chemically pure solids found in nature. Rocks are made up of one or more minerals. As the hardest known naturally occurring substance when the scale was designed, diamonds are at the top of the scale. The hardness of a material is measured against the scale by finding the hardest material that the given material can scratch, or the softest material that can scratch the given material. For example, if some material is scratched by apatite but not by fluorite, its hardness on the Mohs scale would be between 4 and 5.

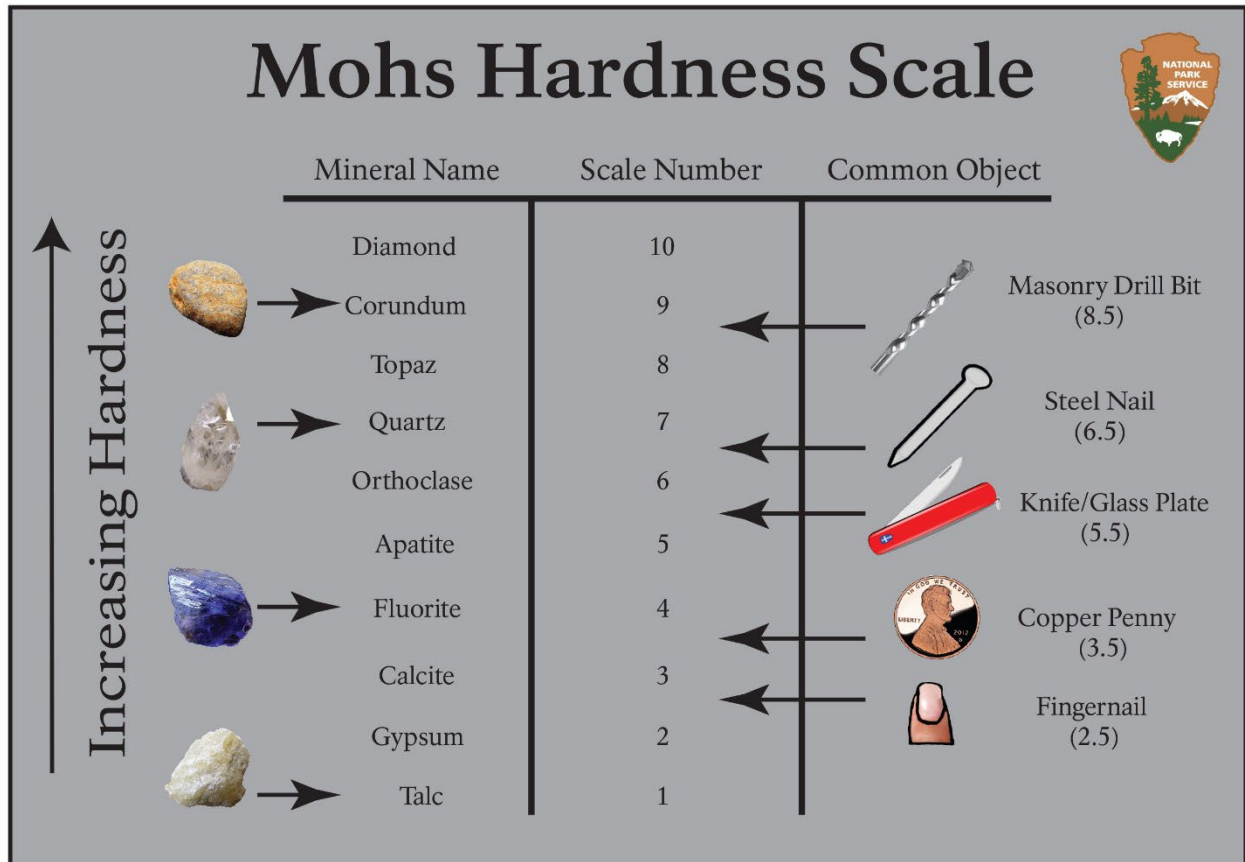
"Scratching" a material for the purposes of the Mohs scale means creating non-elastic dislocations visible to the naked eye. Frequently, materials that are lower on the Mohs scale can create microscopic, non-elastic dislocations on materials that have a higher Mohs number. While these microscopic dislocations are permanent and sometimes detrimental to the harder material's structural integrity, they are not considered "scratches" for the determination of a Mohs scale number.

The Mohs scale is an ordinal scale. For example, corundum (9) is twice as hard as topaz (8), but diamond (10) is four times as hard as corundum.



Metallurgy Lab: Mohs Hardness Scale
Background Reading

It is also possible to gage the hardness of unknown metals with common objects. Here is a guide that might be useful when you do not have the collection of stones originally used.



Source: [File:MoHS.jpg - Wikimedia Commons](#) National Park Service. CC0

Text Source: [Mohs scale - Wikipedia](#). Available and accessed online 6 February 2024.

Image Source: [Mohs Scale - Gem and Mineral Hardness \(gia.edu\)](#). Available and accessed online 6 February 2024.