

Mineral Spotlight: Lepidolite

As the world contemplates ways to transition to cleaner energy, many rare minerals are becoming vital resources. Lepidolite is one such mineral, special because it is an ore for lithium, the lightest metal element and a crucial element for the production of batteries and electronics.

Lepidolite is found most usually in intrusive volcanic environments with other lithium bearing minerals like spodumene. It is a sheet silicate, and, like its fellow mica minerals, can form thin, platy sheets. It's most usually a shade of purple or pink, but the Museum's lepidolite shows that in rare circumstances it can also be a yellow shade.

Lepidolite is about four percent lithium by weight. Lithium has a high electrochemical potential – a measure of the difference between the average energy of the outermost electrons of an element in its two valence states. This makes it an ideal component of high energy density batteries as it has a high charge-to-weight ratio: a lightweight lithium ion battery can hold a relatively large amount of charge in comparison to other metal ions. This makes it important for manufacturing things like electric car batteries, phones, laptop computers, and other portable electronics.

This feature was posted on Dice Museum social media by Museum curator Jillian Herlinger on 9/27/2022.

