

SPECTRAL EVOLUTION

Identifying Minerals Associated with Potash

Potassium is a key ingredient in soil fertilizer that improves soil nutrient values, water retention and disease resistance in agricultural crops. Potash ore is the source for potassium in fertilizer and is associated with the minerals sylvite, carnallite, halite, kainite and anhydrite. Potash is mined from sub-surface deposits by conventional shaft mining techniques.



Potash ore sample.

Identifying minerals associated with potash is key for successful mining efforts. Samples from a Canadian mine were scanned with an oreXpress field spectrometer with EZ-ID mineral identification software. Absorption features were noted at 529,678, 902, 1447, 1968, 2222, 2310 and 2480 nanometers. Using EZ-ID's spectral match regions to match to three spectral libraries (USGS, SpecMIN, and GeoSPEC) the samples were identified as a mixture of hematite, carnallite, and halite.



The oreXpress is a NIR mineral analyzer designed for field use. It is lightweight, rugged and reliable with no moving optical parts. It can be equipped with a 3mm spot size or 10mm spot size contact probe, runs off lithium-ion batteries (2 batteries— 4 hours each) and fits in a backpack. The GETAC optional micro-computer stores scans and tags them with photos from its built-in digital camera, voice notes, GPS location and altimeter readings.

EZ-ID mineral identification software and a scan of the potash ore.

Running on a tablet or a PC, EZ-ID mineral identification software matches your target scans against three known libraries (USGS, SpecMIN, and GeoSPEC) of 1100 minerals and 2600 spectra. You can select different spectral match regions of key absorption features and generate a mineral identity for just those features—helping you to unmix complex samples. You can even build your own library, scanning known samples and adding the scans and metadata to records in that library.

And for projects that require higher resolution scans to discover more absorption features, there's the SR-6500 ultra-high resolution field and lab spectrometer.



The oreXpress can use a 3mm or 10mm contact probe or a benchtop probe with compactor for chips and powder samples.

1 Canal Street ♦ Unit B1
Lawrence, MA 01840 USA
Tel: 978 687-1833 ♦ Fax: 978 945-0372
Email: sales@spectralevolution.com
www.spectralevolution.com

