SPECTRAL EVOLUTION

Using a field spectrometer for chromite identification

Chromite is the only ore for chromium, a hard corrosion resistant metal that can be polished, has a high melting point and is used primarily as a coating/finish for stainless steel. Its yellow color is also used in pigments. Chromite is part of the spinel group of minerals.

Chromite is associated with the minerals olivine, magnetite, serpentine, and corundum. It is found in two deposit types: stratiform (layered) and podiform (pod shaped). The largest deposit being currently mined is in the Bushveld complex of South Africa.

The oreXpress with the Miniprobe's 3mm spot size for field or core shack use.

Spectral Evolution's oreXpress field portable spectrometer is well-suited for *in situ* identification of chromite. With a rugged, all solid state design, the oreXpress is ideal for field use. Using our contact probe (10 mm spot size) or our Miniprobe (3mm spot size), a geologist can take hundreds of scans in a day in the field or in the core shack. The oreXpress takes high resolution/high sensitivity scans for accurate and clean spectra.

Chromites have distinct absorption features at 490, 590, 690, 940, 1300, 1750, 2000 and 2300 nm.

Using the oreXpress with EZ-ID, a geologist can quickly identify an alteration mineral that may not be readily identifiable by sight, matching an unknown sample against a known spectral library. EZ-ID allows the geologist to select specific spectral regions to fine-tune the matching process for a more precise ID. If the geologist wants to look at a particular absorption feature, it can be highlighted so that EZ-ID can flag similar matches. EZ-ID includes a Library Builder module for the inclusion of project and location specific scans of known samples for comparison with target samples.

EZ-ID allows you to build a site/ project specific library from known chromite samples and match against that library during exploration.

EZ-ID from within the DARWin SP Data Acquisition software included with all SPECTRAL EVOLUTION spectrometers and spectroradiometers. All spectra collected with an oreXpress are saved as ASCII files for easy import into other 3rd party analysis software for mine planning, mineral mapping and 3D imaging.

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