

SPECTRAL EVOLUTION

Cassiterite Identification in Tin Exploration

Tin, a silver/white metal, is ductile and malleable, resists corrosion and fatigue and can be alloyed with other metals. Tin is used in many applications such as tin plate—a protective coating for steel cans used in food packaging. It is commonly used in alloys such as bronze and solder. It is also used as an alloy with titanium in aerospace applications.

Cassiterite is the main mineral ore for tin. Cassiterite is found in granite pegmatites and alluvial placer deposits. Its chemical formula is SnO₂. The main producers of cassiterite ore for tin are China, Indonesia, Peru, Brazil, Bolivia and Australia.

A geologist can identify cassiterite in the field using a field portable oreXpress spectrometer, oreXplorer high resolution spectrometer or ultra-high resolution oreXpert spectrometer running EZ-ID mineral identification software. Using EZ-ID with the USGS spectral library, or the optional SpecMIN™ and GeoSPEC libraries, the software quickly provides accurate matching of an unknown target with a known mineral spectrum. The USGS library includes five known samples of cassiterite for comparison and identification.

The oreXpress, oreXplorer and oreXpert are full range (350-2500nm) field spectrometers with rugged design and no moving optical parts for exceptional field reliability. Running off lithium-ion batteries they offer a full day of scanning in the field. They offer high resolution/high sensitivity with the oreXpert offering the highest resolution available in a field instrument at:

- ◆ 1.5nm @ 700nm
- ◆ 3.0nm @ 1500nm
- ◆ 3.8nm @ 2100nm

Benefits include:

- ◆ Quickly collect a lot of scans
- ◆ Cover more ground in less time for better mapping
- ◆ Collect more accurate data for a more complete picture of the area you are exploring
- ◆ Get results immediately instead of waiting for lab analysis
- ◆ Drill fewer holes with better results
- ◆ Speed-up core shack scanning and logging, accurately identify samples of interest, and save on assay costs

In addition to matching against a known library, EZ-ID with the Custom Library Builder module, allows you to quickly scan and build your own spectral library or add new samples to an existing library. You can add known samples as you scan or later along with metadata to accompany your spectrum.

oreXpress, oreXplorer, oreXpert and EZ-ID software are trademarks of Spectral Evolution, Inc.



oreXpress spectrometers are ideal for single-user field exploration in tin exploration.



EZ-ID software identifies minerals in real-time by matching your target spectra against a known spectral library such as the USGS library, the SpecMIN library or the GeoSPEC library. The scan above is from the USGS library.

26 Parkridge Road ♦ Suite 104
Haverhill, MA 01835 USA
Tel: 978 687-1833 ♦ Fax: 978 945-0372
Email: sales@spectralevolution.com
www.spectralevolution.com

