



New 2020 S1 TITAN

● Mining & Exploration

Mining requires quick decision making from the best possible data. The S1 TITAN Handheld XRF empowers decision makers to collect more data, quicker. The S1 TITAN is used worldwide in the worlds most remote and rugged conditions by mining professionals. The S1 TITAN is a real-time addition in the raw materials value stream, with the unique ability to use your traditional laboratory analysis to confirm and recalculate results, and improve your matrix matched calibration.

S1 TITAN 800 and 500 are both equipped with a high performance, graphene window SDD which offers superior speed and sensitivity. S1 TITAN 800 GeoExploration can analyze up to 48 elements including light elements such as magnesium, aluminum, silicon and sulfur. Light element analysis allows a more complete understanding of mineral deposits and are essential for many applications (such as industrial minerals -if space allows). The S1 TITAN 500 model with GeoChem

Benefits:

- On-site geochemical analysis
- GPS/mapping
- Fast, accurate & easy to use
- Rugged and weatherproof (IP54)
- Matrix Matched Calibrations and Recalculation
- Analysis of up to 48 elements, including Mg, Al, Si, P and S
- TITAN Detector Shield™
- Available desktop or benchtop stands

calibration is an excellent value choice when analysis of light elements is not required.

Handheld XRF

Mining & Exploration

On-site geochemical analysis:

- **Exploration**
The lightweight portable nature of the S1 TITAN allows it to be used in the field to survey locations of potential mines directly, as well as measuring drill cores to determine the depth profiles of the deposits.
- **Mine analysis**
Once a mine site has been discovered the S1 TITAN provides the ability to quickly analyze the deposit.
- **Mine control**
Once the mine has been mapped and production has begun, the S1 TITAN can provide detailed information on the levels of ore in each truck load to allow better control of the flow of ore to the processing plant.
- **Process and concentrate analysis**
During ore processing the S1 TITAN can determine the concentrations of the sample.
- **Restoration and reclamation**
At the end of mine operation the S1 TITAN can be used in analysis of tailings and help in restoration of the land.



Typical Mining results screen

11 Match 0.0 03-30 17:42
Time 50.0

EI	%	+/-
Al2O3	12.733	0.454
SiO2	67.541	0.569
P2O5	0.077	0.050
S	0.127	0.019
K2O	3.644	0.030
CaO	0.890	0.015
Ti	0.336	0.006

< Use in Average >

Averaging Calculate Average

Spectrum Edit Info Back

Mapping:

An essential part of exploration and mine analysis is the correlation of the analysis with the exact location of the measurements. When paired with a Bluetooth™ enabled GPS, the S1 TITAN can store the exact latitude, longitude and altitude of each measurement. The data, stored in ASCII format, can then be readily imported into any GIS or site-mapping application. These coordinates can be downloaded to your PC and imported into a mine mapping program.



GeoExploration calibration:

- Elemental range: up to 48 elements, including Mg, Al, Si, P and S
- Includes matrix matched GeoExploration and GeoMining calibrations for oxide and sulfide based samples

GeoExploration

- Major & trace elements
- Ore pathfinder elements
- Remediation check
- General purpose exploration and soil calibration

GeoMining

- High concentrations of metals in mineral processing
- Industrial minerals
- Concentrates
- Bauxite



Environmental conditions:

IP54 rated; the S1 TITAN is designed to withstand field operation in all environments, including humid and dusty conditions.

- Sealed against moisture and dust
- Ruggedized with rubber over-molding
- Protected from dirt and windblown dust
- Operating Temperature: -10°C to +50°C



Data Management:



Data storage

- Images, spectra, sample identification, and results are stored in a single protected file for easy storage and access
- Results are available in both a protected and unprotected file formats
 - The unprotected file format can be imported directly into Excel or other database programs
- Data may be stored in internal instrument memory or a USB flash drive or both
- The assay's GPS coordinates can be exported to GIS compatible software



Bluetooth® wireless accessories

- External GPS receiver providing GPS coordinates to the S1 TITAN
- Portable, ruggedized thermal printer
- Bar code reader

Bruker Software: PC software for control and communications

- S1 RemoteCtrl: Wi-Fi or USB remote control of the S1 TITAN
- Bruker Instrument Tools: Communicate with the instrument and manipulate data from the S1 TITAN. Features include: Report generator, Grade table editor, Spectrum viewer, software updates.
- Bruker Data Stream: Automated data transfer



Element Name	Unit	Value	Error
Ag	%	0.000	0.000
As	%	0.000	0.000
Ca	%	0.000	0.000
Co	%	0.000	0.000
Cu	%	0.000	0.000
Fe	%	0.000	0.000
Fe2O3	%	0.000	0.000
Ga	%	0.000	0.000
Ge	%	0.000	0.000
Hg	%	0.000	0.000
In	%	0.000	0.000
K	%	0.000	0.000
Li	%	0.000	0.000
Mn	%	0.000	0.000
Ni	%	0.000	0.000
Pb	%	0.000	0.000
Pd	%	0.000	0.000
Pt	%	0.000	0.000
S	%	0.000	0.000
Sb	%	0.000	0.000
Se	%	0.000	0.000
Si	%	0.000	0.000
Te	%	0.000	0.000
Ti	%	0.000	0.000
V	%	0.000	0.000
W	%	0.000	0.000
Zn	%	0.000	0.000
Zr	%	0.000	0.000

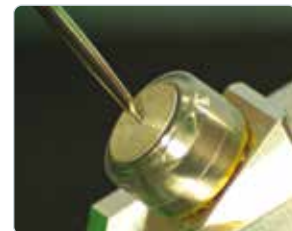


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Sample preparation:

Measuring directly on a rock face is possible, but this type of non-uniform sample will require extensive averaging to enable a meaningful, quantitative analysis. A more uniform, homogeneous sample, such as a finely ground powder; will result in more accurate assays.

The best solution is to grind the material sufficiently fine and to create a reproducible compacting of the sample by either pressing or tapping. Sample grinding in the field can be achieved by using a mortar and pestle or battery-operated SpectroPulverizer field sample preparation kit. In addition to sample grinding, the field sample preparation kit also allows pelletizing to ensure consistent quantitative results.



TITAN Detector Shield™:

The ultimate defense against punctured detectors - **Guaranteed!** This unique patented S1 TITAN accessory protects the detector window from being punctured by sharp objects, while still allowing rapid and accurate analysis of almost any material.

- Prevents costly detector punctures
- Increases equipment up-time
- No need to change window or calibration when measuring light elements
- No sacrifice to analytical performance, even when measuring light elements such as Mg, Al, Si, P or S



Punctured detector

Damaged detector



Shielded detector

Undamaged detector
when fitted with
TITAN Detector Shield

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