



# S1 TITAN

- Positive Material Identification (PMI)

In the refinery, or other industries requiring high temperature and high pressure, safety is routinely ensured by verifying that a given alloy conforms to the design specification. A significant number of incidents in refineries and chemical plants are caused by having the wrong metal in service. By maintaining a strong PMI program – based on API 578 or internal procedures – it is possible to virtually eliminate these failures.

On the manufacturing floor or in a machine shop, alloy identification may be lost as the metal moves through the shop. Using a portable XRF alloy analyzer allows immediate recovery of lost material traceability and ensures that a part is the proper material prior to investing a large amount of machining time and prior to shipment to your customer.

### Benefits:

- Fast, accurate assay & grade ID
- Large grade library (400+)
- Quick & easy report generation
- Secure, encrypted data storage
- Lightweight - only 1.5 kg
- TITAN Detector Shield™
- Non-destructive
- Measure in-situ
- Small spot & camera option
- Analyze hot samples / pipes

## Positive Material Identification

### Fast, accurate assay & grade identification:

The S1 TITAN provides highly accurate, easy-to-understand grade ID and alloy chemistry in a matter of seconds. The simple user interface allows you to choose a specific alloy class for the utmost in speed and accuracy, or you may elect to let the S1 TITAN automatically choose the most appropriate alloy class.

Model Number	Standard alloys	Light element alloys (Al, Mg, Si)
Model 600 & 800	1 - 3 seconds	10 - 20 seconds
Model 500	2 - 5 seconds	N/A
Model 200 & 300	3 - 10 seconds	N/A

### Grade Library:

The S1 TITAN alloy calibration includes extensive grade libraries (400+ grade definitions) covering various international standards. User selectable libraries include: UNS, DIN and others. These libraries cover the following alloy classes:

- Low alloy steels
- Cr-Mo steels
- Tool steels
- Stainless steel
- Zirconium alloys
- Specialty alloys
- Nickel alloys
- Brasses
- Bronzes
- Cobalt alloys
- Zinc alloys
- Aluminum
- Titanium
- Exotic alloys

### Calibrations:

- Multiple specific matrix calibrations based on traceable standards
- Standard-less calibrations
- Automatic selection of calibrations
- Elemental range: up to 37 elements. including Mg and Al
- Accurate elemental analysis of metal samples
- Continuous Automatic Gain Calibration (CAGC)
- Modes: Assay, Grade ID, Grade pass/fail, Limit testing
- SMART Grade™

### SMART Grade™ (System Monitored Automatic Run Time):

The S1 TITAN 800 and 600, when ordered with an Alloy calibration, are automatically equipped with Bruker's patent pending SMART Grade™ calibration. **This application automatically determines the proper conditions and measurement times for each alloy measured.**

- Pull the trigger and the analyzer does the rest
- Like having an expert operate your analyzer
- Optimum measurement conditions for each alloy
- Multiple condition measurement when required
- Fast measurement (2-3 sec) for standard alloys
- Automatically extended times (10-30 sec) for alloys containing light elements

Grade ID screen				
304SS				
42 Match 9.6 01-04 22:38				
Time 1.0				
El	Min	%	Max	+/-
Fe	66.35	71.80	74.00	0.37
Cr	18.00	18.05	20.00	0.16
Ni	8.00	8.36	10.50	0.16
Mn	0.00	1.22	2.00	0.09
Cu	0.00	0.17	0.50	0.03
Mo	0.00	0.13	0.50	0.01



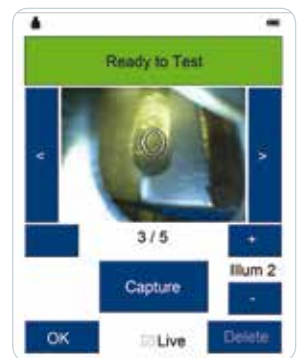
## Data Handling:



- 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 memory or a USB flash drive or both
- Bluetooth® wireless accessories
  - External GPS receiver providing GPS coordinates to the S1 TITAN
  - Portable, ruggedized thermal printer
  - Bar Code Reader
- Bruker Instrument Toolbox - PC software suite for control and communications
  - S1 RemoteCtl – Software for Wi-Fi or USB remote control of the S1 TITAN
  - Bruker Instrument Tools – Software to communicate with the instrument and manipulate data from the S1 TITAN. Features include:
    - Easy to use report generator
    - Spectrum viewer
    - Grade table editor
    - Software & calibration updates
- Report generation- In PMI applications, the generation of an analysis report is a critical part of the measurement. Therefore, two different PC report generation packages exist for the S1 TITAN family:
  - Included Bruker Instrument Tools provides a simple preformatted report including elemental assay, grade ranges and grade ID
  - Optional S1 Data Tool is a flexible, user controlled report generator which allows the complete customization of the report format



Element	Grade	Min	Max	Unit
C	2.000	1.900	2.100	%
Fe	0.000	0.000	0.000	%
Mn	0.000	0.000	0.000	%
Ni	0.000	0.000	0.000	%
P	0.000	0.000	0.000	%
S	0.000	0.000	0.000	%
Si	0.000	0.000	0.000	%
Ti	0.000	0.000	0.000	%
V	0.000	0.000	0.000	%
W	0.000	0.000	0.000	%
Zn	0.000	0.000	0.000	%
Al	0.000	0.000	0.000	%
Cr	0.000	0.000	0.000	%
Cu	0.000	0.000	0.000	%
Co	0.000	0.000	0.000	%
Mo	0.000	0.000	0.000	%
Nb	0.000	0.000	0.000	%
Bi	0.000	0.000	0.000	%
As	0.000	0.000	0.000	%
Sb	0.000	0.000	0.000	%
Sn	0.000	0.000	0.000	%
Pb	0.000	0.000	0.000	%
Ag	0.000	0.000	0.000	%
Au	0.000	0.000	0.000	%
Ir	0.000	0.000	0.000	%
Rh	0.000	0.000	0.000	%
Os	0.000	0.000	0.000	%
Re	0.000	0.000	0.000	%
Se	0.000	0.000	0.000	%
Te	0.000	0.000	0.000	%
Ge	0.000	0.000	0.000	%
Zr	0.000	0.000	0.000	%
Hf	0.000	0.000	0.000	%
Y	0.000	0.000	0.000	%
Sc	0.000	0.000	0.000	%
La	0.000	0.000	0.000	%
Ce	0.000	0.000	0.000	%
Pr	0.000	0.000	0.000	%
Nd	0.000	0.000	0.000	%
Pm	0.000	0.000	0.000	%
Sm	0.000	0.000	0.000	%
Eu	0.000	0.000	0.000	%
Gd	0.000	0.000	0.000	%
Tb	0.000	0.000	0.000	%
Dy	0.000	0.000	0.000	%
Ho	0.000	0.000	0.000	%
Er	0.000	0.000	0.000	%
Tm	0.000	0.000	0.000	%
Yb	0.000	0.000	0.000	%
Lu	0.000	0.000	0.000	%



## Integrated camera & small spot collimator:

The S1 TITAN can be equipped with an integrated camera (640 x 480 pixels) to provide weld & other feature visualization and accurate positioning of the measurement spot. The small spot option provides a reduced measurement area for the isolation of small features to be tested. Thanks to the S1 TITAN's SharpBeam™ optimized geometry, the precision and accuracy of the measurement with small post collimator are the same as for the normal spot; there is no need to extend the measurement time to achieve the desired precision.

- Small spot isolates specific sampling area such as weld seam
- Camera ensures accurate measurement positioning
- Save up to 5 images per assay (provides record of measurement spot)
- Images easily import into reports
- No loss of accuracy with small spot option



## • Positive Material Identification

### TITAN Detector Shield™:

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

- Minimizes 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 or Si

### Easy to use:

The S1 TITAN is among the lightest portable tube-based XRF analyzers available on the market today. The user interface has been designed to provide intuitive operation and results presentation. Data management and transfer are exceedingly easy to use.

- Intuitive user interface with touchscreen LCD
- Requires very little operator training
- Multiple fields for sample identification
- Lightweight – only 1.5 kg / 3.3 lbs, including battery
- Rugged and weatherproof (IP54 rated)
- Sample Temperature (intermittent use): To 150°C for Ultralene® window, to 500°C for Kapton® window

### Service Care Programs:

Bruker has been in the instrument business for many years and supplied products and services to companies just like yours. We understand the critical importance of post-sales support to our clients. Our Service Care program provides the highest level of service in the industry. Our care programs cover the following benefits:

- Annual maintenance and re-certification of measurement accuracy
- 50% discount on repair due to accidental damage
- Priority access to technical support hotline
- Warranty: All repair parts/labor included
- Remote diagnostic services
- On-going User Training
- Rental services
- Guaranteed Loaner program\*
- Free consumables\*
- Free SW updates\*

\*Conditions apply



## • Contact Us [www.bruker.com/s1titan](http://www.bruker.com/s1titan)

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