

# TRACER 5 Apps Brief



## Sodium in Feed

Salt is a critical component of a nutritionally balanced diet for animals. Insufficient salt can lead to serious health and behavioral issues as well as to a decrease in feed utilization. Therefore, in addition to other nutrients, formulators need to ensure feed products have adequate amounts of sodium and chloride.

Forward thinking scientists develop feed formulations which facilitate the release and digestibility of salt and other valuable nutrients. They are designed to ensure absorption of minerals and to maximize protein and energy utilization from animal feed.

X-ray Fluorescence (XRF) analysis is a simple, quick, and non-destructive method to measure nutrients, including Na and Cl, in feed.

### Bruker's TRACER 5

- Handheld battery operated XRF analyzer
- 1.9 kg (4.1 lbs) with battery
- 8µm Beryllium (5i) or 1µm Graphene (5g) detector window
- 5-position primary filter beam plus manual insertion slot for custom filters
- Selectable beam path of vacuum, helium or air to analyze elements from Na to U
- Full control OS and results on analyzer; PC SW for live spectra, qualitative, semi-quant and quantitative data analysis.



TRACER 5g

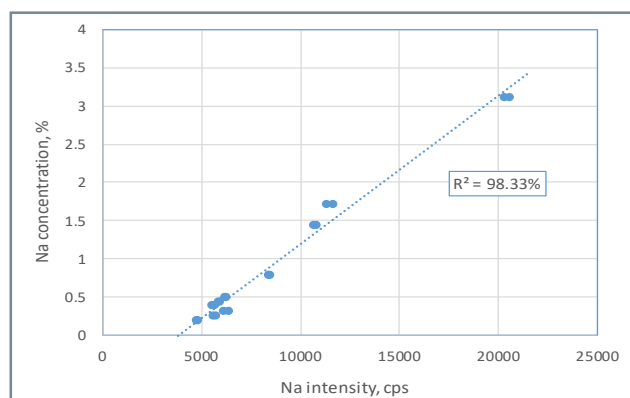
### Portable XRF for Sodium Analysis

The TRACER 5 handheld XRF is unique in that it is used for both standard QA/QC analysis and advanced research. Measurements can be made in air, vacuum or helium atmosphere, selectable by the user. The helium beam path enables light element analysis at PPM levels. Calibrations developed for elements and concentration ranges of interest can be installed on the analyzer to provide near-instant results.

|    | LOD (PPM) | Sens (counts/PPM) |    | LOD (PPM) | Sens (counts/PPM) |
|----|-----------|-------------------|----|-----------|-------------------|
| Na | 312       | 0.62              | Na | 828       | 0.20              |
| Mg | 122       | 2.13              | Mg | 185       | 1.17              |
| Al | 134       | 4.41              | Al | 177       | 3.08              |
| Ca | 24        | 14.04             | Ca | 22        | 16.10             |
| Fe | 50        | 25.87             | Fe | 48        | 30.03             |

Detection limits of light elements with TRACER 5g and 5i using He<sub>(g)</sub> beam path with no instrument window.

The TRACER 5 platform provides the ability to completely control the excitation conditions. Users can control the current and voltage directly from the integrated processor and interactive touch screen display. They can select filters from the integrated filter wheel or insert user-designed filters. Additionally, live spectra analysis via PC is possible.



Correlation for Na measured with balloon He atmosphere

### Bruker's Portable XRF Solutions

Do you need to analyze for other elements too? The TRACER can be customized to meet your specific needs.

- Ready-to-go factory standard or custom calibrations
- EasyCal Software to create your own calibrations
- Artax Software for comprehensive qualitative analysis
- Capable of measuring multiple elements simultaneously

**Bruker Portable XRF Elemental Analyzers:** *Simultaneously measure elements from sodium (Na) to uranium (U) at concentrations as low as parts-per-million to high percentage levels (depending on the element). Objects of any form – liquid, solid, cores, powder, shavings, chips – can be analyzed wherever they are located.*

Bruker's portable XRF analyzers are primarily used for quantitative analysis utilizing installed calibrations with like-sample standard reference materials. Results can be given as composition or Pass/Fail/Inconclusive for single or multi-elemental analysis of elements from Na to U, depending on the model. Spectra is always being collected with each measurement enabling live viewing or subsequent retrieval of stored data. Researchers primarily use this data to identify the presence of elements or to track estimates and/or ratios of elements of interest for qualitative or semi-quantitative work.

The convenient form factor of Bruker's CTX is ideal for samples presented in containers such as powders, soils and liquids; small samples; and those which require extended measurements of more than a few seconds.

Handheld XRFs enable in-situ measurements; in other words, they are "point-and-shoot" analyzers. An optional desk or bench top stand with a PC is typically used for samples presented in containers such as powders, soils and liquids; small samples; and those which require extended measurements of more than a few seconds.

**Bruker's portable XRF features:**

- Rh X-ray tube with high performance SDD detector
- 5 filter wheel (plus manual slot for TRACER 5)
- SharpBeam geometry for high performance, speed and sensitivity
- Touchscreen operation
- Internal camera (optional for CTX and TITAN)
- Wireless communication
- Battery or AC operation
- Lightweight and supplied with water tight transport case; Optional backpack for CTX
- Optional PC software available for qualitative analysis (Artax) or user generated calibrations (EasyCal)
- Optional factory installed calibrations available for various models including applications for:
 

|   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Precious Metals</li> <li>• Alloys</li> <li>• Metals in Oil</li> <li>• Coatings</li> <li>• Hg Contamination</li> <li>• Mudrock, GeoExploration</li> <li>• Limestone</li> <li>• Heavy Metals &amp; Nutrients in Soil</li> <li>• Restricted Materials (RoHS)</li> </ul> | <ul style="list-style-type: none"> <li>• Food Quality</li> <li>• Plant Materials</li> <li>• Maritime Sulfur</li> <li>• Industrial Lead in Paint</li> <li>• Filter &amp; Dust Wipes</li> <li>• Glass</li> <li>• Ancient Copper Alloys</li> <li>• Custom factory calibrations are also available</li> </ul> |
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**CTX™ Portable XRF analyzer**  
Mg (12) to U (92)



**TRACER 5**  
Handheld XRF analyzer  
Na (11) to U (92)



**S1 TITAN**  
Handheld XRF analyzer  
Mg (12) to U (92)

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