Navas Instruments FTA-2000 series
Fusion Thermogravimetric Analyzer + LOI

Important development in sample preparation for XRF

Fusion Thermogravimetric Analyzer – (Patented) FTA is a new concept in ELECTRIC FURNACE fusion preparations for XRF.

Navas Instruments has manufactured multiple sample TGA for almost 20 years, our business is taking precise weights at high temperature.
The concept frees XRF fusion processes from the uncertainties and assumptions made in conventional fusion systems.

The Navas FTA-2000 + Loss on ignition concept is very simple:
Total weight = (Crucible weight + flux weight + sample weight)
Crucible weight + flux weight does not change during fusion, only the sample does
Correction of crucible buoyancy and flux loss is compensated by software
Final sample weight = (Total balance weight - Crucible weight - flux weight)

This simplification of the process coupled with automation of critical weight data collection gives unsurpassed improvements in accuracy and ultimately in precision and hence the name fusion thermogravimetric analyzer.

The (Patented) Navas FTA-2000 simplifies the fusion process by:

- Being able to use dried samples, no pre ignition is necessary even for samples with high percentages of volatiles like limestone.
- Being able to dose the flux weight to a pre determined dilution ratio
- Being able to track the exact weight of an approximate addition of sample (reduces the need for time consuming precise weighing)
- The LOI / LOF / GOI is tracked during the fusion process
- The final bead weight is measured just before the automated addition of the releasing agent giving the true sample dilution ratio
- These values are captured by the Navas FTA-2000 software for automatic integration into any XRF data computation program
- Very high capacity: 4 - 16 beads

Benefits

- We eliminate the variability caused by flux with releasing agent
- 4, 6, 8, 10, 12, 14, 16 bead models available (Easily expandable), **Analysis time: 20 - 30 minutes per batch up to 16 beads simultaneously including LOI**
- Single crucible, flat bottom, no pouring needed, no broken beads, no crucible cleaning needed
- LOI / LOF / GOI in the same fusion cycle
- Increases Productivity & cuts pre fusion prep time significantly
- Cuts Preparation Time – approximate sample addition and rough dosing all carefully monitored by precise weighing reduces demands on operators
- Cuts toxic, corrosive gas emissions of non-wetting agent by 90% providing cleaner processes

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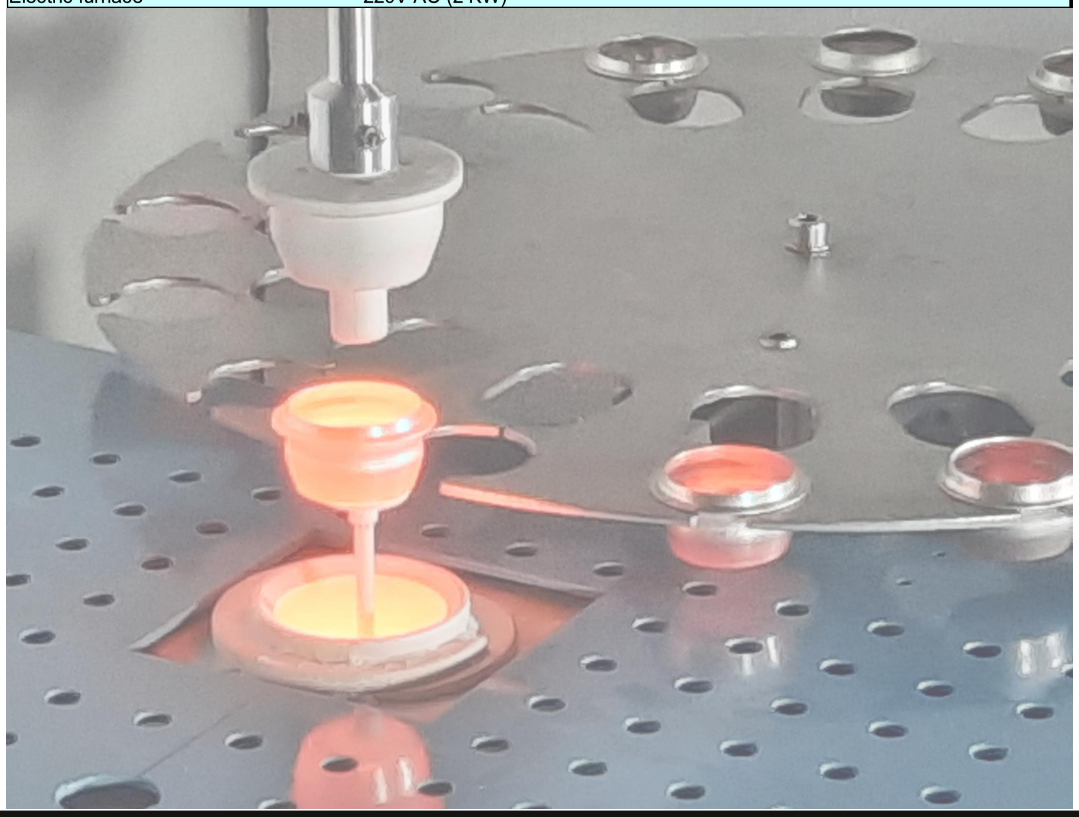
Analysis time: 20 - 30 minutes per batch of 16 beads simultaneously including LOI

Navas FTA-2000 Series Competitive Comparison		
Feature	**Navas**	**Competitors**
Auto-loader	Fully automatic, 16 positions	None
Power requirements	Approx. 2 KW	Varies; up to approx. 6.8 KW (Three phase)
Enclosed furnace	Enclosed furnace saves energy, and reduces operating costs	Exposed furnace loses energy with each batch opening, and increases costs of reheating unit and air conditioning the lab
Variety sizes available	Tailored to meet the requirements of the individual lab. 4, 6, 8, 10,12,14,16 bead models available	1-6 Beads – Maximum
Upgradeable size	4, 6, 8, 10, 12, 14, bead models upgrade-able to 16 without requiring the purchase of an additional instrument	None
Operation and control	Desktop or laptop PC controlled by USB for versatility and expandable functionality	Limited micro controller operation
Available balances	Two balances. One internal, one external	None
Dosing included with instrument	Manual weighing of flux and sample dosing with PC, upgrade-able to automatic flux dosing	None
Available LOI / LOF / GOI	Simultaneous LOI / LOF / GOI	None
Crucibles/Moldable	Crucibles are moldables. Cleaning is eliminated	Crucibles must be cleaned each use
Furnace components	Robust, all ceramic components inside furnace	Furnace with metal parts supplemented with fragile ceramic components

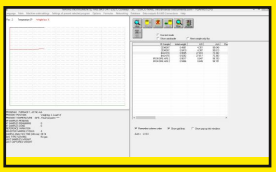
Navas FTA-2000 Series Technical Specifications	
Number of beads	4, 6, 8, 10 ,12, 14, 16 Models available (Easily expandable)
Software features	Unlimited number of fusion programs, Open database connectivity, Customizable reports, data export to TXT, CSV and XLS files to LIMS or Microsoft Excel
LOI / GOI Weight loss/gain range	0 ~ 100 %
Balance sensitivity	0.1 mg
LOI / LOF / GOI Precision	Provided by balance resolution
Temperature range	200 ~ 1150 ºC ±1 ºC
Instrument control	Desktop or Laptop PC with USB
Dimensions (Width x Length x Height)	21.81" x 23.62" x 22.44" + 13" Auto-loader (55.4 cm x 60 cm x 57 + 33 cm)
Weight	133 LB (60 KG)
Electric furnace	220V AC (2 KW)



Furnace carousel with crucibles inside

Furnace balance with 4 decimal places

Automated programmable liquid releasing agent addition through furnace plug



Easy to use Windows operational software

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