



FIRST Newsletter

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S4 TStar – Rapid and Cost-Efficient Ultra-Trace Element Analysis

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Outstanding Versatility

The new **S4 TStar** is designed as a versatile TXRF spectrometer to analyze different sample types on a variety of reflective carriers. For certain applications, even direct analysis without any sample preparation is possible. This clearly differentiates from ICP, which requires fully dissolved liquid samples.

30-mm quartz discs

Elemental analysis of liquids, solids and suspensions



2" wafer

Contamination analysis, depth profiling and materials science research



Microscopy slides

Clinical and biological samples, direct analysis of cell cultures, smears and thin sections



Rectangular carriers up to 54 mm

Films, filters, nanoparticle layers



...and any customized reflective media

No Worries About New Pharma, Food and Environmental Regulations

The S4 TStar is a powerful tool for food safety and fraud prevention in globalized supply chains. It allows the detection of toxic elements like Pb and As. Food safety according to FAO/WHO standards can be guaranteed with detection limits below 40 ppb for As in rice.

Food producers determine the elemental nutrient content in finished products such as Se or Mo in dietary supplements or Fe in animal feed.

S4 TStar provides a versatile solution for water, effluent, air and soil analysis for the recovery of a healthy environment. Research institutes have already developed new TXRF methods to be applied for routine monitoring of:

- Metal accumulation in organisms and biosystems as a longterm indicator for pollution
- Entry, distribution and accumulation of nanoparticles in the environment
- Control of "new" element compositions in modern technical products, such as those containing rare earth elements
- Studies identifying correlations between metal contaminations and diseases
- Analysis of nuclear isotopes up to Americium during the dismantling of nuclear power plants

The S4 TStar sets new standards in performance, automation and quality of benchtop TXRF spectrometry.

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