



TXRF

S2 PICOFOX

Clean Water Package (CWP)

The S2 PICOFOX Clean Water Package (CWP) is an attractive offer for on-site analysis campaigns of fresh water, wastewater and effluents. It is supplied with the wastewater reference standard SPS-WW2 already prepared on quartz discs.

The S2 PICOFOX is a compact, portable benchtop TXRF spectrometer for simultaneous detection of ultra-trace element in various samples. The spectrometer provides cost-effective on-site screening of a wide range of samples and a subsequent selection of samples for laboratory analyses.

The S2 PICOFOX requires no media and can be easily transported to remote sites to screen any environmental sample for trace elements. This helps to reduce the number of samples to be measured in the laboratory and thus minimizes the amount of hazardous chemicals and CO₂ released during power generation.

CWP specifications

- S2 PICOFOX spectrometer equipped with automatic sample changer
- Capacity of 25 sample discs
- Line focus X-ray tube with Mo target
- 60 mm² XFlash[®] silicon drift detector
- Wastewater standard SPS-WW2 prepared on three quartz discs
- Wastewater standard operation procedure (SOP) including calibration
- Notebook PC
- TXRF accessories

Typical power consumption for the spectrometer and PC is about 220 W. For on-site campaigns without power supply the use of a portable power station with a minimal capacity of 750 Wh and at least two power sockets is recommended.



Preparation of water and aqueous standard samples on quartz discs

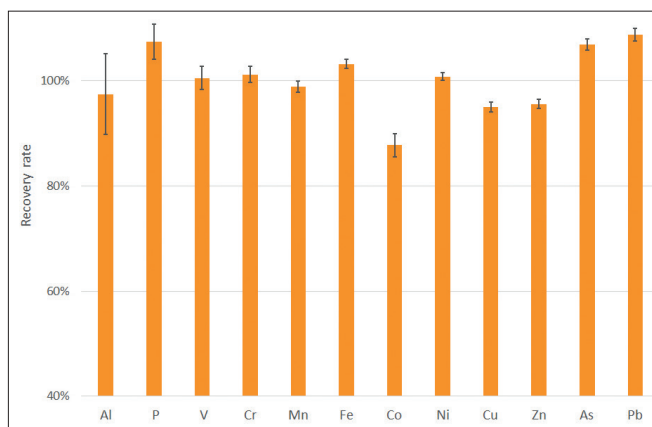
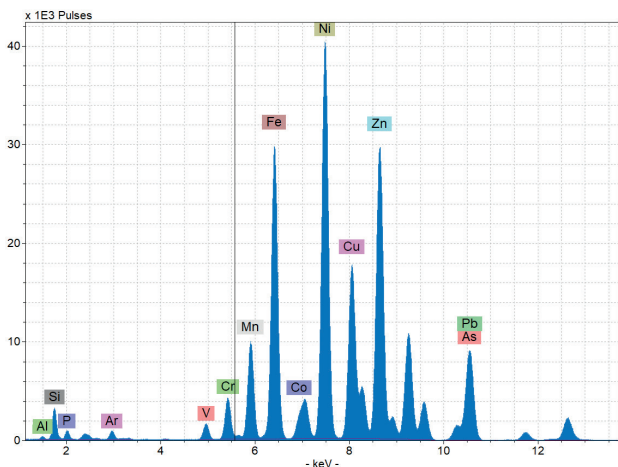
- Transfer of 1 ml sample into reaction vials
- Addition of 5 µl Gallium solution (0.1 g/l) for internal standardization
- Addition of 100 µl polyvinyl alcohol solution (0.3 g/l) for homogeneous sample drying
- Transfer of 10 µl solution onto siliconized quartz glass sample carrier
- Drying on hot plate

A full instrument load of 8 samples prepared in triplicate can be prepared in less than 30 min.

The S2 PICOFOX can accurately analyze almost all certified elements offering detection limits typically in the low ppb range.

Nominal element concentrations of the wastewater reference standard SPS-WW2 and typical detection limits of the S2 PICOFOX

Element	Nominal conc. (µg/l)	LOD (µg/l)
Aluminum	1000	1211
Phosphorus	5000	197
Vanadium	500	9.2
Chromium	1000	10.3
Manganese	2000	9.8
Iron	5000	7.8
Cobalt	300	5.2
Nickel	5000	6.2
Copper	2000	4.7
Zinc	3000	7.9
Arsenic	500	1.2
Lead	500	1.4



TXRF spectrum (left) and recovery values (right) of the reference standard SPS-WW2 measured with the S2 PICOFOX.

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