



Checklist for Peak Analyzer Performance

This checklist is intended for the users of on-stream XRF analyzers, however it applies to many instruments with the same technology or similar applications. It contains a list of items to check or consider in order to achieve maximum performance of the instrument.

The first five items target software, calibrations and settings. Use them to confirm that you are getting the most out of your equipment.

The other five items are things to check on the analyzer and sampling system. Representative samples are one of the keys to accurate assays. Another one is maintenance, have a look at the Checklist for maximum Analyzer Availability for even more tips.

Go over this list every six months and enjoy the results!

Check software, calibrations and settings

- Check trend curves on reference sample.** Verify that measurements of reference sample are stable – then your analyzer is in good health. If not, troubleshoot and fix.
- How often are calibration samples collected?** Use them to adjust type constants or coefficients regularly, at least weekly. More samples also make for better regressions.
- When was the analyzer calibrated?** The analyzer is only as good as its last calibration. Check when new regressions were made. Is it time to update the calibrations?
- Check measurement sequence.** Are streams sampled as often as they need to? Can it be altered for better performance? Do you need a faster analyzer?
- Check measurement times.** Do they give sufficient data quality? Can some be shortened for quicker turn-around time? Do you need a faster analyzer?

Check instrument mechanics and sampling system

- Is the sampling system OK?** Unrepresentative samples to the analyzer cause problems when comparing on-line analysis with lab analysis of the same stream. Check if the design of primary samplers is optimal with regards to process flow. Check primary and secondary samplers for wear and clogging.
- Is the analyzer clean?** Dust and dirt can affect the measurements. Remove dust and dirt on the outside. Replace Mylar windows according to schedule.
- Are sample streams splashing in the secondary sampling tanks?** Splashing may contaminate one sample with another. Splashing may also enter the cutter for the daily composite sample and cause bad representativity.
- Is the temperature around the analyzer stable?** Check x-ray tube cooling system and air conditioning of the space it is in. Replace air and water filters.
- Check water rinsing of flow cell.** Flow cell must be properly rinsed between measurements to avoid cross contamination of samples.