

No Simple Answer
to the Question of Elemental Sensitivity
for the Bruker Tracer XRF System

The limits of sensitivity of the Bruker Tracer xrf elemental analysis system for each element is defined by the physics of the sample. This is because the Tracer system gives the user total control over the x ray beam used to excite the sample.

For example if one optimizes the system for Si analysis in Al the sensitivity to Si is better than 5000 ppm. Using the same settings and looking at Air filter media for the presence of Si dust in the filter one would have a sensitivity of better than 10 ppm. Conversely the sensitivity to Si in Cu is about 50000 ppm.

Or as another example, if one is looking for Pb in Cu with the system optimized for Pb analysis one would not measure any Si and be sensitive to better than 5000 ppm for Pb in the Cu. If one was looking for Pb in a Si matrix like glass, optimized for the detection of Pb one's sensitivity would be 1 ppm.

In each case the Bruker Tracer xrf system is optimized by the user for a specific elemental group and the matrix material that element is found in.

So going back to the first statement, with a twist; because the Bruker instrument gives one complete control over the exciting x ray energy beam and its distribution, and it has a energy resolution of 170 eV its sensitivity to any given element in any given matrix is simply at the limit physics allows in that situation and in most case 5 times better than any other handheld on the market.