

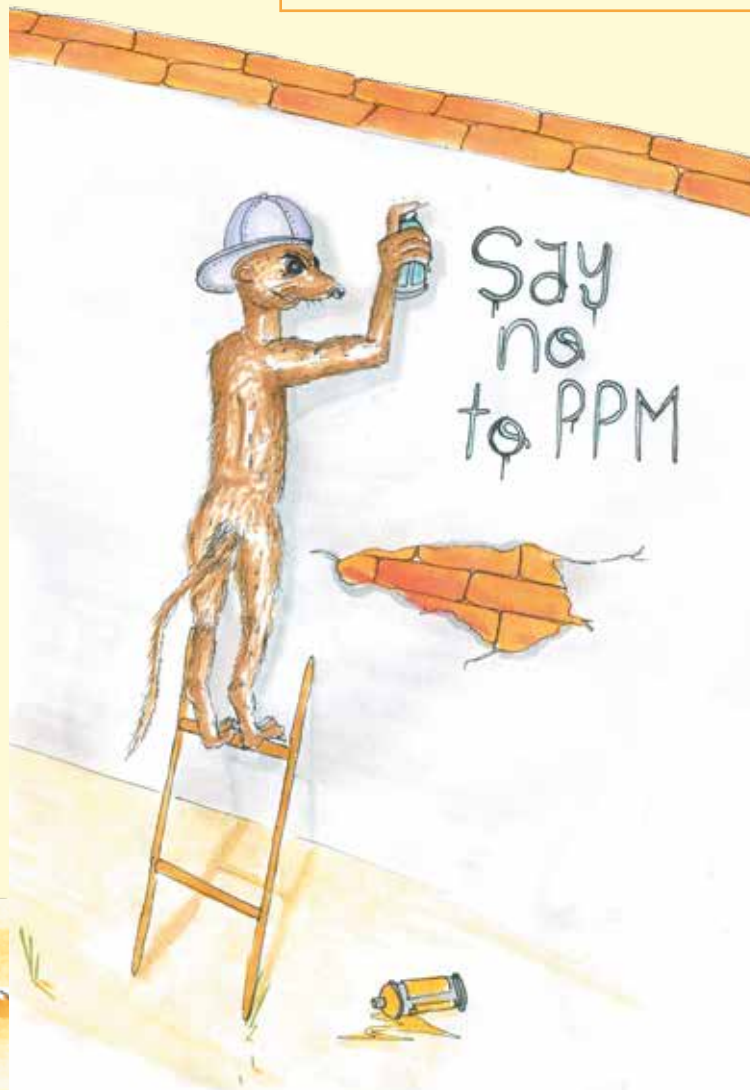


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learn more?

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$\mu\text{g/g}$ is better



Standard Deviation is
the way to go!



The International Association of Geoanalysts



Today we will
learn about the
language of
Geochemistry



Do you want to learn more about correct terminology in geochemistry? Then visit www.geoanalyst.org/glossary – a valuable resource.

Avoid the term "ppm", as it is ambiguous. Though often indicating a mass ratio, "ppm" could also relate to volume of a liquid (mg/l), or atomic ratios, or even a volume ratio for fluids.

In most geochemical contexts the term "sigma" is wrong. **The correct term is "s"**, which is an estimate of the standard deviation based on repeated measurements on a single sample.

An introductory guide from:
www.geoanalyst.org

Know your
Reference
Material!



Standard \neq
Reference Material

Please, no more errors
from your laboratory!



An analytical error is when
you make a blunder in the
laboratory.

Precision is what you want
when hammering a rock,
however...



...the VIM3 metrology guide
sees things differently.

"Small bias" yes!
"High accuracy" no!

Don't be
inaccurate!



The calibration of an instrument usually involves a **Reference Material**. A reference material is a well characterized, homogeneous material. The term "standard" can mean something totally different.

In most cases the term "error" is not correct for the plus-or-minus value associated with a measurement result, rather one should speak of "**measurement uncertainty**".

Precision is always associated with a measurement result. Hence, **a method cannot be precise**, but a result can be.

In metrology, when results are believed to be close to the "true" value, then one speaks of an accurate method that has a small "**measurement uncertainty**".