

# Inter-laboratory calibration of a $\text{Ag}_3\text{PO}_4$ comparison material for oxygen stable isotope analysis

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# Material and Method

Inter-laboratory calibration of a  $\text{Ag}_3\text{PO}_4$  comparison material for oxygen stable isotope composition

Contributing labs:

- University of Natural Resources and Life Science (BOKU)
- University of Western Australia (UWA)
- ETH Zurich (ETH)
- University of Helsinki (UH)
- Helmholtz Centre for Environmental Research Halle (UFZ)

Measurements:

- Thermal Combustion Elemental Analyser (TC/EA) coupled to an IRMS
- 10 individual measurements
- 2 independent measuring rounds
- Normalisation by IAEA-601 ( $\delta^{18}\text{O}_{\text{VSMOW}} = +23.14 \pm 0.17 \text{ ‰}$ )  
IAEA-602 ( $\delta^{18}\text{O}_{\text{VSMOW}} = +71.28 \pm 0.42 \text{ ‰}$ ) (both benzoic acid)  
NBS 127 (barium sulfate) ( $\delta^{18}\text{O}_{\text{VSMOW}} = +8.59 \pm 0.20 \text{ ‰}$ )

# Results

- Arithmetic means of 2 measuring round outside  $\pm 1\sigma$   $\rightarrow$  excluded
- **Weighted arithmetic mean:  $\delta^{18}\text{O}_{\text{VSMOW}} = 13.80 \pm 0.32 \text{ ‰}$  (n = 111)**
- Median of the single valid rounds:  $\delta^{18}\text{O}_{\text{VSMOW}} = 13.76 \text{ ‰}$  (n=9)
- Median of the labs:  $\delta^{18}\text{O}_{\text{VSMOW}} = 13.79 \text{ ‰}$  (n=5)

