

Weight Loss on Ignition (LOI)

Initial Ashing

1. Grind ~5g of soil sample to pass through a 250 micron sieve.
2. Label aluminum weigh-boats.
3. Weigh ~5g into an aluminum weigh-boat and place in the oven at 105°C for 24 hours.
4. Label and weigh a clean ceramic crucible.
5. Tare and pour sample into crucible and place in desiccator.
6. Weigh sample three times and record all three weights.
7. Heat muffle furnace to 550°C.
8. Ash samples for 5 hours.
9. Weigh samples three times in the crucible. Record all three weights.
10. Calculate LOI from (1)

Second Ashing

11. Re-dry samples in oven at 105°C for 24 hours.
12. Weigh sample three times and record all three weights.
13. Heat muffle furnace to 950°C.
14. Ash samples for 2 hours.
15. Re-weigh samples in crucibles.
16. Calculate LOI from (2)

Calculation

$$\text{LOI}_{550} = ((\text{DW}_{105} - \text{DW}_{550}) / \text{DW}_{105}) * 100 \quad (1)$$

$$\text{LOI}_{950} = ((\text{DW}_{550} - \text{DW}_{950}) / \text{DW}_{105}) * 100 \quad (2)$$