Soil Inorganic Nitrogen: KCl Extraction

Materials:
2.0 M KCl (149.1g KCl per 1L extractant)
Graduated cylinder
500ml Squeeze bottle with 2M KCl
Shaker table (plus a box to hold samples bungee cords to secure box to table)
Funnels
Funnel racks
Whatman No. 1 filter paper
Acid washed specimen cups
20 ml plastic Scintillation vials (ones that do not have foil lining are preferred)
Aluminum weigh boats

This method is for the extraction of both Ammonium and Nitrate from fresh (field moist) soil samples. For each sample, you will require 2 subsamples:

- One subsample (10 g) for determining gravimetric soil moisture
- One subsample (10 g oven-dry equivalent) for immediate extraction with 2 M KCl.

Ideally, the whole experiment is done with the same batch of KCl, so make enough to pre-treat filters, extract samples, and then have some for controls and blanks.

Gravimetric Soil Moisture

1. Dry one 10g subsample (field moist) in oven for 48 hours @ 105°C, See *Gravimetric Soil Moisture Protocol*.

Extracting Soil

1. Weigh out a 10g subsample of field moist soil in a specimen cup. With a graduated cylinder measure 40 ml 2M KCl and add to soil. Cap specimen cups.
2. Make several “blank” cups of KCl.
3. Shake for 1 hour at 200 rpm.
4. Allow samples to settle for 1 hour after shaking.
5. Set up funnel holders with folded filters. Pretreat filters by leaching them 2x with 2M KCl.
6. Gravity filter the supernatant through filter paper. Filters should be pre-leached (with 2M KCl) and folded to fit funnels. Funnels should not be reused for multiple samples, use a clean funnel for each sample. Collect extract into pre-labeled scint vials or sample bottles.
7. Freeze extracts to store.