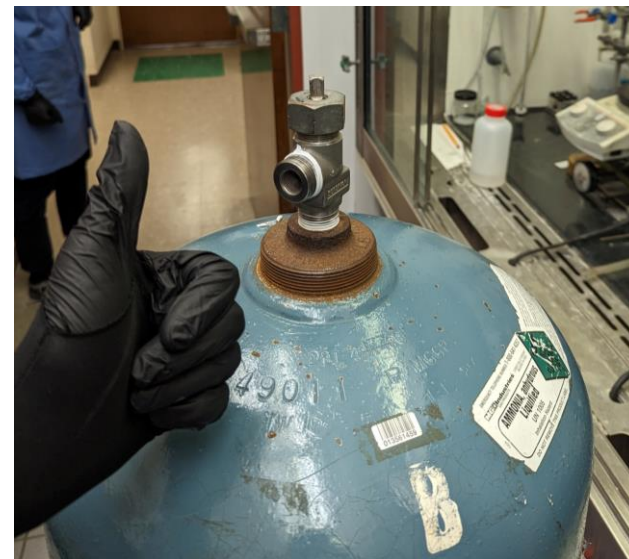
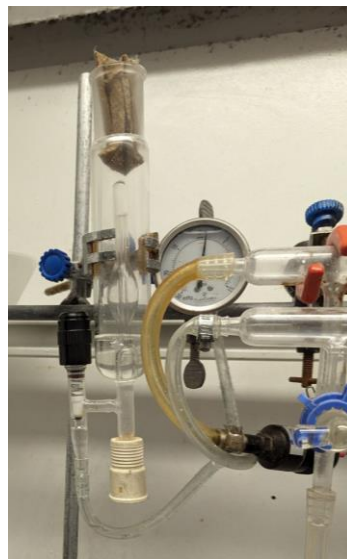


1. Prepare sample & gather necessary equipment



- Place substrate under nitrogen atmosphere, dissolve in THF cosolvent, and cool to $-78\text{ }^{\circ}\text{C}$
- Ensure nitrogen flow in Schlenk is slow but steady: we will monitor ammonia flow by rate of bubbling!
- Obtain ammonia tank, regulator, (a fresh O-ring if needed), and tubing



2. Attach regulator to ammonia tank & begin condensation

- Use wrench to attach regulator, and make sure there is a good O-ring to prevent leaks!
- Attach black control knob (loose fit) to the regulator for fine pressure adjustment
- Place ammonia outlet needle into reaction vessel and carefully open ammonia tank
- Adjust pressure as needed with knob, and be vigilant for any leaks! Ammonia gas is highly toxic, corrosive, and smelly

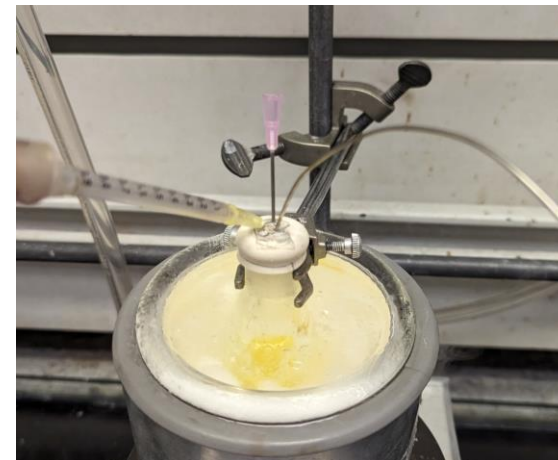


3. Condense ammonia

- Dry ice will bubble as room temperature ammonia condenses
- Double check that Schlenk line is open so excess ammonia gas has somewhere to go!



- Once enough ammonia has condensed, close the tank but leave the regulator open to remove excess ammonia gas from the system
- Use a vent needle and Schlenk nitrogen to clear excess gas
- Disassemble regulator, return tank to closet, and leave tubing in hood overnight



4. Obtain lithium metal and add to reaction



- Lithium metal forms a protective oxide layer, so it can be stored as soft butter-like rods
- Weigh out appropriate amount of lithium on balance, and place in vial of hexanes (chemically inert, but flammable – be careful!)
- Break up lithium with a spatula to expose fresh metal surface underneath the hexane surface
- Quickly add the freshly exposed lithium to the reaction vessel, replacing the septum once added

Note: If using the more reactive sodium metal, it's stored under mineral oil instead of under air. In this case, we weigh the metal in a tared vial of hexanes and exercise additional caution.



5. Enjoy solvated electrons!



6. Quench and clean-up

- By the time the reaction has turned the classical Birch-blue, the reduction is complete
- Depending on the procedure, you can add an electrophile or simply quench with solid ammonium chloride
- Ammonia takes a long time to evaporate, so allow the solution to vent at room temperature for a few hours to overnight depending on the scale, and try to avoid using the hood with the evaporating ammonia for your safety!

