**Dangerous Materials List**

These materials are recommended to not be used when working in your lab alone, late at night, or by undergraduates. All new members of the lab should be trained appropriately before handling these materials independently. Note: increasing reaction scale increases hazards exponentially.

* **Explosive Materials:** *Dangers of rapid combustion, gas release, or shock sensitivity.*
  + Pressurized reactions
  + Benzoyl peroxide
  + Ammonium perchlorate
  + Diazo compounds
  + Nitrocellulose
  + Nitroarenes (like picric acid)
* **Pyrophoric Chemicals:** *Compounds that can ignite spontaneously in air from contact* with water or O2.
  + Organo-lithium compounds (*tert-*, *sec-, n-* butyl lithium)
  + Hydrogen gas (hydrogenations, high pressure, Pd/C…)
  + Diethylzinc
  + Trialkyl phosphines
  + Trimethyl aluminum
  + Grignard reagents (RMg)
  + Metal carbonyls (like nickel tetracarbonyl)
  + Alkali metals (M0)/fine metal powders (Na0, K0, Li0…)
  + Metal hydrides (NaH, KH…)
* **Acutely Toxic Materials:** *Materials that can cause severe acute effects from a single dose ( P-listed materials)*
  + Toxic gasses
    - NH3
    - Cl2
    - CO
    - H2S
  + Br2
  + Cyanides (eg NaCN)
  + Azides (NaN3)
  + OsO4
  + Hydrazines (eg H2N-NH2)
  + Cyanogens (Br-CN, NC-CN…)
* **Corrosive Materials:** *Strong acids, bases, dehydrating agents, reductants, cryogens, and oxidizers.*
  + HF/HF-pyridine
  + Piranha solutions
  + Aqua regia
  + Nitric acid
  + Phosphorous pentoxide
  + ≥30% Hydrogen peroxide
  + Lithium aluminum hydride