Safety: Gas Cylinders

- Ordering:
  - Order only returnable cylinders and try not to order a bigger cylinder than needed
  - Inspect new cylinders for leaks or damage
  - If a cylinder is no longer needed, return it as there is a monthly rental fee e.g. in the Cohen lab:
    - 4 CO$_2$ cylinders
    - Forming gas, N$_2$, He, Ar
Safety: Gas Cylinders

- Compressed gas cylinders must be restrained securely using a chain, belt, or strap
  - Must be secured above center of gravity (2/3)
  - Should only have one cylinder per bench strap
- Must use valve cap when moving a cylinder and whenever a regulator is not attached
- Label cylinders (Full, In Service, Empty)
- Gas cylinder is considered empty at 25 psig
- Use hand truck if moving cylinders over large distances
Safety: Gas Cylinders

- Do not use Teflon tape on CGA valve fittings
- Avoid flexible tubing
- Need pressure relief valves for any equipment which cannot withstand full cylinder pressure
Safety: Gas Cylinders

- Oxidizers (e.g. $O_2$)
  - Use only regulators designated for $O_2$ service
  - Never lubricate valves, connections
  - Label components (e.g. “oxygen – use no oil”)
  - Recommend locating in a “cut-off room of non-combustible construction”
Safety: Gas Cylinders

• Flammable gases (e.g. H₂)
  – Requires permit for storage
  – Must be stored at least 20 ft. from oxygen or combustible materials
  – No more than 400 ft³ (1-2 cylinders) in one area
  – Adequate ventilation required
  – Cylinders and piping should be grounded
  – Flashback arrestors are recommended

Massachusetts Institute of Technology EHS Compressed Gases SOP (2/16/07)