LESSONS LEARNED

Best Practice – work recommendation

When handling Gas Cylinders:

Transportation

- put caps on all cylinders before you move them
- ask a coworker to help you (depending on the sizes and the quantity of cylinders and the position of your cylinder in the rack)
- get two carts in order to move other cylinders which may be in the way
- make use of a cart even for short distances
- free space to temporarily store your cylinder and the others you may have to move
- get straps or chains to restrain the cylinders before you start moving them
- don't leave a cylinder unrestrained: either tie it up, put in a cart, or ask a coworker to handle it
- in best case the ground floor is even: be extra careful if you have to work on a slope or a cylinder rack with a ramp
- consider sturdy work gloves and steel toed shoes as PPE
- you may carry lecture bottles and cylinders <20in by hand but it is highly recommend to use a cart for any bigger sizes
- don't carry cylinders on your shoulder
- don't try to catch a falling cylinder - just let it go

Connecting

- consult the MSDS before connecting the regulator: http://www.lbl.gov/ehs/chsp/html/msds.shtml
- only work on a secured gas cylinder. For leak checking a cylinder in a cart may work as an exception.
- check the gas cylinders for notes and labels, i.e. get information about the current pressure, impurities, hazards etc.
- wear safety glasses or goggles and consider sturdy work gloves
- clean the thread of the gas cylinder valve. Only for non-hazardous gases you may blow out the thread with a burst by opening the valve shortly. If you do so warn others and make sure the burst is not pointing at coworkers or any sensitive equipment. Consider ear protection. Use alcohol to clean the thread and give it enough time to evaporate before you mount the regulator.
- make sure to choose the right gas regulator: http://amo-csd.lbl.gov/downloads/CGAValveFittingSpecs.pdf and http://amo-csd.lbl.gov/downloads/CGAConnectionsForGasTanks.pdf
- inspect your regulator visually before mounting it (are the gauges at zero ? is the glass cracked ? can I open and close the main valve easily ? etc.)
- clean the threads of the regulator if necessary and close its main valve
- connect and disconnect regulators to hazardous gases in gas cabinets only !