

Things to remember.

1. You always need to keep an eye on the N<sub>2</sub> pressure. You want to replace the N<sub>2</sub> gas cylinder when the N<sub>2</sub> pressure is lower than 500 psi. If the pressure is 500 psi, you can still use it once, but you have to replace the N<sub>2</sub> cylinder immediately once you are done. If the pressure is 300 psi or even lower than 300 psi, do not use it, replace the N<sub>2</sub> cylinder immediately.

2. Remember the N<sub>2</sub> gas we are using is Ultra High Purity. Do not use regular purity N<sub>2</sub> gas. Once you replace the last one, order two UHP N<sub>2</sub> gas cylinders as backup. Please email Dr. Ilkeun Lee to order the UHP N<sub>2</sub> gas.

3. The UHP N<sub>2</sub> cylinders will be delivered to our lab directly. Sometimes the delivery guy put them in the cabinet in the hallway or the stockroom. Sometimes they put them in CS 135 or 113 (stockroom). Sometimes they knock on the door and ask who ordered the gas, and you can take them. New N<sub>2</sub> cylinders are stored in the empty cylinder cabinet, right next to room 139 door.

4. To return the empty cylinders, there are two options. You can tell the delivery guys to take the empty ones if you see them or you can put them in the stockroom to ask Pris or Ilkeun to return the empty ones to the campus storehouse.

5. The low- and high-pressure limits must be set to 1.5 and 4.5, respectively.

6. As we are using the glove box, it is normal that the oxygen level will slowly increase. Oxygen level less than 10 ppm is considered good. Once the oxygen level is too high (20–30 ppm), you may want to run a regeneration cycle.

7. There are some materials/catalysts inside the glove box. The mechanism that oxygen level can decrease is because these catalysts react with O<sub>2</sub>, so O<sub>2</sub> is consumed. However, as we use the glove box for a long time, these catalysts will be inactive. Thus, we have to use H<sub>2</sub>/N<sub>2</sub> mixture gas to reduce the catalysts, so they will be active again. The reduction with H<sub>2</sub>/N<sub>2</sub> gas is called "regeneration".

8. Before regeneration, remember to close the two valves on the back of the glove box.

9. After regeneration, purge the glove box for a couple of minutes to decrease the oxygen level first.