

# Standard Operating Procedure: Liquid Nitrogen Work

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## General Cautions

1. Liquid nitrogen is a cryogenic liquid and can cause severe frostbite. Always be cautious when working with it.
2. Liquid nitrogen can quickly displace oxygen in the room. Always work in a well ventilated area with an oxygen sensor.
3. If you are unsure of any procedure, consult with EMG staff.

## SOP

1. This SOP is for working with small amounts of liquid nitrogen: filling microscope dewars, cryo-loading, sample storage. It does **not** cover plunge freezing.
2. For delicate work, such as grid loading, cryo gloves can be cumbersome. They do not need to be worn, but do be careful to not freeze your fingers.
3. Eye protection such as goggles or glasses should be worn.
4. Excess liquid nitrogen should be poured back into a storage dewar and not simply dumped on the floor.
5. For the Tecnai F20, when doing a cryo-cycle, remove the dewar and place on the floor. If there is a large amount of nitrogen, empty much of it into a 10L dewar. Small amounts can be allowed to evaporate naturally from the dewar. Leave it right-side up, uncovered, on the floor beside the table.
6. For the JEOL 2100, when inserting the heating element for ACD heat, be careful that tube is pointing away from you.
7. For the JEOL 3200, always wear eye protection when filling tanks. Increase pressure slowly, as any blockage can cause filling hose to detach or break.