



Purpose: Plunge Freezing into Liquid Ethane

Author:

Approved by:

Date:

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. Liquid ethane, unlike liquid nitrogen, does not have the Leidenfrost effect. It therefore is more dangerous as severe frostbite can occur immediately.
4. If you are unsure of any procedure, consult with NYSBC/NCCAT staff.

SOP

1. Wear eye protection (goggles or glasses) throughout the experiment. Cryo gloves need not be worn since they are too bulky for delicate work. Do be careful not to freeze your fingers.
2. Cool a chamber (thermos or bath of Vitrobot/Leica/CP3) to liquid nitrogen temperature.
3. It is often easier to pre-cool the metal tip coming from the ethane tank to near liquid nitrogen temperature before dispensing. However, be careful since ethane remaining in tube can freeze solid, causing a blockage.
4. Insert tip from ethane tube into filling container (50 ml Falcon tube or baths in Vitrobot/Leica/CP3).
5. Slowly open bleed valve on ethane tank. Be careful not to spatter ethane.
6. As ethane liquifies, you will hear a loud noise. If you are filling too fast you will hear more gas hiss.
7. Fill about 5 ml ethane.
8. When done filling, close ethane tank.
9. At end of experiment, transfer remaining liquid ethane to fumehood.