National Center for CryoEM Access and Training

Purpose: NCCAT Dry Shipper Intaking and Processing Grids.
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Approved: Ed Eng   **Date**:   2020/03/30

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1. **Purpose:**
    1.1. To Intake NCCAT dry shipper and processes grids for clipping or loading onto Krios or autoloader system.

2. **Scope:**
    2.1. All NCCAT Grids are to be organized as unclipped Krios/Glacios/NC pucks and clipped Krios/Glacios/NC pucks are stored in canes in one centralized LN2 dewar.

3. **Definitions**
    3.1. Proposals have different identifiers and typically would follow this workflow, but should be verified with the NCCAT User Office:
        3.1.1. NCCAT-GUP1 or 2/TP1 or 2/RAP/BAG – Krios puck
        3.1.2. NCCAT-GUP2/TP1 or 2 – Glacios puck
        3.1.3. NCCAT-GUP2/BAG/TP1 or 2 – may also include samples intended for storage in 4C/-20C/-80C.

4. **Responsibilities:**
    4.1. When opening up the dry shipper take a picture of the general state of the package. If there is a return label give it to the NCCAT User Office. The NCCAT Traffic Controller would be the first point of contact.
    4.2. Retrieve shipping manifest and verify intended access category and/or instrumentation access with the NCCAT User Office.
    4.3. Fill dry shipper with LN2. At this point may pause if several dry shippers need to be processed at the same time.
    4.4. Retrieve grid box from dry shipper using cryo gloves and:
        4.4.1. To take out grid box from falcon tube use large tweezers to transfer into a transfer dewar.
        4.4.2. To take out grid box from pucks use appropriate puck tongs and large tweezers.
        4.4.3. Note with crystallography puck use crystallography tongs and hex key to assist with opening puck before transfers grid boxes.
    4.5. Visually inspect grid boxes and note any identifying markings. Take a picture if necessary. Record if there are clipped or unclipped and number of grids in which slots before placing them in the assigned puck.
    4.6. The manifests obtained from NCCAT User Office and/or Traffic Controller should be cross referenced with any manifests found within the dry shipper. The normalized manifest annotated with what was visually determined to be received must be put into the NCCAT Inventory Binder associated with the user's grids.
    4.7. For Krios samples: If known, Krios user's parameters are to be attached to the manifest. If unknown, then contact user in coordination with the NCCAT User Office. If there is no response, then use standard Krios parameters.
    4.8. When samples are removed and processed the Dry shipper will placed in temporary storage in the alcove by the NCCAT loading dock.

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5. Personal protective Equipment (PPE):
   5.1. Cryo Gloves
   5.2. Laboratory gloves
   5.3. Safety glasses
   5.4. Face mask

6. Chemicals:
   6.1. N/A

7. Equipment
   7.1. Liquid Nitrogen (LD4 or LD5)
   7.2. VCH35 storage dewar
   7.3. SubAngstrom canes
   7.4. SubAngstrom pucks
   7.5. Tongs
   7.6. Large Tweezers
   7.7. Puck transfer dewar
   7.8. Pen & Marker
   7.9. Puck record binder

8. Waste Disposal:
   8.1. Pour excess LN2 into a LD10 dewar

9. Vendors:
   9.1. N/A