Standard Operating Procedure: Operation of the Acetone Recycling Unit

1. **Purpose:** to provide step by step guidance on how to use the Acetone Recycler

2. **Scope:** applies to all staff in the Chemical Stores that process acetone through the recycling unit.

3. **Prerequisites:** EH&S WHMIS & Chemical Safety. Hands-on training (provided by the Manager of Lab Technical support and supplies

4. **Responsibilities:** it is the responsibility of the person running acetone through the recycler to follow proper procedure to prevent spills and exposure to themselves or others in the lab.

5. **Personal Protective Equipment (PPE) | Acetone Recycler Receptacle**

![White lab coat and protective goggles]

![Acetone Recycler Receptacle]
5. **Procedure:**

- Processing of recycled acetone will commence **ONLY** at the end of the work day so that recycling occurs overnight.
- Dispensing takes approximately 15 minutes.
- Respirators are **NOT** required to dispense or run recycling. The risk assessment performed by Health and Safety is available upon request.
- If personnel chooses to wear a respirator during operation of the acetone recycling unit and dispensing; the manager will ensure fit-testing, training in the use of respirators and will produce the proper respirator as per fit-testing recommendation.

5.1 – **filling the waste receptacle**

- Inspect waste receptacle to ensure no large lab supply particulate is present.
  - If waste receptacle is contaminated with lab consumables etc. contact research group to pick up waste receptacle and treat as chemical waste.
- Place waste receptacle adjacent to waste collection carboy to the left of the recycling unit (A in picture above).
- Connect tygon tubing adapter to the spigot on the acetone recycling receptacle.
- Open spigot to drain acetone from waste receptacle into waste collection carboy.
- Once emptied, detach tygon tubing from waste receptacle and place waste receptacle on floor for pick up by research groups.

5.2 – **Filling the acetone recycler**

- Fill both top receptacles on the acetone recycling unit (B in picture above).
- Ensure metal filter basket is in place.
- Place white cap connected to unit tubing on receptacle and close tightly.
- Once the system is closed, press the red fill button on the right side on the unit to fill the receptacle to the 0-0 line at the top.
• Once receptacle is full, repeat process to fill the second container on the top of the recycling unit.

5.3 – **Running a 5 gallon cycle**
• Only to be run when there is not enough acetone to run a full 10 Gallon cycle.
• Fill only the receptacle on the right of the unit (B in picture above).
• See 10 gallon cycle for processing instructions.

5.4 – **Running a 10 gallon cycle**
• Press Enter to recycle Acetone.
• Press NO to run a 10 gallon cycle (press NEXT to run a 5 gallon cycle).
• Check containers; loosen lid on top receptacle (E picture to right) and open spigot (F picture to right).
• Ensure the lid on the clean acetone catch receptacle is on tight (G picture to right).
• Press enter to fill the distillation unit. Fill can take up to 20 min.
• Observe container, be sure acetone has begun to gravity fill into the boiling tank.
• Recycling process will begin automatically.
• Container two will fill at the completion of the first 5-gallon cycle.

5.5 – **Dispensing Clean Acetone**
• Recycled acetone collects in recycled receptacles (C picture above).
• Attach tygon tubing to spigot on the clean acetone receptacle (H picture above/ right).
• Place tygon tubing into opening of available flammable acetone safety canister.
• Open spigot to allow clean acetone to flow into canister (H picture above/ right).
• Top up 20L flammable acetone safety canister with acetone from a second acetone receptacle.
• Once completed filled, close spigot.
• Dispensing takes approximately 15 minutes.

6. **Other**
• Adding a few drops of acid helps prevent cleaned acetone having a smell, which develops from the production of amines during the fractional distillation process.