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| Standard Operating Procedure for:  **Using Carbolite ashing furnace** | PPE required: |
| This SOP the use of the Carbolite 1000-1200ºC ashing furnace.  When operating furnaces PPE is required including laboratory coat, safety glasses and nitrile gloves. For higher temperatures thermally insulating gloves are required.  **Never put flammable or volatile materials in the furnace.** Never put measuring glassware in the furnace (e.g. volumetric flasks and measuring cylinders). |
| **Before use**   1. **TURN ON THE EXTRACTION HOOD**! 2. Ensure that the temperature of the oven does not exceed the melting or boiling point of any materials to be placed in the oven.    1. Polystyrene melting point = 70 ºC    2. Polypropylene melting point = 130 ºC    3. Aluminum = 660 ºC 3. If there is any concern of your sample producing toxic emissions or unpleasant smells please consult a technician. **Never put flammable materials in ovens/furnaces.**   **Adding items to furnace**   1. Make sure you are **wearing** **protective** **heat proof gloves** when adding items to furnace 2. Ensure door is firmly shut when items in furnace. 3. **Write on door label:**     1. **Start and finish date,,**    2. **Full name,**    3. **Temperature,**    4. **Whether other users can use the furnace at the same time,**    5. **Any other important sample information for users (e.g. toxicity).** 4. Check on sample after around 30mins to ensure no unpleasant emissions are being released and that samples are not burning.   **Removing items from furnace**   1. When removing hot items from the furnace ensure you use the **protective heat resistant gloves** provided. 2. For higher temperatures please use heat resistant mats to avoid damaging work surfaces. 3. **If your samples are in the oven past the date on the front they may be disposed of without warning.**   **Furnace controller**  To set a simple ramp, hold and cool please follow the instructions below. For more complex programs please speak to a technician.   1. Put the furnace into “**Hold mode**” 2. Press the **Page key** once so it reads *SP°C* then use arrow keys to set the **Set Point**. 3. Press the **Page key** again so it reads *SPrr* then use arrow keys to set the **Ramp Rate** (normally 10 max. 20oC/min.). 4. Press the **Page key** again so it reads *t1* then use arrow keys to set the **Dwell time** 5. Press the **Page key** again so it reads *HOLD* then press the **Timer Key** to start the program.  |  |  |  | | --- | --- | --- | |  | Hold mode  Page key | Arrow keys  Timer key | | **Hazard symbols:**  See individual users risk assessment |
| **Significant hazards:**   * High temperatures |
| **Hazard phrases (H):**  See individual users risk assessment |
| **Can it be done out of hours?**  The ovens and furnaces can be used out of hours. |
| **This SOP is not relevant in the following circumstances:**   1. SOP does not cover specific experimental risk these must be covered by user’s assessments 2. Any other situation where the procedure may result in harm to yourself or others. | |