|  |  |
| --- | --- |
| Standard Operating Procedure for:**Use of ovens and furnaces** | PPE required: |
| This SOP covers ovens and furnaces and their use in the Cohen labs (level 8 and 9) up to 1100 ºC. For the purpose of this SOP:* **Ovens** are generally capable of going up to 250ºC and
* **Furnaces** up to higher temperatures (generally up to 1100ºC).

This SOP covers the general operation of ovens and not what the oven is used for. It also does not cover users’ samples. When operating ovens at lower temperatures standard laboratory PPE is required. This includes laboratory coat, safety glasses and nitrile gloves. For higher temperatures thermally insulating gloves are required.**Never put flammable or volatile materials in the ovens or furnaces.** Never put measuring glassware in the ovens (e.g. volumetric flasks and measuring cylinders) |
| **Before use**1. Check the function of the oven/furnace (e.g. glassware drying or sample heating) before commencing use. Use ovens according to their function only.
2. Check that oven/furnace is not in use. If it is in use make sure that it is OK to share.
3. Set temperature to desired value. If there is an over-temperature controlled make sure it is set to at least 10 ºC above set point. If you are not sure how to do this please ask.
4. 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
5. 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.**
6. Ensure samples are properly labelled. If this is not possible ensure any relevant information is written on door.

**Adding items to furnace**1. Make sure you are **wearing** **protective** **heat proof gloves** when adding items to oven/furnace
2. Ensure door is firmly shut when items in oven.
3. **Write on door label:**
	1. **Start and finish date,,**
	2. **Full name,**
	3. **Temperature,**
	4. **Whether other users can use the oven 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 oven ensure you use the **protective heat resistant gloves** provided.
2. For higher temperatures please use heat resistant mats to avoid damaging work surfaces.
3. Do not leave glass/plasticware drying in the oven longer than 24 hours.
4. **If your samples are in the oven past the date on the front they may be disposed of without warning.**
 | **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.
 |