Standard Operating Procedure

High Temperature Oven

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| **Department:** | Earth and Environmental Sciences |
| **Date SOP was written:** | 3/23/2015 |
| **Date SOP was approved by PI/lab supervisor:** | 3/23/2015 |
| **Principal Investigator:** | John Ayers |
| **Internal Lab Safety Coordinator/Lab Manager:** | Richard Bradshaw |
| **Lab Phone:** | Click here to enter text. |
| **Office Phone:** | J. Ayers (615) 322-2158 (campus phone: 2-2158) Bradshaw (615) 343-0839 (campus phone: 3-0839) |
| **Emergency Contact:** | J. Ayers (615) 973-1879  R. Bradshaw (208) 260-2792 |
| *(Name and Phone Number)* |
| **Location(s) covered by this SOP:** | SC 5703 |
| *(Building/Room Number)* |

**Type of SOP:** ☒ Process ☐Hazardous Chemical ☐ Hazardous Class

**Personal Protective Equipment (PPE)**

**Eye/Hearing Protection:**

# **Other Protection:**

Pull long hair back and tuck into back of shirt.  
Thermally insulated gloves (e.g., welders gloves)

# **Medical Emergency Dial (615) 322-2222 for Vanderbilt Police**

**Life Threatening Emergency, After Hours, Weekends And Holidays** – Dial **(615) 322-2222 for Vanderbilt Police** or go to the nearest emergency room. *Note: All serious injuries must be reported to EH&S within 8 hours.*

**Non-Life Threatening Emergency** – Go to the Occupational Health Facility (OHF). After hours go to the nearest emergency room. *Note: All serious injuries must be reported to EH&S within 8 hours.*

**Protocol/Procedure**

These instructions are for the Barnstead Thermolyne FB1415M furnace in SC 5703. The furnace manual can be downloaded at <https://onedrive.live.com/redir?resid=55FD3F8FFA58DB1A%21102698>

1. Sign in on the Furnace Use Log – print name and date
2. Notify faculty/staff/fellow student of when you are using the furnace and expect to be complete – call/email when you are done.
3. Using the furnace simply involves inputting the temperature setpoint into the temperature controller. Use the switch to turn on the power
4. The Eurothem 2116 temperature controller will display the temperature inside the furnace.
5. Use the "up" and "down" arrow buttons to raise or lower the setpoint.
6. The furnace temperature shown on the display will increase until the setpoint is reached.

**Note**: For the furnace in SC 5703 do not set a temperature above 982°C if you will use it more than three hours. If using less than one hour you can heat it to a maximum temperature of 1100°C.

1. Put your sample in a crucible that is thermally stable at the maximum temperature that you will heat your sample. Examples include graphite, platinum, and Coors ceramic (rated to 1150°C).
2. Use thermally insulated gloves when working with the furnace.
3. Avoid spills inside the furnace.
4. Use crucible tongs to take the crucible/sample in and out of the furnace.
5. Place the hot crucible on an asbestos pad to avoid burning the countertop.
6. Let the crucible cool to room temperature before touching.
7. Once completed, turn off the furnace and record the condition of the furnace and hours used in the Furnace Use Log
8. Contact faculty/staff/fellow student that you are complete and leaving the lab.

If the furnace is not working – **Contact Lab Manager**.

**NOTE**

Any deviation from this SOP requires approval from PI/Lab Manager.

Electrical Problems: Consider your safety first. Shut off the furnace immediately and unplug from the wall if safe to do so – **Contact the Lab Manager**.

**Documentation of Training** (signature of all users is required)

* Prior to conducting any work with the high temperature furnaces, PI or LM must provide training to his/her laboratory personnel specific to the hazards involved in working with this equipment, work area, and emergency procedures.
* The Principal Investigator must provide his/her laboratory personnel with a copy of this SOP.
* The Principal Investigator must ensure that their laboratory personnel have attended appropriate laboratory safety training and are current with any refresher training required.

**I have read and understand the content of this SOP:**

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| **Name** | **Signature** | **Date** |
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