

High Temperature Furnace and Tube Furnace

Purpose and Scope:

This document describes the procedures and policies for using High Temperature and Tube furnaces. The scope of this document is to establish user procedures. Instrument maintenance and repair are outside the scope of this document.

Responsibilities:

This document is maintained by the department Lab manager or Scientific Instructional Technician (SIT). The SIT is responsible for general maintenance and for arranging repair when necessary. If you feel that the instrument is in need of repair or is not operating correctly please notify the SIT immediately. The SIT will operate the instruments according to the procedures set down in this document and will provide instruction and training to users within the department. Users are responsible for using the instrument described according to these procedures. These procedures assume that the user has had at least one training session.

Definitions:

N/A

Prerequisites:

All users must read this document and obtain approval and training from the SIT.

Precautions:

Use the proper safety equipment and safety protocols when using these furnaces. They reach a temperature of 1700 Celsius. The elements for the furnaces are exposed and can be easily damaged if bumped or scraped. They are very expensive to replace. The furnace elements are operated at a high current and can be dangerous if touched.

Do not attempt repair or service. If service is required, contact your supervisor or the SIT immediately. Always use the provided hearth plate on the bottom of the furnace.

If material being used is hazardous or contains burn-off products that can damage the furnace the user must first make arrangements with the SIT or supervisor..

Procedure:

Following is a step by step description of a general operating procedure. Each process can be unique and some steps may not be required or the order may vary.

1. Determine the type of process required before beginning. If your process doesn't require temperatures above 1000 Celsius then please use a box furnace. If your process will utilize temperatures below 1000 Celsius it could damage the elements

Individual Chemical SOP Example



2. Check that the furnace is available.
3. Fill out the furnace use log.
4. Program the furnace: See controller manual.
5. Place the material carefully in the furnace. Do not touch the edges. Do not put material in the furnace that is too big or that could boil over, sputter, or in any other way cause damage to the furnace. It is best to maintain a 2" clearance around all items in the furnace to assure proper convective currents around your sample. Placing the samples on stands assures currents around the majority of the bottom of the sample.
6. Material should be placed in the furnace before starting the program. Opening the furnace at high temperatures will damage the elements.
7. High temperature gloves, face shields, and furnace tongs are provided for your safety.
8. Do not set materials from the furnace onto any wood surfaces. There is a metal table and high temperature refractory materials in the lab for that purpose.
9. Do not hesitate to ask questions.
10. A burn kit is available in the lab. If an accident occurs that is life threatening, call 911 immediately. If a minor accident occurs, it is recommended that the injured party go to Student Health Service and also to fill out an accident report.

Implementation and Training:

This SP will be available to all users and must be adhered to.

Name (print) (Assessor):	Title:
Signature (Assessor):	Date:
Name (print) (PI, Lab Manager, or Unit Head):	Title:
Signature (PI, Lab Manager, or Unit Head):	Date:
Date Sent to UW Safety:	