

Binder Vacuum Oven

Standard Operating Procedure

Revision: 1.0 — Last Updated: Aug. 1/2012, Revised by Nathanael Sieb

Overview

This document will provide a detailed operation procedure of the Binder VDL-53 Vacuum Oven. Formal Training is required for all users prior to using the system.

Revision History

#	Revised by:	Date	Modification
1	Nathanael Sieb	Aug 1, 2012	Original release
2			
3			
4			
5			

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General Information

The Binder vacuum oven is used for baking or curing samples under vacuum at a temperature from room temperature up to 200 °C. It is well suited for baking PDMS, polymers, or removing solvents. It **cannot** be used to dry substances with an ignition temperature below 135 °C.

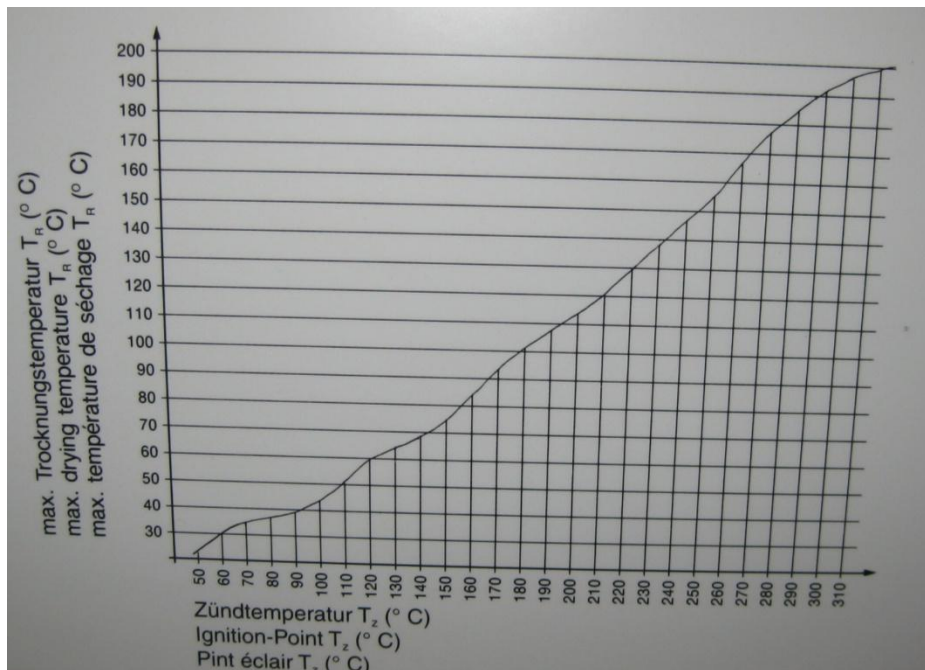


Operation

- Open valve for compressed air and turn on vacuum pump switch.



- Use the chart on the front door to determine the setting of the safety switch. Look up the ignition temperature of your substance on the chart and find the corresponding maximum drying temperature. The values of 1 to 10 on the dial roughly correspond to temperatures from 30°C to 320 °C. Set the safety switch to the required value.



- Turn on system power to I for normal heating or II for high power heating (>100 °C).



- To open the oven door, make sure that the vacuum valve is closed open the air vent valve. Open the door handle. When the pressure reaches ~30 inHg, the door will open.




- Insert the sample, close the oven door, and open the vacuum valve.



- Press the X/W button to access the temperature set-point. Use the up and down arrows to set the desired set-point. The set-point should not be higher than the maximum drying temperature.



- When the vacuum is below 3 inHg, the 'no heating' indicator  will turn off and the oven will begin to heat. It can take a few hours to reach a stable temperature.
- The nitrogen gas valve can be opened to bleed an inert atmosphere into the chamber. Be sure to monitor the pressure that it does not go too high.
- When the experiment is complete, turn off the vacuum, open the air valve, and wait for the chamber to vent. Remove your sample and place the chamber back under vacuum. Turn off the oven, pump, and air at the end of your session.

References and Files

Binder VDL-53 Manual and training notes.

Contact Information

Questions or comments in regard to this document should be directed towards Nathanael Sieb (sieb@4dlabs.ca) in 4D LABS at Simon Fraser University, Burnaby, BC, Canada.