

LABORATORY SCALE FURNACES

ATMOSPHERE CONTROLLED BRIDGMAN FURNACE

This furnace is able to heat only the middle zone which consists of 3 zones. The reactor can be brought from the top or bottom to the middle of the furnace, and it can also be retracted from the place where it is brought. The sample dissolved in the reactor can move to the cold zone at very slow speeds, whereby the crystal is formed. In this method, known as the Bridgman method, all parameters are adjusted by means of a touch panel. During the process, the reactor position, reactor speed, thermocouple temperatures, atmospheric pressure can be monitored and recorded. Different reactor materials can be used due to the interchangeable reactor feature.

- Temperature: 1700°C
- 12 litres
- Vertical design consists of 3 zones
- Loading Zone, Hot Zone, Pull Zone
- Adjustable graphite reactor 10-0,00001 mm/s
- Vacuum and inert gas input
- Able to set programmable temperature, time and soaking time, display of cooling water temperature and process details and data save by USB connection feature via PLC controller, touch screen
- Integrated 10^{-2} mbar ultra high vacuum pump system
- Side-opening furnace lids
- Excessive temperature blocking
- Sealed and reinforced ultra high vacuum cabin
- Heating on around**
- Programme temperature sensitivity $\pm 1^\circ\text{C}$
- Adjustable gas flowmeter
- Water cooled atmosphere cabinet

The top zone has a temperature higher than the melting point, and the bottom zone has a temperature lower than the melting point. There is a middle zone that acts as a baffle between the two zones. This method is often used in a Bridgman furnace as it provides improved control over the temperature gradient.

