



BAY STATE CRUCIBLE CO.

Serving the Foundry Industry since 1907

CYLINDRICAL CLAY GRAPHITE CRUCIBLE

PREHEAT PROCEDURE

Preheat notes:

- The crucible must "soak" for 20 minutes at each temperature listed in steps 1-3 of the preheat procedure. Taking 20 minutes to "get to" the temperature is not sufficient.
- The crucible must be left empty until step 4 of the preheat procedure.
- Once step 3 is complete, the crucible must be loaded and taken to pour temperature as this step finishes the procedure. **DO NOT LET COOL AFTER STEP 3.**
- For longer crucible life, it is best to arrange several consecutive heats after the preheat procedure is complete, on the first day of use.
- This preheat procedure should only be used on our 7-3K mix crucibles. Crucible failure can occur if used on crucibles from other companies.

Please call with any questions

P.O. Box 326 East Taunton, MA 02718

Tel. 508-824-5121 · Fax 508-880-5665 · www.baystatecrucible.com

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CYLINDRICAL STYLE CLAY GRAPHITE CRUCIBLE

PREHEAT PROCEDURE

1. Install crucible in furnace following furnace manufacturers suggested procedure. A good insulating backup such as Dragon Backing A and 85 P Capping should be used to assure long life and durability. Leave crucible empty. When capping is suitably dry follow remaining steps.
2. **LEAVE CRUCIBLE FREE OF METAL AND COMPLETELY EMPTY.** Turn furnace power up slowly until crucible temperature reaches 212°F. NOTE POWER SETTING AT CRUCIBLE TEMPERATURE OF 212°F. Leave furnace at this setting for 30 minutes. This step drives off moisture in crucible prior to turning into steam which causes crucible to delaminate. (212°F is achieved at approximately 5% maximum power in most 3000 cycle furnaces and approximately 10% maximum power in most 1000 cycle furnaces)
3. Continue raising power slowly until crucible temperature reaches 600°F. NOTE POWER SETTING AT CRUCIBLE TEMPERATURE OF 600°F. Leave furnace at this setting for 30 minutes. This step allows crucible material to go through a phase transition at 600°F slowly and therefore avoids thermal shock. (600°F is achieved at approximately 10% maximum power in most 3000 cycle furnaces and approximately 25% maximum power in most 1000 cycle furnaces)
4. Continue raising the power slowly until crucible temperature reaches 1000°F. NOTE THE POWER SETTING AT CRUCIBLE TEMPERATURE OF 1000°F. Leave furnace at this setting for 30 minutes. This step allows crucible material to go through a thermal expansion at 1000°F slowly and therefore avoids building thermal stress. (1000°F is achieved at approximately 20% maximum power in most 3000 cycle furnaces and approximately 50% maximum power in most 1000 cycle furnaces) At 1000°F the bottom radius of the crucible should start to glow red.
5. Turn off power, load crucible and set furnace at desired power to obtain full melt rate.

NOTE: Temperatures listed in preheat procedure should be obtained at the crucible interior sidewall $\frac{1}{4}$ of the way up from the bottom.

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