

ARC Furnace procedure

This furnace has tungsten electrode and copper hearth. The inert gas (Argon) plasma is created by striking the tungsten electrode with copper hearth. This can be used for the preparation of sample by melting and sealing of metal tubes.

Procedure for sealing of tubes.

Two different tube sizes can be fitted with the special hearth designed for tube sealing

1. Open water connection to arc furnace (Located at the left hand side wall of the fume hood 1)
2. Open Argon cylinder tank
3. Turn on the Vacuum pump.
4. Put the tube in the groove provided and fit with the split metal gasket suitable to the tube size.
5. Inset the assembly from the bottom and press a little bit.
6. Open the vacuum valve and press the hearth more to fit exactly and prevent leakage.
7. Clamp it from bottom
8. Wait a little for a good vacuum
9. Close the vacuum valve and flush Argon (open the Argon valve (anti clockwise) for a while and close).
10. Repeat Argon flushing at least thrice (after each flush, apply vacuum shortly by opening and closing the vacuum valve). This is to make sure you get rid of all the air.
11. Open the Argon valve and close the vacuum valve. Control the Argon flow at least just to see continuous flow. Do not overflow.
12. Power supply switches

Polarity :	SMAW
Arc Force :	0 % GTAW
HOT start	OFF
OUTPUT	: ON
Control:	Remote
Amperage	:100 amp
13. Move the tungsten electrode down to a suitable position to strike and move.
14. Turn ON the power supply
15. Press the pad button (with your foot) to max position and strike the electrode and take up immediately. Adjust the pad switch position just to maintain the flame and suitable length.
16. Move the flame over the tube slowly to melt the metal top.
17. Once it is sealed take far away from the metal and release completely the pad switch and turn off power supply.
18. Release the clamp for the hearth
19. Increase the Argon flow and take out the hearth.
20. Close the Argon valve
21. Close the regulator of the Argon cylinder
22. Turn off water supply
23. Turn off vacuum pump

Procedure for melting of sample

Use the copper cup type hearth. Use bigger chunks or pellet so that they will not fly away with vacuum or Argon. Move the flame over the sample to melt.