HYDROTHERMAL AUTOCLAVE REACTOR

The Hydrothermal Autoclave reactor use to carry hydrothermal reaction at high pressure and high temperature. Hydrothermal synthesis reactor generally comes in a two variety; the first is Polytetrafluoroethylene (PTFE) or Teflon lined hydrothermal autoclave reactors and the second is PPL lined autoclave. Hydrothermal reactor mainly made up of two parts; outer high-quality stainless steel jacket and inner Teflon liner or Teflon chamber. In the

Teflon-lined autoclave, the reaction is carried out at maximum 240-degree Celsius (428 Fahrenheit), while the safe temperature is 200-degree Celsius (392 Fahrenheit). PPL lined reactor use for the reaction operate at higher temperature, where the safe temperature will be 240-degree Celsius (464 Fahrenheit) and the maximum operating temperature is 280-degree Celsius (536 Fahrenheit). This product extensively used in the scientific laboratory, research and development labs, institutional organizations, quality analysis section in industries etc.

OPERATING GUIDE

1. Place the Autoclave and sterilizing material on the table or on the shelf.
2. Twist the screw type threaded primary SS cap (SS Alloy 304) in an anticlockwise direction until it has been opened.
3. There is 2 type of SS gasket/lid in the reactor, 1 is on the bottom side and another is on top of the Teflon vessel chamber.
4. Lift the top SS gasket or lid and take-out milky white color PTFE/Teflon reaction chamber.
5. Now fill solvent (as per liner's capacity) in the reaction chamber and sealed it.
6. Make sure that the Teflon cap should be air-tight to avoid pressure leakage.

7. Place Teflon or PTFE liner in a stainless steel chamber.
8. Keep top gasket over the vessel and make sure that the Teflon-lined vessel placed properly in the Stainless Steel chamber.
9. Then twist primary SS cap in a clockwise direction until it does not turn anymore.
10. The secondary SS cap has been given at the top of the primary cap for extra tightening to avoid pressure leakages.
11. Rotate primary SS cap in the clockwise direction with the help of locking rod for additional tightening.
12. Placed the hydrothermal autoclave in oven or furnace and heat it till reactor’s safe temperature.
13. Increase the temperature of the oven and set heating rate 5 0C/minute only.
14. A researcher can heat the hydrothermal autoclave till 200 0C for safe use.
15. After completion of the hydrothermal synthesis reaction, the autoclave's cooling rate will be 5 0C/minute.
16. Make sure that, after completion of the process clean PTFE or Teflon liner properly for reuse.

PRECAUTIONS

1. Do not operate the autoclave without water. Avoid using hard-water in the unit.
2. Clean Teflon reaction vessel properly before use to avoid contamination.
3. Do not put any extra weight on the autoclave.
4. Close the autoclave caps properly, never try to open it by force without first loosening of primary SS cap with the help of tightening rod.
5. Clean and Dry the hydrothermal reactor unit after a day uses.
6. Use Autoclave only for its intended purpose.
7. Ensure that the pressure gauge is operating correctly.
8. Make sure the both stainless steel gaskets are in a good Shape & condition.
9. Clean the surface of the base unit where gasket rests.
10. Do not lubricate Gasket.