TDC Part III

Practical (Lab Work)

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TOPIC:- COMMON LAB GLASSWARES AND APPARATUS

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Cooling baths

Some chemical reactions required constant temperature to proceed and give better yield, which we can up to some extent achieved by using ice liquid ammonia or mixture of ethylene glycol and ethanol in simple beakers. However, few chemical reactions required a more accurate constant temperature to proceed. The simplest and most commonly used apparatus to achieve constant temperature is water bath. The simplest model of a water bath is shown in Figure 1.1.

Actually, water bath is laboratory equipment used to keep water at a constant temperature for incubating samples in a laboratory. Water bath always has electrical circuit with manual temperature control. The application range of water bath includes reagents warming, substrates melting as well as used to enable certain chemical reactions to occur at high temperature. Once the correct temperature is reached, the laboratory water bath turns on and off to maintain a constant temperature. There are different types of water baths such as;

water bath with circulating system, non-circulating water bath, water bath with shaking system and non shaking water bath. Circulating water bath required for the reactions those proceed at constant temperature whereas non-shaking water baths are less accurate in sense of maintaining constant temperature throughout the water bath. Therefore, the type of water bath required depends on the type of application or more appropriately how much accurate temperature required to maintain.

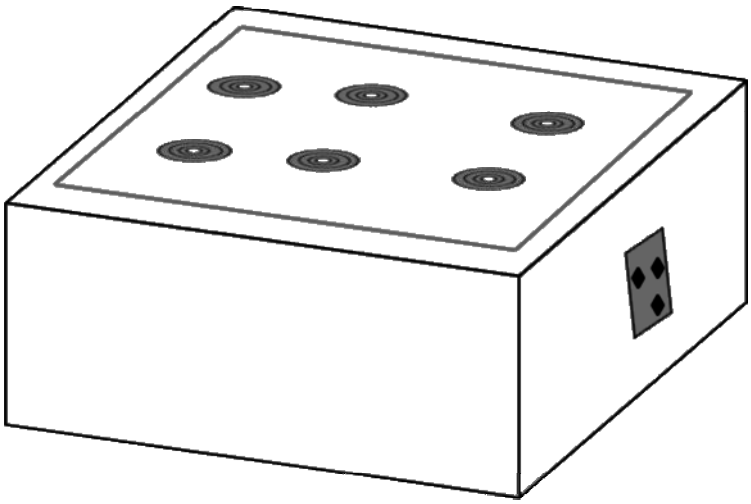

Figure 1.1 A simple model of water bath