

ABSTRACT

Aircraft storage breast milk is a medical device that functions to store or place a substance / ASI, with a steady temperature. In aircraft storage temperature stability can be maintained in accordance with the time and temperature required, so the milk can not be damaged. With this storage aircraft can help women who can not breastfeed their babies exclusively by squeezing / pumping breast milk and then stored in a milk bottle was sterilized and placed in storage plane. Aircraft storage can also help the medical personnel in providing health services.

With reference to the previous tool (Riswan 2007) there are still many shortcomings of them are using a dry heating system it is less efficient because in this system penyusaian temperature between room temperature with the temperature of milk is very difficult. While on penyusaian wet heating system temperature between room temperature with the temperature of milk does not require a long time because penyusaianya between room temperature and the temperature of milk easily. Based on the above the author will modifikasikan display using a wet heating system. Meanwhile, to maintain the safety of the users on the sterilization of milk bottles in use Safety lock the door to the sterilization process took place in a state where the UV light can not open the door. For the writer had the idea to create a tool with the title "Armed milk storage heater and microcontroller-based UV Sterilization AT89s51 ".

Use of this tool is very easy is to press the power button on / off the flame on the instrument, then the timing UV finished press the start button then the sterile process will take place and the safety work lockpun participate in a state where the door closed during the process of sterile place. After the completion process sterile milk will go into storage, if you want to give your baby the milk is heated first in milk by heating setting temperature of 36 ° C-37 ° C.

Based on the results of measurements on the instrument can be concluded that the process of heating milk to have error rates (% error) and uncertainty in data retrieval of five times at a temperature of 36 ° C 0.5%, uncertainty (Ua) of 0.2 or 20%, whereas suhu37 ° C for 0.59%, uncertainty (Ua) of 0.2 or 20%. When compared with the previous tool by pengukuran Riswan which have error rates (% error) to a temperature of 36 ° C \pm 2.22% and the uncertainty (Ua) of \pm 0.24 or 24%, to 37 ° C temperature error rates (% error) for \pm 1.35% and the uncertainty (Ua) of \pm 0.25 or 25%, seen from the comparison of measurements between instruments made by the author before the Riswan tool can be concluded that this tool is still suitable to be used. Used for sterilization and safety door lock that functions so that users will be safer because the door remained closed at the time of UV light on.

This tool uses AT89S51 microcontroller as the main controller. Thus, by using AT89S51 Microcontroller can make various kinds of medical equipment. It is expected that the tool can help and facilitate the mothers who are unable to provide breast milk exclusively to her baby.

Keywords: Heating milk to a temperature range of 36 ° C-37 ° C, AT89s51 microcontroller.