

Some baths have fixed thermometers to check the temperature but instead of all the safety measures for temperature regulation, the temp. of wax must be checked by therapist.

Mode of action of paraffin wax heating :-

Skin temp. above  $45^{\circ}\text{C}$  can lead to damage but it is possible to put the hand comfortably in a bath at approx<sup>imate</sup>  $50^{\circ}\text{C}$ . This is because-

1. The specific heat of paraffin wax is about  $0.72\text{ kJ/kg}^{\circ}\text{C}$  or less with added mineral oil and therefore much lower than that of water  $4.2\text{ kJ/kg}^{\circ}\text{C}$ .

Thermal conductivity of wax is low so first coating of wax acts to insulate the skin from hotter surrounding wax coating. So the amount of heat delivered can be adjusted by increasing or decreasing.

Some air may be trapped between the solidifying wax and the skin adding to insulating effect.

Transmission of heat energy to the tissues:

The wax transmits heat energy to the tissues by giving up energy as it solidifies - the latent heat of fusion.

The temperature of thin layer of wax on the tissues falls quite quickly on its outside surface, the low thermal conductivity prevents much heat loss from the skin surface so the net effect of wax treatment is to provide low temp. heating of the part.

Methods of Application:

1. Dip and rap or glove and pack method:

This method can only be used for extremities hand, wrist, ankle and feet.

Preparation of <sup>patient</sup> part:

→ The patient is well positioned according to the part to be treated and inspected for any contraindications.

Preparation of apparatus:

The temperature of the wax is checked and kept constant by thermostatic knob.

Preparation of part:

The part is dried to prevent the water being introduced in the wax bath.

Explanation to the patient:

The nature of wax treatment should be explained to the patient.