EXPERIMENT #2
Cooling of Glycerine

OBJECTIVE
Determine the transient temperature of a system of hot glycerine cooled by convection.

MATERIALS NEEDED
• Styrofoam Insulator
• 250 mL beaker
• Hot Plate
• 250 mL glycerine (approximately)
• Thermometer (-20 to 110 °C)
• Ruler
• Tongs
• Stopwatch
• 18" stand and ring
• 12" length of string

PROCEDURE
1. Preliminary Measurements:
   a. Measure the diameter of the beaker to determine the area.
   b. Weigh the clean, empty beaker to the nearest gram. Fill the beaker with glycerine and weigh again to determine the mass of glycerine used.
   c. Record the room temperature.
2. Heat the glycerine to 70 to 80°C using the hot plate.
3. Use the tongs to transfer the beaker of glycerine to the styrofoam insulator.
4. Suspend the thermometer in the glycerine approximately 1" from the bottom of the beaker using the ring stand and string. The thermometer must stay at the same level throughout the experiment.
5. Record the temperature of the glycerine at appropriate time intervals for a certain time period. (e.g. every three minutes for ninety minutes.)
6. The glycerine should be returned to the original container to be reused. Clean and return supplies.