

Temperature measurement.



E i M A S

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Introduction to temperature.

What is temperature?



Measurement of temperature.

- ◆ Primary instrument is NIST traceable glass mercury thermometer.
- ◆ Also available – alcohol based glass thermometer.
- ◆ Disadvantage – usually low scale of temperature (if large scale, glass thermometer sizes too long), easily breaks & mercuric strain breaks when shocked.



Measurement of temperature.

- ◆ Alternative instrument – electronic thermometer or stainless steel spring thermometer at selective industries i.e. food processing & boiler – cooling water.
- ◆ disadvantage – needs periodical calibration.
- ◆ Advantages – practical for site and continuous usage, easy storage & robust, wider scale of temperature.



Temperature influences in various parameters.

- ◆ Increases of temperature will:
 1. decreases dissolved oxygen in water.
 2. increases conductivity and pH values.

- ◆ Sources of thermal pollution comes from:
 1. Nuclear or power plant.
 2. Food industry.
 3. Cooling systems.



Temperature compensation in analytical instruments.

- ◆ Most of the electrochemistry analytical instruments have temperature compensation system.
- ◆ To recalculate the effects of temperature to measured parameters.
- ◆ User needs to counter check the temperature compensation system in an analytical instrument from time to time.