



Instrument Description

Sub Folder: Physical Analysis



Hydrometer

Principle:

Hydrometer is an instrument used for measuring specific gravity of a sample. It operates based on the principle of Archimedes (a solid suspended in a fluid is buoyed by a force equal to the weight of the fluid displaced by the submerged part of the suspended solid). The lower the density of the fluid, the deeper a hydrometer of a given weight sinks; the stem is calibrated to give a numerical reading.

Current model:



Figure: Hydrometer

Video: <https://www.youtube.com/watch?v=t9XAiRbL7t4>

The instrument consists of a weighted, sealed, long-necked glass bulb that is immersed in the liquid being tested. The depth of flotation gives an indication of liquid density, and the neck can be calibrated to read specific gravity and other some other related properties.

Typical samples:

Samples which are tested by hydrometer are generally liquids, kerosene, gasoline, alcohol, brine, acids etc.

Standards:

Samples can be accessed in accordance with the other standards such as: ASTM E100 – 19, ASTM D7928 – 17, ASTM E126 – 19, ASTM D891 – 18 etc.

Contact: Dr Brendan Duffy, brendan.duffy@tudublin.ie, +353-1-220-6907