

Standard Operating Procedure (SOP) 3.1.3.3

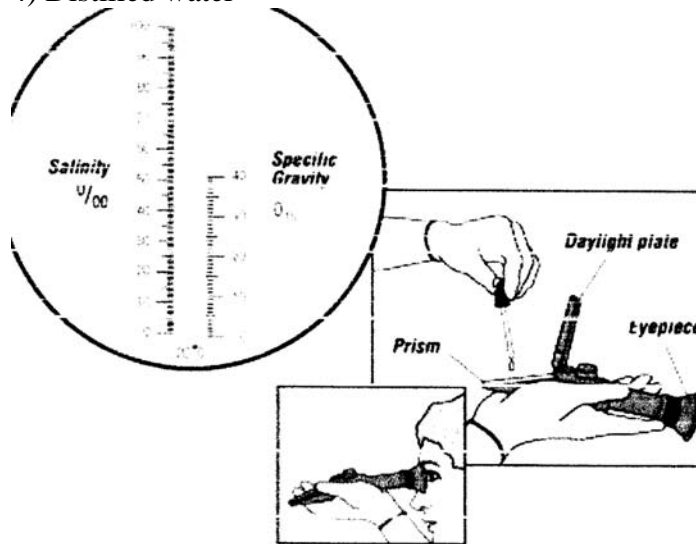
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Measuring Salinity with a Refractometer

Refractometers are used to measure substances dissolved in water, using the principle of light refraction through liquids, refractivity. The more dissolved solids in water, the slower light travels through it. Refractometers measure the change in the direction of light as it passes from air into water. Salinity and temperature both affect the index. Refractometers use a scale to quantify the effect that dissolved solids in water have on light.

Equipment

- 1) Refractometer
- 2) Dropper
- 3) Lens tissue
- 4) Distilled water



Measuring salinity with a refractometer

- 1) Lift the lid that protects the refractometer's specially angled lens.
- 2) Place a few drops of your sample liquid on the angled lens, and close the lid.
- 3) Peer through the eyepiece.
- 4) Results appear along a scale within the eyepiece. Most refractometers display Specific gravity and parts per thousand (ppt).
- 5) Record the measurement on your data sheet.
- 6) Rinse the lens with a few drops of distilled water, and pat dry, being very careful to not scratch the lens' surface.

Tip: Be very cautious not to get sand on your refractometer.

G.L.O.B.E. 1997 Teachers Manual

Green, L. 1998. "Let Us Go Down to the Sea—How Monitoring Changes from River to Estuary." *The Volunteer Monitor* 10(2): 1-3.

U.S. Environmental Protection Agency (USEPA). 1997. *Volunteer Stream Monitoring: A Methods Manual*. EPA 841-B-97-003. Office of Water, Washington, DC. 211 pp.

Images: <http://www.epa.gov/owow/estuaries/monitor/chptr14.html>