

## Physical Properties of Sea Water

1. Highest specific heat of all liquids except ammonia (store house of heat)

2. Temperature ranges if sea is much less than land

Sea: 29 F to 80 F (usual range)

Land: -60 to -70 to 120 F Ranges

Sea: (IF day might temperature difference)

Freezing Point - not definite

-4 C usually will freeze or 28.4 degrees F

Depends upon salinity & pressure

Role of Rock salt on winter salt

Reversing thermometer -

Negetti + Zanbra (Br) 1874: Allows for temperature at different depths

Reichert (German)

(Mercury readout)

Must be protected against pressure: Deformation

Thermograph (fixed) vs. Bathy Thermograph

Bathy thermograph (toward): towed - glass plate - torpedo shaped

Viscosity: ability to flow - Stokes Law - medium, shape, density of sea water, gravity

Sea H<sub>2</sub>O greater than the fresh H<sub>2</sub>O

Eddy vs. laminar flow

Density - eggs float in ocean very few sink or attach to rock

Rate of Sinking inversely proportioned to viscosity but directly proportion to specific

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gravity of body & medium (Stokes law)

**Sampling & Analysis:**

1. H<sub>2</sub>O Bottle - series in line trip & fill by weight stoppered - Van Dom & Nansen

Bottle

2. Titration: sample & scale on a bottle for farther use - Silver Nitrate reaction

3. Test salinity by density a conductivity or refraction index - Sigmat - Temperature sensitive

Composition of Sea H<sub>2</sub>O Xtra with AgNO<sub>3</sub>

K chromate indicator

Salinity as function of chlorinity

(g per Kg)

(X 1.805 + add 0.03)

Density - mass per unit volume

(g per cc @ 4 C)

If reference to distilled H<sub>2</sub>O @ 4 C

Specific gravity

