

Experiment 13 Worksheet: Hard Vs. Soft: How Do You Like Your Water?

Purpose: (A statement should be made here regarding what your experiment is designed to accomplish.)

Procedure: (Describe here how you went about completing your experiment. Use enough detail that someone could repeat it, if necessary. Also reference any books or manual you may have used to assist you.)

Data: (Note: in the following tables, D = distilled water, T = tap water, W = well water and H = artificial hard water.)

Describe the appearance of the watch glasses for D and T. Give the reason for any differences.

(Complete the Table using experimental results)

Reagent	Water	Appearance	Reaction Equation
BaCl ₂	D		
	T		
	W		
	H		

AgNO ₃	D		
	T		
	W		
	H		
(NH ₄) ₂ C ₂ O ₄	D		
	T		
	W		
	H		

Record mL of soap/detergent needed to form persistent foam.

Soap: D = _____ mL T = _____ mL

Detg: D = _____ mL T = _____ mL

Reason for differences:

Record mL of soap solution used to form a foam after water has been treated with the reagent.

Na₂CO₃ : D = _____ mL T = _____ mL

Na₂B₄O₇: D = _____ mL T = _____ mL

Which is the more effective softener?
