

**Part 1: Data and results. Complete the given tables.**

1. Write the balanced chemical reaction for the preparation of soap, the saponification reaction.

Data soap

**Preparation of Soap. Include appropriate significant figures and units.**

1	Mass of Deionized water	38 g
2	Mass of Sodium hydroxide	12.3 g
3	Mass of Lard	45 g
4	Mass of Sunflower oil	36.21 g
5	Mass of Castor oil	10.10 g
6	Mass of Beeswax	8.89 g
7	Total Mass of Ingredients in Soap {L1}+{L2}+{L3}+{L4}+{L5}+{L6}	150.6 g
	Mass of Cured Soap	<del>150.1 g</del> 132.48 g
	Color of Cured Soap	light yellow
	Physical State of Cured Soap (solid, liquid, or gas)	Solid.

**Test of Effectiveness of Surfactants in Hard and Soft Water**

Surfactant	Amount of Foaming of Unadulterated Surfactant	Amount of Foaming following addition of CaCl <sub>2</sub> (hard water)	Amount of Foaming following addition of Na <sub>3</sub> PO <sub>4</sub> (soft water)
Dove	Least	Least	Most
Irish Spring	Second	Most	Least
Your Prepared Soap	Most	Most	Most

**pH Test**

Surfactant	Color of pH Indicator Paper	pH Value	Classification (acidic, basic, or neutral)
Dove	Blue/Purple		
Irish Spring	Blue/Purple		
Your Prepared Soap	" "		
Deionized Water	" "		

Complete next page as well.

Part 1: Data and Results

Preparation of Lotion. Include appropriate units.

1	Mass of Deionized water		41.61g
2	Mass of Sunflower oil		9.00g
3	Mass of Glycerin	43.22	0.61g
4	Mass of Stearic acid	46.23	3.01g
5	Mass of Emulsifying wax	52.43	6.2g
6	Mass of Germaben II		0.37g
7	Total Mass of Ingredients in Lotion {L1}+{L2}+{L3}+{L4}+{L5}+{L6}		52.80g
8	Mass of Prepared Lotion and Bottle		62.15g
9	Mass of Empty Bottle		9.35g
10	Mass of Prepared Lotion {L8}-{L9}		
11	Color of Prepared Lotion		
12	Physical State of Prepared Lotion (solid, liquid, or gas)		

Conductivity tests on different lotions and deionized water.

Item	Red LED	Green LED	Degree of Conductivity	Electrolyte Strength	Emulsion Type
13	✓	X	+ weak	Data lotion	
14	✓	X	+ weak		
15	✓	X	++ moderate		
16	✓	X	weak		
17					

pH of different lotions, deionized water, and your skin.

Item	Color of pHHydriion Paper	pH Value	Classification (acidic, basic, or neutral)
18	Yellow	5	pH < 7 is acidic pH > 7 is basic ex: pH = 9 is basic
19	yellow	5	
20	yellow	5	
21	Yellow/Green	5.5	
22	Green	6	
23	Your Prepared Lotion		

Complete the next page as well.