

Name _____	Lab Partner _____
TA Name _____	Section _____ Date _____

Reaction Stoichiometry Worksheet

As you work through the steps in the lab procedures, record your experimental values and the results on this worksheet.

Table A: Stock solution concentrations of HCl, H₃PO₄ and NaOH

[HCl]	M	[H ₃ PO ₄]	M	[NaOH]	M
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1. Show your calculation for the mmol of base and the mmol of acid in mixing experiment 1. Use the same technique for experiments 2-6.

Table B: Temperature data for combinations of NaOH and HCl

Expt #	mL NaOH	mmol NaOH	mL H ₂ O	mL HCl	mmol HCl	Initial T, °C	Final T, °C	ΔT, °C
1	20.		20.	10.				
2	20.		10.	20.				
3	20.		0	30.				

Table C: Temperature data for combinations of NaOH and H₃PO₄

Expt #	mL NaOH	mmol NaOH	mL H ₂ O	mL H ₃ PO ₄	mmol H ₃ PO ₄	Initial T, °C	Final T, °C	ΔT, °C
4	15		30.	15				
5	30.		15	15				
6	45		0	15				

2. Construct a reaction table in millimoles for experiment 1.

	HCl(aq)	+	NaOH(aq)	→	NaCl(aq)	+	H ₂ O (l)
initial							--
change(Δ)							--
final							--

3. What is the limiting reagent in mixing experiment 1?

4. Which experiments from 1-3 have the same change in temperature?

5. For the experiments from 1-3 with the same temperature change, what other parameters are the same? Select all that apply.

mmol HCl total mL solution
mmol NaOH initial concentration of NaOH
mL H₂O initial concentration of HCl