

Equilibrium Experiment---be sure to watch significant figures on all measurements and calculations

Set number _____

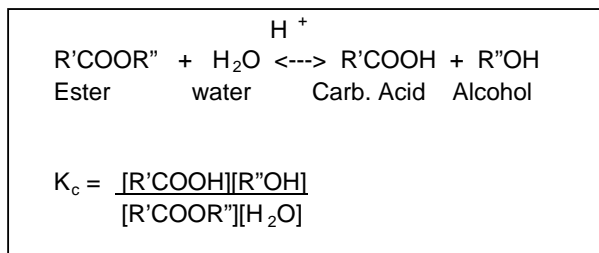
Density of Alcohol = _____ molar mass of alcohol = _____

Density of ester = _____ molar mass of ester = _____

ca. Density of HCl(aq) = _____ Density of water = _____

INITIAL VALUES

	~3M HCl	ca. mol HCl	mass HCl	mass H ₂ O	mol H ₂ O	Added	ca. mole	total mol	Ester	ca. mol	alcohol	ca. mol
Bot #	mL	from titration	g	in HCl (g)	in HCl	H ₂ O mL	added H ₂ O	H ₂ O	mL	ester	mL	alcohol
1a	5					5			0		0	
1b	5					5			0		0	
2	5					0			5		0	
3	5					1			4		0	
4	5					3			2		0	
5	5					2			2		1	



Note: When titrating bottles 1a and 1b, only the HCl is being titrated. The average moles of HCl found in these two bottles is used as the number of moles of HCl in bottles 2-5.

When titrating bottles 2-5, both the HCl and the carboxylic acid formed are titrated, so the moles of HCl must be subtracted from the total moles of acid to determine the moles of carboxylic acid formed.

Equilibrium Values

	total	ca. mole					
	mol acid	Carboxylic acid	ca. mol	Total	Moles	Moles	****Kc
	(titration)	formed	Alcohol	mol	Ester	H ₂ O	values
Bot #		(from titration)	(formed)	alcohol	remaining	remaining	
1a		0	0	0	0	0	N A
1b		0	0	0	0	0	N A
2							
3							
4							
5						**	
****Be sure to use Molarity in [] for Kc expression							Avg.=