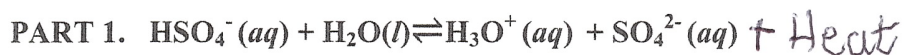


Lab VII DATA SHEET

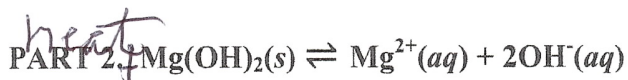
NAMES: _____

SECTION: _____



1. What is the initial color of the mixtures in wells A-1, A-2, A-3, A-4, A-5?
2. (a) Predict the **direction** in which the equilibrium should shift when you add Na_2SO_4 solution to the mixture in well A-2. _____
(b) What color change is associated with your prediction in part (a) of this question?
3. What color change did you observe when you added Na_2SO_4 solution to well A-2? *predict*
4. (a) Predict the **direction** in which the equilibrium should shift when you add solid NaHSO_4 to the mixture in well A-3. _____
(b) What color change is associated with your prediction in part (a) of this question?
5. What color change did you observe as you added solid NaHSO_4 to well A-3? *predict*
6. What color change did you observe when you heated the mixture from well A-4 in the hot-water bath? *would* (Base your answer on where I placed heat in Ren)
7. What color change did you observe when you cooled the mixture from well A-5 in the ice-water bath? *would* Same basis as #6
8. What color change did you observe when you cooled the pipet containing the heated mixture from well A-4 in the ice-water bath? Same basis as #6
9. What color change did you observe when you heated the cooled mixture from well A-5 in the hot-water bath? Same as #6
10. Based on your observations of heating and cooling the mixtures in wells A-4 and A-5 is the FORWARD reaction for the HSO_4^- ion equilibrium endothermic or exothermic?
11. Write the equation for the reaction with the heat included on the appropriate side.

NAMES: _____ SECTION: _____



12. What is the initial color and appearance of the mixtures in well B-1 and B-2? If a precipitate (or cloudiness) is present, note that fact, as well as the color.

B1 - Clear B2 - Pink

13. (a) Predict the **direction** the equilibrium should shift when you add the concentrated HCl to the solution in well B-1. _____

(b) What observable change(s) is/are associated with your prediction in part (a) of this question?

14. What color change *Should* did you observe after you added the concentrated HCl to well B-1? Was there a change in the amount of precipitate or cloudiness?

15. What is the initial color and appearance of the mixtures in wells B-2 and B-3? If a precipitate (or cloudiness) is present, note that fact and the color of the precipitate.

Pink would

16. What color change did you observe when you heated the mixture from well B-2?

17. What color change *would* did you observe when you cooled the mixture from well B-3?

18. What color change *would* did you observe when you cooled the pipet containing the heated mixture from well B-2?

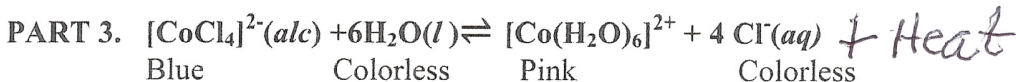
19. What color change *would* did you observe when you heated the pipet containing the cooled mixture from well-B-3?

20. Based on your observations of heating and cooling the mixture, is the FORWARD reaction endothermic or exothermic?

21. Write the equation for the reaction with the heat on the appropriate side.

Lab VII DATA SHEET

NAMES: _____ SECTION: _____



22. What is the initial color of the mixture in well C-1? ~~clear~~ clear
23. (a) Predict the **direction** in which the equilibrium should shift when you add water to the mixture in well C-2? _____ (b) What color change is associated with your prediction in part (a) of this question?
24. What color change did you observe when you added water to the mixture in well C-2?
25. (a) Predict the **direction** in which the equilibrium should shift when you add concentrated HCl to the mixture in well C-2. _____ (b) What color change is associated with your prediction in part (a) of this question?
26. What color change did you observe when you added concentrated HCl to the mixture in well C-2?
27. (a) Predict the **direction** in which the equilibrium should shift when you add AgNO₃ solution to the mixture in well C-2. _____ (b) What color change or cloudiness change is associated with your prediction in part (a) of this question?
28. What color change or cloudiness change ~~did~~ ^{would} you observe when you added 0.1 M AgNO₃ solution to the mixture in well C-2?
29. What color change ~~did~~ ^{would} you observe ~~when~~ ^{if} you added water to the mixture in well C-3?
30. What color change ~~did~~ ^{would} you observe ~~when~~ ^{if} you heated the mixture from well C-3?
31. What color change ~~did~~ ^{would} you observe ~~when~~ ^{if} you cooled the mixture from well C-3?
32. Based on your observations of heating the mixture from well C-3, is the FORWARD reaction endothermic or exothermic?
33. Write the equation for the reaction with the heat on the appropriate side.