

Chem 10113, Quiz 3

October 3, 2018

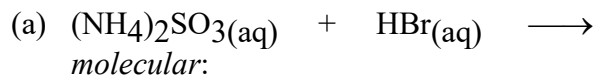
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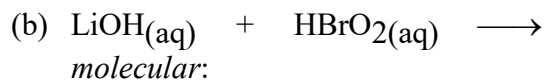
	IA (1)																VIIIA (18)	
1	1 H 1.0080	IIA (2)										III A (13)	IV A (14)	V A (15)	VIA (16)	VII A (17)	2 He 4.0026	
2	3 Li 6.9410	4 Be 9.0122										5 B 10.811	6 C 12.011	7 N 14.007	8 O 15.999	9 F 18.998	10 Ne 20.179	
3	11 Na 22.990	12 Mg 24.305	IIIB (3)	IVB (4)	VB (5)	VIB (6)	VII B (7)	VIII B (8)	VIII B (9)	VIII B (10)	IB (11)	IIB (12)	13 Al 26.982	14 Si 28.086	15 P 30.974	16 S 32.066	17 Cl 35.453	18 Ar 39.948
4	19 K 39.098	20 Ca 40.078	21 Sc 44.956	22 Ti 47.880	23 V 50.942	24 Cr 51.996	25 Mn 54.938	26 Fe 55.847	27 Co 58.933	28 Ni 58.690	29 Cu 63.546	30 Zn 65.380	31 Ga 69.723	32 Ge 72.610	33 As 74.922	34 Se 78.960	35 Br 79.904	36 Kr 83.800
5	37 Rb 85.468	38 Sr 87.620	39 Y 88.906	40 Zr 91.224	41 Nb 92.906	42 Mo 95.940	43 Tc 98.907	44 Ru 101.07	45 Rh 102.91	46 Pd 106.42	47 Ag 107.87	48 Cd 112.41	49 In 114.82	50 Sn 118.71	51 Sb 121.75	52 Te 127.60	53 I 126.90	54 Xe 131.29
6	55 Cs 132.91	56 Ba 137.33	57 La 138.91	72 Hf 178.49	73 Ta 180.95	74 W 183.85	75 Re 186.21	76 Os 190.20	77 Ir 192.22	78 Pt 195.09	79 Au 196.97	80 Hg 200.59	81 Tl 204.38	82 Pb 207.20	83 Bi 208.98	84 Po 208.98	85 At 209.99	86 Rn 222.02
7	87 Fr 223.02	88 Ra 226.03	89 Ac 227.03	104 Unq 261.11	105 Unp 262.11	106 Unh 263.12	107 Uns 262.12											

1. (2 points) I_2O_3 is the anhydride of _____. The anhydride of $Sr(OH)_2$ is _____.

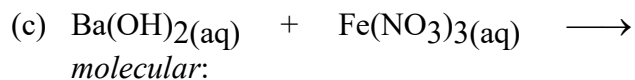
2. (9 points) For each of the following reactions, write **balanced chemical equations** for both the **molecular** and the **net ionic** equations. If no reaction occurs, write No Reaction. Use subscripts [(s), (aq), (g), etc.] to indicate the phase of each compound or ion.



net ionic:



net ionic:



net ionic:

3. (4 points) **SHOW ALL WORK.** Helium passes through a certain gas-separation membrane at the rate of 2.50 L per minute. Determine the volume (in Liters) of uranium hexafluoride (UF₆) gas that should pass through the same membrane in 12.0 hours. (molar mass: UF₆ = 352)
4. (2 points) Write a complete, *balanced chemical equation* to show how aziridine, (CH₂)₂NH, behaves when dissolved in water. (Use the proper type of arrow in your equation!)
5. (3 points) In the following balanced redox equation, write the oxidation number of *each* underlined atom in the blanks below the formulas. Also, *circle* the substance that is the *oxidizing agent*.
- $$26 \text{H}^+(\text{aq}) + 3 \text{H}_2\underline{\text{S}}(\text{g}) + 4 \underline{\text{Cr}}_2\underline{\text{O}}_7^{2-}(\text{aq}) \longrightarrow 3 \underline{\text{S}}\text{O}_4^{2-}(\text{aq}) + 8 \underline{\text{Cr}}^{3+}(\text{aq}) + 16 \text{H}_2\text{O}$$
- _____
6. (5 points) **SHOW ALL WORK.** Refer to the balanced chemical equation in question 5 above. Determine the volume (in mL) of H₂S gas, measured at 22.0 °C and 735 torr, that is required to react completely with 150.0 mL of 0.0725 M K₂Cr₂O₇ solution.