Solubility Constants Calculations

from http://www.sci.tamucc.edu/pals/morvant/genchem2/ppsolubility.html

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1. Write the balanced chemical equations describing the dissolving of the following solids in water. Write the expression for K_{sp} for each process.

a) $PbBr_2$ (s)

b) Ag_2S (s)

c) $PbCO_3$ (s)

d) $Sr_3(PO_4)_2$ (s)

2. Zinc carbonate, $ZnCO_3$ (s), dissolves in water to give a solution that is 1.7×10^{-5} M at 22 C. Calculate the Ksp for $ZnCO_3$ (s) at this temperature.

3. The solubility product constant, K_{sp}, for copper(II) chromate is approximately 3.8×10^{-6} at room temperature. Calculate the solubility of $CuCrO_4$ in moles per liter under these conditions.

4. Lead(II) chloride, $PbCl_2$ (s), dissolves in water to the extent of approximately 3.6×10^{-2} M at 20 C. Calculate the K_{sp} for $PbCl_2$ (s), and calculate its solubility in grams per liter.

5. The solubility of silver carbonate is 0.032 M at 20 C. Calculate the Ksp of silver carbonate.

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1.9×10^{-4} 1.3×10^{-4} 2.9×10^{-10} 1.9×10^{-3}M 2.3×10^{-5}M 10.g/l 2.7×10^{-11} 7.2g/l