

If solid NaCl is added to a saturated water solution of PbCl<sub>2</sub> at 20o C, a precipitate is formed. How would this affect the value of the K<sub>sp</sub> for [Pb<sup>2+</sup>][Cl<sup>-</sup>] in solution?

**Solution:** In the solution, lead chloride dissociates according to the following scheme:

$\text{PbCl}_2 \leftrightarrow \text{Pb}^{2+} + 2\text{Cl}^-$ , a solubility product value will be written:  $K_{sp} = [\text{Pb}^{2+}] \times [\text{Cl}^-]^2$ . This value remains constant at the set temperature. Therefore, by adding a stronger electrolyte with the eponymous ion (in this case it will be chloride ion), we change the concentration of ion and solubility, but the product of solubility remains constant.

**Answer:** does not affect.

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