Answer on question #74882

Since the solution is already 0.10 M in F-1 ions, we must make an addition to our equilibrium

concentrations.

BaF2(aq) = Ba+2(aq) + 2 F-1(aq)

"x" "2x + 0.10 "

(at equilibrium)

Ksp = [Ba+2][F-1]2

Because BaF2 is only slightly soluble, you might expect "2x" to be negligible compared to 0.10. In that case

(2x + 0.10) (X ) and substituting into the Ksp expression, we get

1.0 x 10-6 = (x) (0.10)2

solving for x, we get: x = 1.0 x 10-2 M

the solubility of Baf2 is 1.0×10-2 M in Naf solution
the solubility of Baf2 in pure water is
Ksp = [Ba+2][F-1]2

1.0 x 10-6 = (x) (2x)2 = 4x3

solving for x, we get: x = 6.30 x 10-3 M

Solubility of Baf2 in water is 6.30×10-3M