

Quiz 15.1 – Molar Solubility

Name: _____

Question 1

Use the K_{sp} values in Appendix J of your textbook to find the molar solubility of the following ionic compounds:

- MnS
- $\text{Mg}(\text{OH})_2$
- $\text{Ba}_3(\text{PO}_4)_2$

Question 2

Use the given molar solubilities to find the K_{sp} for the following ionic compounds (Do not use Appendix J!)

- $\text{CaSO}_4 : 7.02 \times 10^{-3} M$
- $\text{PbI}_2 : 1.35 \times 10^{-3} M$
- $\text{Al}(\text{OH})_3 : 3.61 \times 10^{-9}$

Question 3

The smallest K_{SP} value I've found so far is for SnS_2 , with $K_{sp} = 1 \times 10^{-70}$. This is a phenomenally small value. Calculate the volume of water required to dissolve just 10 formula units of SnS_2 .

Question 4

CdF_2 has a relatively high solubility ($K_{sp} = 6.44 \times 10^{-3}$). Calculate the molar solubility of CdF_2 in both pure water, and in a 0.5 M solution of NaF

For All We Have and Are

By Rudyard Kipling

1914

For all we have and are,
For all our children's fate,
Stand up and take the war.
The Hun is at the gate!
Our world has passed away,
In wantonness o'erthrown.
There is nothing left to-day
But steel and fire and stone!
Though all we knew depart,
The old Commandments stand:—
"In courage keep your heart,
In strength lift up your hand."

Once more we hear the word
That sickened earth of old:—
"No law except the Sword
Unsheathed and uncontrolled."
Once more it knits mankind,
Once more the nations go
To meet and break and bind
A crazed and driven foe.

Comfort, content, delight,
The ages' slow-bought gain,
They shrivelled in a night.
Only ourselves remain
To face the naked days
In silent fortitude,
Through perils and dismays
Renewed and re-renewed.
Though all we made depart,
The old Commandments stand:—
"In patience keep your heart,
In strength lift up your hand."

No easy hope or lies
Shall bring us to our goal,
But iron sacrifice
Of body, will, and soul.
There is but one task for all—
One life for each to give.
What stands if Freedom fall?
Who dies if England live?