Updated: 8 April 2020

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CEE 680: Water Chemistry

Lecture #41

Precipitation and Dissolution: Solubility of Mixed Solids

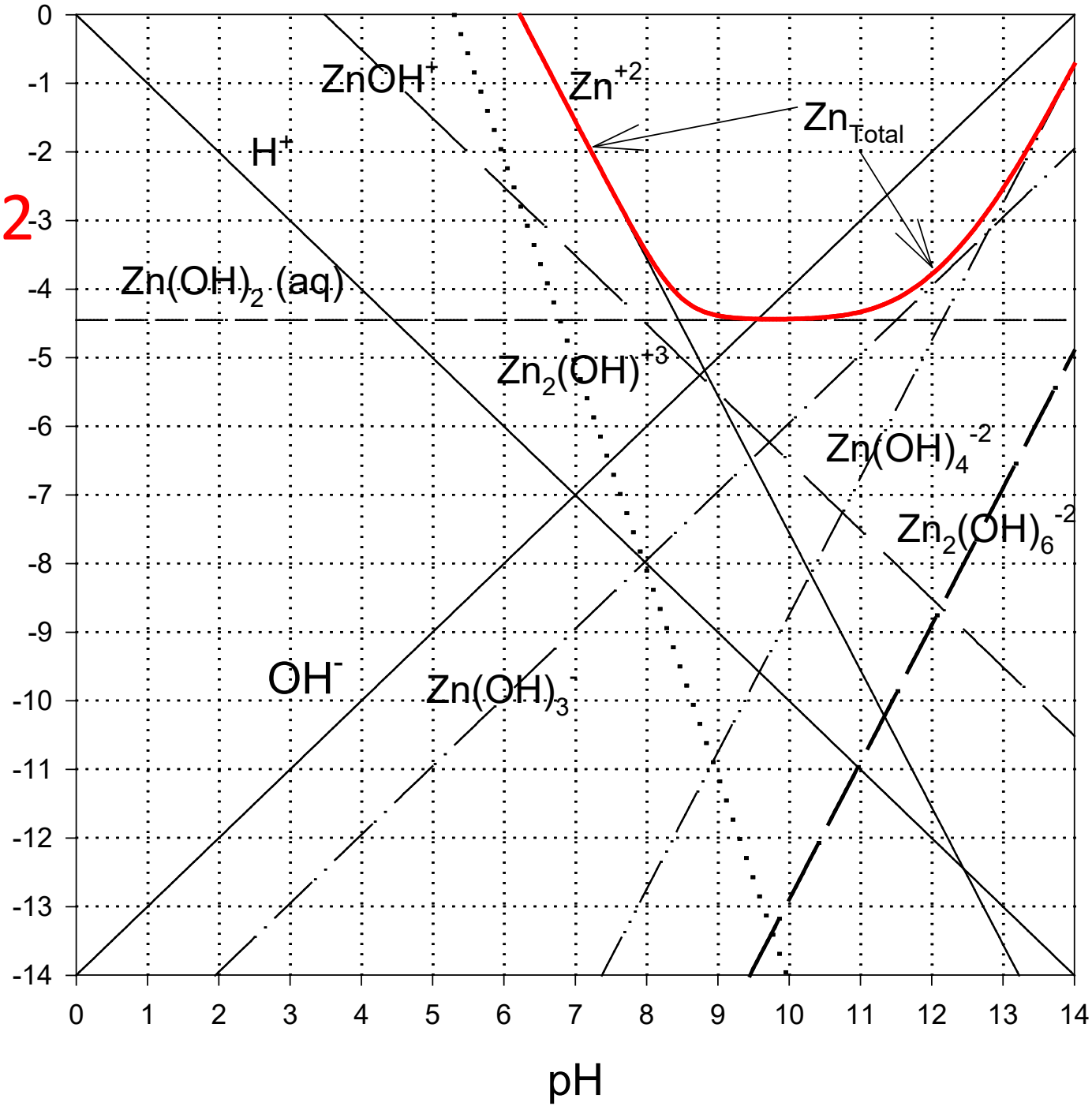
(Stumm & Morgan, Chapt.7)

Benjamin; Chapter 8.7-8.15

$Zn(OH)_2$

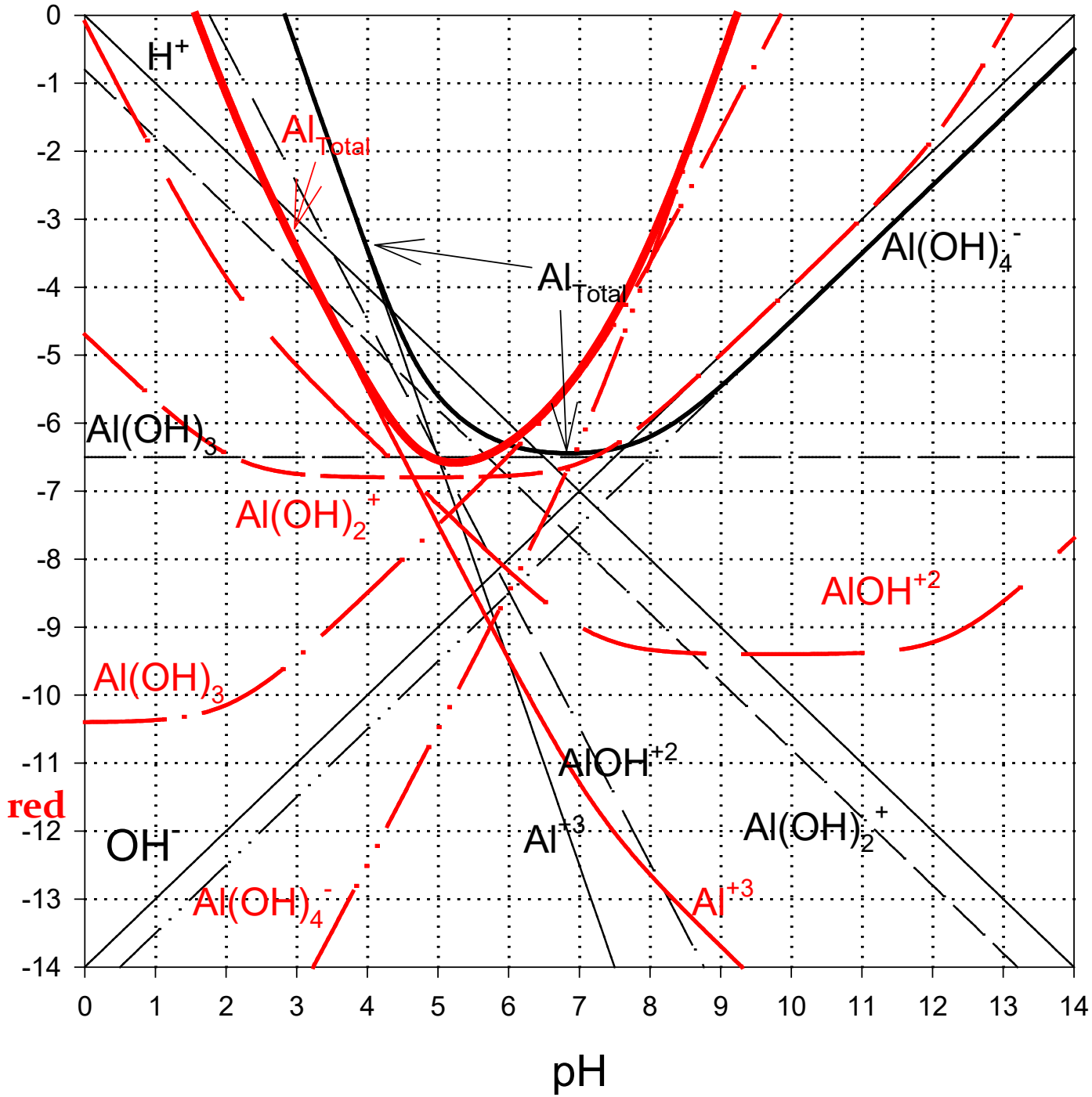
From Lecture #36

- Zn solubility
- Compare to Stumm & Morgan's fig. 6.8c, pg.273



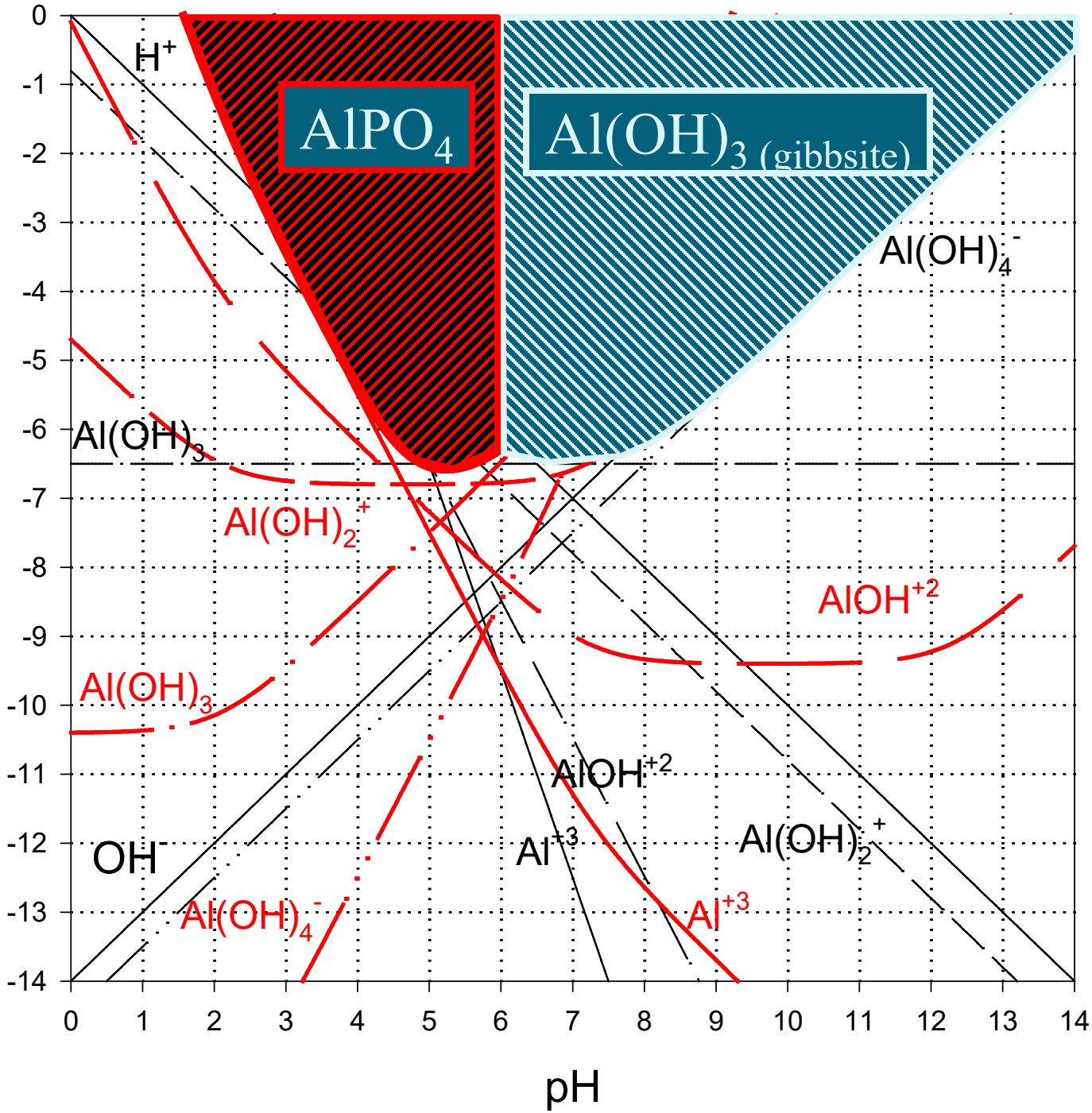
David Reckhow

- **Gibbsite**
- **0.0001 M total phosphate**
  - **Aluminum hydroxide in black**
  - **Aluminum phosphate in red**

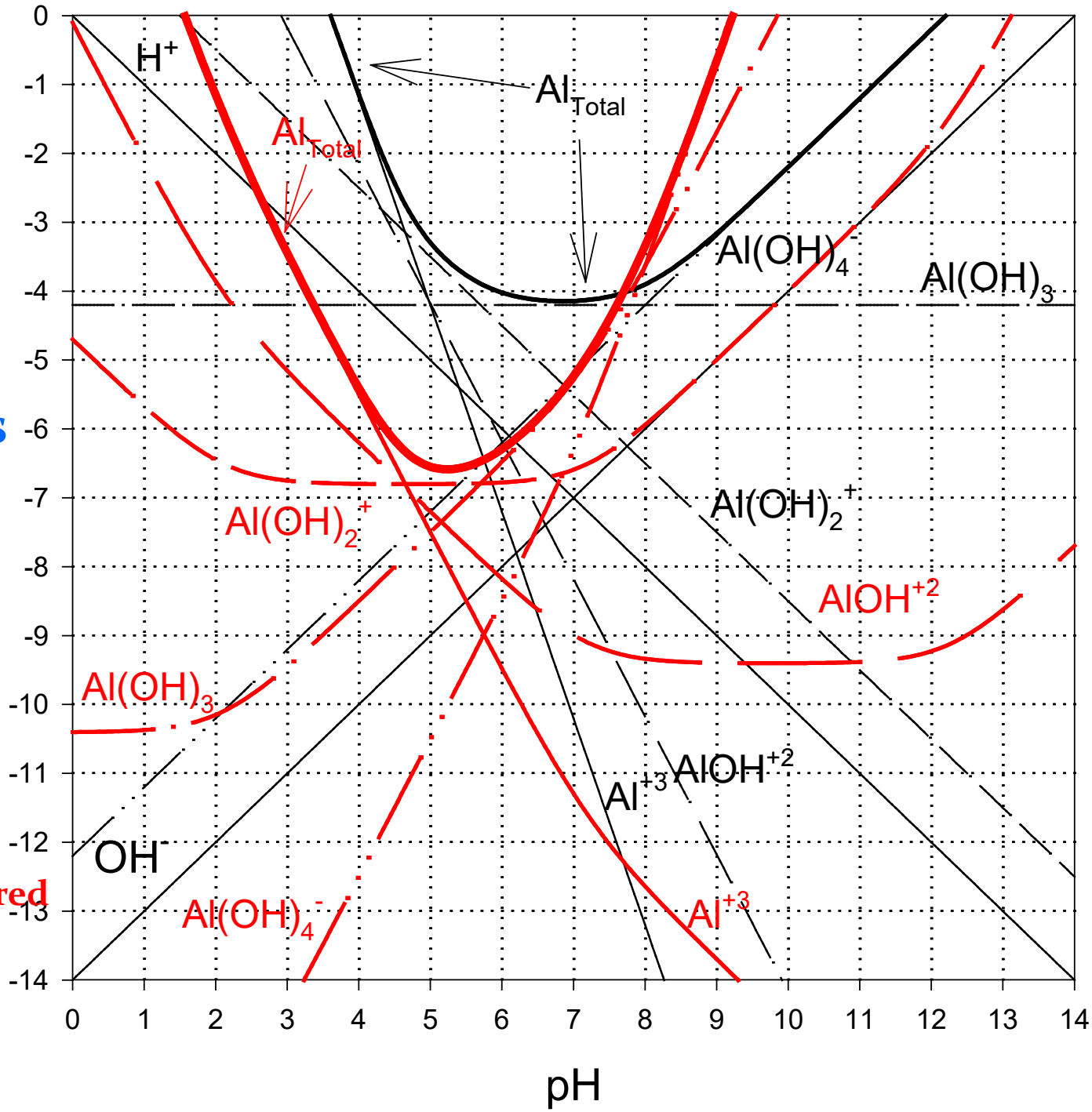


Similar to HW prob. 9.1, except that is for amorphous $Al(OH)_3$

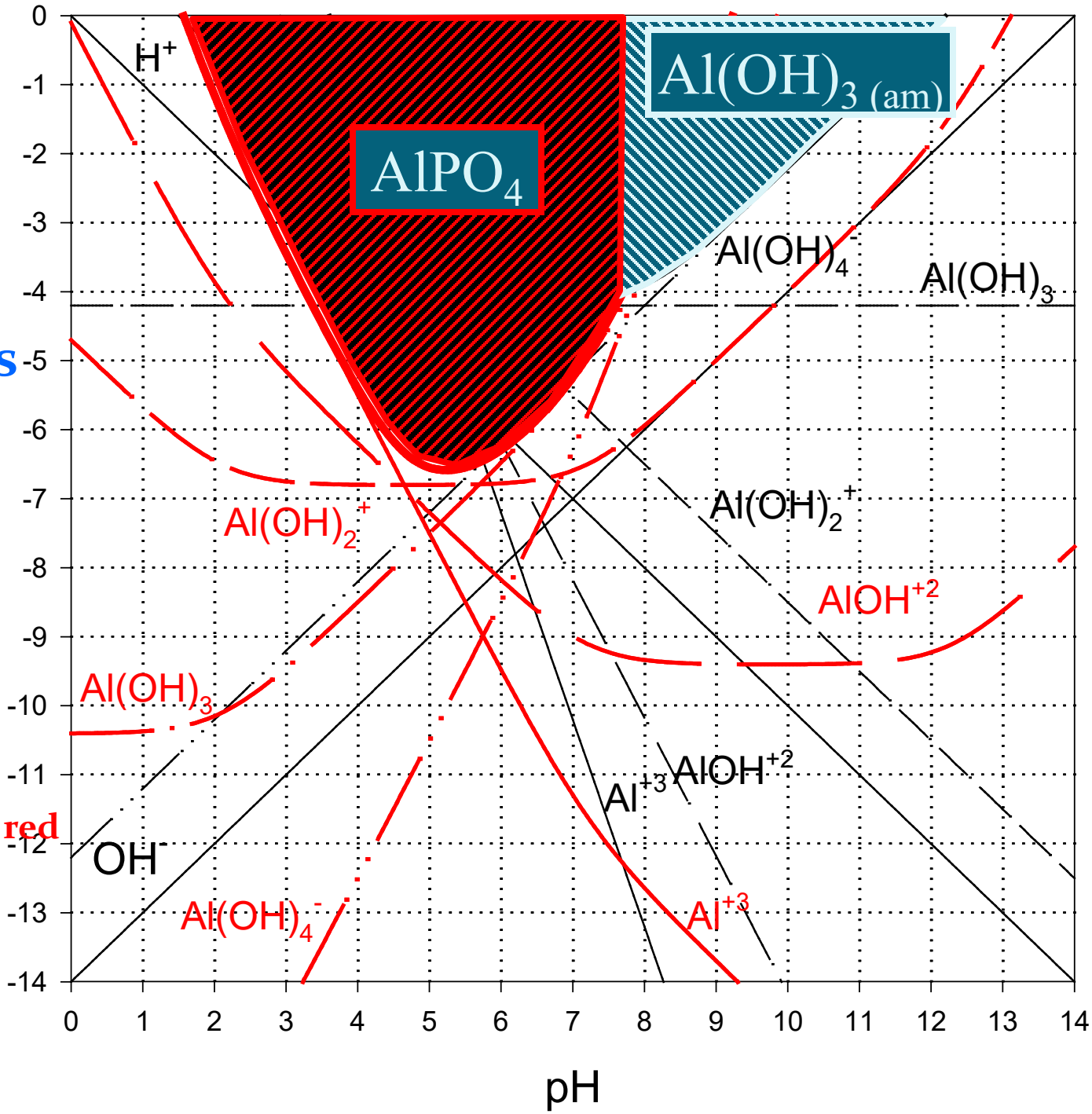
- **Gibbsite**
- **0.0001 M total phosphate**
  - **Aluminum hydroxide in black**
  - **Aluminum phosphate in red**

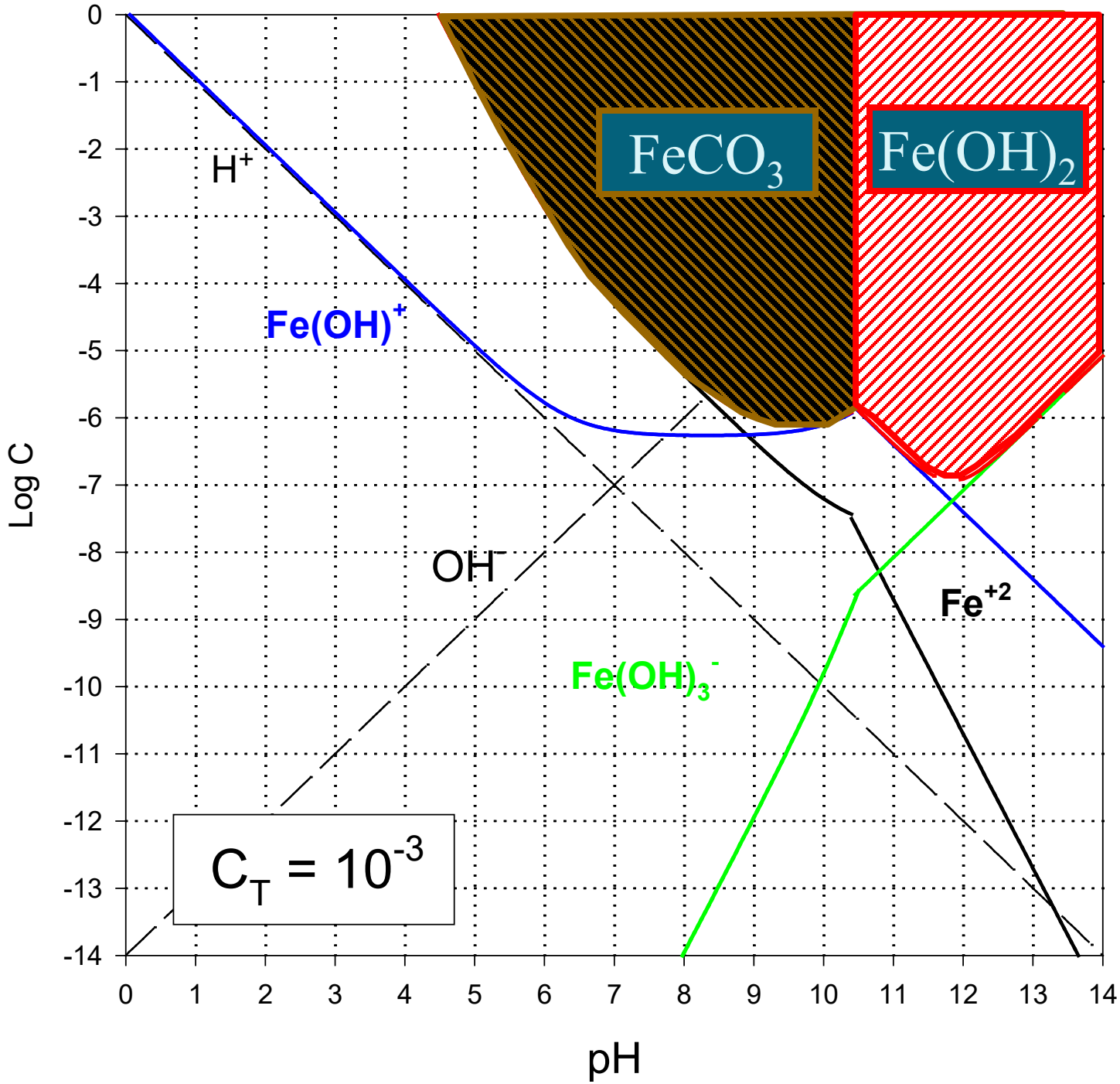


- Amorphous $Al(OH)_3$
- 0.0001 M total phosphate
  - Aluminum hydroxide in black
  - Aluminum phosphate in red

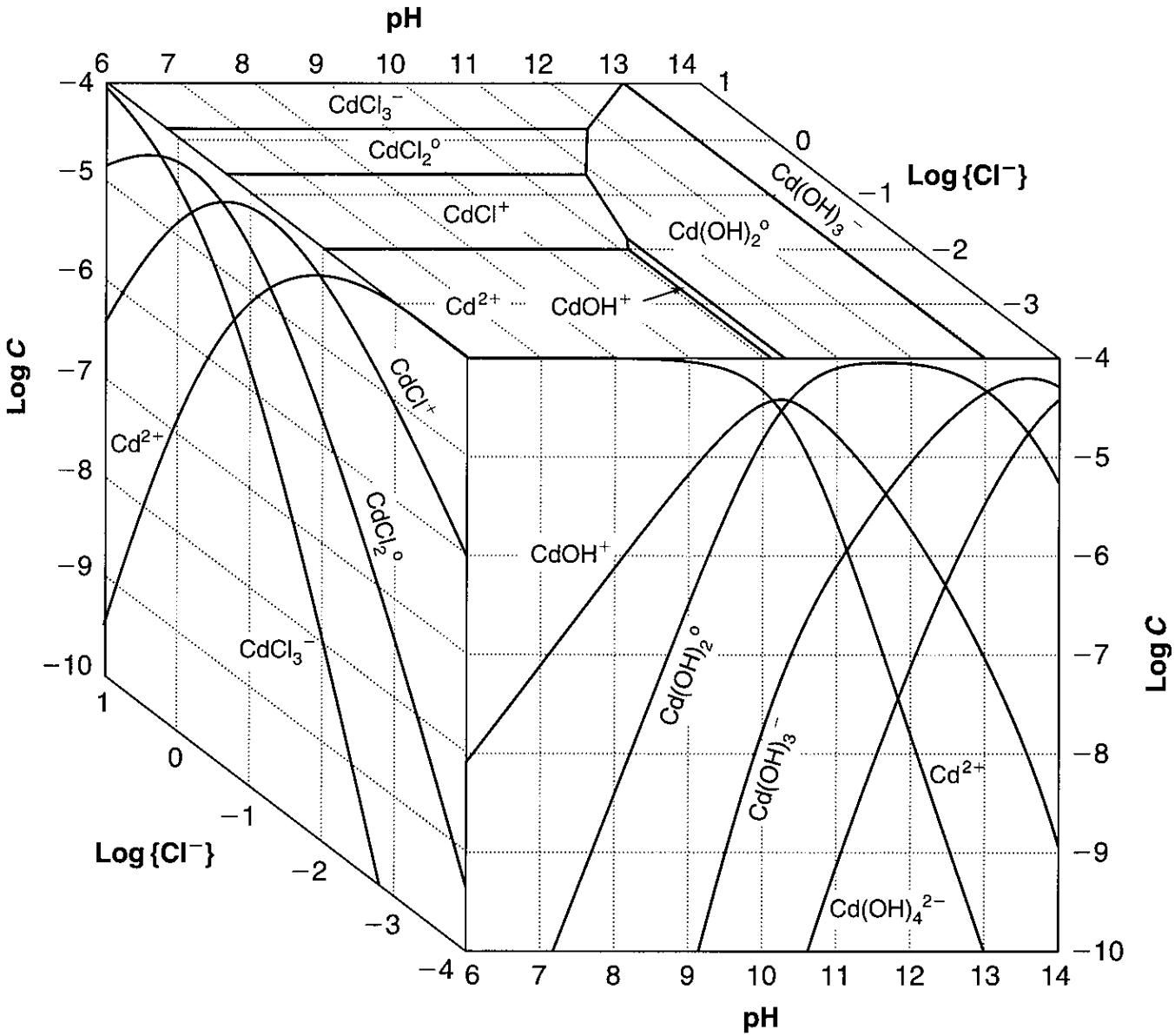


- Amorphous $Al(OH)_3$
- 0.0001 M total phosphate
  - Aluminum hydroxide in black
  - Aluminum phosphate in red




FeCO3
Fe(OH)2
H+
Fe(OH)+
OH-
Fe+2
Fe(OH)3-
CT = 10-3
Log C
pH
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-11
-12
-13
-14
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14

- Fig 8.7 in Benjamin



- To next lecture

Practice

- Prepare solubility diagrams separately for:
  - $Zn(OH)_2$
  - $ZnCO_3$
- Combine
- Others?
  - Mn, Pb, Cd