Solubility Rules Quiz PDF

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Which of the following compounds is always soluble in water?

- ◯ Silver chloride ($AgCl$)
- ◯ Sodium nitrate ($NaNO_3$)
- ◯ Calcium carbonate ($CaCO_3$)
- ◯ Lead sulfate ($PbSO_4$)

Discuss how solubility rules can be applied in qualitative chemical analysis.

Explain the significance of understanding solubility rules in industrial applications such as water treatment.

Why are alkali metal salts generally soluble in water? Provide a chemical explanation.

Which of the following sulfates are insoluble?

- [ ] Calcium sulfate ($CaSO_4$)
- [ ] Sodium sulfate (Na_2SO_4)
- [ ] Lead(II) sulfate ($PbSO_4$)
- [ ] Barium sulfate ($BaSO_4$)

Explain why most nitrates are soluble in water.

Which of the following compounds are generally soluble in water?

- [ ] Potassium chloride (KCl)
- [ ] Calcium carbonate ($CaCO_3$)
- [ ] Ammonium sulfate ($(NH_4)_2SO_4$)
- [ ] Silver nitrate ($AgNO_3$)

Which ion, when combined with any anions, will always form a soluble compound?

- ○ Ag^+
- ○ Pb^{2+}
- ○ NH_4^+
- ○ Hg_2^{2+}

Describe the role of solubility rules in predicting precipitation reactions.

List three exceptions to the solubility of sulfates and explain why they are exceptions.

Which halide is insoluble when combined with silver?

- ◯ Chloride (Cl^-)
- ◯ Bromide (Br^-)
- ◯ Iodide (I^-)
- ◯ Fluoride (F^-)

Which of the following hydroxides is slightly soluble in water?

- ◯ Sodium hydroxide (NaOH)
- ◯ Calcium hydroxide ($Ca(OH)_2$)
- ◯ Iron(III) hydroxide ($Fe(OH)_3$)
- ◯ Aluminum hydroxide ($Al(OH)_3$)

Which compound is insoluble in water?

- ◯ Ammonium chloride (NH_4Cl)
- ◯ Calcium phosphate ($Ca_3(PO_4)_2$)
- ◯ Potassium bromide (KBr)
- ◯ Magnesium sulfate ($MgSO_4$)

Which of the following is not a general solubility rule?

- ◯ All nitrates are soluble.
- ◯ All sulfates are soluble.
- ◯ All alkali metal salts are soluble.
- ◯ All carbonates are soluble.

Which of the following is an exception to the solubility of sulfates?

- ◯ Sodium sulfate (Na_2SO_4)
- ◯ Potassium sulfate (K_2SO_4)
- ◯ Barium sulfate ($BaSO_4$)
- ◯ Ammonium sulfate ($(NH_4)_2SO_4$)

Which ions typically form insoluble compounds?

- ☐ Ag^+
- ☐ Na^+
- ☐ CO_3^{2-}
- ☐ NO_3^-

Which of the following is a soluble compound?

- ◯ Lead(II) iodide (PbI_2)
- ◯ Barium sulfate ($BaSO_4$)
- ◯ Ammonium nitrate (NH_4NO_3)
- ◯ Silver bromide (AgBr)

Which compounds are exceptions to the solubility of chlorides?

- ☐ Silver chloride (AgCl)
- ☐ Sodium chloride (NaCl)
- ☐ Lead(II) chloride ($PbCl_2$)
- ☐ Mercury(I) chloride (Hg_2Cl_2)

Which compounds are typically insoluble in water?

- ☐ Barium carbonate ($BaCO_3$)
- ☐ Potassium sulfate (K_2SO_4)
- ☐ Magnesium phosphate ($Mg_3(PO_4)_2$)
- ☐ Ammonium chloride (NH_4Cl)

Which hydroxides are soluble or slightly soluble in water?

- [ ] Sodium hydroxide (NaOH)
- [ ] Potassium hydroxide (KOH)
- [ ] Calcium hydroxide ($Ca(OH)_2$)
- [ ] Iron(III) hydroxide ($Fe(OH)_3$)