

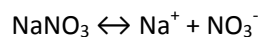
## **Answer on Question #40407 - Chemistry – Inorganic Chemistry**

### **Question**

Why silver chloride does not react with sodium nitrate?

### **Answer:**

Silver chloride (AgCl) and sodium nitrate (NaNO<sub>3</sub>) are ionic compounds. Ionic compounds react with each other only in solutions, mostly in aqueous solutions. But reactions in solutions occur only between ions produced by ionic compounds. If ionic compound is soluble, it dissociates and forms ions, e.g. for sodium nitrate:



If ionic compound is not soluble, it doesn't produce ions. Sodium nitrate is soluble, and it does form ions (the reaction above). Silver chloride is not soluble in water, it is solid, so it doesn't produce ions. That's why when we mix together two solutions of silver chloride and sodium nitrate, there is no reaction because resulting solution contains only sodium and nitrate ions, and these ions cannot react with solid silver chloride.