

## Solubility Rules

- Chorus: Solubility rules,  
They're really great,  
They help predict precipitates,  
What a marvelous tool!  
Solubility Rules.
- Verse 1: Alkali metal ions are really swell  
Assume their compounds are always soluble  
Those ions are hardly precipitators  
In reactions they're usually spectators.
- Verse 2: And that positive one ion,  $\text{NH}_4$ ,  
Its compounds are soluble for sure.  
And that negative one ion  $\text{NO}_3$ ,  
Nitrates are as soluble as can be.
- Verse 3: Of course we know one thing is always true,  
There are always exceptions to the rules.  
Sulfates are soluble it's said.  
'Cept with barium, strontium and lead (and a few others).
- Verse 4: Chlorides, bromides and iodides are soluble  
But there are some secrets I'm gonna tell.  
Working in the lab it's plain to see,  
They're insoluble with silver, lead and mercury.
- Verse 5: Many ions make precipitates  
Including phosphate, sulfide and carbonate.  
Except when paired with ammonium or alkali metal ions,  
Hey it's hard to make this simple but I'm trying
- Verse 6: So consider all the possibilities,  
And use the rules to guess the solubilities,  
The most important thing you must keep straight,  
The insoluble combinations precipitate.