

Answer on Question #44019 - Chemistry - Inorganic Chemistry

Question:

Why industrial usage of potassium hydroxide is 48% and if 100% is used, what is the effect of it?

Solution:

The effect of usage of solid potassium hydroxide (100%) instead of liquid solution (48%) of KOH is the following:

- High melting point (above 406°C) instead of -10°C for 48% solution. The solution can be transported into tanks or other vessels. Moreover, the dosage of solution is more precise than dosage of solid.
- High corrosion activity for pure KOH. If 48% solution is used, it can be stored into tanks made of carbon steel. If you store pure KOH into vessel made of carbon steel, it will cause very quick corrosion, especially while heating.
- 100% potassium hydroxide is very hygroscopic and quickly react with carbon dioxide from the air, therefore the composition of KOH is not stable, especially when it is stored in humid accommodations.
- Solid (100%) potassium hydroxide is more dangerous than its (48%) solution because of high activity, especially during contact with water or acids.