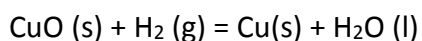


## Answer on Question #64176, Chemistry / General Chemistry

1. You have two sealed jars of water at the same temperature. In the first jar there is a large amount of water. In the second jar there is a small amount of water. Using 3 -4 sentences explain how the vapor pressure of water in the first jar compares with the vapor pressure of water in the second jar.

2. Using your knowledge of colligative properties explain whether sodium chloride or calcium chloride would be a more effective substance to melt the ice on a slick sidewalk. Use 3 – 4 sentences in your explanation.

3. Which element is oxidized in the following reaction:

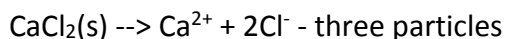


4. Why must the number of electrons lost equal the number of electrons gained in every redox reaction? Use 3 – 4 sentences in your own words to address this question.

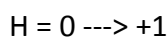
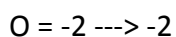
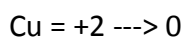
### Answer:

1. They are the same. The vapor pressure of water is only dependent on temperature. The amount of water does not affect it.

2. Calcium chloride is better at melting ice than sodium chloride (assuming equal moles per kg of water). For starters, the dissolving of  $\text{CaCl}_2$  is exothermic which releases some heat that  $\text{NaCl}$  does not, and helps melt ice. In addition, for each formula unit of  $\text{CaCl}_2$  there are three particles (van't Hoff factor,  $i = 3$ ) for  $\text{NaCl}$   $i = 2$ .



3. Hydrogen is oxidized because it loses electrons:



In order for H to get to +1 it needs to lose electrons

4. In a redox reaction, the number of electrons lost must equal the number gained. This is because electrons are conserved in reactions due to the conservation law of charge.

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