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Course: FVS Chemistry AB 19.3

Teacher: Kerr

Question: Based on a substance's properties, how can you determine whether its bonds are ionic or covalent?

Claim: If a substance is solid at room temperature, has a crystalline structure, dissolves easily in water, and conducts electricity well, then it likely contains ionic bonds. Otherwise, it likely contains covalent bonds.

Evidence:

Ionic Compound in Solution	Observed Flame Color
<i>HCl</i> Solution (baseline)	blue
0.5M calcium chloride (<i>CaCl</i> ₂)	orange-red
0.5M sodium chloride (<i>NaCl</i>)	orange-yellow
0.5M barium chloride (<i>BaCl</i> ₂)	pale green
0.5M lithium chloride (<i>LiCl</i>)	red
0.5M copper(II) chloride (<i>CuCl</i> ₂)	blue-green
0.5M cesium chloride (<i>CsCl</i>)	blue-violet
Unknown Solution #1	red
Unknown Solution #2	blue-violet

Lab Results

Metal ion in Unknown Solution #1: Lithium

Metal ion in Unknown Solution #2: Cesium

Justification (Reasoning) of the Evidence:

This makes sense