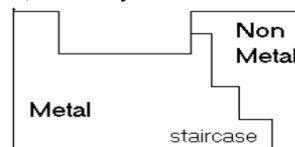


1. Sketch a cartoon of the PTE (Periodic Table of the Elements). Identify the metal and non-metal regions with labels and a "staircase."



2. List six metals by name and symbol.

Examples: lithium Li, lead Pb

3. List six non-metals by name and symbol.

Examples: carbon C, argon Ar

4. NaCl is known as "table salt" or sodium chloride. What group number is sodium in? What group number is chlorine in? Is NaF expected to exist? Explain. Is LiF expected to exist? Explain. Is MgF expected to exist? Explain.

Sodium (Na) is in group 1. Chlorine (Cl) is in group 17. NaF and LiF are expected to exist since they are electrically neutral ionic compounds. MgF is not expected to exist since it is not electrically neutral. Mg has a 2+ charge (group 2) and F has a 1- charge (group 17)

Note: Chlorine (Cl) is in group 17. The chloride ion (Cl⁻) is in group 18. Sodium (Na) is in group 1. The sodium ion (Na⁺) is in group 18.

5. CaCl₂, calcium chloride, has many applications (<http://www.dow.com/calcium/>) including water treatment. What group number is calcium in? Is CaF₂ expected to exist? Explain. Is LiCl₂ expected to exist? Explain. Is MgF₂ expected to exist? Explain.

Calcium is in group 2, chloride is in group 18. Calcium fluoride (CaF₂) is an electrically neutral ionic compound. Ca is in group 2. Lithium chloride (LiCl₂) is not expected to exist since Li is 1+ and Cl is 1- giving the compound a total charge of 1-. MgF₂ is electrically neutral and is expected to exist.

6. Lithium oxide, with the formula Li₂O, readily absorbs carbon dioxide and water vapor from the air. What group number is lithium in? What group number is oxygen in? Is Li₂F expected to exist? Explain. Is Na₂S expected to exist? Explain. Is Cs₂Se expected to exist? Explain.

Lithium is in group 1. Oxygen is in group 16. Li₂F is not expected to exist because it is not electrically neutral (1+); Na₂S and Cs₂Se are expected to exist because they are electrically neutral.