

12.34 (a) For Ca^{2+} substituting for Li^+ in Li_2O , lithium vacancies would be created. For each Ca^{2+} substituting for Li^+ , one positive charge is added; in order to maintain charge neutrality, a single positive charge may be removed. Positive charges are eliminated by creating lithium vacancies, and for every Ca^{2+} ion added, a single lithium vacancy is formed.

(b) For O^{2-} substituting for Cl^- in CaCl_2 , chlorine vacancies would be created. For each O^{2-} substituting for a Cl^- , one negative charge is added; negative charges are eliminated by creating chlorine vacancies. In order to maintain charge neutrality, one O^{2-} ion will lead to the formation of one chlorine vacancy.