

NCERT/CBSE CHEMISTRY CLASS 11 textbook

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CHAPTER THREE

CLASSIFICATION OF ELEMENTS AND PERIODICITY OF PROPERTIES

3.19 The first ionization enthalpy values (in kJ mol^{-1}) of group 13 elements are :

B Al Ga In Tl

801 577 579 558 589

How would you explain this deviation from the general trend ?

3.19.

Solution:

Initial decrement in I.E is due to increased distance from nucleus and screening /shielding effect. But as we go further down the group, d and f orbitals are added. These extra d and f orbitals are not able to shield outer electrons from nucleus effectively. Thus leading to deviation from expected behaviour and increment in values of I.E.

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