IRREGULARITIES IN TRENDS...

1A vs. 1B  1A very reactive

3'  3d⁰  1B) unreactive
  d e's shield poorly
  s' feels worse (s nuclear charge

Z₂A vs. Z₂B  less reactive

SECOND PERIOD  

DIAGONAL RELATIONSHIP → SIMILAR CHEMICAL PROPERTIES

Li₄  Be₂  B  →  Mg₂  Al₄  SI  Be₄⁺  AI₃⁺  →  smaller larger

CHARACTERISTIC RELATIONS

1A, 2A, 7A, 8A  similar reactivity top to bottom

H, He no good table location

He  →  He⁺  →  H⁻  →  H₂⁻  →  H⁻  +  e⁻  →  H₂O

10.03.2016 12:41p
**Irregularities in Trends...**

1A vs. 18
1A: Very reactive

1B

s² s'd⁰

1B: Unreactive

d⁻'s shield poorly

s' feels more (+) nuclear charge

2A vs. 2B

s² s'd¹⁰

2B: Less reactive

**Diagonal Relationship → Similar Chemical Properties**

**Second Period**

- Tend to react differently than the rest of their family
- Related to “charge density” \( \frac{\text{charge of ion}}{\text{volume of ion}} \)

Li → Be → B

Mg → Al → Si → Be²⁺ → Al³⁺

Smaller → Larger

**Characteristic Reactions**

1A, 2A, 7A, 8A: Similar reactivity top to bottom

H, He: No good stable location

He → Ne

H → H⁺ + e⁻

\( H_2 + O_2 \rightarrow H_2O \)