

CONCEPT: LEAVING GROUPS

Leaving groups *break a bond* with the electrophile to make it reactive. They are molecules that will remain stable after accepting an extra electron pair.

□ We use **factors affecting acidity** to determine which atoms will be most stable after gaining extra electrons.

- Recall that the element effect consists of two trends:

Electronegativity

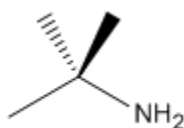
1A (1)	2A (2)											3A (3)	4A (4)	5A (5)	6A (6)	7A (7)	8A (8)
1 H Hydrogen	Li Lithium	Be Beryllium										B Boron	C Carbon	N Nitrogen	O Oxygen	F Fluorine	He Helium
2 Na Sodium	Mg Magnesium											Al Aluminum	Si Silicon	P Phosphorus	S Sulfur	Cl Chlorine	Ar Argon
3 K Potassium	Ca Calcium	Sc Scandium	Ti Titanium	V Vanadium	Cr Chromium	Mn Manganese	Fe Iron	Co Cobalt	Ni Nickel	Cu Copper	Zn Zinc	Ga Gallium	Ge Germanium	As Arsenic	Se Selenium	Br Bromine	Kr Krypton
4 Rb Rubidium	Sr Strontium	Y Yttrium	Zr Zirconium	Nb Niobium	Mo Molybdenum	Tc Technetium	Ru Ruthenium	Rh Rhodium	Pd Palladium	Ag Silver	Cd Cadmium	In Indium	Sn Tin	Sb Antimony	Te Tellurium	I Iodine	Xe Xenon
5 Cs Cesium	Ba Barium	La Lanthanum	Hf Hafnium	Ta Tantalum	W Tungsten	Re Rhenium	Os Osmium	Ir Iridium	Pt Platinum	Au Gold	Hg Mercury	Tl Thallium	Pb Lead	Bi Bismuth	Po Polonium	At Astatine	Rn Radon
6 Fr Francium	Ra Radium	Ac Actinium	Rf Rutherfordium	Db Dubnium	Sg Seaborgium	Bh Bohrium	Hs Hassium	Mt Meitnerium	Ds Darmstadtium	Rg Roentgenium	Cn Copernicium	Nh Nihonium	Fl Flerovium	Mc Moscovium	Lv Livermorium	Ts Tennessine	Og Oganesson

Size

EXAMPLE: Predict which of the following pairs of electrophiles possesses the best leaving group

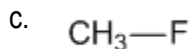
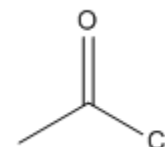


and

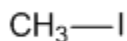


b.

and

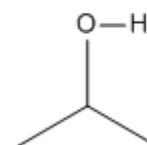


and



d.

and



□ Due to their high electronegativity, _____ will be the primary leaving groups for this chapter.