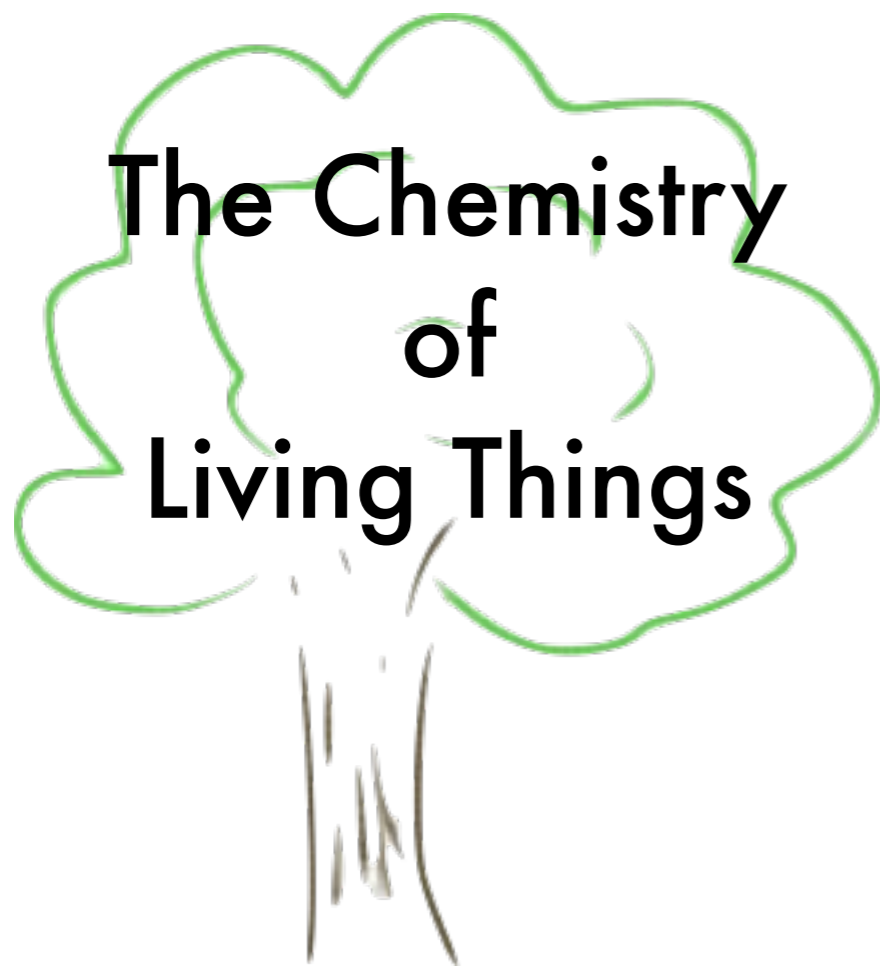


Organic vs Inorganic

**The Chemistry
of
Living Things**



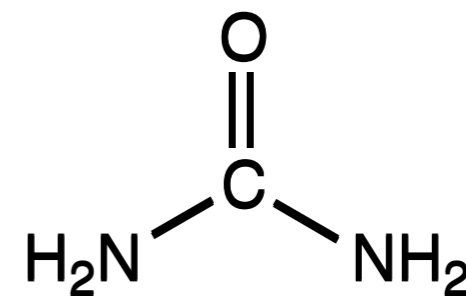
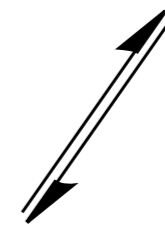
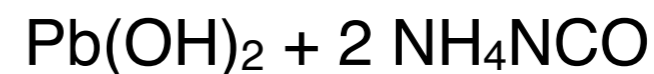
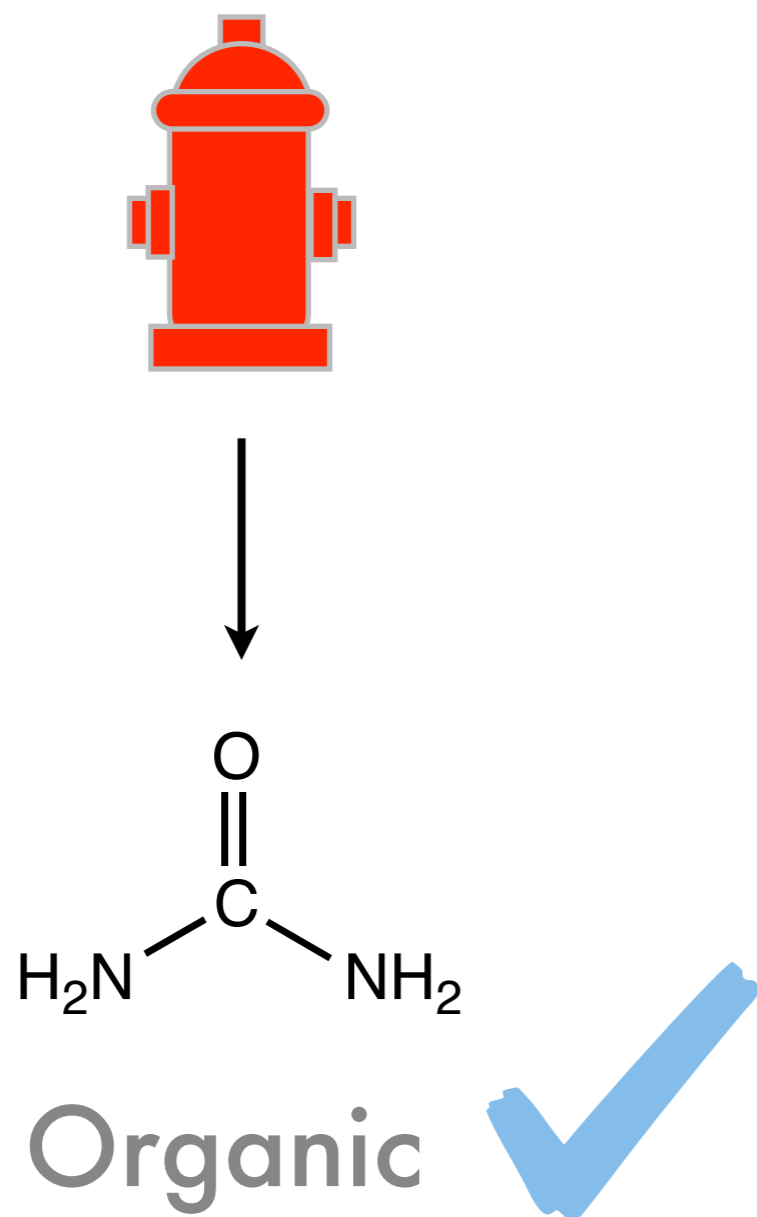
Organic

**The Chemistry
of
Non-living Things**



Inorganic

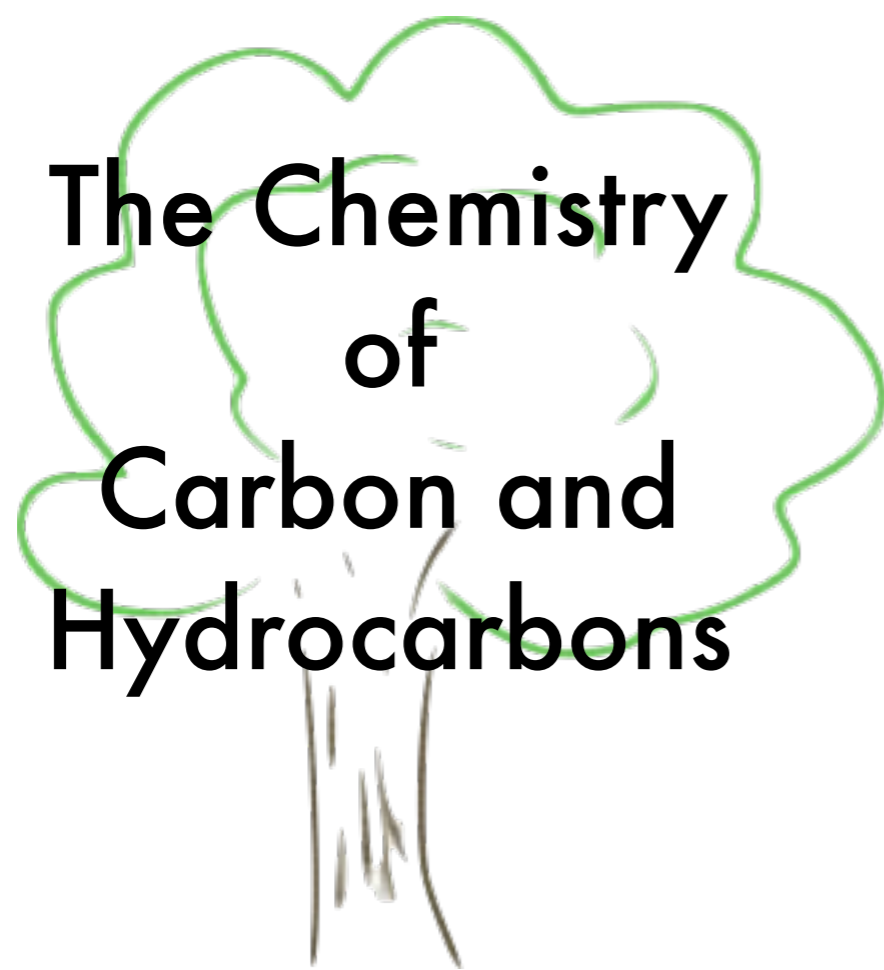
Organic vs Inorganic



Inorganic ?

Friedrich Wöhler

Organic vs Inorganic



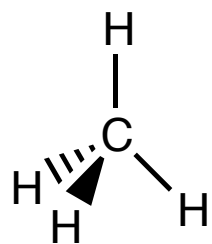
Organic

The Chemistry
of
Everything Else

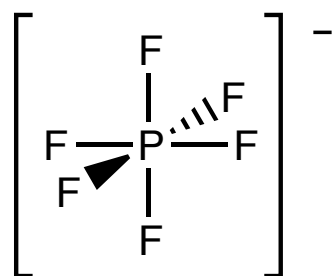


Inorganic

"Cool" Differences



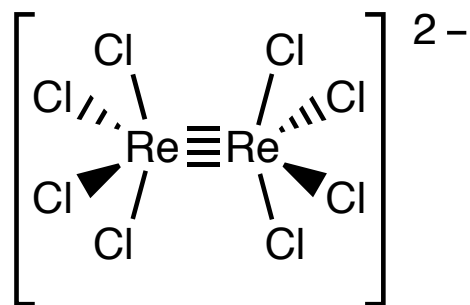
lame



awesome

Organic	Inorganic
four 2-e ⁻ bonds, maximum	more than four 2-e ⁻ bonds possible
fairly strict adherence to octet rule	often exceed octet rule for elements $n \geq 3$

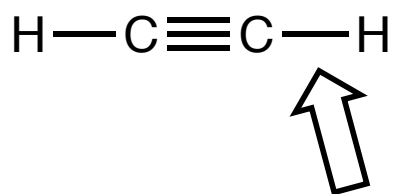
"Cool" Differences



quadruple

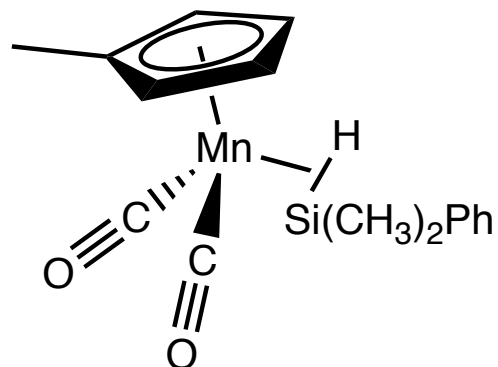
Organic	Inorganic
four 2-e ⁻ bonds, maximum	more than four 2-e ⁻ bonds possible
fairly strict adherence to octet rule	often exceed octet rule for elements $n \geq 3$
no greater than triple bond	higher order bonds possible

"Cool" Differences



2 e⁻, 2 atoms

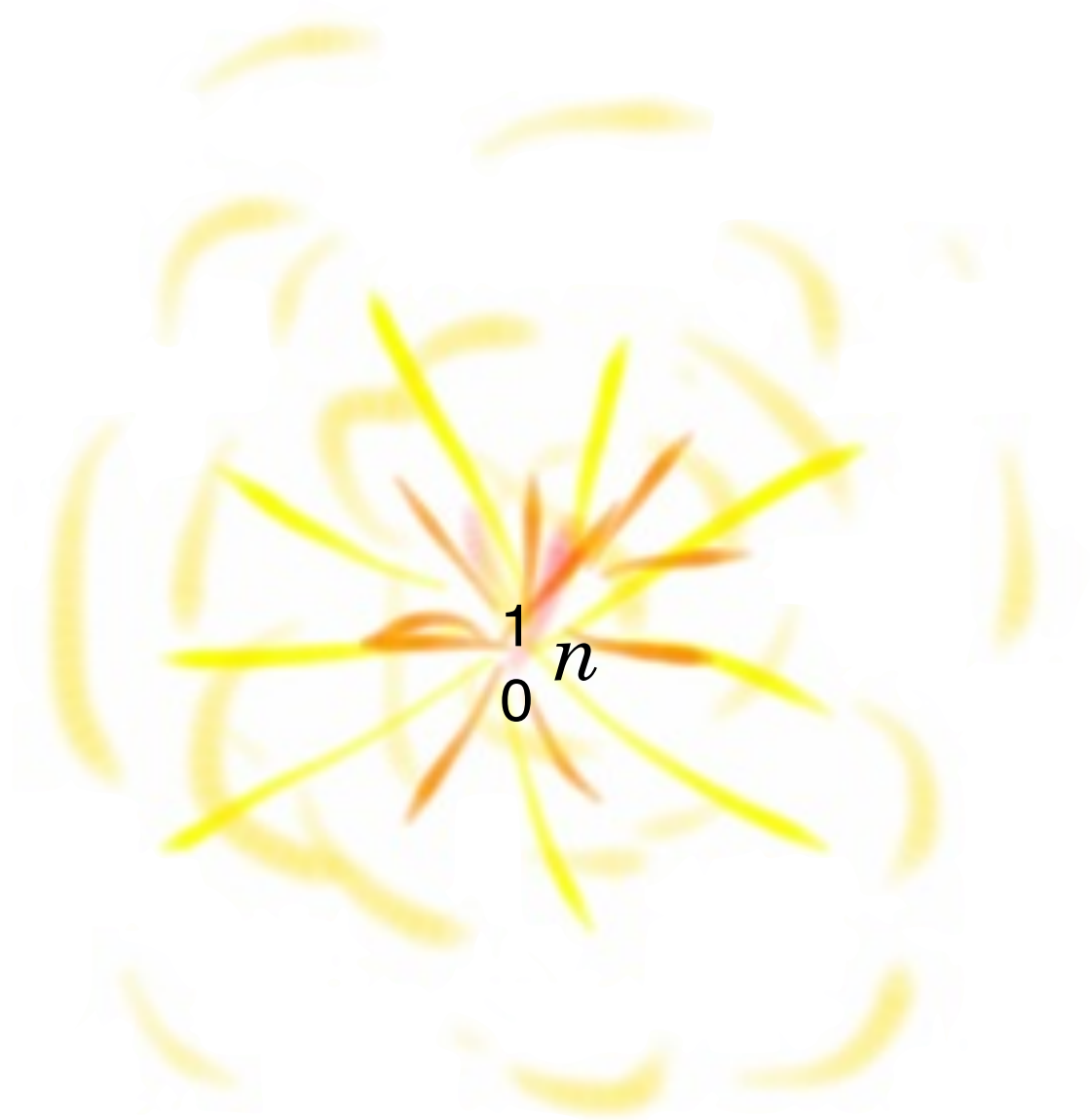
lame



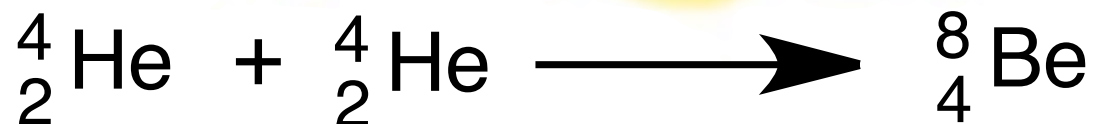
freakish

Organic	Inorganic
four 2-e ⁻ bonds, maximum	more than four 2-e ⁻ bonds possible
fairly strict adherence to octet rule	often exceed octet rule for elements $n \geq 3$
no greater than triple bond	higher order bonds possible
<i>plain</i> 2-e ⁻ , 2 center bonds	multi-center multi-e ⁻ bonds

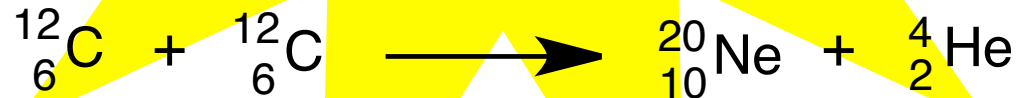
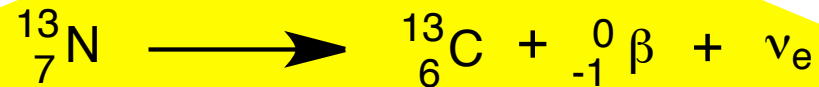
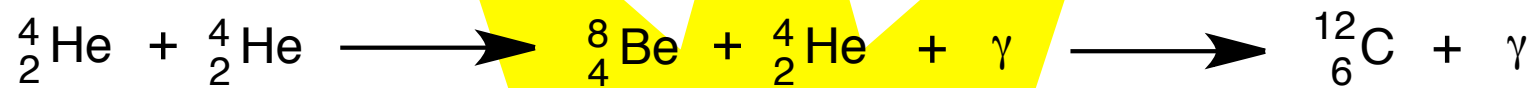
Big Bang Nucleosynthesis



Big Bang Nucleosynthesis Ends at Be



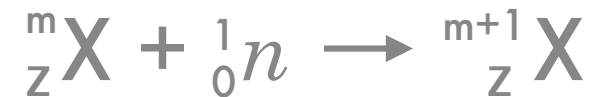
Stellar Nucleosynthesis



Atoms Heavier than Fe?



Can be made
by neutron capture



s-process

r-process

Composite X-Ray and optical
image of the Crab Nebula

Credits for X-ray Image: [NASA/CXC/ASU/J. Hester et al.](#)

Credits for Optical Image: [NASA/HST/ASU/J. Hester et al.](#)