

Molecular Compounds & Covalent Bonding Notes

Vocabulary

- Atom: the _____ individual _____ of that element.
- Compounds: Two or more atoms of _____ that are _____ due to _____.
- Molecule: a group of _____, _____ joined together by _____ . Can be atoms of the _____ (_____!).

Where are the nonmetals located? (Shade in the area →)

What are some properties of nonmetals?

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Why are we reviewing all of this material? Well, nonmetal elements make molecules by forming COVALENT BONDS. All substances studied in this unit will be made of elements to the right of the staircase (+ hydrogen) and will have properties of nonmetals.

Covalent bonds are....

- Attractive forces shared between _____.
- The bonds consist of _____.

Binary Molecular Compounds

- Consist of _____ joined by _____. Include _____ and _____ as nonmetals!
- Bond is formed between _____ (electrons are shared, not transferred!)
- Have _____. Examples...

Molecular Formulas & Nomenclature

The language of chemistry...

- Elements can be described using _____.
- Symbols can be linked together to create _____.
- Chemical formulas can be described using _____.

Example...

Binary Molecular Compounds -- Formula → Name

Step 1

Step 2

Step 3

MAKE SURE THE COMPOUND CONSISTS OF TWO NONMETALS!

Examples...



# of atoms	prefix
1	<i>mono-</i>
2	<i>di-</i>
3	<i>tri-</i>
4	<i>tetra-</i>
5	<i>penta-</i>
6	<i>hexa-</i>
7	<i>hepta-</i>
8	<i>octa-</i>
9	<i>nona-</i>
10	<i>deca-</i>

Binary Molecular Compounds -- Name → Formula

Step 1

Step 2

# of atoms	prefix
1	<i>mono-</i>
2	<i>di-</i>
3	<i>tri-</i>
4	<i>tetra-</i>
5	<i>penta-</i>
6	<i>hexa-</i>
7	<i>hepta-</i>
8	<i>octa-</i>
9	<i>nona-</i>
10	<i>deca-</i>

MAKE SURE THE COMPOUND CONSISTS OF TWO NONMETALS!

Examples...

Sulfur hexafluoride

diboron tetrahydride

trinitrogen pentachloride

Diatomic Molecules

- Some atoms never exist alone in nature so if they can't find anyone to bond with, they will find one of their own. A diatomic molecule is a molecule made up of _____ that are joined by a covalent bond.
- The diatomics are...
- How do we name these molecules?

Hydrocarbons

These are a special group of molecular compounds that only consist of _____ and _____ atoms!

Hydrocarbon Compounds -- Formula → Name

Step 1

Step 2

MAKE SURE THE COMPOUND CONSISTS OF C AND H!!

Examples...



Carbon atoms	Hydrocarbon prefix
1	<i>meth-</i>
2	<i>eth-</i>
3	<i>prop-</i>
4	<i>but-</i>
5	<i>pent-</i>
6	<i>hex-</i>
7	<i>hept-</i>
8	<i>oct-</i>
9	<i>non-</i>
10	<i>dec-</i>

Hydrocarbon Compounds -- Name → Formula

Step 1

Step 2

Examples...

Hexane

Ethane

Decane