

Chemistry Cycle Sheet

April 13, 2020 thru April 17, 2020



Goals: TLW develop an understanding of chemical bonding and the different types.

Monday: Class @1:00 – 2:15 PM
Chemical Bonding
Do Check Ups

Homework: Do warm ups #92 and 93

Tuesday: No meeting. Watch Videos

Homework: Do worksheet
“Chemical Bonds”

Wednesday: No Meeting. Watch Videos.

Homework: Do worksheet
“Chemical Bonds II”

Thursday: Class @1:00 – 2:15 PM
Molecular Geometry

Homework: Do worksheet
“Quarter Review”

Friday: No meeting. Watch Videos

Homework: Do warm ups #94 and 95

Vocabulary

halides	formula unit	electronegativity
diatomic	bonding electrons	coordinate covalent bond
lone pair	covalent bond	pure covalent bond
resonance	ionic bond	polar covalent bond
crystal	metallic bond	binary compound

Know the following

the general rules for chemical bonds
ionic and covalent bonds
the properties of ionic, covalent and metal substances
nonpolar and polar covalent bonds
the driving force behind chemical bonding
Lewis structural formulas
determine the possible bonds
predict the bond type
the 7 diatomic elements

Chemical Bond

It's an electrostatic attraction between two atoms strong enough to act as a unit.

Ionic Bond

A chemical bond created by the transfer of one or more electrons.

Covalent Bond

A chemical bond created by the sharing of one or more electrons.

Polar Bond

It's a covalent bond with a partial positive end and a partial negative end

Metallic Bond

This a bond between atoms of a metal created by sharing free outer shell electrons.

Polar Molecule

This is a molecule with a partial positive end and a partial negative end

Dipole

A dipole is a polar covalent molecule.

Molecule

A molecule is the simplest form of a covalent compound.

Formula Unit

A formula unit is the simplest form of an ionic compound.

Coordinate Covalent Bond

It's a covalent bond in which both electrons come from the same atom.

Intermolecular Forces

Intermolecular forces (IMF's) refer to the attraction between the individual molecules or polyatomic ions of a substance.

Types:

Ion-Ion
Ion-Dipole

Van der Waals
hydrogen bonds
dipole-dipole
dispersion forces

Hybrid Orbitals

Hybridization is the mixing of a set of unequal orbitals on an atom to obtain a new set of equal orbitals.

"s" + "p" = 2 sp linear

"s" + 2 "p" = 3 sp² trigonal

planar

"s" + 3 "p" = 4 sp³ tetrahedral

"s" + 3 "p" + "d" = 5 sp³d
trigonal bi-pyramidal

"s" + 3 "p" + 2 "d" = 6 sp³d²
octahedral

Molecular Orbitals (MO)

Molecular Orbitals are formed by the over-lapping of atomic orbitals from different atoms to create a molecule.

Sigma Bonds (σ)

A sigma bond is a molecular orbital created by the overlapping of atomic orbitals parallel to the plane.

Pi Bonds (π)

A pi bond is a molecular orbital created by the overlapping of atomic orbitals perpendicular to the plane.

7 Diatomic Elements

hydrogen	H ₂	chlorine	Cl ₂
nitrogen	N ₂	bromine	Br ₂
oxygen	O ₂	iodine	I ₂
fluorine	F ₂		

Checkpoint #74

Describe the chemical bond.

Checkpoint #75

List properties of ionic compounds.

Checkpoint #76

List properties of covalent compounds.

Checkpoint #77

What is the driving force behind chemical bonding?