Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_

**Polymer Vocabulary Homework Assignment**

**Define the Following Words:**

radical initiator:

free radical:

polymerization:

monomer:

polymer:

branched polymer:

linear polymer:

copolymer:

homopolymer:

oligomer:

cellulose:

amino acids:

nylon:

polyethylene:

polyester:

cross-linking:

macromolecule:

elastomer:

thermoplastic:

thermoset:

Van der Waals forces:

viscosity:

amorphous:

vulcanization:

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Polymer Vocabulary Homework  
(ANSWER KEY)**

**Define the Following Words:**

**radical initiator:** the start of a chain reaction with a source such as free radicals

**free radical:** A chemical component that contains a free electron which covalently bonds with a free electron on another molecule.

**polymerization:** the chemical reaction in which high molecular mass molecules are formed from monomers.

**monomer:** smallest repeating unit of a polymer.

**polymer:** a high molecular weight macromolecule made up of multiple repeating units.

**branched polymer:** polymer having smaller chains attached to the large, longer polymer backbone.

**linear polymer:** polymers made up of one long continuous chain, without any excess

appendages or attachments.

**copolymer:** a polymer consisting of more than one type of building unit (monomer).

**homopolymer:** a macromolecule consisting of only one type of building unit.

**oligomer:** a low molecular weight polymer in with small amount of repeating units, approximately between two and ten.

**cellulose:** a natural polymer found in wood and other plant material.

**amino acids:** the building block (monomers) of protein, link by peptide bond.

**nylon:** a synthetic polymer used commonly in the textiles industry.

**polyethylene:** the most extensively produced polymer.

**polyester:** a polymer with a C-O-O-R ester group repeating unit.

**cross-linking:** occurs when primary valence bonds are formed between separate polymer chain molecules.

**macromolecule:** a polymer.

**elastomer:** a type of polymer that exhibits rubber-like qualities, it stretches and return to its original shape.

**thermoplastic:** a polymer which may be softened by heat and hardened by cooling in a reversible physical process.

**thermoset:** a network polymer obtained by cross-linking a linear polymer to make it infusible or insoluble.

**Van der Waals forces:** intermolecular attractions weak force.

**viscosity:** the resistance to flow as applied to a solution or a molten solid.

**amorphous:** non-crystalline polymer or non-crystalline areas in a polymer.

**vulcanization:** cross-linking with heat and sulfur to toughen a polymer.