The chemical terminology (polymers)

Activity One:

Find the full names of the following abbreviations in the field of polymers.

HDPE: ……..

LDPE: ……..

PET: ……..

PP: ……..

PS: ……..

PVA: ……

PVC: ……..

Activity Two

Find the appropriate concepts for the following definitions.

Viscosity- cross-linking- configuration- crystalline polymer- copolymer- polyester- propagation- kevlar- branched polymer- monomer- extrusion- macromolecule- composite polymer- Ekonol- T_g- Domains- amorphous- linear- Polymerization- end group- polyethylene- Bakelite- filler- Van der Waals forces- initiation- vinyl chloride- material- homopolymer- nylon- dimer- cellulose- Vulcanization- polystyrene- T_m - creep- polymer- condensation polymer- elastomer Thermoset- thermoplastic- addition polymerization- oligomer- free radical-

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

……..: a polymer produced by the condensation of phenol and formaldehyde.

……: occurs when primary valence bonds are formed between separate polymer chain molecules.

……..: a high strength polymer which can withstand high temperatures.

…….: a polymer.

……..: a polymer commonly used in packaging.

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

……: polymer with a regular order or pattern of molecular arrangement and a sharp melting point.

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

……..: melting temperature.

……: a macromolecule consisting of more than one type of building unit.

……: polymer having smaller chains attached to the polymer backbone.

……..: a chemical reaction in which simple molecules are linked together to form long chain molecules.

……..: cold flow of a polymer.

…….: a relatively inert material used as the discontinuous phase of a polymer composite.

…….: a polymer with a COOR repeating unit.

……..: a type of polymer that exhibits rubber-like qualities.

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

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

……..: a fabrication process in which a heat-softened polymer is forced continually by a screw through a die.

……..: glass transition temperature below which a polymer is a hard glassy material.

……: the most extensively produced polymer.

……: a low molecular weight polymer in which the number of repeating units is approximately between two and ten.

……: intermolecular attractions.

……..: one in which two or more molecules combine resulting in elimination of water or other simple molecules, with the process being repeated to form a long chain molecule.

…….: functional group at the end of a chain in polymers, e.g. carboxylic group.

……..: related chemical structure produced by the making and breaking of primary valence bonds.

……..: the start of a chain reaction with a source such as free radicals, peroxides, etc.

…….: the monomer used in PVC production.

…….: sequences or regions in block copolymers.

……: smallest repeating unit of a polymer.

……: a substance useful for structural purposes.

……..: non-crystalline polymer or non-crystalline areas in a polymer.

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

……: a filled or reinforced plastic.

……..: a polymer containing two monomers.

……: a moldable, high temperature polymer.

…….:a macromolecule consisting of only one type of building unit.

…….: polymers made up of one long continuous chain, without any excess appendages or attachments.

…….: a polymer used commonly in the textiles industry.

…….: the continuous successive chain extension in a polymer chain reaction.

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

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