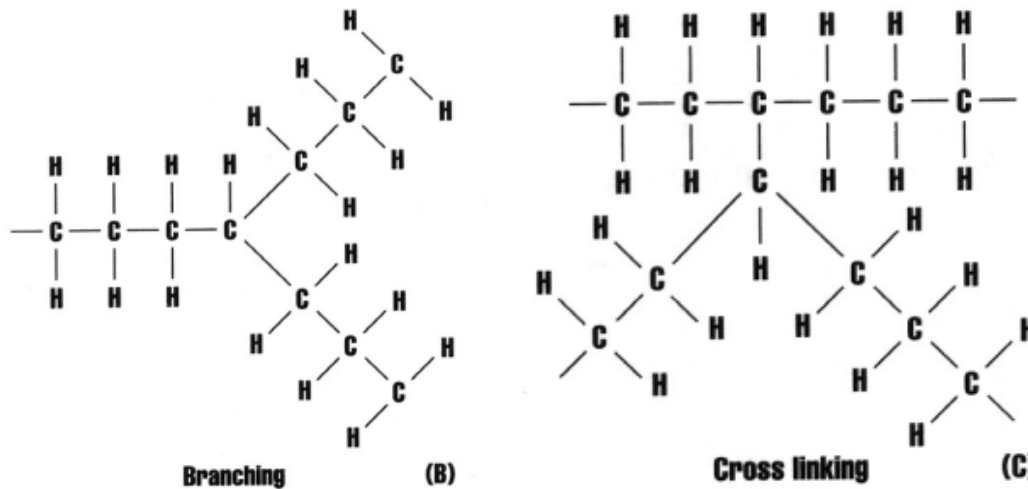
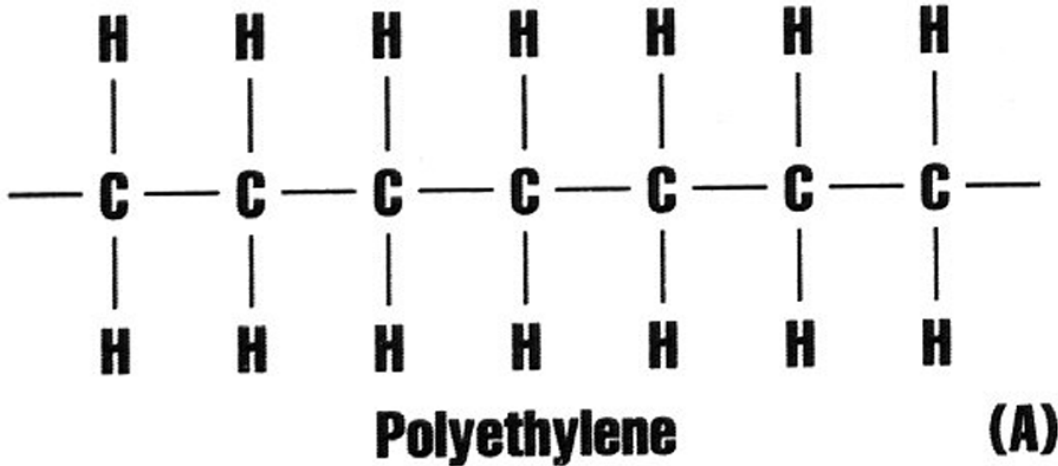


General Photoresist

Photoresists generally consist of 3 parts:

- 1.) Resin: "plastic like" or "glue-like" compound that is solid in it's undiluted state (Novolac -plywood example).
- 2.) Solvent: Chemicals used to dissolve the resin, allowing the resin to be applied in a liquid state.
- 3.) Photoactive Compound (PAC): Act to inhibit or promote the dissolution of the resin in the developer. PAC inhibits dissolution in positive resists before light exposure. After exposure the PAC promotes dissolution of the resin.

Photoresists are constructed from complex hydrocarbon chains known as polymers. Polymers are chains of smaller molecules known as monomers. Polymers are the basis of LCD displays, plastic tubing like PVC, acrylic, simulated leather. Polymers have the ability to form long chains with many branches



Most positive resists are based on Diazoquinones (DQ) or Diazonaphthoquinone (DNQ).

- 1.) Start with a DQ molecule (R is a manufacturer variation). The DQ molecule will not dissolve in a base developer solution (pH >7).
- 2.) UV light breaks the nitrogen molecule off forming an unstable molecule.
- 3.) To "stabilize" itself, one of the 6 carbon atoms in the ring pops out of the ring (leaving 5).
- 4.) Once the solution is exposed to water (a developer/water mixture), an OH group attaches to the carbon atom, forming an acid.
- 5.) The acid can then react and dissolve with the basic developer solution.

