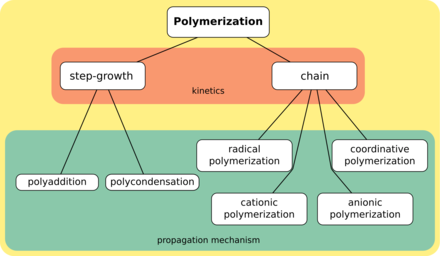
**MACROMOLECULES**

* A polymer is a [substance](https://en.wikipedia.org/wiki/Chemical_substance) or [material](https://en.wikipedia.org/wiki/Material) consisting of very large [molecules](https://en.wikipedia.org/wiki/Molecule). Polymers are created via [polymerization](https://en.wikipedia.org/wiki/Polymerization) of many small molecules, known as [monomers](https://en.wikipedia.org/wiki/Monomer).
* A macromolecule is a very large [molecule](https://en.wikipedia.org/wiki/Molecule) commonly composed of the [polymerization](https://en.wikipedia.org/wiki/Polymerization) of smaller subunits called [monomers](https://en.wikipedia.org/wiki/Monomers).
* A monomer is a [molecule](https://en.wikipedia.org/wiki/Molecule) that can [react](https://en.wikipedia.org/wiki/Chemical_reaction) together with other monomer molecules to form a larger [polymer](https://en.wikipedia.org/wiki/Polymer) chain or three-dimensional network in a process called [polymerization](https://en.wikipedia.org/wiki/Polymerization)

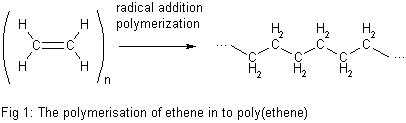
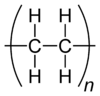


* The term "polymer" derives from the Greek word *polus*, meaning "many, much") and *meros*, meaning "part"), and refers to large [molecules](https://en.wikipedia.org/wiki/Molecule) whose structure is composed of multiple repeating units, from which originates a characteristic of high [relative molecular mass](https://en.wikipedia.org/wiki/Relative_molecular_mass) and attendant properties
* The most common macromolecules in [biochemistry](https://en.wikipedia.org/wiki/Biochemistry) are [biopolymers](https://en.wikipedia.org/wiki/Biopolymers) [nucleic acids](https://en.wikipedia.org/wiki/Nucleic_acid), proteins, and [carbohydrates](https://en.wikipedia.org/wiki/Carbohydrate)
* **Nomenclature of macromolecules:**

There are multiple conventions for naming polymer substances. Many commonly used polymers, such as those found in consumer products, are referred to by a common or trivial name. The trivial name is assigned based on historical precedent or popular usage rather than a standardized naming convention. Both the [American Chemical Society](https://en.wikipedia.org/wiki/American_Chemical_Society) (ACS)[[62]](https://en.wikipedia.org/wiki/Polymer#cite_note-62) and [IUPAC](https://en.wikipedia.org/wiki/IUPAC)[[63]](https://en.wikipedia.org/wiki/Polymer#cite_note-63) have proposed standardized naming conventions; the ACS and IUPAC conventions are similar but not identical.[[64]](https://en.wikipedia.org/wiki/Polymer#cite_note-64) Examples of the differences between the various naming conventions are given in the table below:

|  |  |  |
| --- | --- | --- |
| Common name | ACS name | IUPAC name |
| [Poly(ethylene oxide)](https://en.wikipedia.org/wiki/Poly(ethylene_oxide)) or PEO | Poly(oxyethylene) | Poly(oxyethylene) |
| [Poly(ethylene terephthalate)](https://en.wikipedia.org/wiki/Poly(ethylene_terephthalate)) or PET | Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) | Poly(oxyethyleneoxyterephthaloyl) |
| [Nylon 6](https://en.wikipedia.org/wiki/Nylon_6) or Polyamide 6 | Poly[imino(1-oxo-1,6-hexanediyl)] | Poly[azanediyl(1-oxohexane-1,6-diyl)] |

In both standardized conventions, the polymers' names are intended to reflect the monomer(s) from which they are synthesized (source based nomenclature) rather than the precise nature of the repeating subunit. For example, the polymer synthesized from the simple alkene [ethene](https://en.wikipedia.org/wiki/Ethene) is called polyethene, retaining the *-ene* suffix even though the double bond is removed during the polymerization process:

[](https://en.wikipedia.org/wiki/File:Ethene_polymerization.png) [](https://en.wikipedia.org/wiki/File:Polyethylene-repeat-2D-flat.png)

However, IUPAC structure based nomenclature is based on naming of preffered [constitutional repeating unit](https://en.wikipedia.org/wiki/Repeat_unit),[[65]](https://en.wikipedia.org/wiki/Polymer#cite_note-65) which in this case is just methylene -CH2- unit and therefore the recommended name for ethene homopolymer is poly(methylene).