The Plastics in Our Lives:

* Plastic is a material consisting of any of a wide range of [synthetic](https://en.wikipedia.org/wiki/Synthetic_polymers) or semi-synthetic [organic compounds](https://en.wikipedia.org/wiki/Organic_compounds) that are [malleable](https://en.wikipedia.org/wiki/Malleability) and can be [molded](https://en.wikipedia.org/wiki/Molding_%28process%29) into solid objects.
* Synthetic means that the compounds cannot be found in nature.
* Organic means the compounds are CARBON based.
* Most plastics are derived from petro-chemicals (fossil fuels)
* Nearly all plastic does not break down, and remains in the environment for hundreds, even thousands of years.
* This means that virtually EVERY SINGLE PIECE OF PLASTIC EVER MADE IS STILL IN THE ENVIRONMENT SOMEWHERE.
* Much of the plastics end up in the ocean where they get into the food system and wind up killing fish, whales, sea turtles and dolphins.
* Plastic has collected in ocean currents leading to the *Great Pacific Garbage Patch.* Estimates of size range from [700,000 square kilometres (270,000 sq mi)](https://en.wikipedia.org/wiki/Orders_of_magnitude_%28area%29#108_to_1014_sqm) (about the size of Texas) to more than 15,000,000 square kilometres (5,800,000 sq mi) (0.4% to 8% of the size of the Pacific Ocean), or, in some media reports, up to "twice the size of the continental United States".

How many of these products do you use:

 A. Every Day

 B. Every Week

 C. Every Month

 D. Every Year

 E. Never

Common Plastics

* [Polyester](https://en.wikipedia.org/wiki/Polyester) (PES) – [Fibers](https://en.wikipedia.org/wiki/Fiber), [textiles](https://en.wikipedia.org/wiki/Textile)
* [Polyethylene terephthalate](https://en.wikipedia.org/wiki/Polyethylene_terephthalate) (PET) – Carbonated drinks bottles, peanut butter jars, plastic film, microwavable packaging
* [Polyethylene](https://en.wikipedia.org/wiki/Polyethylene) (PE) – Wide range of inexpensive uses including supermarket bags, plastic bottles
* [High-density polyethylene](https://en.wikipedia.org/wiki/High-density_polyethylene) (HDPE) – Detergent bottles, milk jugs, and molded plastic cases
* [Polyvinyl chloride](https://en.wikipedia.org/wiki/Polyvinyl_chloride) (PVC) – Plumbing pipes and guttering, shower curtains, window frames, flooring
* [Polyvinylidene chloride](https://en.wikipedia.org/wiki/Polyvinylidene_chloride) (PVDC) – Food packaging, such as [Saran](https://en.wikipedia.org/wiki/Saran_%28plastic%29)
* [Low-density polyethylene](https://en.wikipedia.org/wiki/Low-density_polyethylene) (LDPE) – [Outdoor furniture](https://en.wikipedia.org/wiki/Garden_furniture), siding, floor tiles, shower curtains, clamshell packaging
* [Polypropylene](https://en.wikipedia.org/wiki/Polypropylene) (PP) – Bottle caps, drinking straws, yogurt containers, appliances, car fenders (bumpers), [plastic pressure pipe systems](https://en.wikipedia.org/wiki/Plastic_pressure_pipe_systems)
* [Polystyrene](https://en.wikipedia.org/wiki/Polystyrene) (PS) – [Foam peanuts](https://en.wikipedia.org/wiki/Foam_peanut), food containers, plastic tableware, disposable cups, plates, cutlery, [compact-disc](https://en.wikipedia.org/wiki/Compact_disc) (CD) and cassette boxes
* [High impact polystyrene](https://en.wikipedia.org/wiki/High_impact_polystyrene) (HIPS) – Refrigerator liners, food packaging, vending cups
* [Polyamides](https://en.wikipedia.org/wiki/Polyamides) (PA) ([Nylons](https://en.wikipedia.org/wiki/Nylon)) – Fibers, toothbrush bristles, tubing, [fishing line](https://en.wikipedia.org/wiki/Fishing_line), low-strength machine parts such as engine parts or gun frames
* [Acrylonitrile butadiene styrene](https://en.wikipedia.org/wiki/Acrylonitrile_butadiene_styrene) (ABS) – Electronic equipment cases (e.g. computer monitors, printers, keyboards), drainage pipe
* Polyethylene/Acrylonitrile Butadiene Styrene (PE/ABS) – A slippery blend of PE and ABS used in low-duty dry bearings
* [Polycarbonate](https://en.wikipedia.org/wiki/Polycarbonate) (PC) – Compact discs, [eyeglasses](https://en.wikipedia.org/wiki/Eyeglasses), [riot shields](https://en.wikipedia.org/wiki/Riot_shield), security windows, traffic lights, lenses
* Polycarbonate/Acrylonitrile Butadiene Styrene (PC/ABS) – A blend of PC and ABS that creates a stronger plastic used in car interior and exterior parts, and mobile phone bodies
* [Polyurethanes](https://en.wikipedia.org/wiki/Polyurethanes) (PU) – Cushioning foams, thermal insulation foams, surface coatings, printing rollers (Currently sixth or seventh most commonly used plastic material, for instance the most commonly used plastic in cars)

High-Performance Plastics

* [Maleimide/bismaleimide](https://en.wikipedia.org/wiki/Maleimide) – Used in high temperature composite materials
* [Melamine formaldehyde](https://en.wikipedia.org/wiki/Melamine_resin) (MF) – One of the aminoplasts, and used as a multi-colorable alternative to phenolics, for instance in moldings (e.g. break-resistance alternatives to ceramic cups, plates and bowls for children) and the decorated top surface layer of the paper laminates (e.g. Formica)
* [Plastarch material](https://en.wikipedia.org/wiki/Plastarch_material) – Biodegradable and heat resistant, thermoplastic composed of [modified corn starch](https://en.wikipedia.org/wiki/Modified_starch)
* [Phenolics](https://en.wikipedia.org/wiki/Phenolic_resin) (PF) or ([phenol formaldehydes](https://en.wikipedia.org/wiki/Phenol_formaldehydes)) – High [modulus](https://en.wikipedia.org/wiki/Young%27s_modulus), relatively heat resistant, and excellent fire resistant polymer. Used for insulating parts in electrical fixtures, paper laminated products (e.g. [Formica](https://en.wikipedia.org/wiki/Formica_%28plastic%29)), thermally insulation foams. It is a thermosetting plastic, with the familiar trade name Bakelite, that can be molded by heat and pressure when mixed with a filler-like wood flour or can be cast in its unfilled liquid form or cast as foam (e.g. Oasis). Problems include the probability of moldings naturally being dark colors (red, green, brown), and as thermoset it is difficult to [recycle](https://en.wikipedia.org/wiki/Recycle).
* [Polyepoxide](https://en.wikipedia.org/wiki/Epoxy) (epoxy) – Used as an adhesive, potting agent for electrical components, and matrix for composite materials with hardeners including [amine](https://en.wikipedia.org/wiki/Amine), [amide](https://en.wikipedia.org/wiki/Amide), and [boron trifluoride](https://en.wikipedia.org/wiki/Boron_trifluoride)
* [Polyetheretherketone](https://en.wikipedia.org/wiki/Polyetheretherketone) (PEEK) – Strong, chemical- and heat-resistant thermoplastic, [biocompatibility](https://en.wikipedia.org/wiki/Biocompatibility) allows for use in [medical implant](https://en.wikipedia.org/wiki/Implant_%28medicine%29) applications, aerospace moldings. One of the most expensive commercial polymers.
* [Polyetherimide](https://en.wikipedia.org/wiki/Polyetherimide) (PEI) (Ultem) – A high temperature, chemically stable polymer that does not crystallize
* [Polyimide](https://en.wikipedia.org/wiki/Polyimide) – A high temperature plastic used in materials such as [Kapton](https://en.wikipedia.org/wiki/Kapton%22%20%5Co%20%22Kapton) tape
* [Polylactic acid](https://en.wikipedia.org/wiki/Polylactic_acid) (PLA) – A biodegradable, thermoplastic found converted into a variety of aliphatic polyesters derived from [lactic acid](https://en.wikipedia.org/wiki/Lactic_acid) which in turn can be made by fermentation of various agricultural products such as [cornstarch](https://en.wikipedia.org/wiki/Cornstarch), once made from dairy products
* [Polymethyl methacrylate](https://en.wikipedia.org/wiki/Acrylic_glass) (PMMA) (acrylic) – Contact lenses (of the original "hard" variety), glazing (best known in this form by its various trade names around the world; e.g. Perspex, Oroglas, Plexiglas), aglets, fluorescent light diffusers, rear light covers for vehicles. It forms the basis of artistic and commercial [acrylic paints](https://en.wikipedia.org/wiki/Acrylic_paints) when suspended in water with the use of other agents.
* [Polytetrafluoroethylene](https://en.wikipedia.org/wiki/Polytetrafluoroethylene) (PTFE) – Heat-resistant, low-friction coatings, used in things like non-stick surfaces for frying pans, plumber's tape and water slides. It is more commonly known as Teflon.
* [Urea-formaldehyde](https://en.wikipedia.org/wiki/Urea-formaldehyde) (UF) – One of the aminoplasts and used as a multi-colorable alternative to phenolics. Used as a wood adhesive (for plywood, chipboard, hardboard) and electrical switch housings.
* [Furan](https://en.wikipedia.org/wiki/Furan) – Resin based on furfuryl alcohol used in foundry sands and biologically derived composites
* [Silicone](https://en.wikipedia.org/wiki/Silicone) – Heat resistant resin used mainly as a sealant but also used for high temperature cooking utensils and as a base resin for industrial paints
* [Polysulfone](https://en.wikipedia.org/wiki/Polysulfone) – High temperature melt processable resin used in membranes, filtration media, water heater dip tubes and other high temperature applications