

## Extensive list of polymers:

Substance	Group	Description
<b>ABS</b> (Acrylonitrile Butadiene Styrene)	Polymers	A tough, impact-resistant thermoplastic that combines strength, rigidity, and processability, widely used in automotive parts, electronics, and consumer products.
ABS-Nylon-Alloy	Polymers	Combines the qualities of ABS with the strength and heat resistance of nylon.
Acrylic	Polymers	Excellent clarity and weatherability, used in lenses and outdoor applications.
<b>ASA</b> (Acrylonitrile Styrene Acrylate)	Polymers	A weather-resistant thermoplastic similar to ABS, valued for its UV stability and durability in outdoor applications.
<b>BIIR</b> (Bromobutyl Rubber)	Rubbers	A halogenated butyl rubber with excellent impermeability, heat resistance, and chemical stability, used in tires, seals, and protective equipment.
Bone	unknown	A natural composite material made of collagen fibers and mineralized calcium phosphate, providing strength and biological functionality.
Bone	-	Deproteinized bovine bone
<b>BR</b> (Butadiene Rubber)	Rubbers	A synthetic rubber with excellent resilience, abrasion resistance, and flexibility, commonly used in tires and footwear.
<b>CA</b> (Cellulose-Acetate)	Polymers	High clarity, good chemical resistance, used in eyewear and packaging.
<b>CAB</b> (Cellulose-Acetate-Butyrate)	Polymers	Improved toughness and impact strength, used in coatings and films.
<b>CAP</b> (Cellulose-Acetate-Propionate)	Polymers	Lower density, higher transparency, for eyewear frames.
<b>COC</b> (Cyclic Olefin Copolymer)	Default Group	An amorphous thermoplastic with high transparency, moisture resistance, and dimensional stability, often used in medical and optical applications.
<b>ECTFE</b> (Ethylene Chlorotrifluoroethylene)	Polymers	A chemically resistant fluoropolymer with good mechanical strength, used in linings, pipes, and corrosion protection.
<b>EPDM</b> (Ethylene Propylene Diene Monomer (Rubber))	Rubbers	A synthetic elastomer with outstanding weather, ozone, and heat resistance, widely used in automotive and construction seals.
Epoxy	Polymers	A thermosetting resin known for strong adhesion, chemical resistance, and electrical insulation, used in coatings, adhesives, and composites.
<b>EVA</b> (Ethylene Vinyl Acetate)	Polymers	Flexibility and resilience, used in foam products and flexible tubing.
<b>HDPE</b> (High-Density Polyethylene)	PE	Extremely high strength-to-weight ratio, used in containers.

<b>LDPE</b> (Low-Density Polyethylene)	PE	A flexible, lightweight polyethylene with good impact resistance and chemical stability, commonly used in films, bags, and packaging.
Mica-Reinforced-Polypropylene	Polymers	Enhanced stiffness and temperature performance for automotive parts.
Modified-Acrylic	Polymers	Altered properties for impact resistance or flow, for automotive and signage.
Nylon-Transparent	Polymers	High strength and transparency, for high performance applications
<b>PA</b> (Polyamide (Nylon))	Polymers	A family of engineering thermoplastics with high strength, wear resistance, and toughness, widely used in textiles and mechanical components.
<b>PA 6.10</b> (Polyamide 6.10)	Polymers	A partly bio-based nylon made from hexamethylene diamine and sebacic acid (from castor oil), offering good chemical resistance and low moisture absorption.
<b>PA12</b> (Polyamide 12 (Nylon 12))	PA12	Good chemical resistance, low moisture absorption, used in tubing and coatings.
<b>PA46</b> (Polyamide 46 (Nylon 46))	Polymers	A high-performance nylon with excellent heat resistance, stiffness, and strength, used in demanding automotive and electrical applications.
<b>PA6</b> (Polyamide 6 (Nylon 6))	PA6	Good wear resistance, used in fibers and engineering plastic.
<b>PA66</b> (Polyamide 66 (Nylon 66))	PA66	Higher melting point and strength than Type 6, for mechanical components.
<b>PBS</b> (Polybutylene Succinate)	Polymers	A biodegradable aliphatic polyester with good thermal and chemical resistance, used in packaging and agricultural films.
<b>PBT</b> (Polybutylene Terephthalate)	Default Group	Good mechanical and electrical properties, for electronic connectors.
<b>PC-ABS</b> (Polycarbonate/Acrylonitrile Butadiene Styrene blend)	Default Group	Blend of polycarbonate and ABS for high heat resistance and toughness.
<b>PE</b> (Polyethylene)	PE	A versatile thermoplastic available in various densities, known for chemical resistance, toughness, and wide use in packaging, pipes, and containers.
<b>PES</b> (Polyethersulfone)	Polymers	A high-performance thermoplastic with excellent thermal stability, transparency, and chemical resistance, used in medical and filtration applications.
<b>PET</b> (Polyethylene Terephthalate)	PET	A strong, transparent polyester with good chemical resistance, widely used in beverage bottles, packaging, and fibers.
<b>PHBV</b> (Poly(3-hydroxybutyrate-co-3-hydroxyvalerate))	Polymers	A biodegradable polyester with good toughness and processability, used in sustainable packaging and medical applications.

<b>PLA</b> (Polylactic Acid)	Polymers	A biodegradable thermoplastic derived from renewable resources like corn starch, used in packaging, 3D printing, and disposable items.
<b>PMMA</b> (Polymethyl Methacrylate)	Polymers	Excellent clarity and UV resistance, used in signs and displays.
<b>BR</b> (Polybutadiene)	Polymers	A synthetic rubber with high resilience and wear resistance, mainly used in tires and impact-modified plastics.
<b>PC</b> (Polycarbonate)	Polymers	High impact strength and clarity, used in eyewear and bulletproof glass.
<b>PES</b> (Polyester)	Polymers	A versatile class of polymers known for durability, chemical resistance, and use in textiles, packaging, and engineering applications
<b>TPE-E</b> (Polyester-Elastomer)	Polymers	Elasticity and chemical resistance, used in medical devices and automotive parts.
<b>HDPE</b> (Polyethylene-HD)	Polymers	Stiffness, strength, and chemical resistance, used in containers
<b>LDPE</b> (Polyethylene-LD)	Polymers	Flexibility and toughness, used in bags and film applications.
<b>MDPE</b> (Polyethylene-MD)	Polymers	Balance of flexibility and strength, for pipes and films.
<b>PPO</b> (Polyphenylene-Oxide)	Polymers	An engineering thermoplastic with high dimensional stability, low moisture absorption, and good electrical insulating properties.
<b>PPS</b> (Polyphenylene-Sulfide)	Polymers	High temperature and chemical resistance, for automotive and aerospace parts.
<b>POM</b> (Polyoxymethylene)	Default Group	Polyoxymethylene, is a high-performance engineering thermoplastic polymer. High strength, stiffness, and dimensional stability, for precision parts.
<b>PP</b> (Polypropylene)	PP	A lightweight, chemically resistant thermoplastic available in various grades (homopolymer, copolymer, and reinforced) widely used in packaging, automotive, and consumer products.
<b>PPA</b> (Polyphthalamide)	Polymers	High thermal stability and resistance to oxidation, used in electronics.
<b>PPO</b> (Polyphenylene Oxide)	Polymers	High dimensional stability and electrical insulating properties.
<b>PPT</b> (Polypropylene Terephthalate)	Polymers	A less common polyester similar to PET, studied for fiber and film applications but not widely commercialized.
<b>PS</b> (Polystyrene)	PS	A clear, rigid thermoplastic that can be modified for improved impact strength, offering a balance of low cost, clarity, and versatility for packaging, consumer goods, and appliances.
<b>PSU</b> (Polysulfone)	Polymers	High temperature resistance and strength, for medical and electrical applications

<b>PTFE</b> (Polytetrafluoroethylene (Teflon))	Polymers	A fluoropolymer with outstanding chemical resistance, non-stick properties, and very low friction, used in coatings, seals, and cookware.
<b>PTT</b> (Polytrimethylene Terephthalate)	Polymers	A polyester thermoplastic with good chemical resistance, elasticity, and resilience, used in textiles, carpets, and engineering applications.
<b>PVA</b> (Polyvinyl Alcohol)	Polymers	A water-soluble synthetic polymer with good film-forming and adhesive properties, used in packaging, textiles, and coatings.
<b>PVB</b> (Polyvinyl Butyral)	Default Group	A tough, flexible resin with excellent adhesion and clarity, widely used in laminated safety glass.
<b>PVC</b> (Polyvinyl Chloride)	PVC	A versatile thermoplastic with good chemical and weather resistance, used in pipes, profiles, cables, and films.
<b>PVC-Flexible</b>	Polymers	Versatile, used in hoses, tubing, and inflatable.
<b>PVC-Rigid</b>	Polymers	Good chemical and mechanical properties, used in pipes and fittings.
<b>PVDF</b> (Polyvinylidene Fluoride)	Polymers	Excellent chemical, UV, and weather resistance, used in coatings.
<b>SAN</b> (Styrene-Acrylonitrile)	Polymers	Good chemical resistance and rigidity, for kitchenware.
<b>SBR</b> (Styrene Butadiene Rubber)	Rubbers	Good abrasion resistance, used in rubber tires and mechanical parts.
Styrenic-Terpolymer	Polymers	Customized properties for special applications.
<b>TPV</b> (Thermoplastic Rubber)	Polymers	Combines the processability of plastics with the elasticity of rubber.
<b>TPE</b> (Thermoplastic Elastomer)	Polymers	A class of polymers combining the flexibility of rubber with the processability of plastics, used in seals, grips, and footwear.
<b>TPU</b> (Thermoplastic Polyurethane)	Polymers	Versatile elastomer, for footwear and automotive interiors.
<b>TPX</b> (Polymethylpentene)	Polymers	Polymethylpentene, also known as poly, is a thermoplastic polyolefin. Low density and high heat resistance, used in laboratory equipment
<b>VE</b> (Vinylester)	Polymers	A thermosetting resin with high chemical and corrosion resistance, used in coatings, composites, and marine applications.

Total amount of substances: 69<sup>1</sup>

Additional information and a dynamically updated sample list can be found here: <https://app.nirlab.com/algorithms/substances/>

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<sup>1</sup> As of September 18, 2025