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Biobased & Biodegradable

Bioplastics: a family of materials that can further be split into two groups: biobased and biodegradable.

Biobased: (beginning of life) these materials are made, in part or in whole, from bio/renewable carbons (plant-based) compared to standard petro/fossil fuel-based carbons. The carbon molecules are extracted from the plants and polymerized. Since carbon atoms are the same regardless where they come from, the properties of bioplastics are comparable to those of standard plastics. The environmental advantage is that the plants absorb carbon dioxide during their life, compared to the pollution often generated during oil extraction, ensuring an improved carbon footprint or life cycle.

Biodegradable or Compostable: (end of life) these materials can undergo biodegradation, a chemical process in which microorganisms convert the materials into natural substances like water, carbon dioxide, and compost. These are usually Polylactic Acid (PLA) or starch-based materials. Compostable materials have been tested and certified by a third party to adhere to international standards such as ASTM D6400 (in the U.S.) or EN 13432 (in Europe) for biodegradation in an industrial composting facility environment. Note that biodegradable plastics usually cannot be placed in curbside bins as they will contaminate the recyclable plastics.

Biocomposites: combines traditional plastics with biomaterials like wood, flax, hemp, starch, wheat, rice husk, paper pulp powder, etc., to be used as filler or reinforcement. The environmental advantage is that it reduces the portion of plastic and replaces it with an organic filler that comes from sustainable sources. Note that the density is usually higher with biocomposites.

Post-Industrial Reprocessed (PIR): The material comes from manufactured parts directly from processors that were ground and repelletized. The advantage is to give a second life to plastic and because it comes directly from the processor. There is minimal chance for contamination and this material is more uniform and consistent. The color can be mixed, black, or in some cases clear.

Post-Consumer Reprocessed (PCR): The material comes from curbside collection by municipalities. It is more difficult to get clean feedstocks and not all municipalities are equipped to sort it, and the ones that are it is usually costly for them to do so. Some companies specialize in this type of reprocessing and have contracts with chosen municipalities to ensure a certain level of quality. The advantage is to give a second life to plastic. The color is usually black because the municipalities cannot control the variety of incoming colors.

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Manufacturer	Tradename	Type of Material	Color Options	Post-Industrial Reprocessed	Post-Consumer Reprocessed	Biodegradeable / Compostable	Biocomposites (Renewable Fillers)	Biobased (Plant-Based)	Food Contact
Ascend Performance Materials	HiDura™	PA 6/10	Various					•	
Chase Plastic Services, Inc.	CP Pryme®	ABS	Black, Grey	•					
		ASA	Black, Grey	•					
		PA6	Various	•					
		PA 6/6	Various	•					
		PA 6/66	Various	•					
		PC/ABS	Various	•					
		PC/PBT	Black	•					
		PBT	Black	•					
		PC	Black, Clear	•					
		PE	Black	•					
		PET	Black, Clear	•	•				
		PP	Black	•					
		PS	Black	•					
		TPE	Black	•					
		TPO	Black	•					
GreenDot Bioplastics	Terratek® BD	Starch-based	Various			•		•	•
	Terratek® Flex	TPE	Various			•			•
	Terratek® SC	PP, PE	Various					•	•
	Terratek® WC	PP, PA	Various				•		•
KRAIBURG TPE Corporation	Thermolast®	TPE	Black	•	•				
LANXESS	Durethan® ECO	PA6	Various	•	•				
		PA66	Various	•					
	Pocan® ECO	PBT, PBT/PET	Various	•	•				
	Durethan® Scopeblue	PA6	Various	•				•	•
LG Chem	LG PA 5/6	PA 5/6	Black					•	
	LG ABS	ABS	Various	•					
	LG MABS	MABS	Various	•					•
RheTech, Inc.	RTI PP	PP	Various	•	•				•
	RheVision	Polyolefin Compounds	Various				•		•
SABIC Specialties business	EICRIN™ iQ	PBT, PC/PBT	Various		•				•
	LEXAN™ HFD	PC Copolymer	Various					•	
	ULTEM™	PEI	Various	•				•	•
	LEXAN™ EXL	PC Copolymer	Various		•				
	THERMOCOMP™	Multiple	Various		•				
	THERMOTUF™	Multiple	Various		•				
	NORYL™	mPPE	Black	•					
	LNP CX	PC/ABS	Black		•				
SK Chemicals	Ecozen®	Copolyester	Various					•	•
	Ecotria®	Copolyester	Various		•			•	•
	Ecotria® Claro	Copolyester	Various					•	•
Washington Penn An AUDIA® Company	WPP PP	Polyolefin Compounds	Black	•	•		•		•