








**TABLE 13.1** Some Alkene Polymers and Their Uses

MONOMER NAME	MONOMER STRUCTURE	POLYMER NAME	USES
Ethylene	$\text{H}_2\text{C}=\text{CH}_2$	Polyethylene	Packaging, bottles
Propylene	$\text{H}_2\text{C}=\text{CH}-\text{CH}_3$	Polypropylene	Bottles, rope, pails, medical tubing
Vinyl chloride	$\text{H}_2\text{C}=\text{CH}-\text{Cl}$	Poly(vinyl chloride)	Insulation, plastic pipe
Styrene	$\text{H}_2\text{C}=\text{CH}-\text{C}_6\text{H}_5$	Polystyrene	Foams and molded plastics
Styrene and butadiene	$\text{H}_2\text{C}=\text{CH}-\text{C}_6\text{H}_5$ and $\text{H}_2\text{C}=\text{CHCH}=\text{CH}_2$	Styrene-butadiene rubber (SBR)	Synthetic rubber for tires
Acrylonitrile	$\text{H}_2\text{C}=\text{CH}-\text{C}\equiv\text{N}$	Orlon, Acrilan	Fibers, outdoor carpeting
Methyl methacrylate	$\begin{array}{c} \text{O} \\ \parallel \\ \text{H}_2\text{C}=\text{C}-\text{COCH}_3 \\   \\ \text{CH}_3 \end{array}$	Plexiglas, Lucite	Windows, contact lenses, fiber optics
Tetrafluoroethylene	$\text{F}_2\text{C}=\text{CF}_2$	Teflon	Nonstick coatings, bearings, replacement heart valves and blood vessels

Symbol	Acronym	Full name and uses
	PET	Polyethylene terephthalate - Fizzy drink bottles and frozen ready meal packages.
	HDPE	High-density polyethylene - Milk and washing-up liquid bottles
	PVC	Polyvinyl chloride - Food trays, cling film, bottles for squash, mineral water and shampoo.
	LDPE	Low density polyethylene - Carrier bags and bin liners.
	PP	Polypropylene - Margarine tubs, microwaveable meal trays.
	PS	Polystyrene - Yoghurt pots, foam meat or fish trays, hamburger boxes and egg cartons, vending cups, plastic cutlery, protective packaging for electronic goods and toys.
	Other	Any other plastics that do not fall into any of the above categories. For example melamine, often used in plastic plates and cups.