

Chemical Resistance and Physical Properties of Polymers

 Excellent resistance, can withstand use over a long period of time without change	 Good resistance, minor attack may occur over long periods of storage	 Limited resistance, moderate attack, product can be used for brief mixing and measuring	 Poor resistance, product becomes unstable on contact with chemical	 Translucent
				 Clear

	PS	PP	LDPE	HDPE	PETG
Acids-dilute	Green	Green	Green	Green	Green
Acids-concentrated	Orange	Green	Green	Green	Red
Alcohols	Green	Green	Green	Green	Green
Aldehydes	Red	Green	Yellow	Yellow	Red
Bases	Green	Green	Green	Green	Red
Chloroform	Red	Orange	Red	Orange	Red
Esters	Red	Yellow	Yellow	Yellow	Red
Formaldehyde	Red	Yellow	Yellow	Yellow	Red
Hydrocarbons-aliphatic	Red	Yellow	Orange	Yellow	Red
Hydrocarbons-aromatic	Red	Orange	Orange	Yellow	Red
Hydrocarbons-halogenated	Red	Orange	Red	Orange	Red
Ketones	Red	Yellow	Yellow	Yellow	Red
Oils, mineral	Green	Green	Orange	Yellow	Yellow
Oils, vegetable	Yellow	Yellow	Yellow	Yellow	Yellow
Oxidizing agents	Red	Orange	Orange	Orange	Red

	PS	PP	LDPE	HDPE	PETG
Max Temp °C	70	135	80	120	60
Min Temp °C	-40	0	-50	-100	-80
Autoclavable	NO	YES	NO	NO	NO
Gamma Irradiation Sterilisation	YES	NO	YES	YES	YES
Transparency	C	TL	TL	TL	C
Gas Permeability N ₂	3	4.4	20	3	0.8
Gas Permeability CO ₂	75	92	280	45	4.5
Gas Permeability O ₂	15	28	60	10	1.1
Water Absorption %	0.05	<0.02	<0.01	<0.01	<0.1

mm cm³/cm² sec (cm Hg) x 10¹⁰

Key to abbreviations

- (PS)** Polystyrene
- (PP)** Polypropylene
- (LDPE)** Low density polyethylene
- (HDPE)** High density polyethylene
- (PETG)** Polyethylene Tetraphthalate

This chemical resistance chart and table of physical properties is intended for general guidance only. We recommend that users satisfy themselves as to the compatibility between containers and proposed contents before use.