

Properties of Plastic



Plastic Physical Compatibilities

PROCESS	POLYSTYRENE	POLYPROPYLENE	HIGH DENSITY POLYETHYLENE	LOW DENSITY POLYETHYLENE
Autoclavable	NO	YES	NO	NO
Chemical Sterilisation	NO	YES	YES	YES
Dry Heat Sterilisation at 160°C	NO	NO	NO	NO
Radiation Sterilisation	YES	YES	YES	YES
Gas Sterilisation, Ethylene Oxide	YES	YES	YES	YES
Brittle Temperature	0°C (32°F)	-40°C (-40°F)	-40°C (-40°F)	-40°C (-40°F)
Heat Distortion Temperature	70°C (158°F)	135°C (275°F)	121°C (250°F)	50°C (90°F)
Specific Gravity	1.040	0.903	0.944	0.92
Transparency	Clear	Translucent	Translucent	Translucent

Plastic Chemical Compatibilities

CHEMICAL CLASS	POLYPROPYLENE	POLYETHYLENE	POLYSTYRENE
Aliphatic Hydrocarbon	Fair	Fair	Poor
Aromatic Hydrocarbons	Fair	Fair	Poor
Full Halogenated Hydrocarbons	Poor	Poor	Poor
Partially Halogenated Hydrocarbons	Poor	Poor	Poor
Alcohols - Monohydric	Good	Fair	Good
Polyhydric	Excellent	Good	Good
Phenols	Poor	Excellent	Poor
Ketones	Good	Good	Poor
Esters	Good	Good	Poor
Ethers	Fair	Good	Poor
Inorganic Acids - Concentrated	Excellent	Good	Fair
Inorganic Acids - Dilute	Excellent	Excellent	Good
Bases - Concentrated	Excellent	Good	Fair
Bases - Dilute	Excellent	Good	Excellent
Salts - Acid	Excellent	Excellent	Good
Neutral	Excellent	Excellent	Excellent
Basic	Excellent	Excellent	Good
Organic Acids - Concentrated	Good	Excellent	Poor
Organic Acids - Dilute	Excellent	Excellent	Fair
Oxidizing Agents - Concentrated	Poor	Poor	Poor
Oxidizing Agents - Dilute	Good	Good	Fair

Note: These tables are only a general guideline of recommendations and do not guarantee performance. Factors such as concentration, temperature, stress and length of exposure can affect performance. Chemicals can affect the strength, flexibility, surface appearance, colour, dimensions and weight of plastics. We recommend you test materials under actual conditions to determine suitability for applications.