

PHYSICAL PROPERTIES

Plastics	Max Temp. (°C)	Transparency	Autoclavable ¹	Sterilization			Specific gravity	Flexibility	Brittleness temp. (°C)	Permeability unit $\frac{\text{cc} \times \text{mm}}{\text{sec} \times \text{cm}^2 \times \text{cmHg}} \times 10^{-12}$			Tensile strength (Psi)	Absorption (%)
				Gas	Dry heat	Chemical				N2	O2	CO2		
HDPE	110	Transluc.	With caution ²	Yes	No	Yes	0.95	Rigid	-100	3	10	45	4000	0.01
LDPE	90	Transluc.	No	Yes	No	Yes	0.92	Excel.	-100	20	20	280	2000	0.01
PP	130	Transluc.	Yes	Yes	No	Yes	0.90	Rigid	-20	4	25	90	5000	0.02
PC	160	Clear	Yes ³	Yes	No	Yes	1.20	Rigid	-135	3	85	85	8000	0.35
PTFE	300	Opaque	Yes	Yes	Yes	Yes	1.70	Mod.	-100	—	—	—	6500	0.10
PVC	75	Clear	No	Yes	NO	Yes	1.34	Rigid	-30	0.5	1	10	6500	0.06
ABS	100	Opaque	No	Yes	No	Yes	1.05	Rigid	-20	2	6	35	7000	0.30
PS	80	Clear	No	Yes	NO	Yes	1.04	Rigid	0	—	25	—	6000	0.05

Remark

1 Autoclaving: clean and rinse with distilled water before autoclaving.

2 Certain chemicals which have no appreciable effect on resins at room temperature may cause deterioration at autoclaving temperature unless removed with distilled water beforehand...

3 Can be autoclaved at 120 °C for 20 minutes.

3 Autoclaving reduces mechanical strength. Do not use PC vessels for vacuum applications if they have been autoclaved.

• GAS-Ethylene oxide • DRY HEAD - AT 160 °C • CHEMICAL -Benzalkonium chloride, formaline, ethanol, etc.

CHEMICAL PROPERTIES

Reagent (20 °C)	LDPE	HDPE	PS	PP	PC	PTFE	TPX
Inorganic acids	E	E	B	E	B	E	E
Organic acids	E	E	B	E	B	E	E
Oxidizing agents conc.	B	B	S	B	N	E	B
Alcohols	E	B	E	E	B	E	E
Aldehydes	B	B	S	B	S	E	B
Amines	B	B	E	B	N	E	B
Bases	E	E	B	E	N	E	E
Ketones	B	B	N	B	N	E	B
Ethers	B	B	S	B	S	E	B
Esters	E	E	N	E	N	E	E
Glycols	E	E	NA	E	B	E	E
Aliphatic hydrocarbons	B	B	S	B	S	E	B
Aromatic hydrocarbons	B	B	S	B	N	E	S
Halogenated hydrocarbons	B	B	N	B	N	E	S
Mineral oils	S	E	B	S	E	E	E
Vegetable oils	B	B	E	B	B	E	B
Lubricating oils	B	E	B	E	B	E	E

CHEMICAL RESISTANCE CHART

Reagent	HDPE		PC		PP		LDPE		PTFE		TPX	
	20 °C	50 °C	20 °C	50 °C	20 °C	50 °C	20 °C	50 °C	20 °C	50 °C	20 °C	50 °C
Acetaldehyde	B	S	S	N	B	N	B	N	E	E	B	N
Acetone	E	E	N	N	E	E	E	E	E	E	E	E
Acetic acid	E	E	E	B	E	E	E	E	E	E	E	E
Aluminum hydroxide	E	E	S	N	E	B	E	B	E	E	E	B
Ammonium chloride	E	E	E	E	E	E	E	E	E	E	E	E
Ammonium hydroxide 5%	E	E	S	N	E	E	E	E	E	E	E	E
Ammonium hydroxide 28%	E	E	N	N	E	B	E	B	E	E	E	B
Amyl chloride	S	N	N	N	N	N	N	N	E	E	N	N
Aniline	E	B	S	N	B	S	E	B	E	E	B	S
Benzaldehyde	E	E	S	N	E	B	E	B	E	E	E	B
Benzene	B	B	N	N	B	S	S	N	E	E	B	S
Boric acid	E	E	E	E	E	E	E	E	E	E	E	E
Bromine	S	N	S	N	N	N	N	N	E	E	N	N
Bromoform	N	N	N	N	N	N	N	N	E	E	N	N
Butadiene	S	N	N	N	N	N	N	N	E	E	N	N
Butyl acetate	E	B	N	N	B	S	B	S	E	E	B	S
Butyl alcohol	E	E	B	S	E	E	E	B	E	E	E	B
Butyric acid	S	N	S	N	N	N	N	N	E	E	N	N
Calcium hydroxide	E	E	N	N	E	E	E	E	E	E	E	E
Calcium hypochloride	E	E	S	N	E	E	E	E	E	E	E	B
Carbon disulphide	N	N	N	N	N	N	N	N	E	E	S	N
Carbon tetrachloride	B	S	N	N	B	S	S	N	E	E	N	N