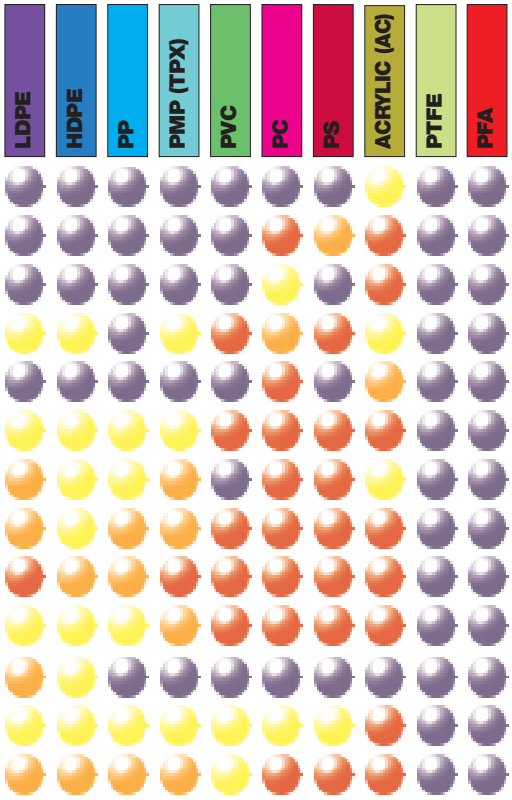
Physical Properties & Chemical Resistance of Polymers

Excellent resistance - can withstand use over a long period of time without change in physical, optical or chemical properties.

Good general resistance - minor attack may occur after long periods of storage.

Limited resistance - product can be used for brief mixing and measuring.

Poor resistance - product becomes unstable on contact with chemical.



C Clear
O Opaque
TL Translucent
R Rigid
F Flexible

	LDPE	HDPE	PP	PMP (TPX)	PVC	PC	PS	ACRYLIC (AC)	PTFE	PFA
Max Temp °C	80	120†	135	180	70	130	70	90	300	270
Min Temp °C	-50	-100	-20*	-180	-25	-135	-40	-60	-200	-260
Autoclavable	NO	NO	YES	YES	NO	YES	NO	NO	YES	YES
Gas sterilisation	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Dry Heat sterilisation	NO	NO	NO	YES	NO	NO	NO	NO	YES	YES
Gamma irradiation sterilisation	YES	YES	NO	YES	NO	YES	NO	YES	YES	YES
Chemical Disinfectant sterilisation	YES	YES	YES	YES	YES	YES	YES	NO	NO	YES
Transparency	TL	TL	TL	C	C	C	C	C	O	TL
Flexibility	F	R	R	R	R	R	R	R	R	F
Gas Permeability N_2	20	3	4.4	65	0.4	3	3	-	-	-
Gas Permeability CO_2	280	45	92	-	10.2	85	75	-	-	-
Gas Permeability 0_2	60	10	28	270	1.2	20	15	-	-	-
Water Absorbtion %	<0.01	<0.01	<0.02	<0.01	0.06	0.35	0.05	0.3	0.3	<0.03
Resistivity Ohm CM²	$>10^{15}$	$>10^{15}$	$>10^{16}$	$>10^{16}$	$<10^{16}$	$2x10^{16}$	$>10^{16}$	$>10^{14}$	$>10^{18}$	10^{18}
Specific gravity	0.92	0.95	0.90	0.83	1.34	1.20	1.05	1.18	2.2	2.16

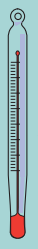
mm cm^3/cm^2 sec (cm Hg) x 10^{10}

†Please note that the polymer may become malleable at temperatures above 80°C if the product is under structural stress.

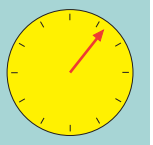
**Warning. Material may become brittle at low temperatures*

Use and Care of Plastics

Chemicals can affect the strength, flexibility, appearance, dimensions and weight of plastics depending on

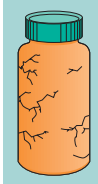


length of exposure ....



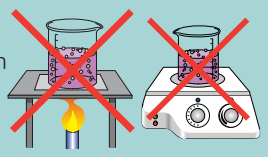
the temperature ...

... the concentration.



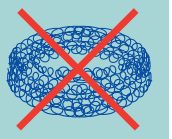
Certain chemicals, i.e. detergents, lubricants, oils, pure water and surface additives in the presence of tensile stress can lead to cracking. Prolonged exposure to strong oxidising agents can also lead to embrittlement and failure.

Never place plastic labware in direct contact with a flame or directly onto a hotplate surface.



Generally, you can clean most plastic labware with laboratory detergent and rinse with distilled water.

Avoid using scourers or abrasive cleaners that scratch the plastic.



Particular care should be taken to avoid the use of strong alkali cleaners with polycarbonate. In the case of stains, oils, greases or other agents which cannot be removed by conventional washing you can adopt the following measures with care:

a. Soaking in chromic acid solution will loosen organic particles.

b. Bleaches (such as sodium hypochlorite if used at 20°C - 25°C will also assist in the cleaning of organically stained plastic labware. Not suitable for use with polycarbonate.

c. Methylene chloride and acetone will help remove oils, however prolonged exposure to such organic solvents can cause swelling of certain plastics. In general do not use solvents with polycarbonate, PVC, acrylic or polystyrene.

For more detailed information on cleaning procedures contact our technical dept.