

Abbreviations of plastic materials:

E-CTFE	Ethylene-Chlorotrifluoroethylene (Halar)	PA	Polyamide	PSF	Polysulfone
FEP	Tetrafluoroethylene-Perfluoropropylene (Teflon)	PC	Polycarbonate	PTFE	Polytetrafluoroethylene (Teflon)
FPM	Fluor-Polymer (Viton)	PFA	Perfluoro-alkoxy (Teflon)	PVC	Polyvinylchloride
HDPE	High-density Polyethylene	PMP	Polymethylpentene (TPX)	PVDF	Polyvinylidene fluoride
LDPE	Low-density Polyethylene	PP	Polypropylene	SAN	Styryole-Acrylonitrile
		PS	Polystyrene	SI	Silicone Rubber

Physical properties of the plastic materials:

PS	Temperature		Sterilisation 5)				Transparency	Flexibility
	min. 1)	max. 2)	steam 4) 121 °C	ethylene oxide gas	radiation 2.5 kGy	chem., ethanol formalin		
E-CTFE	-100°C	+150°C	yes	yes	no	yes	translucent	moderate
FEP	-255°C	+205°C	yes	yes	no	yes	translucent	excellent
FPM	-20°C	+200°C				yes	black	good
HDPE	-50°C	+110°C	no	yes	yes	yes	translucent	unbendable
LDPE	-50°C	+95°C	no	yes	yes	yes	translucent	excellent
PA	0°C	+90°C	no	yes	yes	yes	translucent	unbendable
PC	-135°C	+135°C	yes	yes	yes	yes	clear	rigid
PFA	-270°C	+250°C	yes	yes	no	yes	translucent	excellent
PMP	-150°C	+175°C	yes	yes	yes	yes	crystal clear	rigid
PP	0°C	+135°C	yes	yes	no	yes	translucent	rigid
PS	-20°C	+70°C	no	no	yes	yes	crystal clear	rigid
PSF	-100°C	+165°C	yes	yes		yes	clear	rigid
PTFE	-270°C	+270°C	yes	yes	no	yes	opaque	excellent
PVC	-30°C	+70°C	no 3)	yes	no	yes	clear	rigid
PVDF	-4°C	+160°C	yes	yes	yes	yes	translucent	rigid
SAN	-40°C	+95°C	no	yes	no	yes	crystal clear	rigid
SI	-60°C	+180°C	yes	yes	no	yes	translucent	excellent

- 1) temperature of embrittlement
- 2) at short-term also higher
- 3) with the exception of PVC hoses, which are resistant to steam sterilisation at 121 °C
- 4) repeated sterilisation leads to loss of strength
- 5) clean the plastic with distilled water before sterilisation (to avoid corrosion due to stress cracks). For closed vessels, remove the cap or loosen it slightly.

Chemical resistance of the plastic materials at 20°C:

	PS	PC	PA	SAN	ABS	PVC	LDPE	HDPE	PP	PMP	ECTFE	PTFE/FE P/PFA	SI
Aldehydes	-	0	0	-	-	-	+	+	+	0	+	+	0
Aliphatic alcohols	+	+	0	+	+	+	+	+	+	+	+	+	+
Esters	-	-	+	-	-	-	0	0	0	0	+	+	0
Ethers	-	-	+	-	-	-	-	0	-	-	+	+	-
Ketones	-	-	+	-	-	-	0	0	+	0	0	+	
Hydrocarbons													
aliphatic	-	0	+	-	-	+	0	+	+	0	+	+	-
aromatic	-	-	+	-	-	-	0	+	0	-	+	+	-
halogenated	-	-	0	-	-	-	-	0	0	-	+	+	-
Acids, weak/dilute	-	0	0	0	+	+	+	+	+	+	+	+	0
Acids, strong/concentrated	0	-	-	-	-	+	+	+	+	+	+	+	-
Acids, oxidizing	0	-	-	-	-	-	0	0	0	0	0	+	-
Bases	-	-	0	+	0	+	+	+	+	+	+	+	+

+ = Excellent chemical resistance
Permanent action of the substance does not induce damage of plastic within 30 days.
Plastic can remain resistant for years

0 = Good/conditional chemical resistance
Permanent action induces slight damages from ca. 7 to 30 days, which are partially reversible (softening, swelling, deterioration of mechanical resistance, discoloration)

- = Low chemical resistance
Continuous exposure under certain circumstances causes immediate damage to the plastic. (Deterioration of mechanical strength, deformation, discoloration, cracks, etc...)