

Diamond RealSeal™ Plastic Laboratory Bottles

STERILIZATION GUIDELINES

Observe the tolerated temperature range of plastic type when autoclaving. Remove any stoppers, fittings, or caps prior to autoclaving. Plastic vessels should be autoclaved separately from their closures and other fittings. Autoclaving with closures in place can lead to deformation and destruction of the vessel. Verify that no contamination or residues are present before sterilization as their presence could destroy plastics during sterilization or autoclaving. All statements are advisory only, and imply no liability on the part of Ted Pella, Inc. All statements relating to the resistances of plasticware to high temperatures, chemicals, and to sterilization and cleaning procedures have been carefully formulated, based on statements of raw materials manufacturers and experience gained in practical use.

Sterilization Method	Plastic Type		
	HDPE	PP	LDPE
Autoclave		●	
Gas Sterilization	●	●	●
Dry Sterilization @ 160° C			
Chemical Sterilization			
in Formalin	●	●	●
Gamma Irradiation	●	●	
Microwave	●	●	●

*Sterilizing reduces mechanical strength.

CHEMICAL RESISTANCE GUIDELINES

Substance Group	Plastic Type		
	HDPE	PP	LDPE
Alcohols, aliphatic	H	H	H
Aldehydes	G	G	G
Alkalis	H	H	H
Esters	G	G	G
Hydrocarbons, aliphatic	G	G	M
Hydrocarbons, aromatic	G	M	M
Hydrocarbons, halogenated	M	M	N
Ketones	G	G	G
Oxidants (oxidizing acids), strong	M	M	M
Acids (diluted), weak	H	H	H
Acids (concentrated), strong	H	H	H

H High Resistance

G Good Resistance; no damage or only minor damage resulting from exposures of more than 30 days

M Marginal Resistance; for some types of plastics, extended exposure can result in damage (hairline cracks, loss of mechanical strength, discoloration, etc.)

N Non-Resistance; exposure can lead to deformation and destruction

TED PELLA. INC.

Microscopy Products for Science and Industry

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PHYSICAL PROPERTIES OF PLASTICS TABLE

Resin	Max use Temp (°C/°F)	Brittleness Temp (°C/°F)	Transparency	Flexibility	Autoclave	Specific Gravity (g/mL)	Permeability Approx. cc-mm/m ² -24hr-Br		
							N ₂	O ₂	CO ₂
HDPE	120/248	-100/-148	Translucent	Rigid	No	0.95	651	2868	8990
PP	135/275	0/32	Translucent	Rigid	Yes	0.90	744	3720	12.400
LDPE	80/176	-100/-148	Translucent	Flexible	No	0.92	2790	7750	41.850

HDPE – High-Density Polyethylene **PP** – Polypropylene **LDPE** – Low-Density Polyethylene

CLEANING LABORATORY PLASTICWARE

All polyolefins, such as Low Density Polyethylene (LDPE), High Density Polyethylene (HDPE) and Polypropylene (PP) have wettable surfaces that are both highly resistant to high temperatures and chemical attack and easy to clean. Slight contamination can be removed using a chemically neutral (pH7) cleaning agent. Heavy contamination can be removed using an alkaline (pH up to 12) cleaning agent. Never use scouring powders or abrasive sponges when cleaning laboratory plasticware.

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