

POLYPRO[®]

All Polypropylene Filter Cartridge

Absolute 0.6, 1.2, 2.5, 5.0, and 10 Micron Ratings



PolyPro[®] cartridges are specifically engineered to achieve high throughputs for longer filtration life. Extensive testing has verified cartridge performance, safety, and biological compatibility. Broad compatibility with solvents, acids, and bases, as well as CFR 21 material compliance, is ensured by using all polypropylene components. PolyPro cartridges are offered in two designs: standard (PG) or reinforced (PP) where high temperature and/or steam sterilization is required.

APPLICATIONS

- Chemicals: fine chemicals, reagents, solvents.
- Pharmaceutical: solvents & recovery systems, glassware washers, biologicals, cough syrups, ointments, prefiltration for membrane filters, process water
- Cosmetics: raw material clarification, final product clarification
- Semiconductor: process solvents, acids, etchants, photoresists, strippers, RO water
- Magnetic Tape Media: metal oxide dispersions, coatings, and solvents.
- Photographic: photo emulsions, make-up and rinse water.

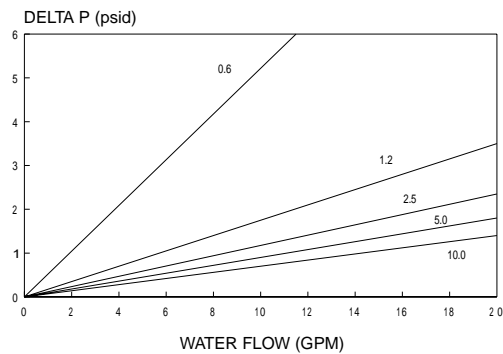
PERFORMANCE

Efficiency

Modified Oklahoma State University (OSU) performance tests have been conducted to verify cartridge performance. The cartridge exhibits retention of >99.99% at each grade's absolute rating at flow rates not exceeding four gallons per minute per 10" element.

Water Flow

The Polypro cartridge exhibits excellent water flow rates, as depicted in the graph below.



WATER FLOW RATE VS. DIFFERENTIAL PRESSURE

The clean water flow rate is per 10" element at 77° F (25° C).

BENEFITS

- Increases Final Filter Life
- Durable Construction Provides Long Life Under Severe Process Conditions
- High Flow Rates at Low Differential Pressure
- Low Extractables
- FDA Compliance Ensured By Using CFR 21 Listed Materials Of Construction
- Wide Solvent Compatibility For Application Flexibility
- Thermally Bonded End-caps Of Various Styles Allow For Use In Non-Cuno Housings Without Using Cartridge Adapters



Fluid Purification

BIOLOGICAL SAFETY

Oxidizable Substances and Pyrogenicity

Polypro cartridges were subjected to USP Class VI Safety tests in addition to 12 safety tests. Many of these newer tests are more sensitive and specific. PolyPro cartridges passed all Safety Tests listed below.

Cytotoxicity

- Direct Exposure
- Agar Overlay
- Neutral Red Uptake
- Chinese Hamster Ovary Cell

Hemocompatibility

- Human Red Blood Cell Hemolysis
- Recalcified Whole Blood Clotting Time
- Human Lymphocompatibility

Safety and Histocompatibility

- USP Class VI Safety Test
- Single Dose Oral Toxicity
- Single Dose Eye Irritation
- Primary Skin Irritation
- Kligman Guinea Pig Maximization

Mutagenicity

- Salmonella Preincubation (AMES)

The Biological Safety Report for PolyPro cartridges will be supplied upon request.

GRAVIMETRIC EXTRACTABLES

PolyPro cartridges were tested for total gravimetric extractables by a 4-hour agitated soak test. The test results indicate that both grades have extractable levels of <2 mg/sq. ft. of filter area in 21° C water.

CHEMICAL COMPATIBILITY

The compatibility data provided in Table 1 is intended as a guide. It is recommended that compatibility with any process be established under actual filtration conditions, since operating parameters may influence compatibility. Consideration must also be given in the selection of suitable gasket materials to ensure complete compatibility.

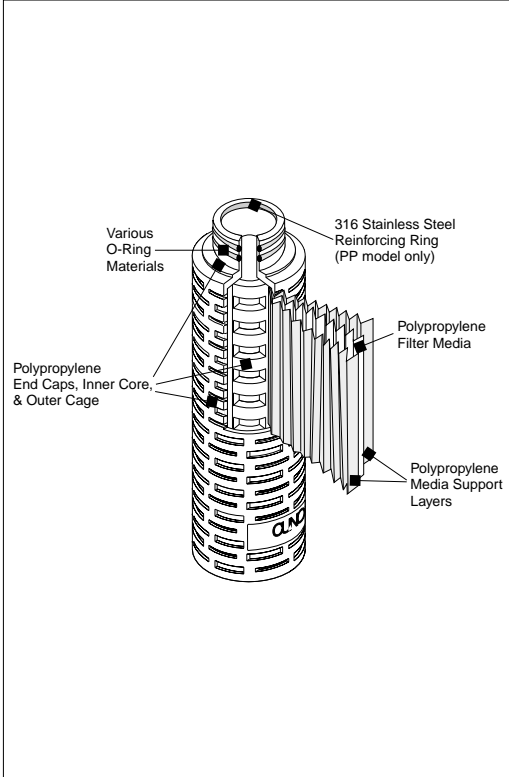
Solution	Temp. °C	PP	PG
Acetic Acid 25%	22	G	G
Acetic Acid Glacial	22	G	G
Acetone	22	G	G
Acetonitrile	22	L	L
Ammonia 10%	22	G	G
Ammonium Hydroxide 10%	22	G	G
Ammonium Hydroxide 28%	22	G	G
Benzaldehyde	22	G	G
Butylaldehyde	22	G	G
Butyl Carbitol Acetate	22	G	G
Butyl Cellosolve	22	G	G
n-Butanol	22	G	G
n-Butyl Acetate	22	G	G
Butyl Carbitol	22	G	G
Carbon Tetrachloride	22	L	L
Cellusolve Acetate	22	G	G
Cellusolve Solvent	22	G	G
Chloroform	22	L	L
Cotton Seed Oil	22	G	G
Cyclohexanone	22	L	L
Diethanolamine	22	G	G
Di-Ethyl Formamide	22	G	G
Di-Methyl Fomamide	22	G	G
Di-Methyl Sulfoxide	22	G	G
Ethanol Absolute	22	G	G
Ethyl Acetate	22	L	L
Ethyl Oleate	22	G	G
Ether Diethyl	22	L	L
Ethylene Glycol	22	G	G
Ethylene Oxide 12-88%	22	L	L
Formaldehyde 37%	22	G	G
Formic Acid Concentrate	22	G	G
Glycerol	22	G	G
Hydrazine	22	G	G
Hydrochloric Acid 37%	22	N	G
Hydrofluoric Acid	22	N	G
Hydrogen Peroxide Concentrate	22	G	G
Isobutyl Alcohol	22	G	G
Isopropyl Alcohol	22	G	G
Methanol	22	G	G
Methylene Chloride	22	L	L
Methyl Cellosolve	22	G	G
Methyl Isobutyl Ketone	22	L	L
Monethanolamine	22	G	G
Nitric Acid	22	G	G
n-Propanol	22	G	G
Phosphoric Acid, Glacial	22	G	G
Propylene Glycol	22	G	G
Pyridine Concentrate	22	L	L
Sodium Hydroxide Concentrate	22	G	G
Sodium Hypochlorite	22	G	G
Sulfuric Acid Concentrate	22	G	G
Tertiary Butyl Alcohol	22	G	G
Toluene	22	N	N
Trichloroethylene	22	L	L
Trichlorotrifluoroethane (Freon)	22	G	G
Triethylene Glycol	22	G	G
Water	22	G	G
Water	90	G	G
Xylene	22	N	N

Explanation of Ratings
 G = Good Compatibility; to the temperature Indicated
 L = Limited Compatibility - Testing Recommended
 PG = No Stainless Steel Reinforcing Ring
 PP = Has Stainless Steel Reinforcing Ring for Thermal Sterilization

TABLE 1. - CHEMICAL COMPATIBILITY

CONSTRUCTION

PolyPro cartridges are produced from a pleated filter composite containing multiple layers of non-woven polypropylene, supported by upstream and downstream support material. Multiple cartridge lengths of various end cap styles are produced by thermal bonding which eliminates the need for adapters. No adhesives are used in the cartridge assembly process. All materials used are FDA listed for food contact.



CARTRIDGE SPECIFICATIONS

	CARTRIDGE GRADE				
	060	120	250	500	10C
Nominal Micron Rating	0.2	0.65	0.8	2.2	5.4
Absolute Micron Rating	0.6	1.2	2.5	5.0	10
Filter Area (Sq. Ft.)**	6.0	8.0	8.0	8.0	8.0
Efficiency at Absolute	>99.99% for all grades				
Extractables	<2 mg/sq. ft. of filter area				
Dimension	2.8 inch O. D.; Lengths to 40 inches				
Rinse Up to 18 megohm cm (min)	<15 min**				

OPERATING PARAMETERS

	PP	PG
Maximum Differential Pressure (psid)	60	60
Maximum Operating Temperature (°C)	80	60
Heat Sterilization (°C)*	121	N/A
Recommended Rinse (Minutes @ 3 gpm)	15	15

*Autoclave or in-situ steam
 ** Per 10" element

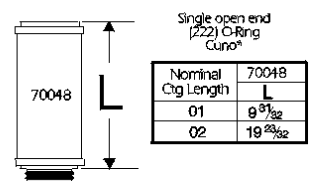
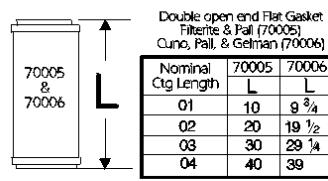
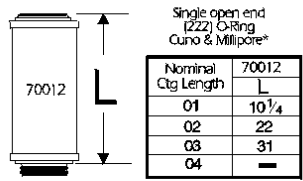
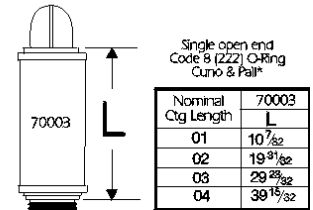
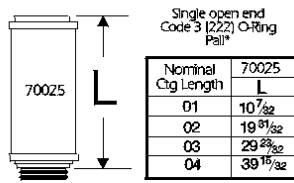
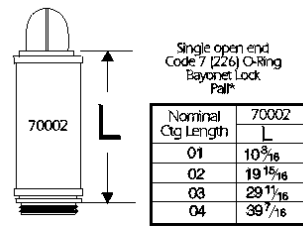
PolyPro PP Series vs. PG Series

PolyPro PG series cartridges are manufactured to the same high standards and materials as the PP series cartridges. PG series cartridges; however, DO NOT incorporate a thermal reinforcing ring, and therefore, thermal sterilization procedures are not recommended.

POLYPRO ORDERING GUIDE

Plant Code 08 Product Code 104

700 XX	XX	X	XXX	X	X
Basic Cartridge Design	Nominal Cartridge Length	Gasket or O-Ring Material	Micron Rating	Formulation	Control Grade
		A (Silicone)	060 (.6 um)	P	P - Reinforced* G - General
		B (Fluorocarbon)	120 (1.2 um)		
		C (EPR)	250 (2.5 um)		
		D (Nitrile)	500 (5.0 um)		
			10C (10.0 um)		



CAUTION - Care must be exercised in applying PolyPro equivalent cartridges to competitive housings. While every effort has been made to ensure compatibility, exceptions may exist. A dimensional check is recommended. *P - Reinforced version is available in these configurations only

WARRANTY

Seller warrants its equipment against defects in workmanship and material for a period of 12 months from date of shipment from the factory under normal use and service and otherwise when such equipment is used in accordance with instructions furnished by Seller and for purposes disclosed in writing at the time of purchase, if any. Any unauthorized alteration or modification of the equipment by Buyer will void this warranty. Seller's liability under this warranty shall be limited to the replacement or repair, F.O.B. point of manufacture, of any defective equipment or part which, having been returned to the factory, transportation charges prepaid, has been inspected and determined by the Seller to be defective.

THIS WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE OR USE, OR ANY OTHER MATTER. Under no circumstances shall Seller be liable to Buyer or any third party for any loss of profits or other direct or indirect costs, expenses, losses or consequential damages arising out of or as a result of any defects in or failure of its products or any part or parts thereof or arising out of or as a result of parts or components incorporated in Seller's equipment but not supplied by the Seller.

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Fluid Purification

CUNO Pacific Pty Ltd
140 Sunnholt Road
Blacktown, NSW 2148
Australia

CUNO Europe SA
Chemin du Contre Halage
62730 - Les Attaques
France

CUNO Srl
Via Tonale n°3
20037 Paderno Dugnano
Italy

CUNO Filtration Asia Pte Ltd
18 Tuas Link 1 (3rd Floor)
Singapore 638597

CUNO Latina Ltda
Rua Amf Do Brasil 251
18120 Mairinque-Sp
Brazil

CUNO GmbH
Wihl-Th-Römheld-Str. 32
55130 Mainz
Germany

CUNO K.K.
Hodogaya Station
Building 6F
1-7 Iwai-cho, Hodogaya-ku
Yokohama 240 Japan

CUNO Ltd
21 Woking Business Park
Albert Drive
Woking, Surrey GU215JY
United Kingdom

Cuno Incorporated
400 Research Parkway
Meriden, CT 06450, U.S.A.
Tel: (800) 243-6894
(203) 237-5541
Fax: (203) 238-8977