45 SERIES CHEMPULSE ® POLYMER ELECTRONIC PUMP

BOOK NO. WEC 450.100 ISSUE A

WALLACE & TIERNAN®

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INTRODUCTION

This instruction book describes the Wallace & Tiernan (W&T) 45 Series Chempulse ® Polymer Electronic Pump installation, operation and service procedures. The polymer pumps have Teflon diaphragms that are driven by an oil filled solenoid that provides quiet operation and long life. Three configurations are available with PVC heads and special polyelectrolyte spring-loaded ball valves.

NOTE: 45 Series metering pumps are suitable for indoor service only.

These chemical metering pumps are designed for feeding chemicals commonly used in water and wastewater treatment, plus industrial process applications. The pump feed rate is variable by adjusting the stroke length knob or the stroke rate knob. Additionally, configurations are available that allow the stroke frequency to be controlled externally by a water meter, a mA-to-pulse frequency converter, a master metering pump, or other similar devices.

ACCESSORIES

The following is a list of accessories available for the polymer pump:

Anti-Syphon Valve - This valve prevents liquid from syphoning through the pump. (Vacuum Breaker) connected to discharge side of pump.

Adapters-Pipe/Tube/Hose - These adapters provide connecting of threaded pipe to tube or hose connections.

Backpressure Valve - This valve enables regulation of the backpressure created on the discharge side of the pump.

Pressure Relief Valve - This is a safety device for the pump. When the discharge pressure is too high, the excessive pressure is discharged into the atmosphere.

Mixer(s) - A mixer consists of a motor, a long shaft, and a propeller. When operating, it creates a constant agitation within the tank.

Wall Mounting Bracket - This accessory enables the pump to be mounted on a shelf.

Pulse Frequency Scaler - This device multiplies or divides the incoming pulse signals and enables user to match the pulse pumps 1-100 pulses/minute.

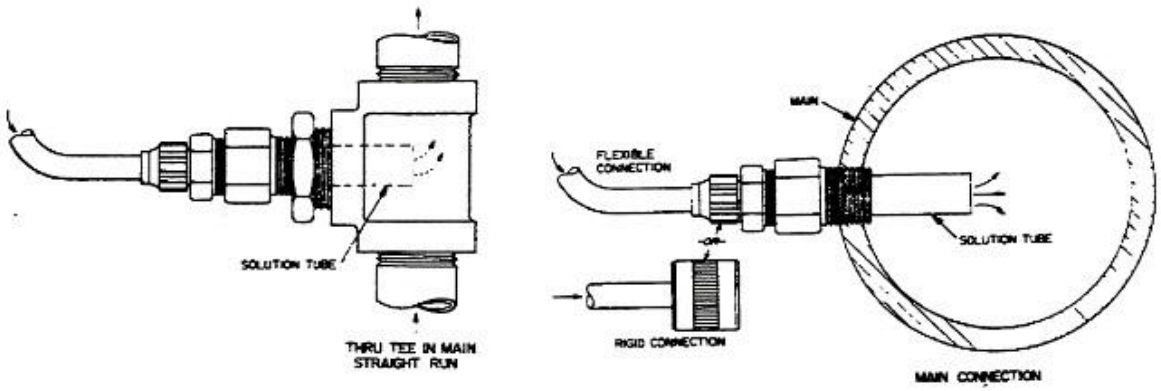
Milliamp to Pulse Frequency Converter (inverting or non-inverting) - This device uses the pulse frequency input and converts it to a 4-20 mA output signal. Non-inverting is 4 mA when 0 strokes/minute and 20 mA is 100 strokes/minute. Inverting is the opposite.

Pulse Retransmitter - This device enables a single pump to perform as a master for slaving other pump(s).

Pulse Totalizer - This unit counts the number of strokes that occur in the pulse pump.

Predetermining Counters - This device enables user to determine how many strokes are required, before the pump will automatically shut off.

Main Connector - The main connector is a 1/2-inch pipe tap. This tap can be on the bottom or side of a main pipe or in a tee of a line too small to tap. It may also be in the side of the storage tank. Always locate the point of application where the solution will be thoroughly mixed with all of the water flowing through the system. If the solution tube end of the main connection is too long, it may be shortened, as required, to deliver the solution into the moving stream.



NOTE: The appearance of fittings for the 10 gph pump is slightly different. For proper dispersion of solution the end of solution tube must extend into main approximately 1/3 diameter of main. End of tube may be cut to meet this condition.

CAUTION: The use of excessive force on plastic parts is not necessary and may result in damage. Tighten screws just enough to prevent leaks without over-torquing. Use wrenches only on fittings designed with flat surfaces. Moderate torque is ample. Use pliers only when parts cannot be grasped with the fingers and do not mark the fitting.

SECTION 1 - TECHNICAL DATA

LIST OF CONTENTS

1 TECHNICAL DATA

Model No.	Max. gph	Max. mL/Stroke	Max. gal./Stroke	Max. psi	Weight lbs.
45-010	1	0.631	0.000167	150	12
45-050	5	3.15	0.000833	100	23
45-100	10	6.31	0.00167	50	23

Line Voltage: 115 Vac ± 10% 50/60 Hz or 180-266 Vac 50/60 Hz

Peak Current:
1 gph: 1.5A @ 115V
5 & 10 gph: 2.3A @ 115V

Stroke Rate: 4 to 100 strokes per minute

Stroke Length: 0 to 100%

Lift-Suction: 5 feet of water at 100% stroke length and 100% of stroke speed, zero backpressure and valves wetted. A flooded suction is preferred.

Operating Temperature Range: -10 to 40°C (14 to 104°F)

Fluid Temperature Range: -10 to 50°C (14 to 122°F)

Diaphragm: TFE (Teflon) faced

Heads: Clear Acrylic

Valves:
PVC housings
TFE balls
PVC seats
Cobenium springs
Kynar guides
Viton O-rings

Apparent Viscosity: 50,000 CPS; Using a Brookfield viscometer #4 spindle @ 12 rpm.

Controls:
Stroke length on pump
Stroke rate: at pump or remotely

LIQUID	REF. NO.	HAST. C.	316 S.S.	HYPALON	VITON	PVC	TFE	NORDEL	KYNAR
ACETALDEHYDE	54	A	A	C	C	C	A	B	C
ACETATE SOLVENTS	54	A	A	C	C	C	A	-	A
ACETIC ACID, CRUDE	2, 54	A	A	C	C	C	A	B	A
ACETIC ACID, PURE	2, 54	A	A	C	C	C	A	B	A
ACETIC ACID 10%	2, 3	A	A	B	C	A	A	A	A
ACETIC ACID 80%	2, 54	A	B	C	C	C	A	B	A
ACETIC ANHYDRIDE	2	A	B	A	C	C	A	C	C
ACETONE		A	A	C	C	C	A	A	C
ACETYLENE		A	A	B	A	A	A	A	A
ACRYLONITRILE	55	A	A	C	C	A	-	-	A
ALUMINUM CHLORIDE	5	B	B	A	A	A	A	A	A
ALUMINUM HYDROXIDE	6	A	A	A	A	A	A	A	A
ALUMINUM NITRATE		A	A	B	C	A	A	A	A
ALUMINUM SULFATE	3	A	A	A	A	A	A	A	A
ALUMS		A	B	A	C	A	A	A	A
AMINES		A	A	C	C	A	A	-	-
AMINES (FILMINE) B		A	A	C	C	A	A	-	-
AMMONIA ANHYDROUS (LIQ.)		A	A	B	C	A	A	A	C
AMMONIA SOLUTIONS		A	A	C	C	A	A	-	A
AMMONIUM CARBONATE		A	A	A	A	A	A	-	A
AMMONIUM CHLORIDE	2, 7	A	B	A	A	A	A	A	A
AMMONIUM HYDROXIDE	8	A	A	A	A	A	A	A	A
AMMONIUM MONO PHOSPHATE	9	A	A	A	A	A	A	A	A
AMMONIUM DI-PHOSPHATE	9	A	A	A	A	A	A	A	A
AMMONIUM TRI-PHOSPHATE	9	A	A	A	A	A	A	A	A
AMMONIUM NITRATE		B	A	A	A	A	A	A	A
AMMONIUM SULFATE	2, 10	B	A	A	A	A	A	A	A
AMMONIUM SULFIDE	2	-	B	A	C	A	-	-	A
AMYL ACETATE	55	A	A	C	C	C	A	A	A
AMYL ALCOHOL	11, 12	A	A	A	A	B	A	A	A
AMYL CHLORIDE		A	A	C	C	C	A	C	A
ANILINE	13	A	A	C	A	C	A	B	B
ANILINE DYES		A	A	B	B	C	A	-	-
ARSENIC ACID	14	A	B	C	A	A	A	-	A
BARIUM CARBONATE	15	A	B	A	A	A	A	-	A
BARIUM CHLORIDE		A	A	B	A	A	A	-	A
BARIUM HYDROXIDE	14, 5	A	A	B	A	A	A	A	A
BARIUM SULFATE		-	A	A	A	A	A	-	A
BARIUM SULFIDE		-	B	A	A	A	A	-	A
BEER		A	A	A	A	A	A	A	A
BEET SUGAR LIQUORS		A	A	C	A	A	A	-	A
BENZENE OR BENZOL	13, 14	A	A	C	B	C	A	C	B
BENZALDEHYDE		A	A	C	C	C	A	B	B
BENZOIC ACID		A	A	C	A	A	A	C	A
BLACK SULFATE LIQUOR	54	-	A	B	A	A	A	-	A
BORAX (SODIUM BORATE)	14	A	A	B	A	A	A	A	A
BORIC ACID	16	A	A	A	A	A	A	A	A
BUTANE		A	A	A	B	A	A	B	A
BUTADIENE		A	A	B	B	A	A	-	A
BUTYL ACETATE		A	A	C	-	B	A	C	C

CHEMICAL COMPATIBILITY OF 43-300 SERIES AND 45 SERIES METERING PUMPS - PERFORMANCE

430.300.190.010A
ISSUE 3 10-92

LIQUID	REF. NO.	HAST. C.	316 S.S.	HYPALON	VITON	PVC	TFE	NORDEL	KYNAR
BUTYL ALCOHOL	17	A	A	A	A	A	A	-	A
BUTYRIC ACID	14	A	A	A	B	B	A	C	A
CALCIUM BISULFITE		A	A	A	A	A	A	A	A
CALCIUM CARBONATE	15	B	A	A	A	A	A	A	A
CALCIUM CHLORATE		A	A	A	A	A	A	A	A
CALCIUM CHLORIDE	18	A	B	A	A	A	A	A	A
CALCIUM HYDROXIDE	15	A	A	A	A	A	A	A	A
CALCIUM HYPOCHLORITE		A	C	A	A	A	A	A	A
CALCIUM NITRATE		A	A	A	A	A	A	A	A
CALCIUM SULFATE		A	A	A	A	A	A	-	A
CANE SUGAR LIQUORS	14	A	A	C	B	-	A	-	A
CARBOLIC ACID (PHENOL)	11, 14, 54	A	A	C	A	A	A	B	A
CARBON BISULFIDE		A	A	C	A	A	-	-	-
CARBONIC ACID	14, 54	A	A	A	A	A	A	-	A
CARBON TETRACHLORIDE	13, 3	A	A	C	A	C	A	C	A
CHLORACETIC ACID		A	C	C	C	A	A	A	C
CHLOROBENZENE (DRY)		A	A	C	A	C	A	C	A
CHLOROFORM		A	A	C	A	C	A	C	A
CHLORSULPHONIC ACID		A	B	C	C	A	A	C	C
CHROMIC ACID	19, 55	B	A	A	A	A	A	C	A
CITRIC ACID	20	A	A	A	A	A	A	A	A
COPPER ACETATE		A	A	C	C	A	A	-	A
COPER CHLORIDE	5	A	C	B	A	A	A	A	A
COPPER CYANIDE	3	A	A	A	A	A	A	-	A
COPPER NITRATE	3	B	A	A	A	A	A	A	A
COPPER SULFATE	21	A	A	A	A	A	A	A	A
CREOSOTE	3	A	A	C	A	C	A	C	A
CRESYLIC ACID (50%)		A	A	C	A	A	A	-	A
CYCLOHEXANE		A	A	C	A	C	A	C	A
DETERGENT		-	-	A	A	A	A	-	-
DIETHYLAMINE	54	A	A	C	C	C	-	-	A
DIETHYLENE GLYCOL		A	A	A	A	A	A	A	-
DOWTHERMS		-	A	C	A	C	-	C	-
ETHERS (ETHYL)		A	A	C	B	C	A	C	B
ETHYL ACETATE		A	A	C	C	C	A	A	C
ETHYL ALCOHOL	12	A	A	A	A	A	A	A	A
ETHYL CHLORIDE		A	A	C	A	C	A	B	A
ETHYLENE CHLORIDE	22	-	A	C	B	C	A	B	A
ETHYLENE GLYCOL	12	A	A	A	A	A	A	A	A
ETHYL MERCAPTAN		A	A	C	-	-	-	-	-
ETHYLENE OXIDE		A	A	C	C	C	A	C	C
FATTY ACIDS	14	A	A	C	A	A	A	C	A
FERRIC CHLORIDE	23, 6	B	C	A	A	A	A	A	A
FERRIC NITRATE		B	A	A	A	A	A	A	A
FERRIC SULFATE	24	A	B	A	A	A	A	-	A
FERROUS CHLORIDE		C	C	A	A	A	A	A	A
FERROUS SULFATE	14	B	B	A	A	A	A	A	A
FILTER AID	15	A	A	A	A	C	A	A	A
FLUOSILICIC ACID	6, 25, 26	A	B	A	A	A	A	A	A
FORMALDEHYDE		A	A	A	C	A	A	A	A
FORMIC ACID	3, 55	A	A	A	B	B	A	B	A
FRUIT JUICES		A	A	C	A	A	A	-	A
FURFURAL	54	B	A	C	C	C	A	B	A
GALLIC ACID (5%)		B	A	C	A	A	A	B	B
GASOLINE		A	A	C	A	A	A	C	A

CHEMICAL COMPATIBILITY OF 43-300 SERIES
AND 45 SERIES METERING PUMPS - PERFORMANCE

LIQUID	REF. NO.	HAST. C.	316 S.S.	HYPALON	VITON	PVC	TFE	NORDEL	KYNAR
GLUCOSE		A	A	A	A	A	A	A	A
GLYCEROL (GLYCERIN)	6, 11, 27	A	A	A	A	A	A	A	A
HEPTANE, HEXANE		A	A	A	A	C	A	A	A
HYDRAZINE (35%)	28	B	A	B	C	-	-	A	A
HYDROBROMIC ACID	29	B	C	A	A	A	A	-	A
HYDROCHLORIC ACID (37%)	5, 30	B	C	A	A	A	A	B	A
HYDROCYANIC ACID		A	A	A	A	A	A	A	A
HYDROFLUORIC ACID	6, 26, 25	A	C	A	A	A	A	A	A
HYDROGEN PEROXIDE	31, 56	A	B	A	A	A	A	B	A
HYDROGEN SULFIDE	11, 3	A	A	A	A	A	A	A	A
HYDROFLUOSILICIC ACID	6, 25, 26, 54	A	B	A	A	A	A	A	A
INKS	19	A	A	A	A	A	A	-	-
IODINE SOLUTION		A	C	B	A	C	A	C	A
KEROSENE		A	A	C	A	A	A	C	A
LACTIC ACID	32, 54	A	A	A	A	A	A	A	A
LEAD ACETATE		A	A	C	C	A	A	A	A
LIME SLURRIES	15	A	A	A	A	A	A	A	A
LINSEED OIL		A	A	A	A	A	A	B	A
MAGNESIUM CARBONATE		A	A	A	A	A	A	A	A
MAGNESIUM CHLORIDE	6, 34	A	C	A	A	A	A	A	A
MAGNESIUM HYDROXIDE	6, 15	A	A	A	A	A	A	A	A
MAGNESIUM NITRATE		A	A	A	A	A	A	A	A
MAGNESIUM SULFATE	14, 5	A	A	A	A	A	A	A	A
MALEIC ACID (DILUTE)	5, 14	A	A	C	A	A	A	C	A
MALIC ACID	14	A	A	B	A	A	A	-	A
MELAMINE RESINS		A	A	C	-	A	A	-	-
MERCURIC CHLORIDE	5	A	C	A	A	A	A	A	A
MERCURIC CYANIDE		A	A	A	A	A	A	-	A
MERCURY		B	A	A	A	A	A	A	A
METHYL ACETATE	54	-	A	C	C	-	A	-	A
METHYL ACETONE		-	A	C	C	C	-	-	-
METHYL ALCOHOL	35	A	A	A	B	A	A	A	A
METHYLAMINE		-	A	C	C	-	-	-	C
METHYL BROMIDE		A	A	C	A	C	-	-	A
METHYL CELLOSOLVE		A	A	C	C	-	A	B	A
METHYL CHLORIDE (LIQ.)		A	A	C	C	C	A	C	A
METHYL ETHYL KETONE		A	A	C	C	C	A	A	C
METHYLENE CHLORIDE	36, 14	A	A	C	B	C	A	C	C
MOLASSES		A	A	A	A	A	A	-	A
MONO CHLORACETIC ACID		A	C	-	-	A	A	-	A
MORPHOLINE	54	A	A	C	C	A	A	C	A
NAPHTHA	13	A	A	C	A	A	A	C	A
NAPHTHALENE	11	A	A	C	A	C	A	C	A
NICKEL CHLORIDE		A	A	A	A	A	A	A	A
NICKEL NITRATE	14	A	A	A	A	A	A	A	A
NICKEL SULFATE	14	A	A	A	A	A	A	A	A
NICOTINIC ACID		-	A	C	A	A	-	-	A
NITRIC ACID (10%)	57	B	A	A	A	A	A	B	A
NITRIC ACID (70%) TO 100F	57	B	B	C	B	A	A	C	A
NITROBENZENE		A	A	C	C	C	A	A	B
OILS, ANIMAL		A	A	C	A	A	A	-	A
OIL, COTTONSEED	11, 55	A	A	A	A	A	A	A	A
OILS FUEL	37, 14	A	A	A	A	A	A	C	A
OLEIC ACID	3	A	A	C	C	A	A	B	A
OLEUM 20-25%		A	A	C	B	C	A	C	C

CHEMICAL COMPATIBILITY OF 43-300 SERIES
AND 45 SERIES METERING PUMPS - PERFORMANCE

LIQUID	REF. NO.	HAST. C.	316 S.S.	HYPALON	VITON	PVC	TFE	NORDEL	KYNAR
OXALIC ACID		A	B	A	A	A	A	A	A
PALMITIC ACID	3	-	A	C	A	A	A	B	A
PERCHLOROETHYLENE (DRY)	11	-	A	C	A	C	-	C	A
PERCHLORIC ACID (10%)		-	C	B	-	B	-	-	A
PHENOL (CARBOLIC ACID)	11	A	A	C	A	A	A	B	A
PHOSPHORIC ACID	6, 11, 2, 39	A	A	A	A	A	A	A	A
PHOSPHORUS TRICHLORIDE		A	-	C	A	C	A	A	A
PIORIC ACID	54	A	A	A	A	C	-	B	A
POTASSIUM BICARBONATE		A	A	A	A	A	-	-	A
POTASSIUM TETRA BORATE		-	-	-	-	A	-	-	-
POTASSIUM BROMATE		-	-	-	-	A	-	-	A
POTASSIUM BROMIDE		A	A	A	A	A	A	-	A
POTASSIUM CARBONATE	40	A	A	A	A	A	A	A	A
POTASSIUM CHLORATE	3	A	A	A	A	A	A	A	A
POTASSIUM CHLORIDE	5, 41	A	B	A	A	A	A	A	A
POTASSIUM CHROMATE		A	A	A	A	A	A	-	A
POTASSIUM CYANIDE		A	A	A	A	A	A	-	A
POTASSIUM HYDROXIDE	42	A	A	A	C	A	A	A	A
POTASSIUM NITRATE		A	A	A	A	A	A	A	A
POTASSIUM PERMANGANATE	5, 43	A	A	A	A	A	A	A	A
POTASSIUM MONO PHOSPHATE		A	A	A	A	A	-	-	-
POTASSIUM DI-PHOSPHATE		A	A	-	A	A	-	-	-
POTASSIUM SULFATE	41, 5	A	A	A	A	A	A	A	A
POTASSIUM SULFIDE		-	A	-	A	A	A	-	A
POTASSIUM SULFITE		-	A	B	A	A	-	-	-
PROPANE (LIQ.)		A	A	A	B	A	A	C	A
PROPYL ALCOHOL	12, 55	A	A	A	A	B	A	-	A
PROPYLENE GLYCOL		A	A	A	A	C	A	A	A
RESINS & ROSINS		A	A	-	A	-	-	-	-
SEA WATER		C	B	A	A	A	A	A	A
SILVER NITRATE		A	A	A	A	A	A	B	A
SOAP SOLUTIONS (STEARATES)	6, 54	A	A	A	A	A	A	A	A
SODIUM ACETATE		A	A	C	A	A	A	A	A
SODIUM ALUMINATE 27Be		A	A	A	A	B	A	A	A
SODIUM BICARBONATE		A	A	A	A	A	A	A	A
SODIUM BISULFATE (TO 100°F)		A	A	A	A	A	A	A	A
SODIUM BISULFITE (TO 100°F)		A	A	A	A	A	A	A	A
SODIUM BORATE	14	A	A	A	A	A	A	A	A
SODIUM CARBONATE	44	A	A	A	A	A	A	A	A
SODIUM CHLORATE	14	A	A	A	A	A	A	A	A
SODIUM CHLORIDE	3	A	B	A	A	A	A	A	A
SODIUM CHLORITE (TO 20%)	45	A	C	-	-	C	-	A	A
SODIUM CHROMATE		A	A	-	A	A	A	-	A
SODIUM CYANIDE		A	A	A	A	A	A	A	A
SODIUM FLUORIDE	25, 46	B	B	A	A	A	A	-	A
SODIUM HYDROXIDE 20%	5, 3, 6	A	A	A	C	A	A	A	A
SODIUM HYDROXIDE 50%	5, 3, 6	A	A	A	C	A	A	A	A
SODIUM HYPOCHLORITE	30, 13, 47	A	C	A	B	A	A	C	A
SODIUM NITRATE	48	A	A	A	A	A	A	-	A
SODIUM PERBORATE		A	A	B	A	B	A	–	-
SODIUM PEROXIDE	6	A	A	A	A	B	A	A	A
SODIUM MONO PHOSPHATE		A	A	A	A	A	A	A	A
SODIUM DI- OR TRI-PHOSPHATE		A	A	A	A	A	A	A	A
SODIUM POLYPHOSPHATE		A	A	B	A	A	A	A	A
SODIUM SILICATE	49	A	A	A	A	B	A	A	A

CHEMICAL COMPATIBILITY OF 43-300 SERIES
AND 45 SERIES METERING PUMPS - PERFORMANCE

LIQUID	REF. NO.	HAST. C.	316 S.S.	HYPALON	VITON	PVC	TFE	NORDEL	KYNAR
SODIUM SULFATE	50	A	A	A	A	A	A	A	A
SODIUM SULFIDE	1, 48	A	A	A	A	B	A	-	A
SODIUM SULFITE	44	A	A	A	A	A	A	A	A
SODIUM BORATE - SEE BORAX		-	-	-	-	-	-	-	A
SODIUM THIOSULFATE (HYPO)	51	A	B	A	A	B	A	A	A
STARCH		A	A	A	A	A	A	-	-
STEARIC ACID	37	A	A	B	A	A	A	B	A
SUGAR SOLUTIONS	14	A	A	B	-	A	A	-	A
SULPHUR MOLTEN		A	A	C	A	A	A	A	A
SULFUR CHLORIDE	54	A	C	A	A	-	A	C	A
SULPHURIC ACID 0-40%	5	A	C	A	A	A	A	B	A
SULPHURIC ACID 40-95%	5, 56	A	C	A	A	A	A	C	A
SULPHURIC ACID 95-100%		A	A	B	A	A	A	C	A
SULPHUROUS ACID		A	B	A	A	A	A	C	A
TANNIC ACID	52	A	A	A	A	A	A	A	-
TARTARIC ACID	6, 44	A	A	A	A	A	A	B	A
TITANIUM DIOXIDE		A	A	A	A	B	A	A	-
TOLUOL & TOLUENE	36	A	A	C	A	C	A	C	B
TRICHLORETHYLENE	54	A	A	C	A	C	A	C	A
TURPENTINE	13	A	A	C	A	A	A	C	A
UREA FORMALDEHYDE		A	A	-	-	-	A	-	A
VARNISH & SOLVENTS	14	A	A	C	A	-	A	-	-
VINEGAR		A	A	A	-	A	A	-	-
VINYL ACETATE		A	A	C	C	C	A	C	A
WATER, DEIONIZED		A	A	A	A	A	A	A	A
WATER, SALT		C	B	A	A	A	A	A	-
WHISKEY AND WINES	55	A	A	A	A	A	A	-	A
XYLENE OR XYLOL	13	A	A	C	A	C	A	C	A
ZINC CHLORIDE	6, 53	A	C	A	A	A	A	A	A
ZINC HYDROSULFITE		A	B	-	A	A	A	-	-
ZINC SULFATE		A	A	A	A	A	A	A	A

NOTES:

WARNING: TO AVOID POSSIBLE SEVERE PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT WHEN DEALING WITH ANY CHEMICAL, IT IS THE RESPONSIBILITY OF THE EQUIPMENT USER TO OBTAIN AND FOLLOW THE SAFETY PRECAUTIONS OF THE MANUFACTURER OF THE CHEMICAL.

WARNING: THE STANDARD INTERMEDIATE FLUID IS PROPYLENE GLYCOL. IT IS THE USER'S RESPONSIBILITY TO CONFIRM COMPATIBILITY WITH THE CHEMICALS TO BE METERED AND POSSIBLE HAZARDS FROM PRODUCT CONTAMINATION.

KYNAR RATED UP TO 150°F.

RATING KEY

A	ACCEPTABLE
B	SATISFACTORY WHERE MINOR ATTACK IS ACCEPTABLE
C	SHOULD NOT BE USED
-	INFORMATION LACKING

UNLESS OTHERWISE NOTED, CONCENTRATION OF AQUEOUS SOLUTIONS ARE SATURATED. ALL RATINGS ARE AT ROOM TEMPERATURE UNLESS SPECIFIED.

CHEMICAL COMPATIBILITY OF 43-300 SERIES AND 45 SERIES METERING PUMPS - PERFORMANCE

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