WATER PROCESS SOLUTIONS

CHEMICAL COMPATIBILITY OF METERING PUMPS

LIQUID	REF. NO.	316 S.S.	HYPALON	VITON	PVC	TFE	KYNAR 150F	CERAMIC
ACETALDEHYDE	57	A	C	C	C	A	C	A
ACETATE SOLVENTS	57	A	C	C	C	A	A	A
ACETIC ACID, CRUDE	57	A	C	C	C	A	A	A
ACETIC ACID, PURE	57	A	C	C	C	A	A	A
ACETIC ACID (10%)	3	A	B	C	A	A	A	A
ACETIC ACID (80%)	57	B	C	C	C	A	A	A
ACETIC ANHYDRIDE		B	A	C	C	A	C	A
ACETONE		A	C	C	C	A	C	A
ACETYLENE		A	B	A	A	A	A	N
ACRYLONITRILE	58	A	C	C	A	N	A	N
ALUMINUM CHLORIDE	5	B	A	A	A	A	A	A
ALUMINUM HYDROXIDE	6	A	A	A	A	A	A	N
ALUMINUM NITRATE		A	B	C	A	A	A	A
ALUMINUM SULFATE	3	A	A	A	A	A	A	A
ALUMS		B	A	C	A	A	A	A
AMINES		A	C	C	A	A	N	N
AMINES (FILMINE) B		A	C	C	A	A	N	N
AMMONIA ANHYDROUS (LIQ.)		A	B	C	A	A	C	A
AMMONIA SOLUTIONS		A	B	B	A	A	A	N
AMMONIUM CARBONATE		A	A	A	A	A	A	A
AMMONIUM CHLORIDE	7	B	A	A	A	A	A	N
AMMONIUM DIPHOSPHATE	9	A	A	A	A	A	A	A
AMMONIUM HYDROXIDE	8	A	A	A	A	A	A	A
AMMONIUM MONOPHOSPHATE	9	A	A	A	A	A	A	A
AMMONIUM NITRATE		A	A	A	A	A	A	A
AMMONIUM SULFATE	10	A	A	A	A	A	A	A
AMMONIUM SULFIDE		A	A	A	A	A	A	A
AMMONIUM TRIPHOSPHATE	9	A	A	A	A	A	A	A
AMYL ACETATE	58	A	C	C	C	A	A	A
AMYL ALCOHOL	11,12	A	A	A	B	A	A	A
AMYL CHLORIDE		A	C	C	C	A	A	A
ANILINE	13	A	C	A	C	A	B	A
ANILINE DYES		A	B	B	C	A	N	A
ARSENIC ACID	14	B	C	A	A	A	A	N
BARIUM CARBONATE	15	B	A	A	A	A	A	A
BARIUM CHLORIDE		A	B	A	A	A	A	A
BARIUM HYDROXIDE	14,5	A	B	A	A	A	A	N
BARIUM SULFATE		A	A	A	A	A	A	A
BARIUM SULFIDE		B	A	A	A	A	A	A
BEER		A	A	A	A	A	A	A
BEET SUGAR LIQUORS		A	C	A	A	A	A	A
BENZALDEHYDE		A	C	C	C	A	B	A
BENZENE OR BENZOL	13,14	A	C	B	C	A	B	A
BENZOIC ACID		A	C	A	A	A	A	A
BLACK SULFATE LIQUOR	57	A	B	A	A	A	A	A
BORAX (SEE SODIUM BORATE)		-	-	-	-	-	-	-
BORIC ACID	16	A	A	A	A	A	A	A
BUTANE		A	A	B	A	A	A	A
BUTADIENE		A	B	B	A	A	A	A
BUTYL ACETATE		A	C	N	B	A	C	N
BUTYL ALCOHOL	17	A	A	A	A	A	A	A
BUTYRIC ACID	14	A	A	B	B	A	A	A
CALCIUM BISULFITE		A	A	A	A	A	A	A
CALCIUM CARBONATE	15	A	A	A	A	A	A	B
CALCIUM CHLORATE		A	A	A	A	A	A	A
CALCIUM CHLORIDE	18	B	A	A	A	A	A	A
CALCIUM HYDROXIDE	15	A	A	A	A	A	A	C
CALCIUM HYPOCHLORITE		C	A	A	A	A	A	B
CALCIUM NITRATE		A	A	A	A	A	A	A
CALCIUM SULFATE		A	A	A	A	A	A	N
CANE SUGAR LIQUORS	14	A	C	B	N	A	A	A
CARBOLIC ACID (PHENOL)	11.14.57	A	C	A	A	A	A	A
CARBON BISULFIDE		A	C	A	A	N	N	N
CARBONIC ACID	14,57	A	A	A	A	A	A	N

WATER PROCESS SOLUTIONS

CHEMICAL COMPATIBILITY OF METERING PUMPS

LIQUID	REF. NO.	316 S.S.	HYPALON	VITON	PVC	TFE	KYNAR 150F	CERAMIC
CARBON TETRACHLORIDE	13,3	A	C	A	C	A	A	A
CHLORACETIC ACID		C	C	C	A	A	C	A
CHLOROBENZENE (DRY		A	C	A	C	A	A	A
CHLOROFORM		A	C	A	C	A	A	A
CHLORSULPHONIC ACID		B	C	C	A	A	C	A
CHROMIC ACID	19,58	A	A	A	A	A	A	A
CITRIC ACID	20	A	A	A	A	A	A	A
COPPER ACETATE		A	C	C	A	A	A	N
COPPER CHLORIDE	5	C	B	A	A	A	A	A
COPPER CYANIDE	3	A	A	A	A	A	A	N
COPPER NITRATE	3	A	A	A	A	A	A	A
COPPER SULFATE	21	A	A	A	A	A	A	A
CREOSOTE	3	A	C	A	C	A	A	A
CRESYLIC ACID (50%)		A	C	A	A	A	A	N
CYCLOHEXANE		A	C	A	C	A	A	A
DETERGENT		N	A	A	A	A	N	A
DIETHYLAMINE	57	A	C	C	C	N	A	A
DIETHYLENE GLYCOL		A	A	A	A	A	N	A
DOWTHERMS		A	C	A	C	N	N	N
ETHERS (ETHYL)		A	C	B	C	A	B	A
ETHYL ACETATE		A	C	C	C	A	C	A
ETHYL ALCOHOL	12	A	A	A	A	A	A	A
ETHYL CHLORIDE		A	C	A	C	A	A	A
ETHYLENE CHLORIDE	22	A	C	B	C	A	A	N
ETHYLENE GLYCOL ETHYL	12	A	A	A	A	A	A	A
ETHYL MERCAPTAN		A	C	N	N	N	N	N
ETHYLENE OXIDE		A	C	C	C	A	C	A
FATTY ACIDS	14	A	C	A	A	A	A	A
FERRIC CHLORIDE	6	C	A	A	A	A	A	A
FERRIC NITRATE		A	A	A	A	A	A	A
FERRIC SULFATE	24	B	A	A	A	A	A	A
FERROUS CHLORIDE		C	A	A	A	A	A	A
FERROUS SULFATE	14	B	A	A	A	A	A	A
FILTER AID	15	A	A	A	C	A	A	A
FLUOSILICIC ACID	6,25,26	B	A	A	A	A	A	C
FORMALDEHYDE		A	A	C	A	A	A	A
FORMIC ACID	3,58	A	A	B	B	A	A	A
FRUIT JUICES		A	C	A	A	A	A	A
FURFURAL	57	A	C	C	C	A	A	A
GALLIC ACID (5%)		A	C	A	A	A	B	A
GASOLINE		A	C	A	A	A	A	A
GLUCOSE		A	A	A	A	A	A	A
GLYCEROL (GLYCERIN)	6,11,27	A	A	A	A	A	A	A
HEPTANE, HEXANE		A	A	A	C	A	A	A
HYDRAZINE (35%)	28	A	B	C	N	N	A	B
HYDROBROMIC ACID	29	C	A	A	A	A	A	A
HYDROCHLORIC ACID (37%)	5,30	C	A	A	A	A	A	A
HYDROCYANIC ACID		A	A	A	A	A	A	A
HYDROFLUORIC ACID	6,26,25	C	A	A	A	A	A	C
HYDROFLUOSILICIC ACID	6,25,26,57	B	A	A	A	A	A	C
HYDROGEN PEROXIDE	31,59	B	A	A	A	A	A	A
HYDROGEN SULFIDE	11,3	A	A	A	A	A	A	A
INKS	19	A	A	A	A	A	N	N
IODINE SOLUTION		C	B	A	C	A	A	A
KEROSENE		A	C	A	A	A	A	A
LACTIC ACID	32,57	A	A	A	A	A	A	A
LEAD ACETATE		A	C	C	A	A	A	A
LIME SLURRIES	15	A	A	A	A	A	A	N
LINSEED OIL		A	A	A	A	A	A	A
MAGNESIUM CARBONATE		A	A	A	A	A	A	A
MAGNESIUM CHLORIDE	6,34	C	A	A	A	A	A	A
MAGNESIUM HYDROXIDE	6,15	A	A	A	A	A	A	N
MAGNESIUM NITRATE		A	A	A	A	A	A	A
MAGNESIUM SULFATE	14,5	A	A	A	A	A	A	A

WATER PROCESS SOLUTIONS

CHEMICAL COMPATIBILITY OF METERING PUMPS

LIQUID	REF. NO.	316 S.S.	HYPALON	VITON	PVC	TFE	KYNAR 150F	CERAMIC
MALEIC ACID (DILUTE)	5,14	A	C	A	A	A	A	A
MALIC ACID	14	A	B	A	A	A	A	A
MELAMINE RESINS		A	C	N	A	A	N	A
MERCURIC CHLORIDE	5	C	A	A	A	A	A	A
MERCURIC CYANIDE		A	A	A	A	A	A	N
MERCURY		A	A	A	A	A	A	A
METHYL ACETATE	57	A	C	C	N	A	A	N
METHYL ACETONE		A	C	C	C	N	N	N
METHYL ALCOHOL	35	A	A	B	A	A	A	A
METHYLAMINE		A	C	C	N	N	C	N
METHYL BROMIDE		A	C	A	C	N	A	N
METHYL CELLOSOLVE		A	C	C	N	A	A	A
METHYL CHLORIDE (LIQ.)		A	C	C	C	A	A	A
METHYLETHYL KETONE		A	C	C	C	A	C	A
METHYLENE CHLORIDE	36,14	A	C	B	C	A	C	A
MOLASSES		A	A	A	A	A	A	N
MONOCHLORACETIC ACID		C	N	N	A	A	A	A
MORPHOLINE	57	A	C	C	A	A	A	A
NAPHTHA	13	A	C	A	A	A	A	A
NAPHTHALENE	11	A	C	A	C	A	A	A
NICKEL CHLORIDE		A	A	A	A	A	A	A
NICKEL NITRATE	14	A	A	A	A	A	A	A
NICKEL SULFATE	14	A	A	A	A	A	A	A
NICOTINIC ACID		A	C	A	A	N	A	A
NITRIC ACID (10%)	60	A	A	A	A	A	A	A
NITRIC ACID (70%) TO 100*F	60	B	C	B	A	A	A	A
NITROBENZENE		A	C	C	C	A	B	A
OILS, ANIMAL		A	C	A	A	A	A	A
OIL, COTTONSEED	11,58	A	A	A	A	A	A	A
OILS, FUEL	37,14	A	A	A	A	A	A	A
OLEIC ACID	3	A	C	C	A	A	A	A
OLEUM (20 25%)		A	C	B	C	A	C	A
OXALIC ACID		B	A	A	A	A	A	A
PALMITIC ACID	3	A	C	A	A	A	A	N
PERCHLORIC ACID (10%)		C	B	N	B	N	A	N
PERCHLOROETHYLENE (DRY)	11	A	C	A	C	N	A	N
PHENOL (CARBOLIC ACID)	11	A	C	A	A	A	A	A
PHOSPHORIC ACID		A	A	A	A	A	A	A
PHOSPHORUS TRICHLORIDE		N	C	A	C	A	A	A
PICRIC ACID		A	A	A	C	N	A	N
POTASSIUM BICARBONATE		A	A	A	A	N	A	A
POTASSIUM BROMATE		N	N	N	A	N	A	N
POTASSIUM BROMIDE		A	A	A	A	A	A	A
POTASSIUM CARBONATE	40	A	A	A	A	A	A	A
POTASSIUM CHLORATE	3	A	A	A	A	A	A	A
POTASSIUM CHLORIDE	5,41	B	A	A	A	A	A	A
POTASSIUM CHROMATE		A	A	A	A	A	A	N
POTASSIUM CYANIDE		A	A	A	A	A	A	N
POTASSIUM DIPHOSPHATE		A	N	A	A	N	N	N
POTASSIUM HYDROXIDE	42	A	A	C	A	A	A	C
POTASSIUM MONOPHOSPHATE		A	A	A	A	N	N	N
POTASSIUM NITRATE		A	A	A	A	A	A	A
POTASSIUM PERMANGANATE	5,43	A	A	A	A	A	A	A
POTASSIUM SULFATE	41,5	A	A	A	A	A	A	N
POTASSIUM SULFIDE		A	N	A	A	A	A	A
POTASSIUM SULFITE		A	B	A	A	N	N	N
POTASSIUM TETRABORATE		N	N	N	A	N	N	N
PROPANE (LIQ.)		A	A	B	A	A	A	A
PROPYL ALCOHOL	12,58	A	A	A	B	A	A	N
PROPYLENE GLYCOL		A	A	A	C	A	A	A
RESINS & ROSINS		A	N	A	N	N	N	N
SEA WATER		B	A	A	A	A	A	A
SILVER NITRATE		A	A	A	A	A	A	A
SOAP SOLUTIONS (STEARATES)	6,57	A	A	A	A	A	A	A

WATER PROCESS SOLUTIONS

CHEMICAL COMPATIBILITY OF METERING PUMPS

LIQUID	REF. NO.	316 S.S.	HYPALON	VITON	PVC	TFE	KYNAR 150F	CERAMIC
SODIUM ACETATE		A	C	A	A	A	A	A
SODIUM ALUMINATE 27%		A	A	A	B	A	A	A
SODIUM BICARBONATE		A	A	A	A	A	A	A
SODIUM BISULFATE (TO 100F)		A	A	A	A	A	A	A
SODIUM BISULFITE (TO 100F)		A	A	A	A	A	A	A
SODIUM BORATE	14	A	A	A	A	A	A	N
SODIUM CARBONATE	44	A	A	A	A	A	A	A
SODIUM CHLORATE	14	A	A	A	A	A	A	A
SODIUM CHLORIDE	3	B	A	A	A	A	A	A
SODIUM CHLORITE (TO 20%)	45	C	N	N	C	N	A	A
SODIUM CHROMATE		A	N	A	A	A	A	N
SODIUM CYANIDE		A	A	A	A	A	A	A
SODIUM DI OR TRIPHOSPHATE		A	A	A	A	A	A	A
SODIUM FLUORIDE	25,46	B	A	A	A	A	A	C
SODIUM HYDROXIDE 20%	5,3,6	A	A	C	A	A	A	C
SODIUM HYDROXIDE 50%	5,3,6	A	A	C	A	A	A	C
SODIUM HYPOCHLORITE	30,13,47	C	A	B	A	A	A	N
SODIUM MONOPHOSPHATE		A	A	A	A	A	A	A
SODIUM NITRATE	48	A	A	A	A	A	A	A
SODIUM PERBORATE		A	B	A	B	A	N	N
SODIUM PEROXIDE	6	A	A	A	B	A	A	A
SODIUM POLYPHOSPHATE		A	B	A	A	A	A	A
SODIUM SILICATE	49	A	A	A	B	A	A	A
SODIUM SULPHATE	50	A	A	A	A	A	A	A
SODIUM SULPHIDE	1,48	A	A	A	B	A	A	N
SODIUM SULPHITE	44	A	A	A	A	A	A	A
SODIUM THIOSULFATE (HYPO)	51	B	A	A	B	A	A	A
STARCH		A	A	A	A	A	N	A
STEARIC ACID	37	A	B	A	A	A	A	A
SUGAR SOLUTIONS	14	A	B	N	A	A	A	A
SULFUR CHLORIDE	57	C	A	A	N	A	A	A
SULFUR MOLTEN		A	C	A	A	A	A	A
SULFURIC ACID (0 40%)	5	C	A	A	A	A	A	A
SULFURIC ACID (40 95%)	5,58	C	A	A	A	A	A	A
SULFURIC ACID (95 100%)	58	A	B	A	A	A	A	A
SULFUROUS ACID		B	A	A	A	A	A	A
TANNIC ACID	52	A	A	A	A	A	A	A
TARTARIC ACID	6,44	A	A	A	A	A	A	A
TITANIUM DIOXIDE		A	A	A	B	A	N	N
TOLUOL & TOLUENE	36	A	C	A	C	A	B	A
TRICHLORETHYLENE	57	A	C	A	C	A	A	A
TURPENTINE	13	A	C	A	A	A	A	A
UREA FORMALDEHYDE		A	N	N	N	A	A	A
VARNISH & SOLVENTS	14	A	C	A	N	A	N	A
VINEGAR		A	A	N	A	A	N	A
VINYL ACETATE		A	C	C	C	A	A	A
WATER, DEIONIZED		A	A	A	A	A	A	A
WATER, SALT		B	A	A	A	A	N	A
WHISKEY AND WINES	58	A	A	A	A	A	A	A
XYLENE OR XYLOL	13	A	C	A	C	A	A	A
ZINC CHLORIDE	6,53	C	A	A	A	A	A	A
ZINC HYDROSULFITE		B	N	A	A	A	N	N
ZINC SULFATE		A	A	A	A	A	A	A

WATER PROCESS SOLUTIONS

CHEMICAL COMPATIBILITY OF METERING PUMPS

LIQUID	REF. NO.	316 S.S.	HYPALON	VITON	PVC	TFE	KYNAR 150F	CERAMIC

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.
RATING KEY :

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

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

REF. NO

1. WARNING: DRIED RESIDUE OF SPILLED SOLUTIONS IS EXPLOSIVE.
3. SS TO180°F
5. PVC TO 125°F
6. HYPALON TO 180°F
7. SS TO 125°F 10%, PVC TO 125°F
8. PVC TO 125°F, 29%, SS TO 180°F, 29%
9. SS TO 70°F, 5%
10. PVC TO 105°F, 40%, SS TO 180°F SAT
11. VITON TO 180°F
12. PVC TO 100°F PURE
13. VITON TO 158°F
14. SS TO 140°F
15. USE SLURRY VALVES
16. PVC TO 105°F, SS TO 180°F
17. PVC TO 100°F, SS TO 100°F
18. SS TO 70°F DILUTE, PVC TO 125°F 19. PVC TO 100°F, 50%, SS TO 70°F, 5% 20. PVC TO 100°F, 25%, SS TO 180°F, 50%
21. PVC TO 100°F, SS TO 160°F
22. VITON TO 120°F
24. PVC TO 125°F, 36%, SS TO 180°F 10%
25. FLUORIDATION REQUIRES AN ANTI- SYPHON PUMP INSTALLATION CON- SULT LOCAL REGULATIONS FOR DETAILS.
26. PVC TO 30%
27. PVC TO 125°F, 50%, SS TO 70°F, 5%
28. MAY CAUSE SURFACE PITTING TO SS
29. PVC TO 125°F, 48%
30. HYPALON TO 130°F
31. PVC TO 100°F, 50%, SS TO 100°F, 50%
32. PVC TO 70°F, 10%, SS TO 70°F, 10%
34. SS TO 70°F, 5%, PVC 125°F SAT
35. PVC TO 100°F, SS TO 70°F
36. VITON TO 100°F
37. HYPALON TO 150°F 38. SS TO 70°F, 10%
39. PVC TO 125°F, 80%, SS TO 70°F, 80%
40. PVC TO 100°F, SAT, SS TO 180°F, 50% 41. SS TO 180°F, 5%
42. PVC TO 70°F, 50% OR TO 125°F, 30%, SS TO 180°F, 50%
43. SS TO 140°F, 10%
44. SS TO 180°F, 50%
45. PVC TO 105°F
46. PVC TO 125°F, 4%, SS TO 70°F, 5%
47. PVC TO 125°F, 15%, SS TO 70°F, 5%
48. SS TO 125°F
49. PVC TO 125°F, 41 Be, SS TO 140°F, 41 Be 50. PVC TO 125°F, 30%
51. PVC TO 125°F, 50%, SS TO 70°F, 50%
52. PVC TO 100°F, 10%, SS TO 150°F
53. PVC TO 100°F, SS TO 180°F, 70%
57. KYNAR TO 70°F
58. KYNAR TO 120°F
59. KYNAR TO 120°F, 30%
60. KYNAR TO 100°F