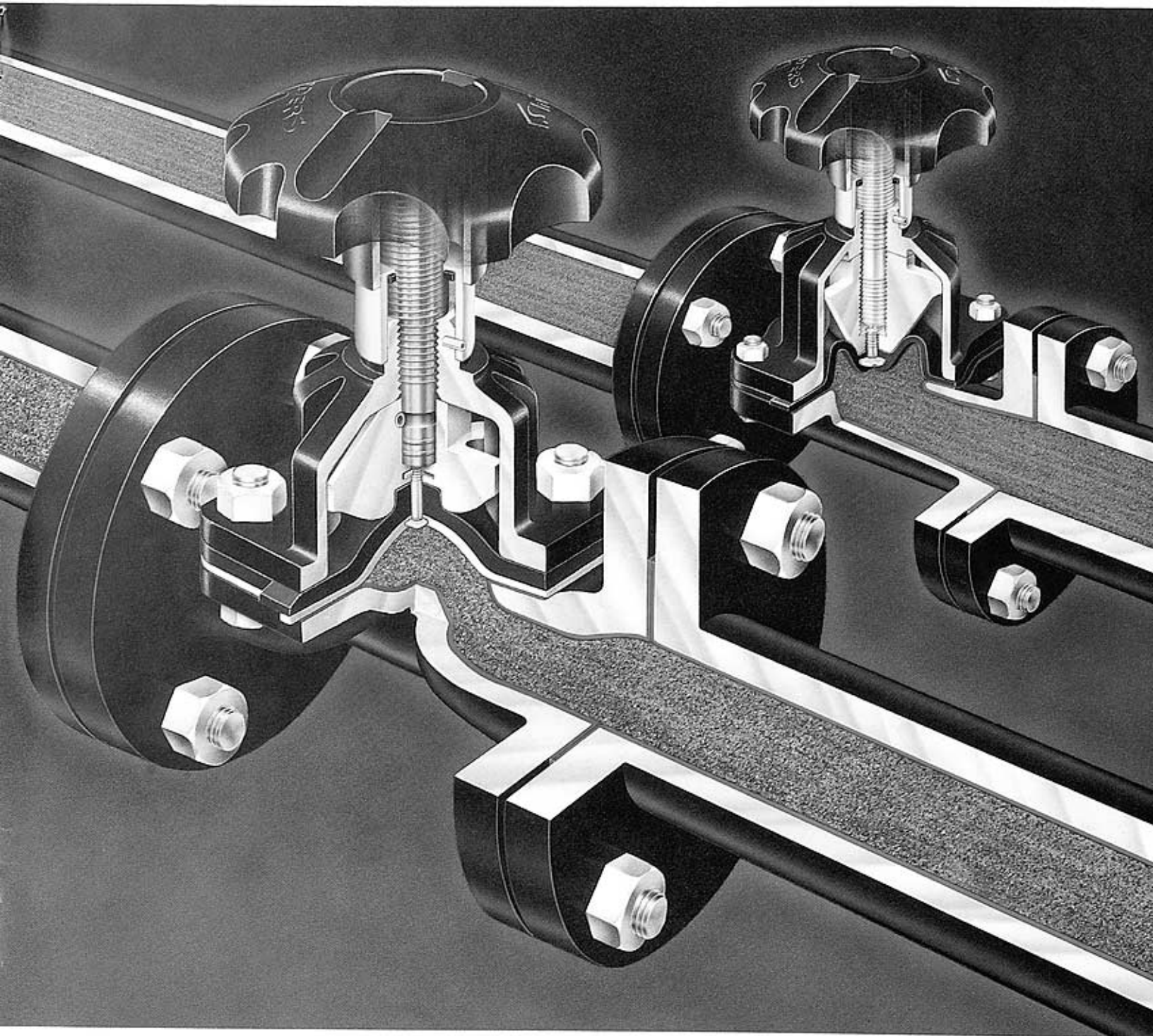


# Saunders

DIAPHRAGM VALVES



XOMOX®  
Process Valves & Actuators

# SERVICE RECOMMENDATIONS

## Service Recommendations

For more than sixty years Saunders diaphragm valves have been handling air, water and oil as well as controlling the abrasive, corrosive and often delicate fluids, slurries and gasses associated with modern industry.

This unrivalled experience has enabled us to compile a unique list, summarized within the following pages, for all these different types of applications.

This list is intended as a guide to the selection of the appropriate diaphragm grades and body materials.

The final choice between the various alternative types of bodies and diaphragms must rest with the customer, in view of his own specific requirements, and the Company assumes no responsibility in this regard.

While every care has been taken in the preparation of this Catalog to insure that recommendations are soundly based on the latest information, the Company does not assume any responsibility therefore, or for misprints or other inaccuracies.

The Company will be pleased to help valve users obtain the best possible service from his valves, however, because so many factors can affect valve life or performance, the Company

does not make any warranty of fitness, merchantability, or otherwise, except as set forth in its terms and conditions of sale.

### Toxic and Hazardous Fluids

The leak-tight quality of our valves means that they are often the first choice for handling toxic or dangerous materials. We have highlighted those fluids known to be hazardous by stating the Toxic Limit Value. These values, published by the American Conference of Governmental Industrial Hygienists represent conditions under which it is believed that nearly all workers may be exposed day after day without adverse affect. They are quoted as a guide to safe handling.

TLV values have been given wherever known but absence of a value does not necessarily mean the fluid is without hazard.

**Note:** This list is also offered as an aid to distributors and users where it may not be possible to carry a complete range of bodies and diaphragms. The alternative recommendations against most of the fluids listed should enable an acceptable specification to be chosen from limited stocks. If all materials or diaphragms are equally available, that listed to the left would be our normal first choice.

## Abbreviations

### Valve Bodies

AL	— Aluminum to ASTM B26-SG 70A	CS	— Cast Steel to ASTM A216 WCB
BR	— Bronze to ASTM B30 Alloy 836	DI	— Ductile Iron to ASTM A395
C (Mall)	— Malleable Iron to ASTM A47 35018	SS	— Stainless Steel to ASTM CF8M (316)
CI	— Cast Iron to ASTM A126 Class B	PVC	— Polyvinyl Chloride (Unplasticised)

### Linings

BL	— Butyl Rubber	NL	— Polychloroprene Rubber (Neoprene®)
ECTFE	— Ethylene Chlorotrifluoro Ethylene (Halar®)**	PFA	— Teflon® PFA Perfluoro Alkoxy
ETFE	— Ethylene Tetrafluoroethylene	PP	— Polypropylene
GL	— Glass	PVDF	— Polyvinylidene Fluoride
HRL	— Hard Rubber (Ebonite)	SRL	— Polybutadiene Rubber (Soft)

### Diaphragms

B	— Butyl Rubber	237	— Hypalon† Rubber Grade U
C	— Nitrile Rubber	300	— Butyl Rubber Grade D
HT	— Chloroprene Rubber (Neoprene®)	325	— Ethylene Propylene Rubber Grade E
Q	— Natural/Synthetic Rubber	326(F)	— White EP Rubber Grade EW
W	— White Natural Rubber	214P*	— PTFE Faced: P1, P2, P3, P4, P5
CF	— White Nitrile Rubber		P1 — TFE/Butyl backed
AA	— Natural Gum Rubber		P2 — TFE/Hypalon® backed
215(F)	— White Butyl Rubber Grade W1		P3 — TFE/Viton® backed
226	— Viton† Rubber Grade V		P4 — TFE/EP backed
			P5 — TFE/PVDF Membrane/Viton backed

† Registered Trade Mark, DuPont

\*\* Registered Trade Mark, Ausimont Chemical

\* P denotes all grades of Teflon diaphragms suitable for service.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Abrasive Fluids (Non-corrosive)	SR CI,CS,BR,SS	Q HT,AA	
Abrasive Fluids (Corrosive)	BL GL,PP,CR,SRL,SS	B,325 Q,HT,AA	
Abietic Acid	ETFE GL,BR,AL	C 214P*	
Acetaldehyde, TLV 200 ppm	CI PP,HRL,AL,SS,ETFE	B,325 Q,HT,214P*	Sealed bonnet advised. Nitrile O-ring seal.
Acetic Acid up to 50%	PP GL,SS,HRL,BR,ETFE	B,325 214P*	
Acetic Acid over 50%	ETFE GL,SS,BL,AL	B,325 214P*	
Acetic Acid (Glacial)	ETFE GL,SS,BL,AL	B,325 214P*	
Acetic Anhydride, TLV 5 ppm	SS ETFE,BL,AL,GL	B Q, 214P*	Sealed bonnet advised. Fluorocarbon seal.
Acetoacetic Ester	ETFE SS,GL,AL	214P*	
Acetone	CI HRL,SS,AL,ETFE,PP	B 214P*,W	
Acetylene	DI CS,AL,CI	B Q,HT	Sealed bonnet advised. Use all iron and steel sealed bonnet.
Acetylsalicylic Acid (Aspirin)	ETFE GL,SS,AL	214P* B,W	
Acrolein	DI ETFE,GL,AL	214P*	
Acrylonitrile, TLV 20 ppm	DI PFA,GL,ETFE,AL	214P* B,Q	Sealed bonnet advised. Nitrile O-ring seal.
Adipic Acid	ETFE ECTFE, HRL,SS,AL	B 214P*	
Adiponitrile	GL SS	214P* B,W	Sealed bonnet available.
Air-See Compressed Air			
Alcoholic Drinks	SS ECTFE,ETFE,BR,GL	326(F) Q,300	Valves with internal polish available.
Alcoholic, TLV 1000 ppm	DI SS,PVDF	B W	
Alkaid Lye	ECTFE BL,AL	B Q	
Alkylated Phenois	GL CI,ETFE	226 214P*	
Alkyd Resins	GL SS,ETFE	214P* 226	
Alkyl Aryl Sulphonates	ETFE GL,SS	214P* Q	
Allyl Alcohol, TLV 2 ppm	CI PP,ECTFE, BR,SS,AL,ETFE	214P* W,Q,325	Sealed bonnet advised.
Aloe	AL SS,BR	214P* B	
Alum (Aluminum Potassium Sulfate)	PP HRL,SS,ECTFE,GL,ETFE	Q B,325,214P*	
Alumina	CI SRL,BL	Q B,325,AA	
Aluminum Acetate (Basic)	PP HRL,AL,SS	Q B,325	
Aluminum Chloride	ETFE ECTFE,PVC,GL,HRL,PP,PVDF	Q B,214P*,325	
Aluminum Chloro Hydrate	ETFE ECTFE,PVC,BL,HRL	Q B,214P*,325	
Aluminum Fluoride	ETFE BL,ECTFE,ETFE,BL	B Q,325	
Aluminum Silicofluoride	ETFE BL,ECTFE,HRL	B Q,325	
Aluminum Sulphate	PP HRL,SS,PVDF,BR,GL,ECTFE	Q B,325,214P*	
Aluminoferic	PP HRL,SS,BR,GL,ECTFE	Q B,325	
Amino Resins	GL SS	214P* B	
Ammonia, Aqueous, TLV 50 ppm	DI SS,CS,GL,CI,HRL,PP,PVDF,ETFE	Q B,325,214P*	Sealed bonnet advised. Use all iron and steel sealed bonnet.
Ammonia, Gaseous, TLV 50 ppm	DI SS,CI,HRL	Q B,325,214P*	Sealed bonnet advised. Use all iron and steel sealed bonnet.
Ammonia, Liquid, TLV 50 ppm	DI SS,CI	Q B	Sealed bonnet advised. Use all iron and steel sealed bonnet.
Ammoniacal Liquor	CI HRL,PP,GL	B HT,C,214P*	
Ammonium Acetate	HRL GL,ECTFE,AL	Q B,325	
Ammonium Bicarbonate	CI PP,HRL,AL	Q B,325	
Ammonium Bisulphate	HRL PP	B Q,325	
Ammonium Carbamate	HRL PP,ECTFE,BL,AL,SS	B Q,325	
Ammonium Carbonate	CI PP,HRL,AL,SS,GL,ECTFE	Q B,325	
Ammonium Chloride	PP HRL,ECTFE,GL,PVDF	Q B,325,214P*	
Ammonium Citrate	SS HRL,PVDF,ECTFE	Q B,214P*,325	
Ammonium Fluoride	BL HRL,PP	B Q,325	
Ammonium Fluosilicate	BL HRL,PP	B Q,325	
Ammonium Hydroxide, TLV 50 ppm	CI HRL,GL,ETFE,PVDF,PP	Q B,325,214P*	Sealed bonnet available. Use all iron and steel sealed bonnet.
Ammonium Molybdate	CI PP,GL,SS	B 300,214P*,325	
Ammonium Nitrate	SS ECTFE,ETFE,HRL,PVDF,BL,GL,PP	B 214P*,226	Keep cool and moist. Can explode if heated.
Ammonium Persulphate	PP HRL,GL,ETFE,PVDF	214P* B	Keep cool and moist.
Ammonium Phosphate	BL PP,SS,HRL,GL,ETFE,PVDF	Q B,325,214P*	Sealed bonnet advised. Only if fluoride absent.
Ammonium Sulphate	ETFE BL,PP,PVDF,ECTFE,GL,SS,HRL	B Q,325,214P*	
Ammonium Sulphide	HRL GL,AL,ETFE	Q B,325	Sealed bonnet advised.
Ammonium Thiocyanate	PP HRL,AL,GL,PP	B Q,214P*	
Ammonium Thioglycolate	ETFE GL,PVC	214P* B,325	
Ammonium Thiosulphate	SS PP,HRL,AL	B 214P*,W,325	
Amyl Acetate, TLV 100 ppm	SS GL,PVDF,ETFE,CI,BR	214P*	
Amyl Alcohol	CI BR,HRL,ECTFE,SS,ETFE	B BL,Q,W,325,214P*	
Amyl Nitrate	PFA SS,GL,AL	214P*	Sealed bonnet with Fluorocarbon seal.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Anhydrite	SRL CI,DI	Q B,AA	
Aniline	ETFE GL,SS,CI	214P*	Sealed Bonnet Advised. Viton O-ring seal.
Aniline Hydrochloride	PFA GL,ETFE	214P*	
Anilind Dyes	ETFE GL,SS	214P*	
Aniline Black	ETFE GL,SS,HRL	214P*	B
Animal Oils	CI BR,SS,ETFE,PP,ECTFE	C HT,214P*,226,CF	
Aniseed Oils	GL BR,AL,SS,ETFE	214P* 226	
Anthracene	DI CI,GL,ETFE	226 214P*	
Anthracite	CI DI,SRL,GL	Q HT	
Antibiotics	SS GL,ETFE	300 214P*,325	Internally polished valves available.
Antiformin	HRL PVC	237 0,300	
Antifreeze	CI BR,AL	300 0,325	
Apple Juice	SS PP,GL,BR	W 0,300	Internally polished valves available.
Apricots	SS BR,GL,PP	W 0,B	
Aqua Regia	PFA GL,ETFE,ECTFE	P5/P3	Sealed bonnet Fluorocarbon seal. HL not over 125°F.
Arcton (See Freon)			
Argon	CI AL,BR,SS	B P1,226	
Aromatic Hydrocarbons	CI AL, SS,GL	P3	
Arsenic Acid	ETFE SS,BL,HRL,PP,PVDF	B 214P*.O	Sealed bonnet advised. Fluorocarbon seal. Butyl O-ring seal. Highly toxic. Specific regulations apply.
Asbestos Cement	CI SRL	Q AA	
Ascorbic Acid	ETFE GL,SS,AL	214P* W	
Ash Handling	SRL CI	Q AA	
Asphalt	DI CI,CS,AL,BR,ETFE	214P* 226	
Aspirin	ETFE GL,SS,AL	214P* B,W	Internally polished valves available.
Aureomycin	SS GL,ETFE	300 214P*	Internally polished valves available.
Avcat JP5	AL CS,BR	226 C	
Avgas 100LL	AL CS,BR	226	
Avtag JP4	AL CS,BR	226 C	
Avtur JET-A	AL CS,BR	226 C	
Bagasse	CI	300 B,O	Valves with internal polish available.
Baking Powder	SS PP,AL,HRL,BR	Q B	
Barium Carbonate, TLV 0.5 mg/M <sup>3</sup>	PP SS,ECTFE,GL,HRL,BR	B 0,325	Sealed bonnet advised. Nitrile O-ring seal.
Barium Chloride, TLV 0.5 mg/M <sup>3</sup>	CI PP,HRL,BR	Q B,325	Sealed bonnet advised. Nitrile O-ring seal.
Barium Sulphate, TLV 0.5 mg/M <sup>3</sup>	PP SRL,AL,ETFE,HRL,BR,GL	Q B,325,214P*,AA	Sealed bonnet available.
Barium Sulphide, TLV 0.5 mg/M <sup>3</sup>	PP SRL,SS,HRL,GL	Q B,325	Sealed bonnet available.
Barytes	PP SRL,CI,GL	Q B,325,AA	
Basic Slag	SRL CI	Q AA	
Battery Acid	PP HRL,ECTFE,ETFE,GL,PVDF	B 237,226,214P*,325	
Bauxite	SRL CI,DI	Q AA,325	
Beer	SS ETFE,BR,GL	Q 300,W,214P*	Internally polished valves available.
Beet Juice	CI PP,HRL,SRL	300 Q	
Beeswax	AL CI,BR,SS,ETFE	226 214P*.C	
Bentonite	C SRL,GL	Q AA	
Benzaldehyde	PFA GL,ETFE,SS	214P*	
Benzene (Benzol), TLV 10 ppm	DI ETFE,GL,CI,AL,SS	P5/P3	Sealed bonnet advised. Viton O-ring seal.
Benzene Sulfonic Acid	PP HRL,SS,GL,BR	B 214P*,226	
Benzene, TLV 500 ppm	DI CS,C,AL,BR,PP	P5/P3 226	Sealed bonnet advised. Nitrile or Viton seal.
Benzoic Acid	PP SS,HRL,AL,GL,ETFE	B 0,325,214P*	
Benzoyl Alcohol	ETFE SS,GL,AL,PVDF	214P* 226	
Benzoyl Chloride	PFA ETFE,GL,BR	214P*	Sealed bonnet available. Fluorocarbon seal. Nitrile O-ring seal.
Benzoyl Peroxide	ETFE SS,GL,AL	214P*	Can explode spontaneously if dry. Vent hole in bonnet shell.
Bergamot, Oil of	GL SS,AL	214P*	
Bilge (Ships)	CI BR,ETFE,PVDF,PP	C 214P*	Internally polished valves available.
Black Currant Juice	SS GL,ETFE	C CF,214P*	Valves with internal polish available.
Black Liquor	ETFE GL,SS,PVDF,BL	214P* B	Stainless steel nuts/bolts available.
Blanc Fixe	PP SRL,SS	Q B	
Blast Furnace Gas	DI CI,AL,BR	B HT,C,325	Sealed bonnet optional.
Bleaching Powder	PP HRL,GL,CI	237 0,325	
Blood	SS CI,AL,GL,BR	Q 214P*	
Borax	PP SS,HRL,ETFE,GL,BR,PVDF	Q B,325,214P*	
Boric Acid	PP SS,HRL,BR,ETFE,PVDF	Q B,214P*	
Boron Trifluoride, TLV 1 ppm	SS CS,BR	214P*	Sealed bonnet advised.
Bovril	SS PP	W 300	Valves with internal polish available.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Brandy	SS PVDF, BR, PP	Q W,300	Internally polished valves available.
Brine	PP ECTFE, CI, BR, HRL, PVDF	Q B, C, 325, 214P*	
Brine, Chlorinated	ETFE PVDF, HRL, GL	P2 226, Q, 237	
Bromine, TLV 0.1 ppm	PVDF GL, ECTFE	226 P5/P3	Sealed bonnet available. Viton O-ring seal. HL not over 80°F.
Bromochlorodifluoromethane (BCF)	CI BR, AL	214P*	
Butadiene, TVL 1000 ppm	DI AL, SS, ETFE, PVDF, BR	214P*	Sealed bonnet advised. Nitrile O-ring seal.
Butane	DI C, AL, BR, ETFE, PP	C HT, 214P*	Sealed bonnet advised. Nitrile O-ring seal.
Butanol, TLV 100 ppm	ETFE GL, DI, CI, BR, AL	B W, HT, 325	Sealed bonnet available.
Butter	SS AL, BR, ETFE	C 226, 214P*	Internally polished valves available.
Buttermilk	SS AL, BR	C 226, 214P*	Internally polished valves available.
Butterscotch	SS ETFE, BR	214P* 300	Internally polished valves available.
Butyl Acetate, TLV 150 ppm	SS GL, AL, PP, ETFE, BR, CI	214P*	Sealed bonnet advised. Fluorocarbon seal.
Iso Butyl Acetate, TLV 150 ppm	ETFE SS, DI, AL, GL, CI	214P*	Sealed bonnet advised. Fluorocarbon seal.
Butyraldehyde	PP SS, GL, AL	214P*	Sealed bonnet advised.
Cadmium Sulphate	PP HRL, SS, BR, GL, CI	Q B, 325, C	
Calcium Bisulphite	ETFE SS, ECTFE, HRL, GL, BR, PVDF, PP	Q 300, 325, 214P*	Sealed bonnet available. Nitrile O-ring.
Calcium Carbonate	CI SRL, PP, GL, ETFE, PVDF	Q 325, 214P*, AA	
Calcium Chloride	PP HRL, BR, CI, ETFE, PVDF	Q 300, 325, 214P*	
Calcium Cyanamide	CI SRL, PP, HRL	Q AA	
Calcium Formate	PP SS, HRL	Q B, 325	
Calcium Hydroxide	CI PP, SRL, HRL, ETFE, PVDF	Q B, 325, 214P*	
Calcium Hypochlorite	PP HRL, GL, CI, ETFE, PVDF	237 Q, 325, 214P*	
Calcium Nitrate	PP SS, ECTFE, HRL, GL	Q B, 325	
Calcium Peroxide	ETFE SS, BL, HRL	B 237	Keep moist.
Calcium Phosphate	PP BL, NL, HRL, SRL, GL	Q B, HT, 325, AA	
Calcium Sulphate	SRL CI, PP, BR, GL, ETFE, PVDF	Q B, 325, 214P*, AA	
Calcium Sulphite	ETFE SS, ECTFE, HRL, CI, GL	Q B	Sealed bonnet available. Nitrile O-ring seal.
Calgon	PP HRL, SS, BL	B Q, 325	
Calomel (Mercurous Chloride)	PP ECTFE, GL, ETFE, HRL	B Q, 214P*	Sealed bonnet available. Nitrile O-ring seal. Toxic.
Calor Gas	DI C, AL	C HT	
Cane Juice	CI PP, SRL, HRL, BR	300 Q, AA	Sealed bonnet available. Nitrile O-ring seal.
Capric Acid	ETFE SS, AL	214P* 226	
Caprolactam	ETFE SS, GL, AL	214P* B	
Capryl Alcohol	ETFE SS, GL, CI, AL, BR	214P*	
Caramel	SS BR, CI	300 Q, 214P*	Polished valves available.
Cabitol	DI PFA, CI, BR, AL, GL	214P*	
Carbon Black	SRL CI, HRL, GL, ETFE	Q HT, 214P*, AA	
Carbon Dioxide, TLV 5000 ppm	CI DI, PP, BR, AL, SS, ETFE	B 215(F), 214P*, HT, W	
Carbon Disulphide, TLV 20 ppm	SS PFA, AL, BR, ETFE	P5/P3 226	Sealed bonnet available. Viton O-ring seal.
Carbon Monoxide, TLV 50 ppm	DI BR, SS, CI, AL	B HT, 325	Sealed bonnet advised. Nitrile O-ring seal.
Carbon Tetrachloride, TLV 10 ppm	CI DI, GL, BR, ETFE, PVDF	214P* C	Sealed bonnet advised. Nitrile O-ring seal.
Carnallite	HRL GL	Q B	
Casein	SS AL, PP, CI, ETFE	W 300, 214P*	
Castor Oil	SS CI, BR, AL, ETFE, PP	B W, Q, C, 214P*	
Caustic Potash	CI PP, BL, SS, HRL	Q B, 325, 300	
Caustic Soda	CI PP, BL, HRL, SS	Q B, 325, 300	
Cebex 112	CI HRL	Q B	
Cellosolve, TLV 200 ppm	DI PFA, CI, BR, AL, SS	214P*	Sealed bonnet. Fluorocarbon seal.
Cellulose Lacquers	DI PFA, AL, GL, SS, CI, ETFE	214P* 226	Sealed bonnet. Fluorocarbon seal.
Cement (Dry and Slurry)	SRL CI, GL, C	Q 226, AA	
Cereclor	AL GL, ETFE	214P* 226	
Chalk	CI SRL, PP, HRL, GL	Q AA, 325	
China Clay	CI SRL, PP, BR	Q AA	
Chloracetic Acid	GL SS, ETFE	P2	Sealed bonnet advised. Viton O-ring seal.
Chlorinated Brine	ETFE PVDF, HRL, GL, SS	P2 226, Q, 237	
Chlorinated Copperas	PP HRL, ECTFE, SS	237 Q	
Chlorinated Diphenyls, TLV 0.5 mg/M <sup>3</sup>	CI SS	214P*	Sealed bonnet available. Viton O-ring seal.
Chlorinated Paraffin	AL GL, ETFE	214P* 226	
Chlorine Dioxide, TLV 0.1 ppm	PFA PVDF, GL, ETFE	P2 226	Sealed bonnet available. Viton O-ring seal. Mineral oil based greases must not be used.
Chlorine Gas, TLV 1 ppm			Sealed bonnet advised for all gaseous and liquid chlorine applications. Viton O-ring seal.
Dry	DI GL, ETFE, PVDF, HRL, CI	P5/P3 226, 237, Q	
Moist	TI ETFE, GL, HRL, PVDF	P5/P3 226, Q, 237	
Wet	TI ETFE, GL, PVDF	P5/P3 226	"Wet" means more than 0.4% water.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Chlorine, Liquid, TLV 1 ppm			
Dry	DI GL,ETFE,CI,PVDF	P5/P3 226	Sealed bonnet advised. Viton O-ring seal.
Moist or Wet	TI ETFE,GL,PVDF	P5/P3 226	
Chlorine Water	HRL PVC,GL,ETFE,PP	237 0,226,214P*	
Chlorobenzene, TLV 75 ppm	CI AL,GL	214P*	Sealed bonnet advised. Viton O-ring seal.
Chlorobromomethane, TLV 200 ppm	DI BR,SS,CI	214P*	Sealed bonnet advised. Viton O-ring seal.
Chloroform, TLV 50 ppm	DI SS,GL,CI,PVDF,ETFE	P5/P3 214P*	Sealed bonnet available. Viton O-ring seal.
Chlorosulphonic Acid	PFA GL,ETFE	P5/P3 214P*	
Chocolate	SS C,AL,ETFE	226 HT,214P*	
Chrome Alum, TLV 0.5 mg/M <sup>3</sup>	BL PP,ECTFE,HRL,GL	B 214P*, 237,325	
Chrome Plating Solns, TLV 0.5 mg/M <sup>3</sup>	BL PP,ECTFE,GL	B 214P*,325	
Chrome Tanning Solns, TLV 0.5 mg/M <sup>3</sup>	BL PP,ECTFE,GL	B 214P*,325,300	
Chromic Acid	GL BL,ECTFE,PVDF	214P* B,325	
Cider	SS BR,GL	Q W,B,215(F)	Internally polished valves available.
Citric Acid	SS PP,HRL,BR,GL,ETFE	W Q,300,214P*	
Citric Juices	SS PP,BR,HRL,GL	W Q,300	Internally polished valves available.
Citronella Oil	SS AL,GL,ETFE	214P* 226	
Clays & Slips	SRL CI	Q AA	
Coal Dust	SRL CI	Q AA	
Coal Gas	DI CI,BR,AL	B C,HT	Sealed bonnet optional.
Coal Slurry	SRL CI,GL	Q HT	
Coal Tar	DI GL,ETFE,CI,BR	214P* 226	
Cobalt Nitrate	SS ETFE,BL,HRL,ECTFE	B Q,325,214P*	
Cocoa Butter	SS CI,AL	HT 226	
Coconut Oil	SS CI,AL,ETFE,PVDF,PP	B 214P*,300	
Codeine	GL SS,BR,ETFE	214P* 226	
Cod Liver Oil	SS AL,GL	B 215(F),226	
Coffee	SS AL	214P* 215(F)	
Coke Oven Gas	DI CI,BR,AL	B HT,C	Sealed bonnet optional.
Coke Quenching Water	CI SRL,GL	Q AA,325	
Compressed Air (Oil Free)	C DI,BR,AL	C HT,Q,300,214P*	Use Saunders ball valves prior to after cooler.
Compressed Air (Oily)	C DI,BR,PP,AL	HT C,226,214P*	Use Saunders ball valves prior to after cooler.
Concrete	SRL CI	Q AA	
Copperas	HRL PP,PVC,SS	237 Q,B,325	
Copper Chloride	HRL BL,PVDF	Q B	
Copper Oxochloride	PVDF BL,HRL	Q B	
Copper Plating Solutions	BL PP,ECTFE,HBL,GL	B 214P*,Q,300	
Copper Sulphate	BL ECTFE,PP,HRL,SS,GL,ETFE,PVDF	B Q,300,214P*	
Corn Oil	CI AL,ECTFE,PP	226 214P*,300	
Cottonseed Oil	CI AL,ECTFE,SS,ETFE	226 214P*,B,C,HT,300	
Cream	SS GL,ETFE	C 226,215(F)	Internally polished valves available.
Creosote	DI GL,CI	214P* 226	Sealed bonnet advised. Viton O-ring seal.
Cresol, TLV 22 mg/M <sup>3</sup>	DI GL,CI,BR,SS	214P* 226	Sealed bonnet advised. Viton O-ring seal.
Crude Oil	CS DI,AL	226 214P*,C,HT	
Cumene, TLV 50 ppm	DI CS,AL	P5/P3 226	Sealed bonnet advised. Viton O-ring seal.
Cuprous Ammonium Formate	ECTFE HRL,PP,CI	B 300	
Cutting Oil	C DI,AL,CI,BR	226 C,HT	
Cyanamide	PP CI,SRL,ETFE,HRL	Q B,214P*,AA	
Cyanide Sludges	BL PP,HRL,CI,SS	Q B,AA	Sealed bonnet available. Nitrile O-ring seal.
Cyanogen Chloride	GL ETFE	P2 P3,Q,237	Sealed bonnet available. Viton O-ring seal.
Cyclohexane, TLV 300 ppm	DI CS,SS,AL,BR	226 P3	Sealed bonnet available. Viton O-ring seal.
Cyclohexanone, TLV 50 ppm	DI CS,SS,BR,CI,AL	226 P3	Sealed bonnet available. Viton O-ring seal.
Cyclohexylamine, TLV 10 ppm	DI CS,SS,CI,C	214P* 325	Use all iron and steel sealed bonnet.
D.D.T., TLV 1 mg/M <sup>3</sup>	AL SS,ETFE	214P* C	Sealed bonnet available. Nitrile O-ring seal.
Decalin	DI CI,ETFE,AL,BR,GL	226 214P*	Sealed bonnet available. Viton O-ring seal.
Detergents	PP SS,GL,BR,ETFE	B Q,325,214P*	
Detergent Alkylate	DI CI,CS,ETFE	C 214P*	
Developers (Photographic)	PP ECTFE,GL,HRL	300 237,214P*,Q	
Diacetone Alcohol, TLV 50 ppm	DI CI,SS,AL,GL	214P*	Sealed bonnet available. Fluorocarbon seal.
Dibutyl Ether	DI ETFE,AL,CI,GL	214P*	Sealed bonnet available. Fluorocarbon seal.
Dibutyl Phthalate, TLV 5 mg/M <sup>3</sup>	ETFE GL,SS,AL	214P*	Sealed bonnet available. Viton O-ring seal.
1:2 Dichloroethylene, TLV 200 ppm	DI AL,GL,SS	P5/P3	Sealed bonnet advised. Viton O-ring seal.
Dichlorobenzene, TLV 50 ppm	DI AL,GL,CI,BR,SS	P5/P3	Sealed bonnet available. Viton O-ring seal.
Dichlorodifluoromethane, TLV 1000 ppm	CI AL,BR,SS,GL	214P* HT	
Diesel Oil	DI CI,AL,BR	226 C	

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Diethanolamine	DI CI,SS,HRL,AL	Q B,300,325	All iron and steel sealed bonnet. Fluorocarbon seal.
Diethylamine, TLV 25 ppm	PVDF SS,GL	214P*	All iron and steel sealed bonnet. Fluorocarbon seal.
Diethyl Ether, TLV 400 ppm	DI SS,GL	P5/P3 214P*	Very inflammable. Sealed bonnet. Fluorocarbon seal.
Diethylene Glycol	CI AL,SS,BR,HRL	Q B,325	
Diglycolic Acid	PP PVC,GL,HRL	214P* 300	
Dimethyl Ether	DI SS,GL	P5/P3	Sealed bonnet. Fluorocarbon seal.
Dimethyl Formamide, TLV 10 ppm	ETFE PP,SS,GL,AL	214P*	Sealed bonnet advised. Nitrile O-ring seal. Fluorocarbon seal.
Dimethyl Phthalate, TLV 5 mg/M <sup>3</sup>	ETFE SS,GL,AL	214P* 226	Sealed bonnet available. Viton O-ring seal.
Dimethyl Terephthalate	SS ETFE,GL,AL	214P*	
Dinonyl Phthalate	ETFE SS,GL,AL	214P*	
Diocetyl Phthalate, TLV 5 mg/M <sup>3</sup>	ETFE SS,GL,AL	214P*	
Dioxan, TLV 100 ppm	DI CI,SS,AL	214P*	Sealed bonnet. Viton O-ring.
Diphenylamine	DI CI,SS,GL	214P*	Sealed bonnet.
Disinfectant	CI PP,GL,HRL,ETFE	214P* 237,HT	
Dowtherm	DI CS,SS,AL	226 P3	Sealed bonnet available. Viton O-ring seal.
Dye Liquors	ETFE BL,SS,HRL,GL	300 B,214P*	
Eau de Cologne	SS GL,AL,ETFE	214P* B	
E.D.T.A.	PP HRL,ECTFE,GL,BL,ETFE	B Q,214P*	
Electrolytic Tinplating Solutions	BL ETFE,HRL	B 300,325	
Electrophoretic Paint	CI SS,GL	214P*	
Epichlorhydrin, TLV 5 ppm	SS ETFE,GL	214P*	Sealed bonnet. Nitrile O-ring.
Epoxy Resins	CI SS,GL,ECTFE	214P* B	
Epoxy Soya Bean Oil	GL AL,ETFE	214P*	
Epsom Salts	BR SS,AL,HRL,GL,PP	Q B,325	
Essential Oils	SS ETFE,GL,AL,PVDF	214P* 226	Internally polished valves available.
Ethane	DI CS,CI,HRL	C HT,B,325	
Ethanol, TLV 1000 ppm	DI SS,PVDF,CI,BR,HRL,GL	B W,Q,300,325	
Ethanolamine, TLV 3 ppm	DI CI,AL,HRL,GL,SS	B 300,325	Sealed bonnet. Fluorocarbon seal.
Ether, TLV 400 ppm	DI SS,GL,ETFE,BR	P5/P3 214P*	Very inflammable. Sealed bonnet. Fluorocarbon sealed.
Ethyl Acetate, TLV 400 ppm	SS ETFE,GL,BR	214P* B,300	Sealed bonnet.
Ethyl Acetoacetate	SS PVDF,GL,AL,ETFE	214P*	Fluorocarbon seal.
Ethyl Alcohol, TLV 1000 ppm	DI SS,PVDF,CI,BR,HRL,GL,ETFE,PP	B W,Q,300,214P*,325	Sealed bonnet available. Viton O-ring seal.
Ethyl Benzene, TLV 100 ppm	DI SS,AL,BR,CI,ETFE	P5/P3 226	Sealed bonnet advised. Viton O-ring seal.
Ethyl Chloride, TLV 1000 ppm	DI SS,ECTFE,CI,GL,ETFE	214P*	Sealed bonnet available. Butyl O-ring seal. Fluorocarbon seal.
Ethyl Formate, TLV 100 ppm	SS AL,GL,ETFE	214P*	
Ethyl Lactate	CI SS,GL,ETFE	214P*	
Ethyl Mercaptan, TLV 10 ppm	AL SS,ETFE,GL	214P*	Sealed bonnet available. Intense odor.
Ethyl Stearate	CI AL,BR,BL,PVDF	B Q,300	
Ethylene	DI CS,BR,AL	B HT,C,Q,325	Sealed bonnet available. Nitrile O-ring seal.
Ethylene Chlorhydrin, TLV 5 ppm	GL SS	P5/P3 226	Sealed bonnet advised. Viton O-ring seal.
Ethylene Cyanohydrin	ETFE SS,GL,CI,AL	P5/P3 226	Sealed bonnet available. Viton O-ring seal.
Ethylene Diamine, TLV 10 ppm	SS PP,AL	B 214P*	All iron and steel sealed bonnet.
Ethylene Dibromide, TLV 25 ppm	PFA SS,GL,BR	P5/P3	Sealed bonnet available. Viton O-ring seal.
Ethylene Dichloride, TLV 50 ppm (1:2 Dichlorethane)	DI CS,SS,CI,AL,GL,BR,ETFE	P5/P3	Sealed bonnet advised. Viton O-ring seal.
Ethylene Glycol	CI BR,AL,SS,HRL,GL,ETFE,PP	Q B,325,214P*	
Ethylene Oxide, TLV 50 ppm	DI CI,SS,BR,AL,GL,ETFE	214P*	Sealed bonnet. FEP O-ring.
Factory Services	CI BR	HT C,300	
Fatty Acids	SS AL,ECTFE,GL,ETFE,PVDF,PP	C 226,214P*	
Fatty Alcohols	SS GL,AL,BR	214P* 226,C,237	
Ferric Chloride	ECTFE PP,HRL,GL,ETFE,PVDF	Q B,325,214P*	
Ferric Sulphate	BL PP,SS,HRL	B Q,325,300	
Ferrolene Gas	CI BR	214P* C	
Ferrous Chloride	ECTFE PP,GL,HRL	Q B,325	
Ferrous Sulphate	SS ECTFE,PP,HRL,BL	237 Q,B,325	
Fertilizers (Dry Powders)	SRL CI,NL,HRL,ETFE	Q HT,B,214P*	
Fertilizer Slurries (Wet Process)	BL NL,SS,ETFE	B Q,325,214P*	
Filter Aid Slurry	SRL CI,PP,SS,NL	Q 300,B	
Fire Foam	C BR,CI,HRL	Q C,325	
Fish Oil	CI SS,ECTFE,ETFE,BR	C HT,214P*	

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Fluorine (Dry) TLV 0.1 ppm	SS	P2	SS sealed bonnet. Fluorocarbon O-ring. Mineral Oil greases must not be used.
Fluosilicic Acid	ETFE	B	Q,214P*,300,325
Formaldehyde, TLV 5 ppm	BL	B	HT,325,214P*
Formalin, TLV 5 ppm	BL	B	HT,325,214P*
Formamide	PP	B	Q,325
Formic Acid, TLV 5 ppm	ETFE	214P*	B
Flue Gas	CI	HT	Q,300,325
Freon	CI	214P*	HT
Fruit Juices	SS	W	215(F),Q,300
Fuel Oil	DI	226	C,214P*
Furfural, TLV 5 ppm	PFA	214P*	
Furfuryl Alcohol (Furfuro), TLV 50 ppm	PFA	214P*	
Fusel Oil	CI	B	214P*W
Fusus Oil	C	C	226
Gallic Acid	PP	Q	B,C,HT
Gas (Coal)	C	C	HT,Q,B,214P*
Gas (Natural)	C	C	HT
Gasoline	CS	P5/P3	226,214P*
Gelatine	SS	Q	W,300,214P*
Geraniol	SS	214P*	226
Gin	SS	W	215(F),300
Glaze (Potters)	SRL	Q	B,AA
Gluconic Acid	SS	B	Q,300,214P*
Glucose	SS	Q	300,W,215(F)
Glue	CI	Q	B,325,W,214P*
Glycerine	SS	B	W,325,214P*
Glycol	CI	Q	B,325,214P*
Glycolic Acid	PP	B	Q,214P*
Gravel	SRL	Q	AA
Grease	CI	C	HT,226
Ground Glass	GL	Q	AA
Gypsum	SRL	Q	AA
Halibut Liver Oil	SS	B	226,215(F)
Helium	CI	B	300
Heptane, TLV 500 ppm	DI	226	C,214P*
Hexamethylene Diamine	ETFE	B	214P*,300
Hexamethylene Tetramine	ETFE	B	214P*,300
Hexane, TLV 500 ppm	DI	226	C,214P*
High Test Peroxide	SS	214P*	
Honey	SS	W	215(F),Q
Hydraulic Oils, Flame Proof	C	226	214P*
Hydraulic Vegetable Oil Based	C	C	B,Q
Hydraulic Mineral Oil Based	C	C	226
Hydrazine, TLV 1 ppm	ETFE	214P*	Q
Hydriodic Acid	PVDF	214P*	B
Hydrobromic Acid	PVDF	214P*	237,B
Hydrochloric Acid	PP	Q	B,214P*,325
Hydrocyanic Acid, TLV 10 ppm	AL	B	214P*,Q,325
Hydrofluoric Acid up to 40%	PP	B	214P*,237
Hydrofluoric Acid 40-80%	ECTFE	B	214P*,237
Hydrofluoric Acid 80-100%, TLV 3 ppm	ECTFE	214P*	
Hydrofluorosilicic Acid	BL	B	Q,300,325
Hydrogen	BR	B	Q,HT,325,214P*
Hydrogen Peroxide, TLV 1 ppm	AL	214P*	B,237
Hydrogen Sulphide, TLV 10 ppm	PP	B	Q,214P*
Hydroquinone, TLV 2 mg/M <sup>3</sup>	PP	300	237,214P*,B,325
Hypo	PP	300	237,214P*,Q,B,325
Ice Cream	SS	W	215(F),Q,214P*
Illipe Butter	SS	300	C,214P*
Inert Gases	CI	B	300,325,HT,214P*
Inks, Aqueous	PP	Q	B,HT,325,214P*
Insecticide Solutions	AL	C	214P*
Instrument Air	AL	C	Q,HT



# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Iodine	GL PVDF,ETFE	P2 237	
Iodoform	GL PVDF,ETFE,BR,AL	P2 237	
Iron Oxide Slurry	SRL GL,CI	0 AA	
Isocyanate Resins	AL SS,PFA,GL	214P*	Toxic, Sealed bonnet advised.
Isophorone, TLV 25 ppm	BR DI,CI,GL	214P*	Sealed bonnet. Fluorocarbon seal.
Isopropanol, TLV 400 ppm	CI PP,BR,HRL,SS	0 B,W,325	
Isopropyl Acetate, TLV 250 ppm	CI SS,ETFE,GL	214P*	
Isopropyl Alcohol, TLV 400 ppm	DI SS,PVDF,CI,BR,HRL,ETFE	B W,325,0,214P*	
Jams & Preserves	SS ECTFE,BR,GL	300 215(F),Q,W	Internally polished valves available.
Jeyes Fluid (JP4,JP5)	CI PP,AL,BR,SS	B 300,325,214P*	
Kaolin	SRL PP,CI,BR,ETFE	0 214P*,AA	
Kephos	GL ETFE,SS	226 214P*	
Kerosene	DI BR,C,CI,SS,AL,PVDF,ETFE	226 C,214P*	Sealed bonnet optional. Nitrile or Viton O-ring seal.
Kieselguhr	SRL CI,PP,BR,SS	0 B,AA	
Kraft Liquor	PVDF CI,HRL,BR,GL	0 B,325	
Lacquers	GL AL,SS,ETFE,CI	214P* 226	
Lactic Acid	SS PP,GL,BR,ETFE,PVDF	0 W,300,215(F),214P*	
Lard Oil	CI SS,ETFE,BR,AL,PP	214P* C,CF	
Latex	GL CI,AL,PP,ETFE,SS	C B,214P*,0	
Laundry Bleach	PVDF HRL,GL,ETFE	237 Q,226,214P*	
Lead Acetate	PVDF SS,ECTFE,HRL,GL,PP,ETFE	B 0,300,325,214P*	Sealed bonnet advised.
Lead Fluoroborate	ECTFE BL,PP,HRL	B 0,325	Sealed bonnet advised.
Lead Nitrate	CI PP,HRL,SS,GL	B 0,300,325	Sealed bonnet advised.
Lead Perchlorate	PFA GL,ETFE	214P*	
Leather Slurry	CI PP,SRL,BR,SS	0 B	
Lecithin	AL SS,GL	C 226,214P*	
Lemon Oil	SS ECTFE,AL,GL,ETFE	214P*	
Lemongrass Oil	SS ECTFE,AL,BR,GL	214P* HT	Internally polished valves available.
Lemon Juice	SS ECTFE,BR,GL,ETFE	W 215(F),Q,214P*	Internally polished valves available.
Lime	CI SRL,PP,HRL,BR	0 AA	
Lime Juice	SS ECTFE,PP,BR,GL,ETFE	W 215(F),Q,214P*	Internally polished valves available.
Linseed Oil	DI CI,PP,ECTFE,BR,SS,ETFE	226 C,214P*	
Liqueurs	SS GL,PP,ETFE	214P* 215(F),226,W	Internally polished valves available.
Liquid Paraffin	CI BR,SS,GL,ECTFE	C 226,215(F)	
Liquid Petroleum Gases (LPG)	C DI,CS,AL,BR	C HT	Sealed bonnet optional. Nitrile O-ring seal.
Lithium Bromide	CI PP,HRL,GL,SS,ECTFE,ETFE	HT 8,0,325,214P*	
Lithium Chloride	PP HRL,ECTFE,GL,SS,ETFE	HT 8,0,325,214P*	
Lithium Lauryl Sulphate	GL SS,ETFE,HRL	HT C,B,214P*	
Lithopone	PP HRL,GL,AL	0 B	
Lubricating Oils	C DI,BR,AL,ETFE	226 C,214P*	
Lyes	CI PP,HRL,GL	0 300,B	
Magnesia	CI PP,SS,BR	0 B,325	
Magnesium Carbonate	CI SRL,PP,BR,ETFE,PVDF	0 B,325,214P*,AA	
Magnesium Chloride	PP HRL,BL,GL,ETFE,PVDF	0 B,325,214P*	
Magnesium Hydroxide	CI HRL,PP,BR,SS,ETFE,PVDF	0 B,325,214P*	
Magnesium Oxide	CI PP,SS,BR	0 B,325,214P*	
Magnesium Sulphate	BL PP,CI,BR,AL,ETFE	0 B,325,214P*	
Magnetite	SRL GL,CI,PP	0 AA	
Maize Oil	CI AL,ECTFE,ETFE	226 300,214P*	
Maleic Acid	ETFE SS,HRL,PVDF,PP	B 300,214P*	
Maleic Anhydride, TLV 0.25 ppm	SS ETFE,ECTFE,GL,HRL	214P* 300,B	Use SS sealed bonnet. Fluorocarbon seal.
Malic Acid	SS ETFE,ECTFE,AL,HRL	214P* 300,B,0,W,215(F)	
Malt	SS PP,BR,AL	0 300,B,W	
Maltose	SS PP,BR,AL	0 300,B,W,215(F)	
Manganese Dioxide	SRL GL,ETFE,AL,BR	B 237,0	
Manganese Sulphate	SRL GL,ETFE,BR,AL	B 237,0	
Meat Extract	SS PP,BR,GL,ETFE	HT 0,215(F),300,214P*	
Meat Juices	SS PP,BR,GL,ETFE	HT 0,215(F),300,214P*	
Mercuric Chloride	ECTFE PP,HRL,GL,ETFE,PVDF	B 0,214P*,325	Sealed bonnet available. Nitrile O-ring seal.
Mercurous Chloride	ECTFE PP,HRL,GL,ETFE,PVDF	B 0,214P*,325	Sealed bonnet available. Nitrile O-ring seal.
Mercury, TLV 0.1 mg/M <sup>3</sup>	CI HRL,BL,ECTFE,GL	B 0,325	Sealed bonnet available. Nitrile O-ring seal.
Methane	HRL DI,CS,BR,AL,CI	B C,HT,325	
Methanol, TLV 200 ppm	PP DI,CI,SS,GL	W B,0,300,325	Sealed bonnet available. Butyl or Nitrile O-ring seal.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Methanol/Water Mixture	PP DI,CI,AL,GL,SS	B 0,300,W,325	
Methyl Acetate	DI AL,SS	214P* 237.B	Sealed bonnet available. Butyl O-ring seal. Fluorocarbon seal.
Methyl Alcohol, TLV 200 ppm	GL SS,ECTFE,ETFE,PVDF,PP	B W,Q,BL,325,214P*	Sealed bonnet available. Nitrile O-ring seal.
Methylamine, TLV 10 ppm	DI CI,PP,AL,HRL,GL	B 214P*,Q,HT,325	All iron and steel sealed bonnet advised. Fluorocarbon seal.
Methylated Spirits	PP DI,CI,BR,SS,HRL,GL	W B,Q,325,300	
Methyl Bromide, TLV 20 ppm	ETFE ECTFE,BR,SS,CI,GL	214P* 214P*	Sealed bonnet available. Viton O-ring seal.
Methyl Chloride, TLV 100 ppm	ETFE ECTFE,GL,CI	214P* 214P*	
Methylene Chloride, TLV 500 ppm	ETFE SS,CI,GL	P5/P3 214P*,226	Sealed bonnet available. Viton O-ring seal.
Methyl Ethyl Ketone, TLV 200 ppm	AL SS,ETFE,BR,GL	214P* B	
Methyl Isobutyl Ketone, TLV 100 ppm	AL SS,ETFE,GL	214P* B	
Methyl Methacrylate Monomer	SS AL,GL,ETFE,PP	215(F) 214P*.B	
Milk	SS PP,GL,BR	215(F) W,Q,300	Internally polished valves available.
Milk of Magnesia	GL PP,ECTFE,HRL,ETFE	O B,325,W,214P*	
Mineral Oil	C DI,CS,AL,BR,ETFE	226 C,214P*	
Mineral Waters	SS PP,BR,GL	300 215(F),W	Internally polished valves available.
Molasses	CI SS,PP,BR	300 Q,214P*	
Monochloroacetic Acid	PFA ETFE,GL	P2	
Monchlorobenzene, TLV 75 ppm	CI AL,GL,SS	214P*	Sealed bonnet available. Viton O-ring seal.
Monoethanolamine, TLV 3 ppm	DI CI,AL,HRL,SS	B 300,325	Sealed bonnet available. Fluorocarbon seal.
Monsodium Glutamate	SS HRL,ETFE		Internally polished valves available.
Morphine	SS GL,ETFE	214P* B	
Morpholine, TLV 20 ppm	PVDF AL,CI,BR,SS	214P* B	
Mortar & Cement	SRL CI	O	
Mustard	SS ETFE,BR	W Q,214P*	Internally polished valves available.
Naphtha	DI CS,AL,PVDF,CI,BR,ETFE	226 C,214P*	
Naphthalene, TLV 10 ppm	DI CS,AL,PVDF,CI,BR,ETFE	226 214P*	Sealed bonnet available. Viton O-ring seal.
Naphthenic Acid	DI CI,ETFE,AL,SS	C 214P*	
Natural Gas	C DI,BR,AL	C HT	Sealed bonnet. Nitrile seal, optional.
Nickel Acetate, TLV 1 mg/M <sup>3</sup>	BL PP,ECTFE,HRL,SS,GL,ETFE	B 237,325,214P*	
Nickel Chloride, TLV 1 mg/M <sup>3</sup>	BL PP,ECTFE,HRL,SS,GL,ETFE	B 237,325,214P*	
Nickel Plating Solutions, TLV 1 mg/M <sup>3</sup>	BL PP,ECTFE,HRL,GL,ETFE	B 237,325,214P*	
Nickel Plating Sludge, TLV 1 mg/M <sup>3</sup>	BL PP,SRL,GL,ECTFE,ETFE	B 237,325,214P*	
Nickel Sulphate, TLV 1 mg/M <sup>3</sup>	BL PP,ECTFE,HRL,SS,GL,ETFE	B 237,325,214P*	
Nickel Sulphide	BL PP,ECTFE,HRL,GL,SS	B 237	
Nitric Acid	SS PFA,ETFE,GL,PVDF	214P* 226.B	(1) SS to ASTM A296 CF8C (2) All-SS bonnet assemblies available to special order (3) Use SS fastenings.
Nitric Acid/Hydrofluoric Acid Mixture	PP ETFE,BL	214P* B	
Nitrobenzene, TLV 1 ppm	GL DI,CS,PFA,CI,SS	214P*	Sealed bonnet FEP O-ring.
Nitrogen	CI AL,PP,BR,ETFE	B 300,325,HT,214P*	
Nitroglycerine, TLV 0.2 ppm	BL SS,GL,PFA,HRL	226 300.B	Explosive. Vent hole in bonnet.
Nitrosyl Sulphuric Acid	PFA GL,CS	214P*	
Nitrous Oxide (Dry)	SS ETFE,BR	B HT,O	Sealed bonnet available. Nitrile O-ring seal.
Nylon Salt	SS GL,ETFE	214P*	Use SS fastenings.
Oleic Acid	AL ETFE,ECTFE,BR,SS,GL,PVDF	226 214P*	
Olein	CI ETFE,BR,AL,SS	214P* HT,226	
Oleum	PFA GL,ETFE,CS,SS,CI	P5/P3 P1	Sealed bonnet advised. Viton O-ring seal. CS only useable at low fluid velocities <0.6 m/sec.
Olive Oil	SS AL,ETFE,CI,PVDF	C 226,214P*.B	Internally polished valves available.
Ortho Dichlorobenzene, TLV 50 ppm	DI AL,GL,CI,BR,SS	214P* 226	Sealed bonnet available. Viton O-ring seal.
Oxalic Acid	PP HRL,SS,BR,GL,ETFE	B Q,214P*	
Oxygen	AL C,DI,BR,ETFE,PVDF,PP	HT 226.B,325,214P*	Valves should be degreased and regreased with oxygen-resistant lubricant.
Ozone, TLV 0.1 ppm	AL CI,DI,BR,ETFE	237 226.B,P2,P3,P4	Stress valves to minimum permissible. Sealed bonnet advised. Viton O-ring seal.
Paint	DI CI,AL,BR,SS,ETFE	214P* 226	
Palm Kernel Oil	CI AL,SS,ETFE	C 226,214P*.B	
Palm Oil	CI AL,SS,ETFE	C 226,214P*.B	
Palmitic Acid	AL ETFE,ECTFE,SS,GL	C 226,214P*	
Paper Pulp	PP HRL,ECTFE,BR,CI,ETFE	O B,325,214P*	
Paper Stock	PP HRL,ECTFE,BR,CI	O B,325	
Paraffin	DI BR,C,AL	226 C	
Paraffin, Medicinal	DI SS,ECTFE,BR,GL	C 226,HT	Internally polished valves available.
Paraffin Wax	DI SS,ECTFE,BR,AL,CI,GL	C 226,CF,HT	

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Paraformaldehyde	BL ETFE,SS	B HT	
Paraquet, TLV 0.5 mg/M <sup>3</sup>	GL SS,ETFE	C HT	Sealed bonnet advised.
Pectin	SS ETFE,BR,GL	W 215(F),214P*,300	Internally polished valves available.
Penicillin	SS GL,ETFE	300 214P*	Internally polished valves available.
Penicillin Acetate	SS GL,ETFE	300 214P*	Internally polished valves available.
Pentachlorophenol, TLV 0.5 mg/M <sup>3</sup>	GL ETFE,SS,BR	214P*	
Pentaerythritol	AL ETFE,SS,GL	214P* B	
Pentane, TLV 1000 ppm	DI CS,CI,BR,C,AL	226 C,214P*,HT	Sealed bonnet available. Nitrile O-ring seal.
Perchloroethylene, TLV 100 ppm	CI SS,AL,GL,ETFE,PVDF	226 P3,214P*	Sealed bonnet available. Viton O-ring seal.
Perchloric Acid	PFA GL,ETFE	214P*	Explodes with dust, oils. Cleaned and degreased valves advised.
Permitol	CI SS	214P* 226	
Perfumes	SS GL,AL,ETFE	214P* B,W,226	Internally polished valves available.
Petrol	DI C,AL,BR,ETFE	226 214P*	Sealed bonnet optional. Viton O-ring seal.
Petroleum Ether	DI CS,BR,AL	226 C	
Petroleum Jelly	DI CS,BR,AL,CI,SS,ETFE	226 C,214P*	
Phenol	PVDF PP,DI,GL,SS,CI,ETFE	214P* B	
Phenol Formaldehyde Resins	GL AL,CI,ETFE,SS,PVDF	214P* B	
Phenol Mercuric Acetate, TLV 0.1 mg/M <sup>3</sup>	SS C,ETFE,GL,PVDF,CI	214P* B,226	Sealed bonnet. Viton seal.
Phosgene, TLV 0.1 ppm	GL PFA,ETFE,SS,GL	P5/P3 226,214P*	Sealed bonnet advised. Viton O-ring seal. Keep dry.
Phosphoric Acid	BL NL,PVDF,ECTFE,HRL,SS,ETFE,PP	B HT,300,Q,325,214P*	
Phosphoryl Chloride	PFA GL	214P*	Toxic.
Phosphorous Pentoxide	SS ETFE,PP,HRL,CI	B Q,300	
Phosphorous Pentachloride	PFA GL,ETFE	214P*	
Phosphorous Trichloride, TLV 1mg/M <sup>3</sup>	PFA GL,ETFE	214P*	
Photographic Developers	PP ECTFE,GL,HRL,ETFE	300 237,214P*,Q	
Phthalic Acid	SS ETFE,NL,GL	B HT,214P*	
Phthalic Anhydride	SS ETFE,NL,GL,AL,PVDF	214P* B,HT	
Pickles	SS ETFE,BR,PP	B 326(F),W,215(F),214P*	Internally polished valves available.
Picoline	DI C,GL,AL,ETFE,	214P*	
Pigswill	PP CI,BR	Q B	
Pineapple Juice	SS GL,BR,ETFE	215(F) 300,W,214P*	Internally polished valves available.
Plating Solutions	BL PP,ECTFE,HRL,GL,ETFE	B 237,Q,300,325,214P*	
Polyester Resins	GL AL,SS,ETFE	214P* B	
Polyethylene Glycol	CI SS,PP,BR	Q B,325	
Polyvinyl Acetate Emulsions	GL ECTFE,SS	Q B,300,215(F),325	
Polyvinyl Chloride Pastes	GL SS,ECTFE,ETFE	B 214P*,C,W	
Polyvinylidene Chloride Emulsions	GL SS,ECTFE,PP,ETFE	214P* B,Q	
Potassium Acetate	PP HRL,BL,SS	Q B,325,300	
Potassium Aluminum Sulphate	PP HRL,SS,GL	Q B,325	
Potassium Bichromate	GL SS,AL	B 325	
Potassium Bromide	PP PVDF,HRL,BR,GL	Q B,325	
Potassium Carbonate	CI PVDF,HRL,SRL,SS,BR	Q B,325,AA	
Potassium Chlorate	GL PVDF,ETFE,SS,AL,HRL	214P* 226,237	Mineral oil based greases must not be used.
Potassium Chloride	PP PVDF,HRL,BR,CI	Q B,325,300	
Potassium Citrate	PP HRL,SS	Q B,325	
Potassium Cyanide	PP HRL,ECTFE,CI	Q B,325	Sealed bonnet available. Nitrile O-ring seal.
Potassium Dichromate	GL PVDF,PP	214P* B,325	
Potassium Ferricyanide	HRL PP,GL,BR,SS	B Q,325	
Potassium Ferrocyanide	HRL PVDF,ECTFE,GL	B Q,325	
Potassium Fluoride	ECTFE BL,ETFE,HRL	B Q,325	
Potassium Hydrogen Fluoride	ECTFE BL,ETFE,HRL	B Q,325	
Potassium Hydroxide	CI PP,HRL,SS	B Q,325,300	
Potassium Hydrogen Sulphite	ETFE ECTFE,BL,HRL,SS	B Q,300,325	Also known as potassium bisulphite.
Potassium Hypochlorite	PVDF HRL,GL,ETFE,PP	237 Q,226,214P*	
Potassium Iodide	PP PVDF,HRL,GL,ETFE	B Q,325,214P*	
Potassium Nitrate	PVDF HRL,PP,SS,CI,BR,ETFE	B Q,237,325,214P*	
Potassium Nitrite	ETFE HRL,GL,SS,CI,PP	B Q,325,237,214P*	
Potassium Permanganate	PP PVDF,ECTFE,SS,GL,CI,ETFE	B Q,237,325,214P*	
Potassium Persulphate	ETFE BL,PP,SS,SRL	B 237,214P*,325	
Potassium Phosphate	PP HRL,NL,SS,CI,ETFE	B Q,HT,325,214P*	
Potassium Sulphate	PP BL,PVDF,HRL,BR,AL,CI,ETFE	B Q,325,214P*	
Potassium Thiocyanate	ETFE BL,HRL,AL	B Q,300,325,214P*	
Pottery Slip	SRL CI	Q AA	
Printers Ink	BR SS,ECTFE,ETFE	226 214P*,HT	
Producer Gas	DI CI,CS	B HT,325	

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Propamine	CI BL,ETFE,GL	B 300	
Propane (Gas or Liquid)	C DI,CS,AL,BR	C HT	Sealed bonnet optional.
Propanol	DI SS,PVDF,CI,BR,HRL	B W,300	
Propionic Acid	ETFE GL,SS,PP	B 214P*	
Propionic/Formic Acid Mixtures	ETFE GL,PP,SS	B 214P*,300	
Propyl Alcohol	CI BR,HRL,SS,ETFE,PP	W 0,8,214P*	Internally polished valves available.
Propylene Chlorhydrin	ETFE GL,PVDF	214P*	
Propylene Glycol	CI AL,BR,SS,GL,ETFE,PP	Q 8,325,W,214P*	
Propylene Oxide, TLV 100 ppm	DI CI,SS,BR,AL,GL	214P*	
Protim	CI DI,ETFE,SS,GL	214P* 226	
Pyridine, TLV 5 ppm	DI ETFE,AL,CI,GL	214P*	
Radioactive Effluents	BL NL,SS,ECTFE,ETFE,PVDF	B HT,325	Sealed bonnet advised. Butyl O-ring seal. SS to ASTM A296 CF8C. Valves internally polished.
Renal Dialysate	SS GL	214P*	
Resorcinol	SS AL,ETFE,GL	214P* B,237	
Rock Salt	PP SRL,HRL,CI,BR	Q B,AA	
Rolling Oil, Cold	C DI,CS,AL,CI,BR,ETFE	226 Q,C,214P*	
Rolling Oil, Hot	C DI,CS,AL,CI,BR,ETFE	226 Q,C,214P*	
Rubber Adhesives	GL CI,ETFE,SS	214P* 226	
Rubber Latex	GL CI,AL,PP,SS,ETFE	C Q,214P*	
Rubber Solution	GL CI,ETFE,SS	214P* 226	
Rum	SS ETFE,BR	W 214P*,300,215(F)	Internally polished valves available.
Saccharin	SS GL,ETFE,HRL	B 0,214P*	
Salicylaldehyde	AL GL,SS,ETFE	214P*	
Salt	PP SRL,HRL,BR,CI	Q B,325	
Saltpetre	PVDF HRL,PP,SS,CI,BR,ETFE	B Q,237,214P*	
Sand	SRL CI	Q B,AA	
Sea Water	BR PP,HRL,CI,NL,ETFE	Q C,325,214P*	
Sequestrol (EDTA)	PP HRL,ECTFE,BL,GL	B Q,214P*	
Sewage	CI HRL,PP,BR,ETFE	Q HT,325,214P*	
Sherry	SS BR,ETFE	W 215(F),214P*	Internally polished valves available.
Silcodyne H.	AL SS,ETFE	C 226,214P*	
Silver Cyanide	PP PVDF,HRL,GL,ETFE	B 0,325,214P*	
Silver Nitrate	HRL GL,SS,PP,PVDF	Q 8,325,214P*	
Silver Plating Solutions	BL PP,ECTFE,HRL,GL	B 300,214P*,325	
Size (Paper Makers)	PP HRL,ECTFE,GL,ETFE	Q AA,325,B,300,214P*	
Slaked Lime	CI SRL,PP,BR,HRL	Q B,AA,325	
Slip (Pottery)	SRL CI	Q AA	
Skydrol	CI SS	300 226	
Soap Lye	CI BL,PP,HRL,GL	300 Q,B,HT,325	
Soap Solutions	CI SS,ECTFE,BR	Q B,300	
Soda Ash	CI SRL,PP,BR,SS	Q B,325,AA	
Sodium Acetate	PP PVDF,HRL,SS,ETFE	Q B,325,300,214P*	
Sodium Aluminate (Bayer Process Fluids)	SRL CI,DI	Q B,325	
Sodium Aluminate (Other Uses)	CI HRL,PP	Q B,300	
Sodium Arsenate	PP HRL,ETFE,CI	Q B,325	
Sodium Bicarbonate	CI HRL,PP,SS,BR	Q B,325	
Sodium Bichromate	CI AL,HRL,GL,ETFE,PVDF,PP	B 237,325,214P*	
Sodium Bisulphate	HRL PP,BR,SS,ETFE,PVDF	Q B,325,214P*	
Sodium Bisulphite	PP HRL,ETFE,SS,BR	Q B,325	
Sodium Borate	PP PVDF,HRL,BR,SS	B Q	
Sodium Bromate	ETFE BL,HRL,BR,GL,SS	Q B,325	
Sodium Bromide	PVDF BL,HRL,BR,GL	Q B,325	
Sodium Carbonate	CI SRL,PP,SS,BR	Q B,325,AA	
Sodium Carboxymethyl Cellulose	CI PP,AL,BR	Q B,W,325	
Sodium Chloracetate	PP CI,BR,HRL	Q B,C	
Sodium Chlorate	ETFE SS,PP,BR,AL,HRL,GL	237 B,214P*	
Sodium Chloride	PP SRL,HRL,BR,CI	Q B,325	
Sodium Chlorite	PFA GL,HRL	P5/P3 226,P2,237,325	
Sodium Chromate	CI ETFE,GL,AL,BR,SS,PVDF	Q 237,214P*	
Sodium Citrate	SS HRL,PP	Q B,325	Sealed bonnet available. Nitrile O-ring seal.
Sodium Cyanide	PP HRL,ECTFE,CI,ETFE,PVDF	Q B,325,214P*	Sealed bonnet advised. Nitrile O-ring seal.
Sodium Dichromate	GL PVDF,PP	214P* B,325	
Sodium Hydroxide	CI PP,HRL,SS,ETFE,PVDF	B Q,300,325,214P*	
Sodium Hydroxide (Oily)	CI DI,SS	HT	

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Sodium Hypochlorite	PVDF HRL, GL, ETFE, SS	237	Q, 226, 214P*
Sodium Metaborate	PP SS, HRL	0	B
Sodium Nitrate	PVDF HRL, PP, SS, CI, BR, ETFE, GL	B	Q, 237, 325, 214P*
Sodium Nitrite	ETFE HRL, GL, SS, CI	B	Q, 237, 325, 214P*
Sodium Pentachlorophenate	CI ETFE, HRL, BR	0	B, 325, 214P*
Sodium Phosphate	PP HRL, NL, SS, BL, ETFE	B	Q, HT, 214P*
Sodium Polyphosphate	PP HRL, SS, BL, ETFE	0	B, 325, 214P*
Sodium Silicates	CI PP, HRL, SS, GL	0	300, 325
Sodium Silicofluoride	BL ECTFE, PP, HRL	B	Q, 325
Sodium Stannate	BL HRL, PP, SS	B	Q, 300, 325
Sodium Sulphate	CI PP, HRL, PVDF, SS, BR, ETFE	B	Q, 300, 325, 214P*
Sodium Sulphide	BL HRL, PP, GL, ETFE, PVDF	B	Q, 300, 214P*
Sodium Sulphite	ETFE PP, HRL, BR, SS, PVDF	B	Q, 300, 325, 214P*
Sodium Thiocyanate	ETFE BL, HRL, AL	B	Q, 300, 325, 214P*
Sodium Thiosulphate	PP ECTFE, GL, HRL, SS, ETFE, PVDF	300	237, 214P*, Q, B, 325
Soft Drinks	SS PP, BR, GL, ETFE	W	215(F), 300, 214P*
Solvent Naphtha	DI CS, AL, CI	226	C, 214P*
Soups	SS BR, PP, ETFE	W	B, 215(F), 300, 214P*
Spent Acids	BL PP, HRL, SS, GL	B	Q, 300
Spin Bath Liquor (Rayon)	PP HRL, GL	214P*	C, 325
Spin Finish Solutions (Synthetic Fibres)	ETFE SS, GL	B	C, 214P*, 300
Starch	CI AL, PP, BR, ETFE	0	B, 325, W, 214P*
Stearic Acid	AL ETFE, ECTFE, BR, SS, GL	226	214P*
Stearin	CI AL, ETFE, BR, SS	214P*	HT, 226
Streptomycin	SS GL, ETFE	300	214P*
Styrene	CS DI, AL, CI	214P*	226
Succinic Acid	SS ETFE, AL, BR, GL	B	214P*
Sugar	CI SS, BR, GL, ETFE	300	215(F), 326(F), Q, 214P*
Sulphamic Acid	PP HRL, GL, ETFE	300	237, B, Q, 325, 214P*
Sulphite Liquor	ETFE SS, GL, BR, HRL	300	214P*, B, Q
Sulphonated Caster Oil	ETFE GL, CI, BR	214P*	
Sulphonated Detergents	PP BR, SS, ETFE	0	B, 325, 214P*
Sulphophthalic Acid	BL ECTFE, PP, GL, HRL	B	Q, 214P*
Sulphosalicylic Acid	BL ECTFE, PP, GL, HR	B	Q, 214P*
Sulphur Dioxide (Gas), TLV 5 ppm	BL PVDF, HRL, BR	B	300, 325, 237, Q, 226
Sulphur Dioxide (Liquid)	PFA GL, BR, ETFE	214P*	B
Sulphur Hexafluoride	AL SS, CI		C 214P*, 325
Sulphur Trioxide	PFA GL, ETFE, SS	214P*	
Sulphuric Acid Below 80%	BL PP, HRL, GL, ETFE, PVDF	B	226, 214P*, 237, 325
80-95%	GL ETFE, PVDF, CI	P5/P3	226, 214P*
95-99%	PFA CI, GL, SS, ETFE	P5/P3	226, 214P*
over 99%	PFA GL, ETFE, CS, CI	P5/P3	P1
Sulphurous Acid	PP BL, PVDF, HRL, BR, GL, ETFE	B	300, 325, Q, 214P*
Syrups (Sugar)	CI SS, BR, GL, ETFE	300	215(F), 326(F), Q, W, 214P*
Tall Oil	C BR, AL, SS, GL, ETFE, DI	226	C, 214P*
Tallow	CI NL, BR, SS, ETFE	HT	C, 214P*
Tanalith	C DI, CS	0	300
Tannic Acid	PP PVDF, HRL, BR, SS, GL, ETFE	B	300, Q, 325, 214P*
Tanning Liquors	PP PVDF, HRL, BL, GL, ETFE	B	300, 325, 214P*
Tartaric Acid	PP HRL, SS, BR, GL, ETFE, PVDF	W	Q, 300, 215(F), 214P*
Teepol	PP HRL, BR, SS, GL	0	B, 325
Terephthalic Acid	GL SS, ETFE, AL	214P*	B, 300
Terpineol	DI CI, AL, GL, SS, ETFE	C	214P*
Tetrachloroethane, TLV 5 ppm	DI CI, AL, GL	P5/P3	226, 214P*
Tetrachloroethylene, TLV 100 ppm	DI CI, AL, SS, GL	P5/P3	226, 214P*
Tetraethyl Lead	DI CS, GL, PFA	P5/P3	
Tetrahydrofuran, TLV 200 ppm	DI AL, GL, PFA, CI, SS	214P*	
Tetrahydrothiophene	CI BR, SS	B	C, HT, 214P*
Tetralin	DI CI, AL, ETFE, BR, GL	214P*	226
Thermex	DI CS, CI, AL, SS	226	P3
Thioglycolic Acid	SS GL, ETFE	214P*	B

Internally polished valves available.

Internally polished valves available.

Internally polished valves available.

Sealed bonnet. Viton O-ring.

Sealed bonnet advised. Viton O-ring seal. Sealed bonnet available. Viton O-ring seal.

Sealed bonnet available. Viton O-ring seal.

Sealed bonnet available. Viton O-ring seal. SS and C usable only at low fluid velocities. Sealed bonnet available. Viton O-ring seal. If in doubt consult us. We can advise suitable valves for all concentrations and temperatures. Sealed bonnet advised. Viton O-ring seal.

# SERVICE RECOMMENDATIONS

Fluid	Body Material/Lining	Diaphragm Grade	Notes
Thionyl Chloride	PFA GL	214P*	
Titanium Dioxide	BL HRL,PP,GL,ETFE	B 0,300	
Titanium Tetrachloride	CS DI,GL,ETFE	226 214P*	Sealed bonnet. Viton O-ring seal.
Toluene, TLV 200 ppm	DI CS,CI,AL,SS,GL,ETFE,PVDF	P5/P3 226,214P*	Sealed bonnet available. Viton O-ring seal.
Toluene Di-Isocyanate (TDI)	DI AL,ETFE	214P*	Sealed bonnet. Fluorocarbon seal. Toxic.
Tomato Juice	SS	HT 215(F),W	Internally polished valves available.
Transformer Oil	SS AL,DI,CI,ETFE	C 226,214P*	
Trichlorobenzene	DI CI,AL,GL	P5/P3 214P*	
Trichloroethane (Inhibited) (Genklene Chlorothene), TLV 350 ppm	C DI,AL,GL	P5/P3 226,214P*	Sealed bonnet available. Viton seal.
Trichloroethylene, TLV 100 ppm	C DI,AL,CI,SS,GL,ETFE,PVDF	P5/P3 226,214P*	Sealed bonnet available. Viton O-ring seal.
Tricresyl Phosphate, TLV 0.1 mg/M <sup>3</sup>	CI AL,ETFE,GL,SS	214P* B,325,215(F)	Sealed bonnet. Fluorocarbon seal.
Triethylene Glycol	CI BR,AL,SS	Q B,325,P3	
Trinitrotoluene	GL BL,ETFE,AL	214P* 226,300	Explosive. Keep moist.
Tritolyl Phosphate	CI AL,ETFE,GL,SS	214P* B,215(F)	
Tung Oil	DI CI,SS,GL,AL,ETFE	226 C,214P*,HT,B	
Turbine Oil	BR ETFE	HT 226,C	
Turkey Red Oil	GL ETFE	214P*	
Turpentine, TLV 100 ppm	DI CI,AL,BR,SS,ETFE,PVDF	C 226,214P*	Sealed bonnet available. Viton O-ring seal.
Uranyl Nitrate, TLV 0.05 mg/M <sup>3</sup>	BL SS,GL,HRL	B 0	Sealed bonnet advised. Radioactive.
Urea	PP SS,HRL,GL,ETFE,PVDF	B 300,325,214P*	
Urea/Formaldehyde Glues	GL SS,CI	214P* B	
Urine	BR SS,PP,HRL	Q B,325	
Vanadyl Sulphate	BL PP,HRL,SS	B 300	
Varnish	DI AL,CI,SS,GL,BR	214P* HT,B,C	
Vegetable Oils	AL SS,DI,ECTFE,CI,ETFE,GL	C 226,214P*,B	See individual oils if known.
Vinegar	PP GL,SS,HRL,BR,BL,ETFE	B 214P*,Q,W,215(F)	
Vinyl Acetate Monomer	GL SS,PFA	214P*	Sealed bonnet advised.
Vinyl Acetate Paints	GL SS,PP	Q B,300,215(F)	
Vinyl Chloride, TLV 50 ppm	GL SS,PFA,ETFE	214P* B	Sealed bonnet essential. Viton O-ring seal.
Vinylidene Chloride	GL SS	214P* 226	Valves with internal polish available.
Vodka	SS ETFE	W 215(F),214P*	Internally polished valves available.
Water, Cold	CI PP,BR,HRL	Q B,325	
De-mineralized	PP HRL,ECTFE,ETFE,SS,BL,GL	Q 300,214P*,B,325,326(F)	
Distilled (Pyrogen Free)	PP SS,GL,ETFE	214P* 300	Internally polished valves available.
Drinking	BR SS,PP,CI	Q 300,326(F)	'Fire' and '303 Grades' - B.D.T. and Lloyds approved
Fire Mains	BR C,CS	FIRE 303,325	
Heavy	SS BL,GL	B 300,325,214P*	Sealed bonnet advised. SS to ASTM A296 CF8C.
Hot	CI PVDF,BR,SS	300 325	
Oily	CI BR	HT C	SS to BS 3100 347 C27F.
Radio-Active	SS BL,BR	300 B,HT,325	SS to ASTM A296 CF8C.
Salt	BR PP,HRL,CI	Q C,325	
Whey	SS CI,PP,BR	W 215(F),300	Internally polished valves available.
Whiskey	SS PP,BR,GL	W 215(F),300,214P*	Internally polished valves available.
White Spirit	DI AL,CI,BR	C 226	Internally polished valves available.
Wine	SS GL,ETFE	W 215(F),CF,C,214P*	Internally polished valves available.
Wood Pulp	CI SRL,NL,BR	Q HT,AA	
Wort	CI PP,BR,SS	300 214P*	
Xylene (Xylol), TLV 100 ppm	DI CS,AL,CI,BR,ETFE	P5/P3 226	Sealed bonnet available. Viton O-ring seal.
Yeast	SS BR,PP,GL,ETFE	300 W,214P*	
Zinc Acetate	BL PP,HRL,GL,SS,ECTFE,ETFE	B 300,325,214P*	
Zinc Chloride	PP HRL,GL,BL,ECTFE,ETFE,PVDF	B 300,325,214P*	
Zinc Oxide	SRL SS,CI	Q HT	
Zinc Plating Solutions	BL PP,HRL,GL,ECTFE,ETFE	B 300,325,214P*	
Zinc Sulphate	BL PP,HRL,GL,SS,ETFE,PVDF	B 300,325,214P*	
Zinc Sulphide	SRL CI,ETFE,PVDF	Q 325,214P*,AA	

# DIAPHRAGM VALVE PERFORMANCE DATA

## GENERAL INFORMATION

CLOSURE TORQUES							HANDWHEEL TURNS REQUIRED				NOMINAL VALVE TRAVELS			
Size	Weir Type (A)		Straight Thru (KB)		High Flow (K)		Valve Size	No. of Turns Between Open and Closed Positions			Valve Size	Weir Type (A)	Straight Thru (KB)	High Flow (K)
	Max. Cold Working Press. psi	Torque in.-lbs.	Max. Cold Working Press. psi	Torque in.-lbs.	Max. Cold Working Press. psi	Torque in.-lbs.		Weir Type (A)	Straight Thru (KB)	High Flow (K)				
1/2"	232	27	100	36	—	—	1/2"	2	—	—	1/4"	1/8"	—	—
3/4"	232	35	—	—	—	—	3/8"	2 1/4	—	—	3/8"	3/16"	—	—
1"	232	37	100	75	—	—	1/2"	1 3/4	5 1/2	—	1/2"	1/4"	5/8"	—
1 1/4"	232	130	—	—	—	—	3/4"	1 1/2	—	—	3/4"	5/16"	—	—
1 1/2"	232	130	100	75	100	155	1"	2 3/4	6 1/2	—	1"	7/16"	1 1/16"	—
2"	232	160	100	155	100	450	1 1/4"	3	—	—	1 1/4"	9/16"	—	—
2 1/2"	145	300	100	450	100	540	1 1/2"	3 1/2	6 1/2	8	1 1/2"	3/4"	1 1/16"	1 9/16"
3"	145	390	100	540	100	720	2"	5 1/4	7 3/4	10	2"	1 1/8"	1 9/16"	1 15/16"
4"	145	624	100	720	100	880	2 1/2"	7 1/4	9 3/4	12 1/2	2 1/2"	1 7/16"	1 15/16"	2 7/16"
5"	145	990	50	880	50	960	3"	8 1/4	13	14	3"	1 5/8"	2 7/16"	2 13/16"
6"	145	1550	50	960	50	1500	4"	10 1/2	14 1/4	17	4"	2 1/8"	2 13/16"	3 5/16"
							5"	14	17	22	5"	2 13/16"	3 5/16"	4 7/16"
							6"	16 3/4	18 1/2	19 1/2	6"	3 3/16"	4 7/16"	4 13/16"
							8"	23	19 1/4	29	8"	4 9/16"	4 13/16"	7 1/4"
							10"	28 3/4	29	32	10"	5 3/4"	7 1/4"	8"
							12"	33	32	48	12"	6 9/16"	8"	12"
							14"	36	48	48	14"	9"	12"	12"

Axial closure loads available on request.

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