

FLOWMETER

CHEMICAL COMPATIBILITY AND MATERIAL SELECTION GUIDE



Information provided is intended to serve as a guide in helping select Varea-Meter® flowmeters for specific flow-metering applications. Guidance for materials of construction is found in the chemical compatibility table. This guidance provides what we believe to be a suitable and economical choice of materials for each chemical listed.

All guidance is based on a service temperature of 70° F. Any variation in temperature, concentration, or purity may radically alter the corrosive activity of the chemical.

Listed at the beginning of this catalog are some commonly used chemicals that, because of their inherent properties, are considered problem fluids. Consider the special information in the problem fluids section below before selecting flowmeter materials for any liquid. If a particular meter-type is not listed under a chemical, that type meter should not be used with that chemical.

WARNING: Do not use Glass-Tube meters for fluids that are toxic, hazardous, or that attack glass.

This publication contains a listing of the liquids and gases most frequently metered in chemical processes. The type of meter with materials of construction best suited for that service can be identified. If your gas or liquid does not appear, ask us. If our section on "Problem Fluids" or the notes on certain chemicals do not give you a clear picture, ask us. Write (USFilter's Wallace & Tiernan Products, 1901 West Garden Road, Vineland, NJ 08360) or call (856:507-9000). We'll see that you get an answer.

All of these may be metered with TFE-Lined Varea-Meters. Please refer to individual service listings.

AMMONIA (NH₃) Ammonia in any form will attack brass. Use only steel or stainless steel meters. PVC meters may be used for dry NH₃ gas service.

CHLORINE Dry (anhydrous) chlorine in liquid or gaseous form (less than 150 ppm water) can be handled by many common metals. In the presence of water or water vapor, however, chlorine forms hydrochloric acid (HCl). Hydrochloric acid will attack nearly all metals. Chlorine solutions (chlorine water) may be handled with a PVC-Tube Varea-Meter if desired (or Glass-Tube meter with PVC end fittings). Do not use a PVC-Tube Varea-Meter for chlorine gas service under pressure.

HYDROCHLORIC ACID (HCl) (MURIATIC ACID) All concentrations of hydrochloric acid will attack most common metals. PVC exhibits good resistance. Thus, PVC-Tube meters should be considered up to 140° F at 35% concentration. Concentrated HCl to 72° F may also be handled with a PVC-Tube meter. Do not use Glass-Tube meters for this service.

HYDROFLUORIC ACID (HF) FLUORINE (F) Fluorine and most of its compounds attack glass. Do not use Glass-Tube meters for this service. Metal-Tube and PVC-Tube Varea-Meters are satisfactory for most hydrofluoric acid applications. NOTE: When using a PVC-Tube Varea-Meter, a Hastelloy C metering disc should be used instead of the standard Tantalum, which is attacked by fluorine compounds.

PHOTO-PROCESSING FLUIDS This group includes many different solutions. Some attack common metals and become contaminated. Type 316 stainless steel is compatible with most photo-processing solutions, except ferricyanide bleach for which Hastelloy C must be used. PVC meters or Glass-Tube Varea-Meters with PVC or KYNAR® end fittings may also be considered as an alternative to 316 SS meters for common photo solutions.

SODIUM HYDROXIDE (NaOH), OTHER CAUSTICS Sodium hydroxide and other caustics attack glass, especially at elevated temperatures and/or concentrations about 20%. Metal-Tube Varea-Meters are recommended for this service. Do not use Glass-Tube meters for this service.

STEAM AND HOT WATER Steam and hot water (200° F and higher) attack borosilicate glass. Do not use Glass-Tube meters for this service. Metal-Tube meters should be specified.

SULFURIC ACID (H₂SO₄) Material requirements for sulfuric acid vary with concentration, temperature, and impurities. The interrelationship of these three variables is complex and makes reliable material selection difficult. Metal-Tube and PVC Varea-Meters are suitable for H₂SO₄ service under certain conditions. Glass-Tube Varea-Meters may be materially suitable but there are hazards in the event of glass tube breakage. Do not use Glass-Tube meters for sulfuric acid service.

NOTE: As mentioned in the introduction, all guidance is based on a service temperature of 70° F. Variations in temperature, concentration, or amounts of impurities may radically change corrosive effects. Guidance is based on material compatibility only. Metal-Tube Varea-Meters are recommended for toxic and hazardous materials. **Do not use Glass-Tube meters for fluids that are toxic or hazardous, or that attack glass.**

MATERIAL SELECTION GUIDE

TO USE THIS SELECTION GUIDE... in the table below, note the materials of construction available for the meter you intend to use. On the following pages, find your fluid in the indicated column and check the material's

compatibility against the meter's material availability. If a particular meter is not compatible with your fluid, that meter should not be used for that service. Select an alternate meter until you find one that is suitable. Refer to the last page for the

interpretation of the "Application Note" reference numbers that are located to the left of each chemical.

(X) Available (-) Unavailable

	TUBE/ BODY MATERIAL	END FITTING/ CONNECTION MATERIAL	O-RING MATERIAL	FLOAT MATERIAL	FLOAT DISK MATERIAL	RETAINER MATERIAL
	BOROSILICATE GLASS NICKEL-PLATED C.S. 316 SS 304 SS (TFE LINED) PVC	BRASS CARBON STEEL 316 SS PVC KYNAR®	BUNA-N EPR 321 SS TFE VITON® KALREZ® 4079	BRASS BLACK GLASS HASTELLOY C POLYPROPYLENE PVC SAPPHIRE 316 SS TANTALUM TFE	HASTELLOY C KYNAR TANTALUM	KYNAR TFE 316 SS
FLOWMETER						
GLASS-TUBE PURGEMETER						
Kynar Frame	X - - - -	- - - - X	X X - - X -	- X - - - X X X -	- - - -	X - -
Stainless Steel Frame	X - - - -	- - X - -	X X - - X X	- X - - - X X X -	- - - -	X - X
ARMORED PURGEMETER						
Arma-View	- - X - -	- - X - -	X X - - X X	- - - - - X - -	- - - -	- - -
Metal Body	- X X - -	- X X - -	X - X X - -	- - - - - X - -	- - - -	- - -
DIRECT-VIEW FLOWMETER	X - - - -	- - X - -	X X - - X -	X - - X - - X* - -	- - - -	- - -
ARMORED FLOWMETER	- - X - -	- - X - -	X X - - X -	- - - X - - X* - -	- - - -	- - -
GLASS-TUBE VAREA-METER	X - - - -	- X X X -	X X - X X -	- - X - - - X - -	- - - -	X X -
STRAIGHT-THROUGH VAREA-METER						
Metal Tube	- - X - -	- X X - -	- - - - -	- - X - - - X - -	- - - -	- - -
TFE-Lined	- - - X -	- - - - -	- - - - -	- - - - - - - X	X X X	- - -
PVC Tube	- - - - X	- - - X -	- - - - -	- - - - X - - - -	X X X	- - -

CHEMICAL COMPATIBILITY TABLE

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL			O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL													
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS		
APPLICATION NOTE REF. NO. FLUID																														
8,42,45,46 ACETALDEHYDE	C	A	C	A	C	C	A	C	C	C	C	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	A	
45 ACETATES	A	A	C	A	A	A	A	C	A	C	C	C	A	A	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	A
9,10,11,12,46,62 ACETIC ACID	A	A	A	A	C	C	A	A	A	A	C	C	A	A	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	A
46 ACETIC ANHYDRIDE	C	A	C	A	C	C	A	C	C	C	C	C	C	C	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C	
13,43,46 ACETONE	A	A	C	A	A	A	A	A	C	C	C	A	C	A	A	A	A	A	C	C	A	A	A	A	A	A	C	A	A	
1,2,43,46,49 ACETYLENE	A	A	C	A	C	A	A	A	A	C	A	A	A	A	A	A	C	A	A	C	A	A	A	A	A	A	A	A	A	
46,57 ACRYLONITRILE	C	A	C	A	C	C	A	C	C	C	C	C	C	C	A	C	A	A	C	C	C	A	C	A	C	A	A	A	C	
46 ACTIVATED SILICA	A	C	A	A	C	C	C	N	A	A	A	C	A	C	C	N	C	C	A	A	C	C	A	C	A	C	A	A	C	
45,46,58 ADIPIC ACID	A	A	A	A	C	C	A	A	A	A	A	C	A	C	C	A	C	A	A	A	C	C	A	C	A	C	A	A	C	
1,46 AIR	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
2,46,61 ALKYL ALCOHOL	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	
46,63 ALUMINUM CHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	
46 ALUMINUM FLUORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C		
3,46,47 ALUMINUM HYDROXIDE	C	A	A	A	C	A	A	C	A	A	A	A	C	C	C	A	C	A	A	A	C	C	A	C	A	C	A	A	C	
46 ALUMINUM NITRATE	A	A	A	A	C	C	A	C	A	A	C	A	A	C	C	A	C	A	A	A	C	C	A	C	A	C	A	A	A	
15,46,50 ALUMINUM SULFATE (ALUM)	A	A	A	A	C	C	A	A	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
3,44,46 AMMONIA, ANHYDROUS	C	A	C	A	C	A	A	C	C	C	C	A	C	C	A	N	C	A	A	C	C	C	A	C	A	C	A	C	C	
1,3,45 AMMONIA, DRY GAS	A	A	A	A	C	A	A	A	C	A	C	A	A	A	A	N	C	A	A	A	A	A	A	A	A	A	A	A	C	
46 AMMONIUM CARBONATE	A	A	A	A	C	A	A	C	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	
13,16,45,46,50 AMMONIUM CHLORIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
46 AMMONIUM FLOURIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	C	C	C	A	A	A	C	
3,13,47 AMMONIUM HYDROXIDE	C	A	A	A	C	C	A	C	A	A	A	A	A	A	A	N	C	A	A	A	C	C	C	C	A	A	A	A	C	
45,46 AMMONIUM METAPHOSPHATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	
13,46 AMMONIUM NITRATE	A	A	A	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
46 AMMONIUM PHOSPHATE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
16,46,50 AMMONIUM SULFATE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
45 AMMONIUM THIOCYANATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	
46,61 AMYL ACETATE	C	A	C	A	C	A	A	C	A	C	C	C	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	C	
43,45 AMYL ALCOHOL	C	A	A	A	C	C	A	C	A	A	C	C	A	A	A	A	C	A	A	A	C	C	C	C	A	C	A	C	C	
46,57 ANILENE	C	A	C	A	C	A	A	C	A	C	C	C	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	C	
1,46 ARGON	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
46 BARIUM CARBONATE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
46,64 BARIUM CHLORIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	
3,46 BARIUM HYDROXIDE	C	A	A	A	C	A	A	C	A	A	A	A	A	A	A	A	C	A	A	A	C	C	A	C	A	C	A	A	C	
46 BARIUM SULFATE	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	
46 BEER (LAGER)	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	
43,45,58 BENZENE	C	A	C	A	C	A	A	C	A	C	C	C	A	C	A	A	C	A	A	C	C	C	C	C	A	A	A	A	C	

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL				O-RING MATERIAL					FLOAT MATERIAL				RETAINER MATERIAL													
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS		
APPLICATION NOTE REF. NO. FLUID																														
46 BENZOIC ACID	C	A	A	A	C	C	A	C	A	A	A	C	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	
46 BORAX (SODIUM BORATE)	A	A	A	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	C	C	A	C	A	A	A	A	A	
17,46 BORIC ACID	A	A	A	A	C	C	A	C	A	A	A	A	A	A	A	C	A	A	A	C	C	A	C	A	A	A	A	A	A	
25,46 BRINE	A	C	A	A	C	C	C	C	A	A	A	C	A	C	C	A	C	C	A	A	C	C	A	C	A	A	A	A	C	
46,59 BROMIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C		
46,59 BROMINE (WATER)	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	A	C	A	A	A	C		
1,43,46 BUTANE	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	
46,64 BUTTERMILK	A	A	C	C	C	C	A	A	C	C	A	A	C	C	C	A	C	A	A	C	C	C	C	C	C	C	C	C	C	
43,46,51,57 BUTYL ACETATE	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	
43,46,59 BUTYL ALCOHOL	C	A	C	A	C	A	A	C	A	C	A	A	A	A	A	A	C	A	A	C	C	C	A	C	A	A	A	A	C	
1,43,46 BUTYLENE	C	A	C	A	A	A	A	C	A	C	A	A	A	C	A	A	A	A	A	C	C	A	A	C	A	A	A	A	A	
10,46 BUTYRIC ACID	C	A	A	A	C	A	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	
46 CALCIUM CARBONATE	C	A	A	A	C	A	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	
46 CALCIUM CHLORATE	C	A	A	A	C	C	A	C	A	A	C	C	A	C	A	A	C	A	C	A	C	C	A	C	A	A	A	A	C	
13,46,52 CALCIUM CHLORIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
18,47 CALCIUM HYDROXIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	C	A	A	A	A	A	A	
46,59 CALCIUM HYPOCHLORITE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	A	C	
46,47 CALCIUM NITRATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	A	C	
46,47 CALCIUM SULFATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	A	C	
CARBOLIC ACID	A	A	C	C	C	C	A	C	C	C	A	C	C	C	A	A	C	A	A	C	C	C	C	C	C	C	C	C	C	
1,4,46 CARBON DIOXIDE (WET)	A	A	C	A	A	C	A	A	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	A	A	A	A	A	A	
46,57 CARBON DISULFIDE/ BISULFIDE	A	A	C	A	A	A	A	C	A	C	A	A	A	C	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	
4,43,46,53 CARBON MONOXIDE	C	A	C	A	C	C	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	A	A	A	C	
46 CARBON SLURRY	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	
3,46 CARBON TETRACHLORIDE	C	A	C	A	C	A	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	A	A	A	C	
20,46 CARBONIC ACID	C	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	
1,26,46 CASTOR OIL	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	
45 CAUSTIC POTASH	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	
3,44,46,47,48,59 CHLORINE-DRY GAS	A	A	C	A	C	A	A	C	A	C	A	C	C	A	C	A	C	C	A	C	C	C	A	C	A	A	A	A	C	
3,44,46,47,59 CHLORINE-WET GAS	C	C	C	A	C	C	C	C	A	C	C	C	C	C	N	C	C	A	C	C	C	A	C	A	A	A	A	A	C	
3,46 CHLORINE SOLUTION	A	C	A	A	C	C	C	C	A	A	A	C	A	C	C	N	C	C	A	C	C	C	A	C	A	A	A	A	C	
3,46,47,59 CHLORINE-LIQUID	C	C	C	A	C	A	C	C	A	C	C	C	C	C	N	C	C	A	C	C	C	A	C	A	A	A	A	A	C	
43,58 CHLOROBENZENE	C	A	C	C	C	C	A	C	A	C	A	C	C	C	A	A	C	A	A	C	C	C	C	C	C	A	A	A	C	
46,47,61 CHLOROFORM	A	A	C	A	A	A	A	C	A	C	A	C	A	A	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	
21,46,58,63 CHROMIC ACID-AQUEOUS	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	A	C	C	A	A	A	C	
18,46 CITRIC ACID	A	A	A	A	C	C	A	C	A	A	A	C	A	C	A	A	C	A	C	A	C	A	A	A	A	A	A	A	A	
43,46 COKE OVEN GAS	C	A	C	A	C	C	A	C	C	C	A	C	A	A	A	A	C	A	A	C	C	C	A	C	A	A	A	A	C	

CHEMICAL COMPATIBILITY TABLE

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL			O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL														
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS			
APPLICATION NOTE REF. NO. FLUID																															
45 COPPER CHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	A	A	C
45 COPPER NITRATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	A	A	C
17,46 COPPER SULFATE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	A	A
1,26,46 COTTONSEED OIL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
26,45 COCONUT OIL	A	A	C	A	A	C	A	C	A	C	A	A	A	C	A	A	A	A	C	C	A	A	A	A	A	A	A	A	A	A	
2,46,58 CRESOL	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	A	
46 DOWTHERM-A	C	A	C	A	C	C	A	C	C	C	A	C	A	C	A	A	C	A	C	C	C	C	A	C	A	C	A	C	A	C	
46 EDIBLE OIL	A	A	C	A	C	C	A	N	A	C	C	A	A	C	A	N	C	A	A	C	C	C	A	C	A	C	A	C	A	C	
1,43,46 ETHANE	A	A	C	A	C	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	A	A	
43,46 ETHER-METHYL, ETHYL, ISOPROPYL	C	A	C	A	C	C	A	C	C	C	C	C	C	C	A	A	C	A	C	C	C	C	A	C	A	C	A	C	A	C	
43,45 ETHYL ACETATE	C	A	C	A	C	C	A	C	C	C	C	C	C	A	A	A	C	A	C	C	C	C	A	C	A	C	A	C	A	C	
43,46 ETHYL ALCOHOL	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	A	
43,46,47 ETHYL CHLORIDE	C	A	C	A	C	C	A	C	A	C	C	A	C	C	A	A	C	A	C	C	C	C	A	C	A	C	A	A	C	A	
1,43,46 ETHYLENE	A	A	C	A	C	A	A	C	A	C	C	A	A	C	A	A	C	A	C	C	C	A	A	A	A	A	A	A	A	A	
19,43,46 ETHYLENE DICHLORIDE	A	A	C	A	A	C	A	C	A	C	A	C	A	C	A	A	A	C	C	C	C	A	A	A	A	A	A	A	A	A	
19,46 ETHYLENE GLYCOL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	
19,46 FATTY ACIDS	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	
46 FERRIC CHLORIDE	A	C	A	A	C	C	C	C	A	A	A	A	C	C	C	A	C	C	A	A	C	C	A	C	A	C	A	A	C	A	
45,46,47 FERRIC NITRATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	A	
17,25,45,47,50 FEFFIC SULFATE	A	A	A	A	C	C	C	C	A	A	C	A	A	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	A	C	
45,47 FERROUS CHLORIDE	A	C	A	A	C	C	C	C	A	A	A	A	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	A	C	
46 FERROUS SULFATE	A	C	A	A	C	C	C	C	A	A	C	A	A	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	A	
22,46,47 FLUOSILICIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	A	C	A	C	A	A	C	A	
46,59,61 FORMALDEHYDE	C	A	C	A	C	C	A	C	A	C	C	A	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	C	A	
23,46 FORMIC ACID	C	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	C	A	A	C	A	
46 FRUIT JUICES	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	A	
43,46 FUEL OIL #1, 2, 4, 5, 6	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	
46 FUEL OIL W/ H ₂ SO ₄	C	A	A	A	C	C	A	C	C	A	C	C	C	C	C	A	C	A	A	A	C	C	A	C	A	C	A	C	A	C	
43,46,57 FURFURAL	A	A	C	A	C	C	A	A	A	A	C	C	A	A	A	N	C	A	A	C	C	A	A	A	A	A	A	A	A	A	
13,43,46 GASOLINE	C	A	C	A	C	A	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	A	A	
19,46 GLYCERINE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	
46 GUM SOLUTION	A	A	C	A	C	A	A	A	A	C	A	C	A	C	A	N	C	A	A	C	C	A	A	A	A	A	A	A	A	A	
1,46 HELIUM	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	
46 HEPTANE	C	A	C	A	C	C	A	C	A	C	C	C	C	C	C	A	C	A	A	C	C	C	A	C	A	C	A	A	C	A	
46 HEXANE	C	A	C	A	C	C	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	A	C	A	
46,54 HYDRAZINE	C	A	C	A	C	C	A	C	A	C	C	C	C	C	N	C	A	C	C	C	C	C	A	C	A	C	A	A	C	A	
46,61 HYDRAZINE HYDRATE	C	A	C	A	C	C	A	C	A	C	C	C	C	C	N	C	A	C	C	C	C	A	C	A	C	A	A	C	A	C	

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL				END FITTING/ CONNECTION MATERIAL				O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL										
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS	
APPLICATION NOTE REF. NO. FLUID																													
10,45 HYDROBROMIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	
3,46 HYDROCHLORIC ACID (ALL CONC.)	C	C	A	A	C	C	C	C	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	A	C
3,21,45 HYDROFLUORIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	
1,43,46 HYDROGEN	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	A	A	A	A	A	A	A	A	A
5,46 HYDROGEN CHLORIDE-DRY	C	A	A	A	C	A	A	C	A	A	C	A	A	C	A	A	C	A	A	A	A	C	A	C	A	A	A	A	C
3,6,46 HYDROGEN CHLORIDE-WET	C	C	A	A	C	C	C	C	A	A	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	A	C
21,39,40,45,60 HYDROGEN PEROXIDE	C	A	A	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	A	C	C	C	A	A	A	A	C
43,46 HYDROGEN SULFIDE-DRY	C	A	C	A	C	A	A	C	A	C	A	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	A	A	C
46 HYDROGEN SULFIDE-WET	C	A	C	A	C	C	A	C	A	C	C	C	C	C	A	C	A	C	C	C	C	A	C	A	C	A	A	A	C
46,57 HYPOCHLOROUS ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	C	A	A	C
46 ILLUMINATING GAS	C	A	C	A	C	A	A	C	C	C	C	C	C	C	N	C	A	C	C	C	C	A	C	A	C	A	C	A	C
43,46,58 ISOPROPYL ALCOHOL	C	A	A	A	C	C	A	C	A	A	A	C	A	C	A	A	C	A	C	A	C	C	A	C	A	C	A	A	C
43,46 KEROSENE	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
46 KRAFT LIQUOR	C	C	A	A	C	C	C	C	C	A	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
43,46 LACQUER THINNERS	A	A	C	A	C	C	A	C	C	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	C	A	A	C
16,22,46,61 LACTIC ACID	A	A	A	A	C	C	A	C	A	A	A	C	A	C	A	A	C	A	C	A	C	A	A	A	A	A	A	A	A
45 LAURIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	A	C
45 LAURYL SULFATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	N	C	C	A	A	C	C	C	C	A	A	A	A	A	C
45,46 LEAN ACETATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	N	C	C	A	A	C	C	C	C	A	A	A	A	A	C
46 LINSEED OIL	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A
46 LITHIUM HYPOCHLORITE	A	C	A	A	C	C	C	N	A	A	A	C	C	C	A	C	C	A	A	C	C	A	C	A	C	A	A	A	C
46 LUBRICATING OILS	A	A	A	A	A	C	A	A	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A
46 MAGNESIUM CARBONATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	N	C	C	C	A	C	C	A	C	A	C	A	A	A	C
17,25,46 MAGNESIUM CHLORIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	C	A	A	A	A	A	A	A	A	A
3,45,46 MAGNESIUM HYDROXIDE	C	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	C	C	A	C	A	C	A	A	A	C
46 MAGNESIUM NITRATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	A	C
19,46 MAGNESIUM SULFATE	A	A	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
1,43,46 METHANE	A	A	C	A	C	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A
43,46 METHANOL- METHYL ALCOHOL	C	A	A	A	C	C	A	C	A	A	C	A	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C
25,43,45 METHYL CHLORIDE	A	A	C	A	A	C	A	C	A	C	C	A	A	C	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
43,46 METHYL-ETHYL KETONE	C	A	C	A	C	C	A	C	C	C	A	C	A	A	C	A	C	A	A	C	C	C	A	C	A	C	A	C	C
46,61 METHYL-SULFURIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	A	C
45,61 METHYLENE CHLORIDE	C	A	C	A	C	C	A	C	A	C	A	C	A	N	C	A	A	C	C	C	C	C	A	C	A	A	A	A	C
46 MIL-H-5606 A	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	N	A	A	A	C	A	A	A	A	A	A	A	A	A
1,46 MILK	A	A	A	A	C	C	A	A	A	A	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A
1,26,46 MINERAL OILS	A	A	A	A	A	C	A	A	A	A	C	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A

CHEMICAL COMPATIBILITY TABLE

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL			O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL													
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS		
APPLICATION NOTE REF. NO. FLUID																														
3,46 MURIATIC ACID	C	C	A	A	C	C	C	C	X	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
43,46 NAPHTHA	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
43,46,59 NAPHTHALENE	C	A	C	A	C	C	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C
43,46 NATURAL GAS	A	A	C	A	C	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A
46 NEON	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A
46 NICKEL CHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
16,46 NICKEL NITRATE	A	C	A	A	C	C	C	C	A	A	C	A	A	C	C	A	C	C	A	A	C	C	A	C	A	C	A	C	A	C
16,19,25,27,46 NICKEL SULFATE	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
10,21,37,46 NITRIC ACID (70% TO 100°F)	C	A	A	A	C	C	A	C	A	A	A	A	A	A	N	C	A	A	A	C	C	A	C	A	C	A	C	A	C	
1,46 NITROGEN	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
46 NITROGEN TETROXIDE	C	A	C	A	C	A	A	C	C	C	C	A	A	C	A	N	C	A	A	C	C	C	A	C	A	C	A	C	A	C
7,46 NITROUS OXIDE	A	A	C	A	A	A	A	C	C	C	A	A	A	C	A	N	A	A	A	C	A	A	A	A	A	A	A	C	A	A
46 OILS AND FATS	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
16,46 OLEIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
3,24,45 OLEUM	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	A	C	C	A	C	C	C	C	C	A	C	A	C	A	C
28,46,61 OXALIC ACID	C	A	A	A	C	C	A	C	A	A	A	C	A	C	A	A	C	A	A	C	C	A	C	A	C	A	C	A	C	A
7,46 OXYGEN	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	N	A	A	A	C	A	A	A	A	A	A	A	A	A	A
7,46 OZONE	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A
46 PENTANE	C	A	C	A	C	C	A	A	C	C	C	A	C	C	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C
46,61 PHENOL	C	A	C	A	C	C	A	A	A	C	A	C	A	C	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C
35,36,46 PHOSPHORIC ACID	C	A	C	A	C	C	A	C	A	C	A	C	A	C	C	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C
3,34,46 PHOTOGRAPHIC SOLUTIONS	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	N	C	A	A	A	C	A	A	A	A	A	A	A	A	A
46,59 POTASSIUM BICARBONATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
46 POTASSIUM BICHROMATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
46 POTASSIUM BISULFITE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
46 POTASSIUM BROMIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
45 POTASSIUM CARBONATE	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
45,49 POTASSIUM CHLORATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	C	A	C	A	C
45 POTASSIUM CHLORIDE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	C	A	C	A	C	A	C	A	C	A	C
46 POTASSIUM CHROMATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	C	A	C	A	C	A
46 POTASSIUM DICHROMATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	C	A	C	A	C	A
46 POTASSIUM FERROCYANIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	C	A	C	A	C	A
3,10,13,21,45,46 POTASSIUM HYDROXIDE	C	A	A	A	C	C	A	C	C	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	C	A	C	A	C
45,46,59 POTASSIUM HYPOCHLORITE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	C	A	C	A	C	A
46 POTASSIUM NITRATE	A	A	A	A	C	A	A	C	A	A	A	A	A	C	A	N	C	A	A	A	C	A	A	A	A	A	A	A	A	A
46 POTASSIUM PERBORATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	C	A	C	A	C
33,46 POTASSIUM PERMANGANATE	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL				O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL												
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS		
APPLICATION NOTE REF. NO. FLUID																														
46,61 POTASSIUM PERSULFATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	A	A
33,46 POTASSIUM SULFATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
46 POTASSIUM SULFIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
43,46 PROPANE	C	A	C	A	C	A	A	C	A	C	A	A	C	A	A	A	C	A	A	C	A	C	A	C	A	C	A	A	C	C
45 PROPIONIC ACID	C	A	C	A	C	C	A	C	C	C	C	C	C	C	C	A	C	A	A	C	C	C	C	C	C	A	C	A	C	C
43,46,58 PROPYL ALCOHOL	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
43,46 PROPYLENE	C	A	C	A	C	A	A	C	C	C	A	A	C	A	A	A	C	A	A	C	C	C	A	C	A	C	A	C	A	C
43,46,58 PROPYLENE GLYCOL	A	A	C	A	A	A	A	C	A	C	A	A	A	A	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	A
46 ROSIN SIZE	A	A	C	A	C	A	A	A	A	C	C	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A
46 SALICIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
25,46 SEA WATER	A	A	A	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	A
9,46 SILVER NITRATE	A	A	A	A	C	C	A	C	A	A	A	A	C	A	A	A	C	A	C	A	C	A	A	A	A	A	A	A	A	A
46 SIZE SOLUTION	A	A	C	A	A	A	A	A	A	C	C	A	A	C	A	N	A	A	C	C	C	A	A	A	A	A	A	A	A	A
46 SKYDROL 500 A	A	A	C	A	C	C	A	C	A	C	A	A	A	A	A	A	C	A	C	C	C	A	A	A	A	A	A	A	A	A
46 SOAPS	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM ACETATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM ARSENITE	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	C	A	C
46 SODIUM BENZOATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
19,46 SODIUM BICARBONATE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
46 SODIUM BICHROMATE	C	A	C	A	C	C	A	C	C	C	A	A	A	C	A	A	C	A	C	C	C	C	A	C	A	C	A	C	A	C
46 SODIUM BISULFATE	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	C	A	C	A	A	A	A	A	A	A	A	A
46 SODIUM BISULFITE	A	A	A	A	C	C	A	A	A	A	A	A	A	C	A	A	C	A	C	A	C	A	A	A	A	A	A	A	A	A
46 SODIUM BROMIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM CARBONATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM CHLORIDE	A	A	C	A	C	C	A	C	A	A	A	A	A	A	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	A
46,59 SODIUM DICHROMATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM FERRICYANIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
46 SODIUM FERROCYANIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	C	A	A	C	C
17,45 SODIUM FLOURIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	C
46 SODIUM HYDROSULFITE	A	A	C	A	C	C	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A
3,21,45,47,60 SODIUM HYDROXIDE	C	A	A	A	C	C	A	C	A	A	C	A	A	A	A	A	C	A	A	A	C	C	C	C	A	A	A	A	C	C
31,45,59 SODIUM HYPOCHLORITE	A	C	A	A	C	C	C	C	A	A	A	C	A	C	C	A	C	C	A	A	C	C	C	C	A	A	A	A	C	C
46 SODIUM NITRATE	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A
46 SODIUM NITRITE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	C	A	A	C	C
19,46 SODIUM PHOSPHATE	A	A	C	A	A	C	A	C	A	A	A	A	C	A	A	A	A	A	C	C	C	A	A	A	A	A	A	A	A	A
19,46 SODIUM SILICATE	A	A	A	A	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
27,46 SODIUM SULFATE	A	A	A	A	A	A	A	C	A	A	A	A	C	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A
46 SODIUM SULFITE	A	A	C	A	A	A	A	C	A	C	A	A	C	A	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A

CHEMICAL COMPATIBILITY TABLE

RATING KEY (A) ACCEPTABLE (C) UNACCEPTABLE (N) INFORMATION LACKING	TUBE MATERIAL			END FITTING/ CONNECTION MATERIAL			O-RING MATERIAL					FLOAT MATERIAL					RETAINER MATERIAL													
	BOROSILICATE GLASS	316 SS	PVC	304 SS (TFE LINED)	BRASS	CARBON STEEL	316 SS	ALUMINUM	KYNAR	PVC	VITON	BUNA-N	TFE	EPR	321 SS	KALREZ 4079	BRASS	316 SS	HASTELLOY C	PVC	POLYPROPYLENE	SAPPHIRE	TANTALUM	BLACK GLASS	TFE	KYNAR	TFE	316 SS		
APPLICATION NOTE REF. NO. FLUID																														
46,47 SODIUM THIOSULFITE	A	A	A	A	A	C	A	C	A	A	A	A	C	A	N	C	A	A	A	C	A	A	A	A	A	A	A	A	A	A
26,46 SOYBEAN OIL	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	A
46 STANIC CHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	
46 STANNOUS CHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	
26,46,59 STARCH	A	A	C	A	A	A	A	A	A	C	A	A	A	C	A	N	A	A	A	C	C	A	A	A	A	A	A	A	A	
3,41,45 STEAM	C	A	C	A	C	A	A	C	C	C	C	C	C	A	N	C	A	A	C	C	C	A	C	A	A	A	C	A	C	
46 STEARIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	
46 STODDARD'S SOLVENT	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	C	A	C	
30,46 SUGAR SOLUTION	A	A	C	A	C	C	A	A	A	C	C	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	
46,61 SULFUR DIOXIDE-DRY	A	A	C	A	C	A	A	A	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	
45,61 SULFUR DIOXIDE-WET	A	C	C	A	C	C	C	C	A	C	A	C	C	C	C	A	C	C	A	C	C	C	C	C	A	A	A	C	A	
3,45,59 SULFURIC ACID (0-95%)	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	A	
3,45 SULFURIC ACID-COLD (95% TO CONC)	C	A	C	A	C	A	A	C	A	C	C	C	C	C	A	C	C	A	C	C	C	C	C	A	A	A	C	A	C	
3,45 SULFURIC ACID-HOT	C	C	C	A	C	C	C	C	C	C	C	C	C	C	A	C	C	A	C	C	C	C	C	A	C	A	C	A	C	
45 SULFUROUS ACID	A	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	A	A	C	C	C	C	A	A	A	C	A	
46,59 TANNIC ACID	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	
46 TANNING LIQUORS	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	A	C	A	C	
46 TARTARIC ACID	A	A	A	A	C	C	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	A	A	A	A	A	A	A	A	
46,58 TITANIUM TETRACHLORIDE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	A	A	C	A	
43,46,61 TOLUENE (TOLUOL)	C	A	C	A	C	A	A	C	A	C	A	A	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	C	A
43,46,59 TRICHLORO-BENZENE	A	A	C	A	C	C	A	C	A	C	A	C	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	
38,46 TRICHLORO-ETHYLENE	A	A	C	A	A	C	A	C	A	C	A	C	A	C	A	A	A	A	A	C	C	A	A	A	A	A	A	A	A	
46 TRISODIUM PHOSPHATE	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	C
43,46 TURPENTINE	C	A	A	A	C	A	A	C	A	A	A	A	A	C	A	A	C	A	A	A	C	C	A	C	A	A	A	A	C	A
46 UREA	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	N	C	C	C	A	C	C	A	C	A	A	A	C	A	C
46 VINEGAR	A	A	A	A	C	C	A	C	A	A	C	A	A	A	A	A	C	A	A	A	C	C	A	C	A	A	A	A	A	
43,45 VINYL TOLUENE	C	A	C	A	C	A	A	C	C	C	C	C	C	C	N	C	A	A	C	C	C	C	C	A	C	A	C	A	C	
46 WATER-COLD	A	A	A	A	A	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
1,3,46 WATER-HOT	A	A	A	A	A	A	A	A	A	A	A	A	A	A	N	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
43,46,59 XYLENE OR XYLOL	A	A	C	A	C	C	A	A	A	C	A	C	A	C	A	A	C	A	A	C	C	A	A	A	A	A	A	A	A	
46 ZINC CHLORIDE	A	C	A	A	C	C	C	C	A	A	C	A	C	C	C	A	C	C	A	A	C	C	A	C	A	A	A	C	A	C
46 ZINC CHROMATE	C	C	A	A	C	C	C	C	C	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	C
13,46 ZINC HYDROCHLORIDE	A	A	C	A	C	C	A	C	C	C	A	A	A	C	A	N	C	A	A	C	C	C	A	C	A	A	A	C	A	C
46 ZINC HYDROSULFITE	A	A	C	A	C	C	A	C	A	C	C	A	A	C	A	A	C	A	C	C	C	C	A	C	A	A	A	C	A	C
46 ZINC NITRATE	C	C	A	A	C	C	C	C	A	A	C	C	C	C	C	A	C	C	C	A	C	C	A	C	A	A	A	C	A	C
46 ZINC SULFATE	A	A	A	A	A	C	A	C	A	A	A	A	A	C	A	A	A	A	A	C	A	A	A	A	A	A	A	A	A	A

APPLICATION NOTES:

1. See Catalog File 510.100 or 510.150 for float selection.
2. 70° F max.
3. See problem fluids notes (page 3).
4. Brass fittings are suitable for dry gas only; 316 SS fittings must be used for wet gas.
5. Recommendation based on dry gas only.
6. Hydrogen chloride will be absorbed by H₂O to form hydrochloric acid (HCl).
7. Polypropylene offers limited resistance. Use advisedly.
8. Do not use brass fittings for this service.
9. 8% conc. max.
10. 20% conc. max.
11. 80% conc. max.
12. Glacial
13. BUNA-N may experience long-term effect.
15. 316 SS moderately resistant at 10% conc.
16. 10% conc. max.
17. 5% conc. max.
18. Ambient vapor may attack aluminum frame.
19. Brass may experience long-term effect.
20. Not recommended for glass-tube meters.
21. 50% conc. max.
22. 25% conc. max.
23. Viton may exhibit long term deterioration.
24. To 105° F max.
25. 316 SS may exhibit long-term deterioration (pitting).
26. Use 316 SS instead of brass for food use.
27. Viton limited to cool saturated solution.
28. 10% cold conc. max.
29. BUNA-N may exhibit swelling at 70° F.
30. Observe specific viscosity limits for meter selected.
31. To 5% at 100° F; max. 15% at 70° F.
32. 70% conc. max.
33. Brass moderately resistant at 6% conc.
35. 10-50%
36. 10-40% cold
38. Brass resistant only in absence of water or water vapor.
39. Minor long-term effect on all type O-rings.
40. To 30% conc. max.
41. 212° F
42. 100%
43. Warning! Flammable: Use Glass-tube meters only where, in the event of tube breakage, release of fluid will not result in fire hazard.
44. Note: PVC materials of construction are limited to 30" Hg vacuum to 6 psi max. Pressure and 130° F max. temperature for chlorine gas service.
45. Use Hastelloy C metering disc.
46. Use Tantalum metering disc.
47. Use Kynar metering disc.
48. Not recommended for positive pressure applications.
49. Kynar 250° F max.
50. Use Hastelloy C float where possible.
51. 140° F max.
52. 167° F max. (316 SS)
53. Less than 500 psig
54. To 35% conc. max.
55. Kynar to 120° F, 30% conc.
56. Kynar to 125° F
57. Kynar to 70° F
58. Kynar to 140° F
59. Kynar to 200° F
60. Kynar up to 10% and 150° F
61. Kynar to 175° F
62. Kynar 10% to 225° F; 50% to 200° F; 80% to 175° F
63. Kynar up to 40% in water

Statements and suggestions set forth herein are based upon the best information and practices known to USF/W&T. However, it should not be assumed either that information is complete on the subjects covered or that all possible circumstances, safety measures, precautions, etc., have been included. These statements and suggestions are not intended to reflect state, municipal, or insurance requirements or national safety codes; where applicable, those sources should be consulted directly. Moreover, since

the conditions of use are beyond its control, USF/W&T makes no guarantee of results and assumes no liability in connection with the information contained herein.

When dealing with the installation, operation, or maintenance of a specific USF/W&T product, the manuals and data sheets pertaining to that product should be studied carefully. In case of any doubt about a specific installation, direct inquiries to your local USF/W&T representative.



Wallace & Tiernan Products
1901 West Garden Road
Vineland, NJ 08360
856.507.9000 *phone*
856.507.4125 *fax*

<http://www.usfwt.com>

Products manufactured and marketed by USFilter Corporation and its affiliates are protected by patents issued or pending in the United States and other countries. USFilter reserves the right to change the specifications referred to in this literature at any time, without prior notice.

Kalrez and Viton are registered trademarks of E. I. DuPont Co.
Kynar is a registered trademark of Atochem North America, Inc.

Literature # TI 500.001 UA 5/03

© 2003 USFilter