

ACIDS
AMINES
HYDROCARBONS

Notes:
 1. Bypass Flush
 2. Outside Seal
 3. External Flush
 4. Product May Salt Out
 5. Use Carbon As One Face
 6. Double Seal
 7. Balanced Seal
 8. Quench
 9. Steam Jacket
 10. Steam Purge
 11. < 50 PPM Chlorides
 12. VHAP
 A = Good as any component
 B = Good for glands, collars and compression units
 X = Not recommended
 * = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid
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"A" <0.002"/yr Bellows & Seal Faces
 "A" < 5% Swell for O-Rings
 "B" <0.020"/yr Gland
 "B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

FLUID	FORMULA	CODE	NOTES	CODE	NOTES	316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS	
Abrasive Slurries																														See SD-1113, Abrasive Slurries	
Acetaldehyde <200 F (93C)	C2H4O	E45EFTT	12	CR2EFHH	12	A	A	A	A		A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	X	A	A	Flammable, Kalrez 1050LF only, SD-1475	
Acetate Solvents		E45EFTT	1,5	CR2EFHH	1,5	A	A	A	A		A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A		
Acetic Anhydride <200 F (93C)	C4H6O3	E75EFTT	1	IR2EFHH	1	A	B	B	A	B	A	X	X	A	A	A	X	A	A	X	X	X	A	A	A	X	A	X	X		
Acetic Acid <5% <200 F (93C)	CH3COOH	E75EFVV	1	IR2EFVV	1	A	A	X	A	B	A	X	X	A	A	A	X	A	A	X	A	A	A	X	A	A	A	A	A		
Acetic Acid <40% <200 F (93C)	CH3COOH	E75EFTT	1	IR2EFHH	1	A	A	X	A	X	A	X	X	A	A	A	X	A	A	X	X	X	X	A	X	A	A	A	A		
Acetic Acid >40% <200 F (93C)	CH3COOH	E75EFTT	1	IR2EFHH	1	B	B	X	A	X	A	X	X	A	A	A	X	A	A	X	X	X	X	A	X	A	X	A	A		
Acetic Acid-Glacial(100%)<250F(121C)	CH3COOH	E75EFTT	3	IR2EFHH	3	B	B	X	A	B	A	X	X	A	A	A	X	A	A	X	X	X	X	A	X	A	X	A	A		
Acetic Acid Vapors	CH3COOH	E75EFEE	6	IR2EFEE	6	B	B	X	A	B	A	X	X	A	A	A	X	A	A	X	X	X	X	A	X	A	X	A	A		
Acetone <200 F (93C)	C3H6O	EU5EFEE	1,5	CR2EFEE	1,5	A	A	A	A		A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	Flammable	
Acetylene <250 F (121C)	C2H2	EU5EFVV	1,7	X	-	A	A	A	A		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Flammable	
Acrylic Acid <150 (66C)	C3H4O2	E75EFTT	12	IR2EFHH	12	A	A	B	A		A	X	A	A	A	A	A	A	X	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Acrylonitrile <200 F (93C)	C3H3N	E45EFTT	12	CR2EFHH	12	B	B	A	A	A	A	A	A	A	A	A	A	A	X	X	X	X	A	A	A	A	A	A	A	Explosive, Extremely Toxic, See SD-1475	
Adipic Acid <150 F (66C)	C6H10O4	E75EFEE	1	CR2EFEE	1	B	B	A	A	B	A	A	A	A	A	A	X	A	A	A	X	X	A	A	A	A	A	A	A	Melting Point - 305 F (152C)	
Allyl Alcohol <200F (93C)	C3H6O	E45EFTT	1,5	CR2EFHH	1,5	A	A	A	A	A	A	X	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A		
Allyl Chloride <200 F (93C)	C3H5Cl	E75EFTT	4,12	X	-	B	B	X	B	B	A	X	X	A	A	A	A	A	X	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Alum Solution <10% 70 F (21C)	AlK(SO4)2	K75E(F/V)VV	4,8	CR2E(F/V)VV	4,8	B	A	A	B	B	A	X	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper	
Alum Solution >10%	AlK(SO4)2	E75EFVV	3	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper	
Aluminum Chloride <200 F (93C)	AlCl3	I75IFVV	4	IR2IFVV	4	X	X	X	A	X	A	X	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A		
Aluminum Sulfate <50%<200 F (93C)	Al2(SO4)3	K75KFVV	4	IR2KFVV	4	X	A	X	A	X	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A		
Amine (Services) <200 F (93C)		E45EFTT	1	CR2EFHH	1	A	A	A	A	B	A	X	A	A	A	A	X	A	A	X	X	X	A	A	A	X	X	A	A	Flammable, Kalrez 1050LF only	
Amino Benzene Sulfuric Acid <200 F (93C)	C6H7NO3S	E75EFTT	1	X	-	B	B	B	B	B	A	X	A	A	X	X	A	A	X	X	X	X	A	A	A	A	A	A	A		
Amino Benzoic Acid <200 F (93C)	C7H7NO2	E75EFTT	4	X	-	B	B	B	B	B	A	X	A	A	X	X	A	A	X	X	X	X	A	A	A	A	A	A	A		
Ammonia Anhydrous <300 F (149C)	NH3	EU5E(F/V)EE	1,5,7	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	X	A	A	Kalrez 1050LF Explosive in air	
Ammonia, Aqua <200 F (93C)	NH3 + H2O	EU5EFEE	1	X	-	B	B	B	B	B	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	X	A	A	A		
Ammonium Bifluoride <150 F (66C)	NH4HF2	K45KFVV	4	X	-	X	B	X	B	B	A	X	X	A	X	X	A	A	A	A	A	A	A	X	X	A	A	A	A		
Ammonium Carbamate <150 F (66C)	CH6N2O2	EU5EFTT	1	X	-	B	B	B			A	X	X	A	X	A	A	A					A	A	A	A	A	A	A		
Ammonium Carbonate <200 F (93C)	(NH4)2CO3	E45EFEE	4	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	X	A	A	A		
Ammonium Hydroxide <200 F (93C)	NH4OH	EU5EFEE	1	X	-	B	B	B	B	B	A	X	X	A	A	X	A	A	A	X	X	X	A	A	X	X	X	A	A	Kalrez 1050 LF	
Ammonium Nitrate <200 F (93C)	NH4NO3	E75EFEE	6	CR2EFEE	6	A	A	A	B		A	X	A	A	A	A	X	A	A	A	X	X	A	A	A	A	A	A	X	X	Explosive
Ammonium Phosphates<40%<200F(93C)	NH4H2PO4	E75EFEE	4	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	A	X	X	A	A	A	A	A	A	A		
Ammonium Stearate	C18H39NO2	E75EFTT	6	CR2EFHH	6	A	A	A	A		A	X	A	A	A	A	A	A					A	A	A	A	A	A	A		
Ammonium Sulfate <200 F (93C)	(NH4)2SO4	E75EFEE	4	X	-	B	B	X	B	B	A	X	X	A	A	X	X	A	A	A	X	X	A	A	A	A	A	A	A		
Amyl Alcohol <200 F (93C)	C5H12O	EU5EFEE	1	CR2EFEE	1	A	A	A	A	A	A	X	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	Extremely Toxic	
Aniline <400 F (204C)	C6H7N	E45EFTT	1	CR2EFHH	1	A	A	A	B	B	A	X	X	A	A	X	A	A	X	X	X	X	A	A	A	A	A	A	A	Extremely Toxic	
Aniline Dyes <400 F (204C)		E45EFTT	1	CR2EFHH	1	A	A	A	B	B	A	X	X	A	A	X	A	A	X	X	X	X	A	A	A	A	A	A	A		
Aqua Regia <150 F (66C)	HNO3 + HCl	E44EFTT	6	X	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	A	A	A	X	X		
Aroclor 1248 <350 F (177C)		EU5E(F/V)VV	1,10	IR2E(F/V)VV	1,10	A	A	B	A	A	A	A	X	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-182, Heat Transfer Fluids	
Aroclor 1248 >350 F (177C)		EU4E(F/V)GG	1,10	IU4E(F/V)GG	1,10	A	A	B	A	A	A	A	X	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-182, Heat Transfer Fluids	
Arsenic Acid <200 F (93C)	H3AsO4	E75EFVV	1	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Arsenic Trioxide <200 F (93C)	As2O3	E75EFVV	6	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	

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316 SS	20 SS	AM-350/304 SS	Hast."C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid
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Material	Chemical	Temp	CR2EFV	CR2EFHH	316 SS	20 SS	AM-350/304 SS	Hast."C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	Comments	
Ascorbic Acid 70 F (21C)	C6H8O6	E75EFTT	1	CR2EFHH	1	A	A	A	A	B	A	X	A	A	A	A	A	A	X	X	X	A	A	A	X	A	A	A		
Ash Slurry		EUUEFVV	3	CU2EFVV	3	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
Asphalt-Emulsified		EU5ESVV	9	CR2ESVV	9	A	A	A	A	A	A	X	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A			
Barium Chloride <60% <200 F (93C)	BaCl2	E75EFVV	4	IR2EFVV	4	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Barium Hydroxide <40% <200 F (93C)	Ba(OH)2	E75EFVV	4	KR2EFVV	4	A	B	B	B	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Barium Nitrate <50% <200 F (93C)	Ba(NO3)2	E75EFVV	4	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Barium Sulfate <10% <200 F (93C)	BaSO4	E75EFVV	4	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
Beer		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Benzene (Benzol) <200 F (93C)	C6H6	EU5EFVV	12	IR2EFVV	12	B	A	B	A	A	A	X	X	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Benzene Sulfonic Acid 70 F (21C)	C6H5SO3	K75EFVV	1	KR2EFVV	1	B	A	B	B	A	X	X	A	A	X	X	A	A	X	A	X	A	A	A	A	A	A	A		
Benzoic Acid <200 F (93C)	C7H6O2	I75ESVV	9	IR2ESVV	9	B	B	B	A	B	A	X	X	A	A	X	X	A	X	A	X	A	A	A	A	A	A	A		
Black Liquor, Sulfate <50%		EUUE(FV)EE	8	IU2E(FV)EE	8	B	B	B	A	B	A	X	X	A	A	A	A	A	X	X	A	A	A	A	A	A	A		See SD-1072, Black Liquor	
Black Liquor, Sulfate >50%		EUUEFEE	6	IU2EFEE	6	B	B	B	A	B	A	X	X	A	A	A	A	A	X	X	A	A	A	A	A	A	A		See SD-1072, Black Liquor	
Boiler Feed Water	H2O	EU5EFVV	1,7	IR2EFVV	1,7	B	A	B	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-129, Hot Water	
Bonderite Solution		E75EFVV	1	X	-	A																								
Borated Water <5% <300 F (149C)		EU5EFUU	1,4	IR2EFUU	1,4	A	A	B	A	B	A	X	X	A	A	A	A	A	X	X	A	X	A	A	A	A	A	A	EPT, See SD-1265, Nuclear Power Plant	
Borated Water <12% <300 F (149C)		EUUEFUU	1,4	IU2EFUU	1,4	B	B	B	A	B	A	X	X	A	A	A	A	A	X	X	A	X	A	A	A	A	A		EPT, See SD-1265, Nuclear Power Plant	
Borated Water >12% <300 F (149C)		EUUEFUU	1,4	IU2EFUU	1,4	B	B	B	A	B	A	X	X	A	A	A	A	A	X	X	A	X	A	A	A	A	A		EPT, See SD-1265, Nuclear Power Plant	
Boric Acid <50% <300 F (149C)	H3BO3	E44EFUU	4	I42EFUU	4	B	B	B	A	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A		
Brine <200 F (93C)	NaCl	K75KFVV	4	IR2KFVV	4	X	B	X	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Bromine (dry) 100% <150 F (66C)	Br2	E44EFVV	6	I42IFVV	6	X	X	X	A	A	A	X	X	X	X	X	A	A	X	A	X	A	A	A	A	A	A	X	X	
Bromine (wet) <200 F (93C)	HBr	E44EFVV	6	X	-	X	X	X	X	X	X	X	X	X	X	X	A	A	X	A	X	A	A	A	A	A	A	X	X	
Bunker "C" Fuel Oil		EUUE(FV)V	1,8	CU2E(FV)V	1,8	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A		See SD-826, Refinery	
Butadiene <200 F (93C)	C4H6	EU5EFVV	6,12	CR2EFVV	6,12	A	A	A	A	B	A	A	A	A	A	A	A	A	X	A	X	A	X	X	X	A	A		1050LF Flammable, See SD-826 and SD-1475; TLV:2 ppm	
Butane (gas) <300 F (149C)	C4H10	EU5EFVV	6,12	CR2EFVV	6,12	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	Flammable, See SD-826 and SD-1475	
Butane (liquid) <300 F (149C)	C4H10	EU5EFVV	1,5,7,12	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A		Flammable, See SD-826 and SD-1475	
Butyl Acetate <300 F (149C)	C6H12O2	EU5EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A		
Butyl Alcohol <200 F (93C)	C4H10O	E45EFVV	1	CR2EFVV	1	A	A	A	B	A	X	X	A	A	X	X	A	A	X	A	X	A	A	A	A	A	A	A		
Butylaldehyde <200 F (93C)	C4H8O	E75EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	X	X	A	A		Kalrez 2035 Flammable	
Butyric Acid <200 F (93C)	C4H8O2	E75EFTT	1	IR2EFHH	1	B	B	B	A	X	A	X	X	A	A	X	X	A	X	X	X	A	A	A	A	A	A	A		
Calcium Bisulfite <250 F (121C)	Ca(HSO3)2	E75EFEE	4	IR2EFEE	4	A	A	X	A	B	A	X	X	A	A	X	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper	
Calcium Carbonate <200 F (93C)	CaCO3	E75EFVV	3	CR2EFVV	3	A	B	A	B	B	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Calcium Chloride <200 F (93C)	CaCl2	K75KFVV	4	IR2KFVV	4	X	B	X	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Calcium Hydroxide <50% <200 F (93C)	Ca(OH)2	EU5EFVV	4	IR2EFVV	4	B	B	X	A	B	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A		
Calcium Hypochlorite 70 F (21C)	Ca(OCl)2	K44KFVV	6	K42KFVV	6	X	A	X	B	X	X	X	X	X	A	X	A	A	X	A	A	A	A	A	A	A	X	X	See SD-1112, Pulp and Paper	
Calcium Nitrate <40% <200 F (93C)	Ca(NO3)2	E75EFVV	4	X	-	B	B	B	B	B	A	X	X	A	X	X	A	A	A	A	A	A	A	A	A	A	X	X		
Calcium Phosphate <10% <200 F (93C)	Ca(HPO4)2	E75EFVV	4	X	-	B	B	B	B	B	A	X	X	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
Calcium Stearate <10% <200 F (93C)	C36H70CaO4	E75EFTT	6	X	-	B	B	B	B	B	A	X	X	A	X	X	A	A				A	A	A	A	A	A		See SD-1112, Pulp and Paper	
Calcium Sulfate <10% <200 F (93C)	CaSO4	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	X	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
Cane Sugar <20%	C12H22O11	E75EFVV	3	IR2EFVV	3	A	X	A	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Caprolactam	C6H11NO	EU5ESTT	9,12	CR2ESHH	9,12	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A		See SD-1475, Fugitive Emissions	

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316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalak 220 SP	Zalak 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid
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"A" <0.002"/yr Bellows & Seal Faces
 "A" < 5% Swell for O-Rings
 "B" <0.020"/yr Gland
 "B" <0.020"/yr Pusher rotary units

SD-634-98 by BSB

Material	Chemical	Notes	6	CR2EFOO	6	316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalak 220 SP	Zalak 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS
Carbon Dioxide (gas)	CO2	EU5EFOO	6	CR2EFOO	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Updated 5/22/98 by BSB
Carbon Dioxide (liquid)	CO2	EU5EFOO	1,5,7	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Carbonic Acid <10% <200 F (93C)	CO2 + H2O	E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	X	A	A	A	A	X	A	A	X	A	A	A	A	A	A	A	A		
Carbon Monoxide	CO	E75EFVV	6	CR2EFVV	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Carbon Tetrachloride 100% <200 F (93C)	CCl4	KU5KFVV	12	IR2KFVV	12	B	A	X	A	B	A	X	X	A	A	A	A	A	A	X	X	A	A	A	A	X	A	A	Kalrez Compound 1050LF, See SD-1475	
Castor Oil		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A		
Chlorine, Anhydrous <125 F (52C)	Cl2	E4(4/5)EFTT	6,12	I(4/R)2EFHH	6,12	B	A	B	A	B	X	X	X	A	A	A	X	A	A	X	X	X	A	A	A	A	X	X	Extremely Toxic, See SD-1475	
Chlorine (wet) <125 F (52C)	HCl + HOCl	I75IFTT	1	X	-	X	X	X	B	X	A	X	X	A	A	X	X	A	A	X	X	X	A	A	X	A	X	X	See SD-1112, Pulp and Paper	
Chlorine Dioxide <125 F (52C)	ClO2	S44SFVV	6	X	-	X	B	X	B	X	A	X	X	A	A	X	X	A	A	X	X	X	A	A	X	X	X	X	Kalrez 2037 Extremely Toxic, SD-1112, Pulp and Paper	
Chloroacetic Acid <90% <150 F (66C)	CIC2H3O2	K75KFTT	12	X	-	X	B	X	B	X	A	X	X	A	A	X	X	A	A	X	X	X	A	A	X	A	A	A	See SD-1475, Fugitive Emissions	
Chloroacetic Acid >90% <150 F (66C)	CIC2H3O2	I75KFTT	12	IR2KFHH	12	X	B	X	A	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	X	A	A	A	See SD-1475, Fugitive Emissions	
Chlorobenzene <90% <150 F (66C)	C6H5Cl	K75KFVV	12	X	-	X	B	X	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Chlorobenzene >90% <150 F (66C)	C6H5Cl	I75KFVV	12	IR2KFVV	12	X	B	X	A	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Chloroform <200 F (93C)	CHCl3	E75EFVV	6,12	MR2MFVV	6,12	B	B	B	B	A	A	X	X	A	A	X	A	A	A	X	A	X	A	A	A	A	A	A	Flammable, Extremely Toxic, See SD-1475	
Chloroform 100% 70 F (21C)	CHCl3	E75EFVV	6,12	IR2EFVV	6,12	A	A	B	A	A	A	X	X	A	A	X	A	A	A	X	A	X	A	A	A	A	A	A	Flammable, Extremely Toxic, See SD-1475	
Chloropicrin 100% <200 F (93C)	CCINO2	E75EFTT	1	IR2EFHH	1	B	B	B	A	A	A	X	X	A	A	X	A	A	A	X	A	X	A	A	A	A	A	A		
Chlorosulfonic Acid >20% <200 F (93C)	SO2(OH)Cl	I44IFTT	1	I42KFHH	1	X	B	X	A	X	X	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A		
Chromic Acid <20% <150 F (66C)	H2CrO4	I44IFTT	1	I42IFHH	1	X	X	X	A	X	X	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	X	X	
Citric Acid <50% <212 F (100C)	C6H8O7	E75EFVV	1	IR2EFVV	1	A	B	B	A	B	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	X	A	A		
Citric Acid >50% <212 F (100C)	C6H8O7	K75KFVV	1	IR2KFVV	1	X	B	X	A	B	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	X	A	A		
Clay Slurry		EU4EFVV	6	CU2EFVV	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper	
Coal Tar		EU4ESVV	9	IU2ESVV	9	A	A	X	A	A	A	X	X	A	A	X	A	A	A	A	X	A	A	A	A	A	A	A	See SD-826, Refinery	
Condensate <250 F (121C)	H2O	EU5EFVV	1	IR2EFVV	1	A	A	B	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-129, Hot Water	
Cooling Tower Water	H2O	E75EFVV	1	CR2EFVV	1,11	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Copper Acetate <20% <200 F (93C)	C4H6CuO4	E75EFEE	4	KR2EFEE	4	A	A	B	B	B	A	X	X	A	A	X	A	A	X	X	A	A	A	A	A	A	A	A		
Copper Acetate >20% <200 F (93C)	C4H6CuO4	E75EFEE	6	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	A	A	A	A	A	A	A		
Copper Ammonia Acetate <150 F (66C)		E75EFEE	6	CR2EFEE	6	A	A	A	B	B	A	X	X	A	A	X	A	A	A	X	X	A	A	A	A	A	A	A		
Copper Chloride <100 F (38C)	CuCl2	E75EFVV	6	X	-	X	X	X	B		A	X	X	A	A	X	X	A	A	X	X	A	A	A	A	A	A	A		
Copper Cyanide <10% <200 F (93C)	CuCN	E75EFVV	4	CR2EFVV	4	A	A	A	B	B	A	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Copper Cyanide >10% <200 F (93C)	CuCN	E75EFVV	6	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Copper Nitrate <10% <200 F (93C)	Cu(NO3)2	E75EFEE	4	CR2EFEE	4	A	A	A	X	X	A	X	X	A	A	X	A	A	X	X	X	A	A	A	A	A	X	X		
Copper Nitrate >10% <200 F (93C)	Cu(NO3)2	E75EFEE	6	X	-	B	B	B	X	X	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	X	X		
Copper Sulfate <60% <200 F (93C)	CuSO4	E75EFVV	4	IR2EFVV	4	B	B	B	A	B	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	X	X		
Corn Oil		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A		
Corn Syrup (glucose)	C6H12O6	E75EFVV	3	CR2EFVV	3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Corn Syrup (glucose)	C6H12O6	EU4E(FV)V	1,8	CU2E(FV)V	1,8	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Cotton Seed Oil		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	Flammable	
Creosote <200 F (93C)		E75EFVV	3	IR2EFVV	-	B	B	B	A	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	Flammable	
Cresylic Acid	C7H8O	E75EFVV	12	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Crude Oil		EU4E(FV)V	1,8	CU2E(FV)V	1,8,11	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	Flammable	
Cumene <200 (93C)	C9H12	E75EFVV	12	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	

ACIDS
AMINES
HYDROCARBONS

Notes:
 1. Bypass Flush
 2. Outside Seal
 3. External Flush
 4. Product May Salt Out
 5. Use Carbon As One Face
 6. Double Seal
 7. Balanced Seal
 8. Quench
 9. Steam Jacket
 10. Steam Purge
 11. < 50 PPM Chlorides
 12. VHAP
 A = Good as any component
 B = Good for glands, collars and compression units
 X = Not recommended
 * = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid
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"A" <0.002"/yr Bellows & Seal Faces
 "A" < 5% Swell for O-Rings
 "B" <0.020"/yr Gland
 "B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

Material	Temp	Chemical	Conc	Notes	316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	Comments		
Dowtherm H <400 F (204C)		EU5E(FV)VV	1,10	CR4E(F/V)GG	1,10	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	See SD-182, Heat Transfer Fluid		
Dowtherm LF <400 F (204C)		EU5E(FV)VV	1,10	CR4E(F/V)GG	1,10	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	See SD-182, Heat Transfer Fluid		
DuraClear - Synthetic Blend Barrier Fluid						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	DS-4609-7-F		
DuraClear - Pure Synthetic Barrier Fluid						A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	DS-4614-5-F & DS-4614-32-F		
Dye Liquors		E75EFVV	1	CR2EFVV	1	A	A	A	B	A	X	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper		
Epichlorohydrin <200 F (93C)	C3H5ClO	E75EFTT	6,12	IR2EFHH	6,12	B	A	X	A	A	X	X	A	A	A	A	A	A	X	X	X	A	A	A	X	X	A	A	Kalrez 2035 See SD-1475, Fugitive Emissions		
Epsom Salt <40%	MgSO4	E75EFVV	4	CR2EFVV	4	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A			
Ethane	C2H6	EU5EFOO	1,5,7,12	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Flammable, See SD-826 and SD-1475		
Ethanol (Ethyl Alcohol) <200 F (93C)	C2H5OH	EU5EFEE	1,5	CR2EFEE	1,5	A	A	A	A	A	A	X	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	Flammable		
Ethanol (Fuel Grade w/ 5% Gasoline)	C2H5OH	EU5EFTT	1,5	CR2EFHH	1,5	A	A	A	A	A	A	X	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	Flammable		
Ethanolamine (MEA) <200 F (93C)	C2H7NO	EU5EFTT	1	CR2EFHH	1	A	A	A	B	A	X	A	A	A	A	A	A	A	X	X	X	A	A	X	X	X	A	A	Kalrez 1050LF only		
Ether, Ethyl	C4H10O	EU5EFTT	1,5	CR2EFHH	1,5	A	A	A	A	A	X	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	Flammable, Explosive		
Ethyl Acetate <300 F (149C)	C4H8O2	EU5EFTT	5,12	CR2EFHH	5,12	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	Flammable, Explosive, See SD-1475		
Ethyl Alcohol (Ethanol) <200 F (93C)	C2H5OH	EU5EFEE	1,5	CR2EFEE	1,5	A	A	A	A	A	A	X	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	Flammable		
Ethyl Benzene <200 F (93C)		EU5EFVV	12	IR2EFVV	12	B	A	B	A	B	A	X	X	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions		
Ethyl Bromide <100 F (38C)	C2H5Br	E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, Explosive		
Ethyl Cellulose		E75EFTT	3	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A			
Ethyl Chloride 100%	C2H5Cl	E75EFVV	12	CR2EFVV	12	A	A	A	B	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	Flammable, Explosive, See SD-1475		
Ethylene	C2H4	EU5EFOO	1,5,7,12	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	Flammable, See SD-826 and SD-1475		
Ethylene Dichloride	C2H4Cl2	E75EFTT	12	X	-	B	B	X	X	B	A	X	X	A	A	X	X	A	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions		
Ethylene Glycol <300 F (149C)	C2H6O2	E75EFVV	12	CR2EFVV	12	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions		
Ethylene Oxide <200 F (93C)	C2H4O	EU5EFTT	1,5,7,12	IR2EFHH	1,5,12	B	B	B	A	A	A	X	A	A	A	A	A	A	X	X	X	A	A	A	X	X	A	A	Flammable, Kalrez 2035, See SD-1475		
Ethylene Trichloride 70 F (21C)	C2H4Cl3	E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A			
Ethyl Sulfate	C2H6SO4	E75EFTT	1	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A			
Fatty Acid																							A	A	A	A	A	A	Refer to Specific Acid		
Ferric Chloride <125 F (52C)	FeCl3	E44EFVV	6	X	-	X	X	X	B	X	X	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	A	X	X	"Titanium Wetted Metal Parts"	
Ferric Hydroxide <175 F (79C)	FeHO2	E75EFVV	3	X	-	B	B	B	B	A	X	X	A	A	X	A	A	A	X	A	A	A	A	A	A	A	A	A			
Ferric Nitrate <125 F (52C)	Fe(NO3)3	K75EFVV	4	KR2EFVV	4	B	A	B	B	X	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	X	X	
Ferric Sulfate <125 F (52C)	Fe2(SO4)3	K75KFVV	4	IR2KFVV	4	A	B	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Ferrous Chloride <50% <175 F (79C)	FeCl2	I75IFVV	4	X	-	X	X	X	B	X	A	X	X	A	A	X	X	A	X	A	A	A	A	A	A	A	A	A	A		
Ferrous Sulfate <175 F (79C)	FeSO4	K75KFVV	4	X	-	X	B	X	B	B	A	X	X	A	A	X	X	A	X	A	A	A	A	A	A	A	A	A	A		
Fluosillicic Acid 70 F (21C)	H2SiF6	M22MFVV	6	M22MFVV	6	X	X	X	X	A	X	X	X	A	A	X	X	X	A	A	A	A	A	A	A	A	A	A	A	Monel	
Formaldehyde <40% <200 F (93C)	CH2O + H2O	E45EFTT	8,12	CR2EFHH	8,12	A	A	A	B	B	A	X	A	A	A	A	X	A	A	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions		
Formaldehyde >40% <200 F (93C)	CH2O + H2O	E45EFTT	8,12	KR2EFHH	8,12	A	A	B	B	B	A	X	A	A	A	A	X	A	A	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions		
Formamide <200 F (93C)	CH3NO	E75EFTT	1	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	X	X	X	A	A	A	A	A	A	A			
Formic Acid <160 F (71C)	HCOOH	K75KFTT	1	IR2KFTT	1	X	A	X	A	X	A	X	X	A	A	X	A	A	X	X	X	A	A	A	A	A	A	A	A		
Freon 11 & Refrig. Oil	CCI3F	EU5EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	X	X	X	X	X	A	A		
" 12 " "	CCI2F2	EU5EFVV	1,7	CR2EFVV	1,7	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	X	X	X	X	X	A	A		
" 13 " "	CCIF3	EU5EFVV	1,7	CR2EFVV	1,7	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	X	X	X	X	X	A	A		
" 14 " "	CF4	EU5EFVV	1,7	CR2EFVV	1,7	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	X	X	X	X	X	A	A	
" 21 " "	CHCl2F	EU5EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	X	X	X	X	X	A	A		

COMMENTS Updated 5/22/98 by BSB

ACIDS
AMINES
HYDROCARBONS

Notes:
 1. Bypass Flush
 2. Outside Seal
 3. External Flush
 4. Product May Salt Out
 5. Use Carbon As One Face
 6. Double Seal
 7. Balanced Seal
 8. Quench
 9. Steam Jacket
 10. Steam Purge
 11. < 50 PPM Chlorides
 12. VHAP
 A = Good as any component
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 X = Not recommended
 * = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

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 "B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

						316 SS	20 SS	AM-350/304 SS	Haast "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS
Lithium Chloride <212 F (100C)	LiCl	KU5KFEE	4	IR2EFEE	4	B	A	X	A	A	X	X	X	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	Extremely Toxic	
Lithium Hydroxide <212 F (100C)	LiOH	E44EFEE	1	X	-	B	B	B	B	B	X	X	X	A	A	X	A	A	A	X	X	A	A	A	A	A	A	A		
Lubricating Oil		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	Flammable	
Lye (Caustic)										B													A	A	A	A	A	A	See Sodium Hydroxide	
Magnesium Chloride <200 F (93C)	MgCl2	I75IFVV	4	IR2IFVV	4	X	X	X	A	B	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Magnesium Hydroxide	Mg(OH)2	E75EFVV	3	IR2EFVV	3	B	B	B	A	A	X	X	A	A	X	A	A	A	A	X	A	A	A	A	A	A	A	A		
Magnesium Nitrate <150 F (66C)	Mg(NO3)2	E75EFVV	4	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	X	X		
Magnesium Sulfate <40% <150 F (66C)	MgSO4	E75EFVV	4	CR2EFVV	4	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Maleic Acid <150 F (66C)	C4H4O4	E75EFVV	1	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	A	X	X	A	A	A	X	A	A		
Maleic Anhydride <350 F (177C)	C4H3O3	EU5ESFF	9,12	CR2ESHH	9,12	A		A	A	A	X	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1225 and SD-1475	
Malic Acid <50% <212 F (100C)	C4H6O5	E75EFVV	1	CR2EFVV	1	A	B	A	B	B	A	X	A	A	A	X	A	A	A	A	X	A	A	A	A	A	A	A		
Manganese Chloride <50% <200 F (93C)	MnCl2	E75EFTT	4	IR2EFHH	4	B	A	X	A	B	A	X	X	A	A	A	X	A	A	X	X	X	A	A	A	A	A	A		
Manganese Sulfate <200 F (93C)	MnSO4	E75EFVV	4	IR2EFVV	4	A	A	X	A	A	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A		
Mercaptans 100% 70 F (21C)		E75EFEE	1	CR2EFEE	1	A	A	A		A	X	A	A	A	A	X	A	A	X	X	A	A	A	A	A	A	A	A		
Mercuric Chloride <30<150F (66C)	HgCl2	E75EFVV	6	X	-	X	X	B	X	A	X	X	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic	
Mercury <150 F (66C)	Hg	E75EFVV	6	CR2EFVV	6	A	A	A	B	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic, See SD-1158, Mercury	
Methane (gas)	CH4	EU5EFOO	6,12	CR2EFOO	6,12	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Flammable, See SD-826 and SD-1475	
Methane (liquid)	CH4	EU5E(FV)OO	1,5,7,12	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	X	A	A	Flammable, See SD-826 and SD-1475	
Methanol <200 F (93C)	CH4O	EU5EFEE	1,12	IR2EFEE	1,12	A	A	B	A	A	X	X	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Extremely Toxic, Flammable, See SD-1475	
Methyl Acetate <200 F (93C)	C3H6O2	E75EFTT	1	CR2EFHH	1	A	A	A	A	A	X	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A		
Methyl Acrylate <200 F (93C)	C4H6O2	E75EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A		
Methyl Bromide (gas)	CH3Br	E75EFVV	6,12	X	-	A	B	B	B	A	X	X	A	A	A	X	A	A	X	A	X	A	A	A	A	A	A	A	Extremely Toxic, See SD-1475	
Methyl Chloride <125 F (52C)	CH3Cl	E45EFVV	1,5,12	IR2EFVV	1,5,12	A	B	X	A	B	A	X	A	A	A	X	A	A	X	A	X	X	A	A	A	A	A	A	Extremely Toxic, Flammable, See SD-1475	
Methyl Ethyl Ketone (MEK) <150 F(66C)	C4H8O	E45EFEE	1,5,12	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	Flammable See SD-1475, Fugitive Emissions	
Methyl Ethyl Ketone 100%<150 F (66C)	C4H8O	E45EFEE	1,5,12	CR2EFEE	1,5,12	A	A	A	B	A	X	A	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	Flammable See SD-1475, Fugitive Emissions	
Methyl Isobutyl Ketones (MIBK)<150 F(66C)	C6H12O	E45EFTT	1,5,12	X	-	B	B	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Methyl Methacrylate <125 F (52C)	C4H6O	E75EFTT	1,12	CR2EFHH	1,12	A	A	A		A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Methyl-Tert-Butyl-Ether (MTBE) <200 F (93C)		EU5E(FV)PP	1,5,7	X	-	B	B	B	B	A	X	X	A	A	X	A	A	X	X	X	X	A	A	A	A	A	A	A		
Methylene Chloride <125 F (52C)	CH2Cl2	E75EFTT	1,5,12	KR2EFHH	1,5,12	B	A	B	B	A	X	X	A	A	A	X	A	A	X	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Methylene Dichloride <125 F (52C)	CH2Cl2	E75EFTT	1,5,12	KR2EFHH	1,5,12	B	A	B	B	A	X	X	A	A	A	X	A	A	X	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Mineral Oil		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Flammable	
Mineral Spirits		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Flammable	
Molasses		EU4E(FV)VV	1,8	C42E(FV)VV	1,8	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Use Food Grade Materials	
Monoethanolamine (MEA) <200 F (93C)	C2H7NO	EU5EFTT	1	CR2EFHH	1	A	A	A	B	A	X	A	A	A	A	A	A	X	X	X	X	A	X	X	X	A	A	A	Kalrez 1050LF only	
Muriatic Acid <125 F (52C)	HCl	H75HFVV	1,12	X	-	X	X	X	X	X	X	X	A	A	X	X	A	A	X	X	X	X	A	A	A	A	A	A	See SD-1475, Fugitive Emissions	
Naphtha		EU5E(FV)VV	1,5,12	CR2E(FV)VV	1,5,12	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	X	A	A	A	A	A	A	Flammable, SD1475, Fugitive Emissions	
Naphthalene <400 F (204C)	C10H8	E45EFVV	1,5,12	CR2EFVV	1,5,12	A	A	A	B	A	X	A	A	A	X	A	A	X	A	X	X	A	A	A	A	A	A	A	Flammable, SD1475, Fugitive Emissions	
Naphthalene Chloride <200 F (93C)	C10H7 Cl	EU5EFVV	1	CR2EFVV	1	A	A	A	B	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A		
Naphthenic Acid <300 F (149C)		E75EFVV	1	KR2EFVV	1	A	X	B	B	A	X	X	A	A	X	A	A	X	A	X	X	X	A	A	A	A	A	A		
Nickel Chloride <80% <212 F(100C)	NiCl2	E75EFVV	4	IR2EFVV	4	B	B	X	A		A	X	X	A	A	X	A	A	X	A	A	A	A	A	A	A	A	A		
Nickel Plating Solution		E75EFVV	6	X	-	B	B	X	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	See SD-201, Plating Solutions	

ACIDS
AMINES
HYDROCARBONS

Notes:
1. Bypass Flush
2. Outside Seal
3. External Flush
4. Product May Salt Out
5. Use Carbon As One Face
6. Double Seal
7. Balanced Seal
8. Quench
9. Steam Jacket
10. Steam Purge
11. < 50 PPM Chlorides
12. VHAP
A = Good as any component
B = Good for glands, collars and compression units
X = Not recommended
* = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

"A" <0.002"/yr Bellows & Seal Faces
"A" < 5% Swell for O-Rings
"B" <0.020"/yr Gland
"B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

						316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS
Phosphoric Acid <200 F (93C)	H3PO4	K75KFVV	1	IR2KFVV	1	X	B	X	A	B	A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	See SD-1221, Phosphoric Acid
Phosphorous Oxychloride<200F(93C)	POCl3	I75IFTT	1	X	-	X	X	X	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
Phosphorous Trichloride <150 (66C)	PCl3	E75EFVV	1	CR2EFVV	1	A	A	A	X	A	X	A	A	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
Phthalic Acid <400 F (204C)	C8H6O4	E75EFTT	4	KR2EFHH	4	A	A	B	B	A	X	X	A	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
Phthalic Anhydride <400 F (204C)	C8H4O3	EU5ESTT	9,12	CR2ESHH	9,12	A	A	A	A	A	X	X	A	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1225 and SD-1475
Phthalic Anhydride (Crude) <400 F (204C)	EU5ESTT	9,12	CR2ESHH	9,12	A	X	A				X	X	A	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1225 and SD-1475
Plating Solution - Chrome		K4(4/5)KFVV	6	X	-	X	B	X	B		X	X	X	X	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	See SD-201, Plating Solutions
Plating Solution - Nickel/Copper		E75EFVV	6	X	-	B	B	X	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	See SD-201, Plating Solutions
Picric Acid <200 F (93C)	C6H3N3O7	E75EFVV	6	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	X	A	A	A	A	A	A	A	
Polybutadiene (Rubber)	(C4H6)x	E75EFTT	3	CR2EFHH	3	A	A	A	A		A	A	A	A	A	A	A	A	A				A	X	X	A	A	A	A	
Polyethylene	(C2H4)x	E75EFTT	3	CR2EFHH	3	A	A	A	A		A	A	A	A	A	A	A	A	A				A	A	A	A	A	A	A	
Polyethylene Glycol		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	
Polypropylene Glycol		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	
Polystyrene	(C8H8)x	EUUEFTT	3	X	-	B	B	B			A	X	X	A	A	X	X	A	A	X	X	X	A	X	X	X	A	A	A	
Potash <200 F (93C)	K2CO3	K75KFVV	4	IR2EFVV	4	B	A	B	A	B	A	X	X	A	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	
Potassium Bicarbonate<30%<212 F (100C)	KHCO3	E75EFVV	4	CR2EFVV	4	A	B	A	B	A	X	X	A	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
" Bicarbonate >30%<212 F (100C)	KHCO3	E75EFVV	6	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
" Carbonate <200F (93C)	K2CO3	K75FFVV	4	IR2EFVV	4	B	A	B	A	B	A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
" Chloride <30% <200 F (93C)	KCl	E75EFVV	4	KR2EFVV	4	B	A	X	B	B	A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
" Cyanide <200 F (93C)	KCN	E75EFVV	6	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	Extremely Toxic
" Hydroxide<300 F(149C)	KOH	KU2K(F/V)EE	1,8	X	-	X	B	X	B	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
" Hydroxide <40% 70 F(21C)	KOH	EU2E(F/V)EE	1,8	IU2E(F/V)EE	1,8	B	B	B	A	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
" Nitrate <200 F (93C)	KNO3	E75EFVV	4	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	X	X	
" Permanganate <200 F (93C)	KMnO4	E75EFEE	3	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	X	X	
" Phosphate <200 F (93C)	K3PO4	E75EFVV	4	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
" Silicate <200 F (93C)	K2Si2O5	E75EFVV	3	X	-	B	B	B	B		A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
Potassium Sulfate <200 F (93C)	K2SO4	E75EFVV	4	CR2EFVV	4	A	A	A	B	B	A	A	A	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	
Propane (Gas)	C3H8	EU5EFVV	6	CR2EFVV	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, See SD-826 & SD-1475
Propane (Liquid)	C3H8	EU5E(F/V)V	1,5,7,12	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, See SD-826 & SD-1475
Propionaldehyde <150 F (66C)	C3H6O	E75EFEE	12	CR2EFEE	12	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions
Propionic Acid <150 F (66C)	C3H6O2	E75EFEE	1	IR2EFEE	1	B	B	X	A	X	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
Propyl Acetate <150 F (66C)	C5H10O2	E75EFTT	1	CR2EFHH	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	
Propyl Alcohol (Propanol) <200 F (93C)	C3H8O	EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	
Propylene (Gas)	C3H6	EU5EFVV	6	CR2EFVV	6	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, See SD-826
Propylene (Liquid)	C3H6	EU5EFVV	1,5,7	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, See SD-826
Propylene Glycol	C3H8O2	E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	
Propylene Oxide <200 F (93C)	C3H6O	EU5EFTT	5,7,12	X	-	A	A	A			A	X	A	A	A	X	X	A	A	X	X	X	A	A	X	X	A	A	Flammable, Kalrez 2035, See SD-1475	
PVC (Polyvinyl Chloride)	C2H3Cl	EU5EFTT	5,12	IR2EFHH	5,12	A	A	X	A		A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1200 and SD-1475, Toxic
Pyridine <212 F (100C)	C5H5N	EU5EFTT	1	CR2EFHH	1	A	A	A	A	B	A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	
Rosin - Paper Mill <400 F (204C)	EU5ESTT	9	CR2ESHH	9	A	A	A	A			A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
Rosin Size <350 F (177C)	EU5EFEE	3	IR2EFEE	3	A	A	B	A			A	X	X	A	A	X	X	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper

ACIDS
AMINES
HYDROCARBONS

Notes:
 1. Bypass Flush
 2. Outside Seal
 3. External Flush
 4. Product May Salt Out
 5. Use Carbon As One Face
 6. Double Seal
 7. Balanced Seal
 8. Quench
 9. Steam Jacket
 10. Steam Purge
 11. < 50 PPM Chlorides
 12. VHAP
 A = Good as any component
 B = Good for glands, collars and compression units
 X = Not recommended
 * = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

"A" <0.002"/yr Bellows & Seal Faces
 "A" < 5% Swell for O-Rings
 "B" <0.020"/yr Gland
 "B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

						316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Peramic	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Durafion	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS	
Salicylic Acid <200 F (93C)	C7H6O3	K75EFVV	3	KR2EFVV	3	B	A	B	B	B	A	A	X	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	Dust Explosive	
Sea Water <200 F (93C)		E75EFVV	1	IR2EFVV	1	B	B	B	A	B	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Sewage		E75EFVV	3	CR2EFVV	3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1078, Effluent	
Sewage Sludge		EUUEFVV	2	X	-	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1078, Effluent	
Silicone Oils		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Silver Chloride 70 F (21C)	AgCl	K75KFVV	4	X	-	X	B	X	B		A	X	X	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A		
Silver Nitrate <60% 70 F (21C)	AgNO3	E75EFVV	3	IR2EFVV	3	A	A	B	A	X	A	X	X	A	A	A	X	A	A	X	A	A	A	A	A	A	A	X	X	Extremely Toxic	
Soap Liquors		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Soda Ash <200 F (93C)	Na2CO3	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Soda - Caustic	NaOH									B													A	A	A	A	A	A	A	See SD-1041 Sodium Hydroxide	
Sodium Acetate <200 F (93C)	NaC2H3O2	E75EFEE	4	IR2EFEE	4	B	A	B	A	A	A	A	X	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A		
" Bicarbonate <20% <212 F (100C)	NaHCO3	E75EFVV	4	CR2EFVV	4	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
Sodium Bisulfite <200 F (93C)	NaHSO3	K75KFVV	4	X	-	X	B	X	B	X	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
" Borate(Borax) <200 F (93C)	Na2B4O7	E75EFVV	3	IR2EFVV	3	A	A		A	A	A	X		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Bromide <200 F (93C)		E75EFVV	3	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A		
" Carbonate <200 F (93C)	Na2CO3	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1487, Sodium Carbonate
" Chlorate <140 F (60C)	NaClO3	E75EFVV	4	IR2EFVV	4	B	A	A	A	A	A	X	X	A	X	X	A	A	A	X	A	A	A	A	A	A	A	X	X	See SD-1112, Pulp and Paper	
" Chloride <200 F (93C)	NaCl	K75KFVV	4	IR2KFVV	4	X	B	X	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Chromate <140 F (60C)	Na2CRO4	EU4EFVV	4	CU2EFVV	4	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A		
" Cyanide <200 F (93C)	NaCN	K75KFEE	4	KR2KFEE	4	X	A	X		A	A	X	X	A	A	X	A	A	A	X	A	A	A	A	A	A	A	A	A	Extremely Toxic	
" Ferricyanide <200 F (93C)	Na3Fe(CN)6	E75EFVV	3	X	-	B	B	B	B	A	A	X	X	A	X		A	A	A	X	A	A	A	A	A	A	A	A	A	Extremely Toxic	
" Hydrosulfide <200 F (93C)	NaHS	E75EFVV	4	CR2EFVV	4	A	A	A	A	A				A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A		
" Hydroxide 51- 70% <250 F (121C)	NaOH	KUUK(F/V)EE	1,8	KU2K(F/V)EE	1,8	X	A	X	B	B	A	X	X	A	A	A	X	A	X	X	X	A	A	A	A	A	A	A	A	See SD-1041, Sodium Hydroxide	
" Hydroxide 21-50% <250 F (121C)	NaOH	KU5K(F/V)EE	1,8	IR2K(F/V)EE	1,8	X	A	X	A	B	A	X	X	A	A	A	X	A	X	X	X	A	A	A	A	A	A	A	A	See SD-1041, Sodium Hydroxide	
" Hydroxide 1- 20% <250 F (121C)	NaOH	EU5E(F/V)EE	1,8	IR2E(F/V)EE	1,8	A	A	X	A	B	A	X	X	A	A	A	X	A	X	X	X	A	A	A	A	A	A	A	A	See SD-1041, Sodium Hydroxide	
" Hydroxide <40% 70 F (21C)	NaOH	EU5E(F/V)EE	1,8	IR2E(F/V)EE	1,8	A	A	X	A	B	A	X	X	A	A	A	X	A	X	X	X	A	A	A	A	A	A	A	A	See SD-1041, Sodium Hydroxide	
" Hypochlorite <125 F (52C)	NaClO	I44IFVV	3	I42IFVV	3	X	X	X	A	X	X	X	X	A	A	X	A	A	X	A	X	A	A	A	A	A	A	X	X	See SD-1112, Pulp and Paper	
" Metasilicates <200 F (93C)	Na2SiO3	E75EFVV	3	CR2EFVV	3	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Nitrate <212 F (100C)	NaNO3	E75EFEE	4	CR2EFEE	4	A	A	A	A	A	X	A	A	A	A	A	A	A	A	X	X	A	A	A	A	A	A	X	X		
" Nitrite <200 F (93C)	NaNO2	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	X	A	A	A	A	A	X	X		
Sodium Perchlorate <200 F (93C)	NaClO4	E75EFVV	4	KR2EFVV	4	B	A	B	B	A	A	X	X		A	A	A	A	X	A	A	A	A	A	A	A	A	A	A		
" Phosphate-Mono <200 F (93C)	NaH2PO4	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Phosphate-Di <200 F (93C)	Na2HPO4	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	X	X	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Phosphate-Tri <200 F (93C)	Na3PO4	E75EFVV	4	CR2EFVV	4	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Silicate <200 F (93C)	Na2SiO3	E75EFVV	3	CR2EFVV	3	A	A	A	B	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A		
" Sulfate <200 F (93C)	Na2SO4	E75EFVV	4	KR2EFVV	4	B	A	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
" Sulfide <200 F (93C)	Na2S	K75KFVV	4	KR2KFVV	4	X	A	X	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A		
" Sulfite <200 F (93C)	NaSO3	E75EFVV	4	KR2EFVV	4	A	A	B	B	B	A	X	X	A	A	X	A	A	A	X	A	A	A	A	A	A	A	A	A		
" Thiosulfate <200 F (93C)	Na2S2O3	E75EFVV	4	KR2EFVV	4	A	A	B	B	B	A	X	X	A	A	X	A	A	A	X	A	A	A	A	A	A	A	A	A		
Soybean Oil		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Flammable, Use Food Grade Materials	
Stannic Chloride	SnCl	E75EFVV	6	X	-	X	X	X	X	X	A	X	X	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A		

ACIDS
AMINES
HYDROCARBONS

Notes:
 1. Bypass Flush
 2. Outside Seal
 3. External Flush
 4. Product May Salt Out
 5. Use Carbon As One Face
 6. Double Seal
 7. Balanced Seal
 8. Quench
 9. Steam Jacket
 10. Steam Purge
 11. < 50 PPM Chlorides
 12. VHAP
 A = Good as any component
 B = Good for glands, collars and compression units
 X = Not recommended
 * = Base Material must have an "A" rating for Durchrome, Tung Car A, Tung Car M, Silicon Carbide A,

"A" <0.002"/yr Bellows & Seal Faces
 "A" < 5% Swell for O-Rings
 "B" <0.020"/yr Gland
 "B" <0.020"/yr Pusher rotary units
SD-634-98 by BSB

						316 SS	20 SS	AM-350/304 SS	Haas "C"	Inconel 600/718	#5 carbon	Bronze	Duramate	Kalamate	Durchrome *	Tungsten Carbide	Sil Car 1	Sil Car 2	Buna "N"	Viton	EPR	Duraflon	Chemrez 505	Zalok 220 SP	Zalok 215 CG	Kalrez 4079	Synthetic Blend Barrier Fluid	Pure Synthetic Barrier Fluid	COMMENTS
Vegetable Oil <300 F (149C)		EU5EFVV	1	CR2EFVV	1	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	Use Food Grade Materials
Vinegar	CH3COOH	E75EFTT	1	IR2EFHH	1	A	A	X	A	X	A	X	X	A	A	A	X	A	A	X	X	X	A	A	A	A	A	A	
Vinyl Acetate <300 F (149C)	C4H6O2	EU5EFTT	12	CR2EFHH	12	A	A	A	A	A	A	A	A	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1475, Fugitive Emissions
Vinyl Chloride <125 F (52C)	C2H3Cl	EU5EFTT	5,12	IR2EFHH	5,12	A	A	X	A	A	A	X	X	A	A	A	A	A	X	X	X	A	A	A	A	A	A	A	See SD-1200 and SD-1475, Toxic
Water - Boiler Feed		EU5EFVV	1,7	IR2EFVV	1	B	A	B	A	A	A	A	X	X	A	A	A	A	X	A	A	A	A	A	A	A	A	A	See SD-129, Hot Water
Water - Borated <300 F (149C)		EU5EFUU	4	IR2EFUU	4	B	B	X	A	B	A	X	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1265, Nuclear Power Plant
Water - Brackish <200 F (93C)		E75EFVV	1	IR2EFVV	1	B	B	X	A	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Clean		E75EFVV	1	CR2EFVV	1,11	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Cooling Tower		E75EFVV	1	CR2EFVV	1,11	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Condensate <250 F (121C)		EU5EFVV	1	IR2EFVV	1	A	A	X	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-129, Hot Water
Water - Deionized		E75EFVV	1	IR2EFVV	1	A	B	X	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Demineralized		E75EFVV	1	IR2EFVV	1	A	B	X	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Distilled		E75EFVV	1	IR2EFVV	1	A	B	X	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Heavy		EU5E(FV)UU	1	X	-	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1265, Nuclear Power Plant
Water - River or Lake, Fresh		EU0EFVV	1	CU2EFVV	1,11	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Sea <200 F (93C)		E75EFVV	4	IR2EFVV	4	B	B	X	A	A	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Water - Sour	H2O + H2S	E75EFEE	6	KR2EFEE	6	A	A	B	B	B	A	X	X	X	A	A	A	X	A	X	X	A	A	A	A	A	A	A	
Water - W/Oil		E75EFVV	1	CR2EFVV	1,11	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	
Whiskey	C2H6O	E75EFEE	1	CR2EFEE	1	A	A	A	A	A	A	X	A	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	Use Food Grade Materials
White Liquor - Unclarified <300 F (149C)	NaOH+Na2S	EUUEFEE	6	IU2EFEE	6	B	B	B	A	B	A	X	X	A	A	X	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
White Liquor - Clarified <300 F (149C)	NaOH+Na2S	EUUE(FV)EE	1,8	IU2E(FV)EE	1,8	B	B	B	A	B	A	X	X	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
White Water - Calcium		EU5EFEE	3	IR2EFEE	3	A	A	X	A	X	A	X	X	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
White Water - Chlorine Dioxide		I45IFVV	3	X	-	X	B	X	B	X	A	X	X	A	X	X	A	A	X	A	X	A	A	A	A	A	X	X	See SD-1112, Pulp and Paper
White Water - Caustic		E75EFEE	3	IR2EFEE	3	A	A	B	A	B	A	X	X	A	A	A	A	A	X	X	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
White Water - Paper Machine		EUUEFVV	3	CU2EFVV	3	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	See SD-1112, Pulp and Paper
Wine		E75EFVV	1	CR2EFVV	1	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Use Food Grade Materials
Wort		E75EFVV	6	X	-	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Xylene (Xylol) <350 F (177C)	C8H10	EU5EFVV	5,12	CR2EFVV	5,12	A	A	A	A	A	A	X	X	A	A	A	A	A	X	A	X	A	A	A	A	A	A	A	Flammable, See SD-1475, Fugitive Emissions
Yeast - Torula <150 F (66C)		E75EFL	6	X	-	A	A	A	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Use Food Grade Materials
Yeast - Wort <150 F (66C)		E75EFVV	6	X	-	A	A	A	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
Zinc Chloride	ZnCl2	K75KFVV	4	IR2KFVV	4	X	B	X	A	B	A	X	X	A	A	X	A	A	A	A	A	A	A	A	A	A	A	A	
Zinc Cyanide	Zn(CN)2	E75EFVV	4	IR2EFVV	4	B	B	X	A	B	A	X	X	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	Extremely Toxic
Zinc Nitrate	Zn(NO3)2	E75EFVV	4	X	-	B	B	B	B	A	X	X	X	A	X	A	A	A	A	A	A	A	A	A	A	A	A	A	
Zinc Phosphate Solution <20% <150 F (66C)	Zn3(PO4)2	E75EFTT	4	X	-	A	X				A	X	A	A	A	A	A	A					A	A	A	A	A	A	
Zinc Sulfate <200 F (93C)	ZnSO4	E75EFVV	4	X	-	B	B	B	B	B	A	X	X	A	A	X	X	A	A	A	A	A	A	A	A	A	A	A	

