Colder Products Company

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)

	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	Formula (CAS #)	Hastelloy C (276)	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS (TESS)	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)	ABS	Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	TPO (Santoprene)	Silicone
Acetic Acid	**C2H4O2 (64-19-7)**	A to 212°	A to 212°	A	A	A (PTFE Encapsulated 316 Stainless St.)	A to 140° AB 50-100% to 160° AB to 80% to 180°	AB to 100% to 70° AB 60% to 180°	A to 122° A to 10% to 225° AB to 50%,150-200°	A	A to 5% to 70° BC 10% @ 70°	AB 10% to 70° C 20% @ 70° NR 50-100% @ 70°	A to 100% to 70° A to 20% to 140°	A to 50% to 70° B to 50% @ 122°	A 10% to 70° B 10-25% to 100° B 50% to 140°	A to 70° AB to 200°	A A to 70°	B to 30% at 70° B to 20% to 185° C at 80% at 70°	A to 30% at 70° C 50% @ 70°	A A to 70°
Acetic Anhydride (Acetyl Oxide)	**C4H6O3 (108-24-7)**	A	A to 40% to 165° A 40-100% to 300°	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	AB to 130° NR @ 140°	B/NR 100% 70-180° **(OK Fluorinated/TEST)	AB to 70° NR @ 122°	A	NR at 70°	B/NR @ 70° NR @ 122	NR at 70°	NR at 70°	B 50% to 70° NR 50% @ 100° NR 100% @ 70°	B to 200°	A	C at 100% at 70° NR 25-50% at 70°	A to 70°	A
Acetone (Dimethyl Keytone)	**CH3COCH3 (67-64-1)**	A	A to 212°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 230°	C at 70° **(OK Fluorinated/TEST)	A to 10% to 122° AB 50% to 77°	A	A at 5% to 140° B at 70°	B 10% @ 70°	A to 20% to 70° NR at 100% at 70°	A to 70° NR 10-100% at 70°	NR HIFLUOR AB to 70°	A to 200°	A	125% vol 3 days 70° NR any conc at 70°	AB to 70°	A
Acetonitrile (Methyl Cyanide)	**CH3CN (75-05-8)**	B @ 70°	A@100% to 100° NR 4% @ 192°	A to 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	AB to 75° NR @ 122°	A to 122°	A to 125° B @150° NR @ 180°	A	NR at 70°	NO DATA	NR at 70°	NR at 70°	NR HIFLUOR AB to 70°	A	A	C at 70°	NR	A
Aluminum Sulfate (Aluminum Salt)	**Al2O12S3 (10043-01-3)**	A to 165°	A to 50% to 212° AB 50-100%	A to 100% to boiling	A to 212°	A	A to 100% to 160° A to 10% to boiling AB 100% at 250°	A to 160°	A to 100% to 280° A 10% to boiling	A	A at 10% to 70° AB to 100% to 180°	A to 70° AB to 120°	A to 100% to 200° A to 10% to boiling	A to 100% to 200°	A to 100% to 176° A to 10% to boiling	A to 176° AB to 200°	A to 70°	A to 70° AB any conc to 180°	A to 70°	A to 70°
Amines (General)	**NA**	A to 85% to 160° AB to 200°	A	A to 70°	A to 70°	A	AB to 120°	NR **(OK Fluorinated/TEST)	NR	A	NR at 70°	NO DATA	NO DATA	NR at 70°	NR	AB to AC	A	NR at 70°	A to 70°	A
Ammonia Gas (Anhydrous)	**NH3 (7664-41-7)**	A @ 100% to 140°	A to 40% to 165° A 40-100% to 212°	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 212°	A to 140°	A	A	NR at 70°	B @ 70°	C at 70°	NR at 70°	NR HIFLUOR AB to 70°	A to 140°	A (Black 550) AB (White 571 & 592)	A to 104° B to 140° NR at 200°	A	A (Black 550) AB (White 571 & 592)
Ammonia (Aqueous) (Ammonium Hydrate) (see also Ammonium Hydroxide)	**NH3 (7664-41-7)**	A to 100% to 70° AB to 100% to 200°	A to 100% to 70° AB to 212°	A to 30% to 70° A to 10% to 200°	AB	A (PTFE Encapsulated 316 Stainless St.)	A to 185°	BC to 30% to 120° NR to 30% at 140°	A	A	A/NR 10-30% to 120°	B @ 70°	AB to 30% to 200°	NR 70-150°	AB 30% to 70° C 10% @ 104° HIFLUOR AB to 70°	A 100% to 212°	A	A at 38% to 200°	A to 70°	A
Ammonium Acetate	**C2H7NO2 (631-61-8)**	A@19%	A to 100% to 150°	NO DATA	A	A	A to 102° AB to 180°	A to 122°	A to 100% to 175°	A	A to 70°	NO DATA	A sat'd to 122°	A sat'd to 122°	A to 140° B at 212°	A to 140° B at 212°	A	A to 140° B at 176°	A to 70°	A
Ammonium Bifluoride (Ammonium Hydrogen Fluoride)	**F2H5N (1341-49-7)**	A 10% to 70° B 50-100%	B/NR 6-10% @ 70-250 B45% C 35% @ 70°	NR		A	A to 225°.	NO DATA	A	A	NR	A to 120°	NO DATA	NO DATA	A to 100% to 140°	A to 140† B 212°	A	AB to 140° B 180-212°	A to 100% to 70°	NO DATA
Ammonium Fluoride	**NH4F (12125-01-8)**	A to 25% to 175° A 45% to 260°	AB to 10% to 212° NR > 10%	NR	A	A (PTFE Encapsulated 316 Stainless St.)	A	AC 25-100% to 120° A to 25% to 160°	A	A°	NO DATA	NO DATA	NO DATA	NR at 70°	A to 140°	A to 140°	A	AB any conc to 104°	NO DATA	A
Ammonium Hydroxide (Ammonia, Aqeous)	**NH4OH (1336-21-6)**	A to 47% to 70° A@100% to 150° AB@100% to 200°	A to 100% to 70° A@100% to 150°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 225°	AB to 100% to 140°	A to 200°	A	AB to 100% to 140°	B @ 70°	A to 100% to 200°	BC 5% at 70° NR 10-100% 70° NR 5% at 120°	A46% to 70° AB to 70° B 104-140°	A to 160° AB to 200°	A	A to 38% to 200° A/NR conc to 140°	A to 70°	A
Ammonium Sulfate (Dolamin)	**(NH4)2SO4 (7783-20-2)**	A to 10% to boiling A sat. to 130° AB sat. to 200°	A to 37% to 221° AB 38-80% to 150° A sat'd to boiling	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A 10% to 100°	A to 100% to 70° AB to 100% 120-180°	A	A to 400°	B 100% 70-140° AB fertilizer to 70° AB to 5% to 70°	A to 70° AB @ 120°	A to 100% to 200° A to sat'd to boiling	A to 100% to 200° NR 10-100%boiling	A to 70°	A to 120°	A	A any con to 200°	A to 70°	A
Aqua Regia (NitroHydrochloric Acid)	**HCL-HNO3 (8007-56-5)**	NR (Titanium: A to 70°) (Tantalum: A)	NR	NR	NR	A (PTFE Encapsulated 316 Stainless St.)	C at 70 - 104°	NR **(OK Fluorinated/TEST)	A to 100° AB to 178° B a 212°	A	NR at 70°	NR	NR at 70°	NR at 70°	B to 185°	NR at 140°	AB to 70° (Black 550)			AB to 70° (Black 550)
Benzene (Mineral Naphtha) (Benzol)	**C6H6 (71-43-2)**	AB @100% to 140° B to 100% to Boiling	A to 20% to 217° AB 20-100% to 200°	A to 100°	A to 212°	A to 500°	AB to 10% to 70° AB dilute to 140°	A at 10% to 70° C/NR at 100% at 70° NR at 122°	A to 100% to 120° B at 100% at 120-140° at 100% at 140-158°	A to 500°	A to 140°	NR	NR at 70°	NR at 70°	B to 158°	NR at 70°	A to 70°	NR at 70°	NR	NR at 70°
Benzoic Acid (Carboxybenzene) (Benzymethonic acid)	**C7H6O2 (65-85-0)**	A to 100% to 70° AB to 100% 70-200° C 50% @ 212°	B to 100% to 212°	A to 200°	A	A	A to 140° AB to 180°	A to 180°	A	A	AB @ 70 C/NR @ 140°	B @ 70°	C 10-100% @ 70° NR 10-100% @ 200°	A @ 70° B 10-100% @120° NR 100% @ 200°	A to 70°	B/NR @ 70° NR @ 140°	A to 70°	NR	A to 70°	C/NR @ 70°
BOE (Buffered Oxide Etch) (30-50% Ammonuim Flouride, 0.5-10% HF)	**N/A**	A 45% to 260°	NR	NR	NR	A (PTFE Encapsulated 316 Stainless St.)	A	AC 25-100% to 120° **(OK Fluorinated/TEST)	A	A°	NO DATA	NO DATA	NO DATA	NR	A to 140°	AB	A	AB any conc to 104°	NO DATA	A
Boric Acid (Orthoboric Acid, Hydrogen Orthoborate)	**BH3O3 (10043-35-3)**	A	A to 140° AB > 140°	A to 200°	A to 212°	A	A	A to 150°	A to 175°	A	A to 5% to 70°	A to 70°	A to 200†	A to 125°	A to 185° B > 185°	A to 176° AB > 176°	A	A to 140° AB 140-200°	A to 70°	A to 70°
Butyl Acetate (N-Butyl Acetate)	**C6H12O2 (123-86-4)**	A	A	A to 200°	A to 70°	A to 500°	NR	AC at 70° BC at 120°	A to 70° AB at 80-100° C at 104-120°	A to 500°	AB to 70°	NO DATA	NR at 70°	NR at 70°	NR at 70° HIFLUOR A to 70°	B at 70°	A	NR at 70°	BC @ 70°	NR at 70°
Butyl Alcohol (N-Butanol)	**C4H10O (71-36-3)**	A	A	A to 200°	A to 70°	A	AB to 100% to 180°	A to 150°	AB to 120° NR @ 150°	A	A to 70° AB to 140°	NR	A to 200 (No Stress) B @ 70° < 1 KSI	A to 200° (No Stress) AB to 70°	A to 70°	AB to 100°	A	A to 100% to 140° AB to 190°	B @ 70°	B @ 70° (Static) C @ 70° (Dynamic)
Calcium Carbonate (Aglime)	**CCaO3 (471-34-1)**	B to 100% to Boiling	A Dilute to 120° AB@100%	A to 150°	A to 70°	A to 500°	A to 248°	A to 160°	A to 258° AB to 285°	A to 500°	A to 10% to 150° AB to 180°	NO DATA	NO DATA	C at 70-150°	A to 248°	A to 140°	A to 70°	A to 200°	A to 70°	AC to 70°
Caprylic Acid (Octanoic Acid)	**C8H16O2 (124-07-2)**	NO DATA	NO DATA	NO DATA	A	A	A to 125° BC @ 250°	BC @ 70 - 150° **(OK Fluorinated/TEST)	A to 158° B/NR 175-285°	A	NO DATA	NO DATA	NO DATA	NO DATA	AB to 140°	NO DATA	A	C @ 70°	NO DATA	NO DATA
Ceric Ammonium Nitrate (CAN)	**CeH8N8O18 (16774-21-3)**	NO DATA	NO DATA	NO DATA	A	A	NO DATA	NO DATA	NO DATA	A	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
Chlorine (Anhydrous) (Dichlorine, Chlorinated water)	**CL2 (7782-50-5)**	A to 140° (to 10 ppm to 70°)	A to 70° (to 10 ppm to 70°)	NR	A to 10% to 70° NR Conc. @ 70°	A (PTFE Encapsulated 316 Stainless St.)	NR	A to 2% to 140° NR **(OK Fluorinated/TEST)	A to 100% to 200° AB at 100% to 230° NR	A	NR at 10-100% at 70°	NR	NR at 70°	NR at 70°	C 400 ppm at 70°	B 400 ppm at 70° C 400 ppm at 104°	A to 70°	C sat'd at 70° NR 400 ppm at 70°	NR	NR at 70°
Chlorine Dioxide (Chlorine Peroxide) (CDG Solution 3000, 0.3% Sol., 3000 ppm)	**CLO2 10049-04-4**	A to 70° AB 15% to 175° C 8-10% @ 150°	A 4-5% to 36° NR 10-100% @ 70°	A	NR	A	NR 15-100% @ 70°	NR @ 70° **(OK Fluorinated/TEST)	A to 70° (Stressed) B to 120° (Stressed) NR with UV Present	A	NO DATA	B @ 70°	NO DATA	NO DATA	AB to 8% @ 70° NR 15% @ 70° A 8% (HIFLUOR)	NR 8% @ 70°	A	NR 8% @ 70°	NR @ 70°	NO DATA
CLOROX (5.25% Sodium Hypochlorite)	**CLNaO**			A to 200° (13 months BC @ 200° (1 yr) C @ 70 (1 yr)	AB	A	A to 120° AB to 175° NR @ 212°	A to 150°	A	A	A to 0.03% to 140° NR 5%	BC @ 70°	A to 200°	A to 70°	A	AB to 140°	A	B	B @ 70°	AB to 70°
Citric Acid	**C6H8O7 (77-92-9)**	A to boiling	A to 50% B@100% 70-212° NR 60-100% >125°	A to 220°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A	A to 100% to 160° AB to 100% at 180°	A	A	AB at 15% at 140-150° B at 15-100% at 70° C at 100% at 140-150°	A 10% to 70° B 20% 2 70°	A to 100% to 150° A to 100% 10 70°	A to 100% to 70° B at 10-15% at 120° C at 15% at 150°	A	A	A	A to 200° B at 212°	A to 70°	A
Copper Sulfate (Cupric Sulfate)	**CuO4S (7758-98-7)**	A to boiling	A to 100% to 160° A to 45% to 180°	A to 223°	A to 212°	A (PTFE Encapsulated	A	A to 50% to 150° AB at 50-100% to 180°	A	A	AB to 100% to 140°	A to 70°	A to 200°	A to 100% to 70°	A to conc. to 176° AB to 212°	A to conc. to 176° AB to 212°	A	A to conc to 176° AB any conc to 212°	A 5% to 70° A sol'n to 70°	A

Colder Products Company

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)

	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	Formula (CAS #)	Hastelloy C (276)	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS (TESS)	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)	ABS	Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	TPO (Santoprene)	Silicone
			A to 10% to 2121°			316 Stainless St.)														
Corn Oil	NA	A	A	A to 100°	A to 70°	A	A	A	A	A	AB	A to 70°	A	A	A	NR	A	A	A to 212°	A
Corn Syrup	NA	NO DATA	A	A to 100°	A to 70°	A	A	A to 150°	A	A	AB to 140°	AB to 70°	A	A	A	A	A	A	NO DATA	A
Cotton Seed Oil	NA	A	A	A to 200°	A	A	A	A to 140°	A	A	AB	NO DATA	A	A	A	A	A	A	AB to 70°	A
CRESOL (M, O & P)	C14H16O2	AB to 200°	AB 100° A 100% to 140°	A to 200°	A to 70°	A	NR	AB to 50% C/NR 50-100% @ 70° **(OK Fluorinated/TEST)	A to 150°	A	NR 50 - 100%	NR	NO DATA	NR	A to 104°	NR	A	C/NR	NR	B/NR
Cyclohexanone (Cyclohexyl ketone)	C6H10O (108-94-1)	A to 100°	A to 100 to 100°	A to 200°	A to 70°	A to 500°	AB to 70° B at 70-100° NR at 120°	NR **(OK Fluorinated/TEST)	AB to 122°	A to 500°	A to 70° AB to 140°	NR	NR at 70°	NR at 70°	NR at 70° HIFLUOR A to 70°	BC at 70°	B at 70°	NR at 70°	NR	NR at 70°
Dichloroacetic Acid (DCA)	CL2CHCO2H (79-43-6)	NO DATA	NO DATA	NO DATA	A to 100° NR >100°	A (PTFE Encapsulated 316 Stainless St.)	AB to 100% to 125°	BC at 70° **(OK Fluorinated/TEST)	AB to 50% to 212° AB 100% to 125°	A	NO DATA	NO DATA	NO DATA	NO DATA	NR HIFLUOR A to 70°	NR	A	NR	NO DATA	NR
Dichloromethane (Methylene Dichloride)	CH2CL2 (75-09-2)	AB	A to 70°	A 100% to 70° A/NR 40% @ 100°	NR	A (PTFE Encapsulated 316 Stainless St.)	B/NR @ 70° C/NR @ 88-122°	NR **(OK Fluorinated/TEST)	AB to 100° to 100° B 100% 104 - 125°	A	A to 70°	NR	NR at 70°	NR at 70°	B @ 70°	BC to 130° NR @ 140°	A	NR at 70°	NR	A
Diesel Fuel	N/A	A to 140° AB to 200°	A to 200°	A to 200°	A to 70°	A	AC @ 70° BC @ 120°	A to 70° BC @ 140°	AB to 125°	A	A to 150°	NO DATA	A to 200°	A to 200°	A to 70°	NR	A	A to 70° AB to 250°	C/NR	NR
Diethylene Glycol (Ethylene Diglycol, Carbitol, Glycol Ether)	C4H10O3 (111-46-6)	B 100% @ 70°	A	NO DATA	A 90% to 70°	A	A to 225°	A to 140°	A to 140°	A	A 90 - 100% to 70°	B @ 70°	B @ 70-122°	B @ 70°	A	A	A	A	A	B 70-200°
Diethanolamine (DEA)	C4H11NO2 (111-42-2)	A	A	NO DATA	A to 120° B @ 150° NR > 150°	A	A 100% to 150° AB 100% to 225°	AB to 70°	NR	A	NO DATA	NO DATA	A to 70°	NO DATA	NR HIFLUOR B to 70°	AB 70-160°	A	NR	A to 70°	NR
Diisopropylether (Isopropylether)	C6H14O (108-20-3)	NO DATA	NO DATA	A to 70°	A	A	NR	B/NR at 70° NR at 140° **(OK Fluorinated/TEST)	A 100% to 100°	A	A to 70°	NO DATA	NR	NR	NR	NR	A	B to 100% to 140° NR @ 200°	C/NR @ 70°	NR
Dimethyl Acetamide (DMAC)	C4H9NO (127-19-5)	A	A	NO DATA	A	A	AB to 125°F	A to 122°	NR	A	NO DATA	NO DATA	NR at 70°	NR at 70°	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
Dimethyl Sulfoxide (DMSO)	C2H6OS (67-68-5)	A	A	A to 200°	B @ 70-122°	A	A to 125°	A to 122°	NR	A	NR	NO DATA	NR	NR	NR A for "F Type" HIFLUOR A to 70°	A to 70°	A	NR	A	A (Static) C (Dynamic)
DI water (Deionized Water) (Ultra Pure Water, 17 megaohm +)	H2O	A	B @ 12 - 18.2 megaohm A @ < 12 megaohm	A to 200°	A	A (PTFE Encapsulated 316 Stainless St.)	A	A to 140°	A	A	NO DATA	A to 70°	A to 200°	NO DATA	A to 70° AB to 200°	A to 70° AB to 200°	A	A to 70° AB to 200°	NO DATA	A
Ether (Ethyl Ether) (Diethyl Oxide)	C4H10O (60-29-7)	A@100% to 200° A to 56% to 171°	A@100% to 212°	A to 200°	A to 212°	A to 500°	NR	NR at 100% at 140° **(OK Fluorinated/TEST)	AB to 94° B @ 104° NR @ 140°	A	A to 70° AB at 140°	NR	NR at 70°	NR at 70°	NR HIFLUOR A to 70°	NR	A	NR at 70°	NR	A
Ethyl Acetate (Acetic Ether)	C4H8O2 (141-78-6)	A	A	A 100% to 100°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 180°	BC at 100% at 70° C at 100% at 122° **(OK Fluorinated/TEST)	A to 70° B @ 100 - 122° NR @ 170°	A	A to 10% to 200° AB at 100% to 70° BC at 100% at 140°	AC @ 70°	NR at 70°	NR at 85-100% at 70°	NR HIFLUOR A to 70°	A @ 100% to 130°	A	NR at 70°	NR	B @ 70° NR @ 200°
2 Ethoxy Ethyl Acetate (Ethoxyethanol Acetate)	C6H12O3 (111-15-9)	A	A	A	A to 70°	A	BC @ 70-120° NR @ 140°	AB to 122°	A	A	A to 70°	NO DATA	NR	NR	C/NR HIFLUOR AB to 70°	B	A	NR	C/NR	NR
Ethyl Alcohol (Ethanol/Grain Alcohol)) (Denatured Alcohol)	C2H5OH (64-17-5)	A to 100% to 212°	A to 100% to 200°	A	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 180°	A to 100% to 160°	A to 100% to 176° AB to 100% to 280°	A	A at 96-100% to 70° B at 100% at 120-180°	AB to 70° (No stress)	A to 70% to 70° B at 100% at 70-120° NR at 100% at 200°	A to 90% to 70° AB at 96-100% to 70° B at 40-100% at 120°	A to 70°	A to 200°	A	A to 140° B to 185°	A to 70°	AB to 200° C @ 70 dynamic
Ethyl Benzene (Phynlethane)	C8H10 (110-41-4)	A to 240°	A to 100% to 70° AB to 100% to 70°	NO DATA	NO DATA	A	NR	BC @ 70-120° **(OK Fluorinated/TEST)	A to 140°	A	A to 70°	NO DATA	NR	NR	A	NR	A	NR	C @ 70°	NR
Ethylene Glycol (Glycol Alcohol) (Prestone®)	HOCH2-CH2OH (107-21-1)	A 20-100%	A 40-100% to 200° A 100%	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A	A to 160°	A	A	A to 100% to 120° AB to 140° B at 180°	A to 70° B @ 140°	A to 100% to 200°	A to 160° B to 200°	A to 250°	A to 212°	A	A to 212°		A
Ethylene Glycol Mono Butyl Ether (Butyl Cellosolve)	C6h14O2 (111-76-2)	A to 200°	A to 200°	A to 200°	A	A	AB to 140°	B/NR@70° **(OK Fluorinated/TEST)	A to 104° NR @ 212°	A	AB to 70°	NO DATA	A to 70° BC @ 120°	NR	NR HIFLUOR A to 70°	A to 200°	A	C 70 - 150°	A to 70°	NR
Ethylene Oxide (EO, EtO, Oxiraine)	C2H4O (75-21-8)	A to 70°	AB to 200°	NR	A	A	C @ 70-120° NR @ 140°	BC @ 70°	A to 70° AB 100% 122-140°	A	A to 70°	NR	A to 300°	C @ 70° NR @ 125°	NR	B @ 12% @ 70° C/NR @ 70°	A	NR	A to 70°	NR
Ferric Sulfate (Sulfuric Acid)	Fe2O12S3 (10028-22-5)	A to 100% to 140°	A to 10% to 212° A 20-100% to 140°	A	A	A	A	A to 100% to 150°	A	A	B to 180°	A to 70° AB @ 120°	A to 100% to 200°	A to 70°	A to 176° B @ 212°	A to 176° AB to 200°	A	A to 140° AB to 200°	A to 70°	AB to 160°
Formaldehyde (Formalin)	CH2O (500-00-0)	A to 20% B 20-100% to 200°	A	A to 100% to 70° NR 37%@200°	A	A	A	A to 80° B @ 150°	A to 100% to 104° A to 37% AB 40-100% @ 140°	A	A to 70° AB to 40% 140-180°	A to 40% to 70° AB 40% @ 120°	AB to 100% to 70°	A to 100° AB to 100% @ 120°	A to 176° A to 37% to 212°	A to 120° A to 37% to 212°	A to 104°	A to 40% to 140° B @ 40% @ 212°	AB to 70°	B 40-100% @ 70°
Formic Acid (Formylic Acid)	CH2O2 (64-18-6)	A to 100% to 200°	A to 5% AB 5 - 80% to 212° B 80 - 100% to 212°	A to 100% to 70° A to 40% to 200° NR @ 37% @ 150°	AB to 10% to 70° BC 100% @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 40% to 104° C 100% @ 140°	A to 100% to 104° B at 50-100% at 140-150° BC at 100% at 180°	A to 100% to 212°	A	NR at 3-100% at 70°	A to 10% to 70° NR @ 70°	A to 10% to 70° at 10-50% at 70-120° C 98-100% at 70-120°	A to 50% to 70° AB at 50-100% to 70° B at 3-50% at 120°	AB to 50% to 104° NR 60-100% @ 70° (HIFLUOR A to 70°)	A to 200° A to 90% to 212°	B	B to 50% at 70° NR 50-100% at 70° NR at 100% at 140°	A to 70°	B
Gasoline (Petrol)	NA	A	A to 200°	A to 176°	A to 212°	A to 500°	NR at 70°	NR **(OK Fluorinated/TEST)	A to 275° AB to 285°	A to 500°	A to 70°	NR	A to 70°	C at 70°	A to 190°	NR at 70°	A to 70°	A/NR (Test for additives effect! FKM better)	C/NR	NR at 70°
Glycerin (Glycerol)	C3H8O3 (56-81-5)	A to 100% to 212° A @ 100% to 600°	A to 100% to 200° A@100% to 300°	A to 200°	A to 100% to 70°	A to 450°	A to 100% to 225°	A to 160° A to 150° AB to 180°	A to 100% to 275° AB at 100% at 285°	A to 450°	A to 140°	AB @ 70-140°	A at 100% to 200°	A to 125°	A to 250°	A to 176° AB to 200°	A to 70°	A to 250°	A to 70°	A to 70°
Glycolic Acid	C2H4O3	A	A to 225°	A to 200°	A to 212°	A	A to 100% to 180°	AB to 150°	A to 100% to 100°	A	A to 70°	B @ 70°	NO DATA	NO DATA	A 10% to 140%	A to 70°	A	A to 100% @ 70°	A to 70°	AB to 70°

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)

	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	Formula (CAS #)	Hastelloy C (276)	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS (TESS)	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)	ABS	Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	TPO (Santoprene)	Silicone
(Hydroxyacetic Acid)	(79-14-1)								A to 65% to 212° NR 100% @ 176°						HIFLUOR A to 70°			A to 70% to 140° NR @ 70° (dynamic)		C @ 70 (dynamic)
Hexane (Dipropyl) (N-Hexane)	C6H14 (110-54-3)	A	A @ 100% to 200°	A to 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	BC @ 70-104° C @ 120-140° **NR @ 140°**	NR *(OK Fluorinated/TEST)	A	A	A to 70°	NR	A at 100% to 200°	A to 158° **NR at 80-120°**	A to 200°	NR	A	A to 70°	AC @ 70°	NR
HMDS (1,1,1,3,3,3-Hexamethyldisilazane) Bis(trimethylsilyl)amine	C6H19NSi2 (999-97-3)	NO DATA	NO DATA	NO DATA	NO DATA	A (PTFE Encapsulated 316 Stainless St.)	NO DATA	NO DATA	NO DATA	A	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	A	NO DATA	NO DATA	A
Honey	NA	A to 70°	A to 140°	NO DATA	A		A to 70° AB @ 180°	A to 140°	A	A	A to 70°	B @ 70°	NO DATA	A to 70°	A to 140°	A to 140°	NO DATA	A to 140°	A to 70°	A to 70°
Hydrazine (Diamine)	H4N2 (302-01-2)	A to 70°	A to 140°	NO DATA	A	A	NR 35-100% @ 70°	A to 70°	A	A	B @ 70°	NO DATA	NR	NR	A Aqueous to 70° NR HIFLUOR A to 70°	A to 100% @ 70°	B A 64% to 70°	AB 24% @ 70° BC 64 - 1005 @ 70% B Anhydrouse	A to 70°	B to 100% 70 -200°
Hydrobromic Acid (Hydrogen Bromide)	HBr (10035-10-6)	A@50% to 80° A@100% to 140° AB to 20% to 70°	NR	A to 37% to 100° A to 70°	NR	A (PTFE Encapsulated 316 Stainless St.)	A 20% to 225° A to 50% to 150° B Conc. to 185°	A to 20% to 160° A to 50% to 140° AB 50-100% at 70-150°	A dilute to 250° A to 37% to 70° A 38-100 to 275°	A	NR	NR 20% @ 70°	A to 20% to 300° B at 30% at 70°	NR at 30-100% at 70°	A to 140°	A to 200°	A	NR	B 30-100% @ 70°	A
Hydrochloric Acid (Muriatic Acid)	HCL (7647-01-0)	A to 40% to 140° NR 5-100% 175°	NR 3-100%	A to 10% to 200° C/NR 37-100%@70°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 36% to 150° A to 10% to 185°	A to 100% to 140° A to 40% to 160° AB to 40% to 150°	A to 38% to 194° A to 50% to 175° AB 40-70% to 70°	A	A to 10% to 70° NR at 30-100% at 70°	AB 10-50% to 70° BC 50-100% @ 70° NR 50-100% @ 150°	A to 100% to 70° A to 50% to 140° A to 37% to 200°	A to 10% to 200° AB at 20% at 70-200°	A to 100% to 70° A to 37% to 160°	A to 25% to 140° AB to 37% to 130° A to 10% to 176°	A	AB 20-37% to 70° AB to 15% to 150°	A to 70° AB to 37% to 150° C 37% @ 150°	A
Hydrofluoric Acid (Hydrogen Fluoride) (HF)	HF (7664-39-3)	A to 100% to 70° A@90% to 125°	A to 10% AB@16% to 120° NR 45-80%	A to 50% to 140° A to 35% to 200° NR > 50%	NR 4-100%@70°	A (PTFE Encapsulated 316 Stainless St.)	A to 50% to 140° A to 40% to 200° A to 30% to 225°	A to 60% to 140° A to 40% to 180° A to 30% to 160°	A to 100% to 212°	A	NR at 70°		A to 10% to 200° AB 25-38% at 70-200	A to 10% to 180° AB at 20% to 70° BC at 35% at 70°	A to 60% to 130° A to 50% to 176 A to 30% to 212°	A dilute to 212° AB to 60% to 130° AB to 65% to 70°	A	AB 10% to 70° C 20-30% to 130°	C 20-25% @ 70° NR 50-100% @ 70°	A
Hydrogen Peroxide (Hydrogen Dioxide)	H2O2 (7722-84-1)	A to 100% to 75° A to 50% to 200°	A to 30% to 104° A 50-100% to 70°	A to 10 to 200° AB to 30% to 100° NR 50-100% @ 70°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 80% to 70° A to 5% to 170° NR 30% > 125°	A to 30% to 140° AB at 30-90% to 120° AB at 30-100% to 70°	A to 200° A to 30% to 212°	A	NR at 4-100% at 70°	A to 10% to 70° NR 100% @ 70°	A to 100% to 70° A to 90% to 120° B at 30% at 180°	A to 100% to 125°	A to 104° A 50% to 200° AB @ 100% @ 160°	B 5% to 140° B 3-30% @ 70°	A (White 571 & 592) AB (Black 550)	B 3% at 70° BC 10% to 80°	A to 100% to 70°	A to 90% to 70° B @ 100% @ 70°
Hydroquinone	C6H6O2	B @ 70°	AB to 100% to 70° A 5% to 120°	NO DATA	NO DATA	A	A to 180°	A to 140°	A	A	A to 70°	NO DATA	NO DATA	NO DATA	B	B/NR 70-140°	AB	C/NR	A to 70°	B @ 70°
Hydroxyacetic Acid (Glycolic Acid)	C2H4O3 (79-14-1)	A	A to 225°	A to 200°	A to 212°	A	A to 100% to 180°	AB to 150°	A to 100% to 100° A to 65% to 212° NR 100% @ 176°	A	A to 70°	B @ 70°	NO DATA	NO DATA	A 10% to 140% A (HIFLUOR)	A to 70°	A	A to 100% @ 70° A to 70% to 140° NR @ 70° (dynamic)	A to 70°	AB to 70° C @ 70 (dynamic)
Iodine	I2 (7553-56-2)	A	A 9-10% to 72° NR >10%	NR	BC @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% @ 75° AB to 100% @ 176°	A to 6.5% to 70°	A to 100% to 170° C 100% @ 212	A	A to 70° C/NR at 100% at 70°	NO DATA	NR	NR	A to 100% to 140°	AB to 160°	A	A 6.5% to 70° B to 140°	A to 70°	A
Isopropyl Acetate	C5H10O2 (108-21-4)	B @ 70°	A to 100% to 175°	NO DATA	A	A	AB to 100% @ 176° C @ 125°	A to 70°	A to 280°	A	A/NR @ 70°	NR @ 70°	C/NR @ 70°	NR	NR HIFLUOR A to 70°	AB to 160°	A	NR	B @ 70°	NR
Isopropyl Alcohol (IPA) (Isopropanol)	(CH3)2CH-OH (67-63-0)	A@100% to 212° A@47% to 356° A@11% to 70°	A to 100% to 140° A@100% to 212°	A to 200°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	A to 225°	A to 160°	A to 150° AB to158°	A	A to 70°	A to 70° (No stress)	A to 122° AB at 185°	A to 125°	A to 170° B @212°	A to 160° B @176°	A	A to 70° B any conc to 130°	A to 70°	A
KEROSENE	NA	A	A	AB to 200°	A to 70°	A	AB to 80° BC @ 122° NR @ 140°	C/NR @ 70° NR @ 100° **(OK Fluorinated/TEST)	A	A	A to 180°	BC @ 70°	AB to 200°	A to 70° AC @ 122°	A to 158°	NR	A	A	NR	NR
KEYTONES (MEK, 2-Heptanone, etc.)	NA	A to 200°	A	A	A to 212°	A	AB to 80°	B @ 70° **(OK Fluorinated/TEST)	NR	A	AB to 120°	NR	NR	NR	NR	A to 200°	A	A to 200°	NR	NR
LACTIC ACID	C3H6O3 (50-21-5)	A to 85% to 125° B 65-100% to 212°	A to 75% to 120° A @ 100% to 120° B 25 75% 125-212°	A	A	A	A to 100% to 150°	A to 140°	A to 100% to 100° B 100% @ 120° AB to 80%	A	AC to 100% fr 70-140°	NR	A to 100% to 200° A to 60% to 300°	A to 100% to 70° AB to 100% @ 122-200°	A to 100% to 140° A to 80% to 176°	A to 100% to 140° A to 80% to 176°	A	A to 100% to 70° B 25-80%@104° C 25-80%@104°	A to 70°	A to 70° B 140 - 200°
LIMONENE (D-Limonene / DL-Limonene) (Orange Oil)	C10H16 (138-86-3) (59-8927-5)	A to 70°	A to 140°	NO DATA	A	A	B @ 70° C @ 122°	B @ 70° C @ 122° **(OK Fluorinated/TEST)	A to 260°	A to 122°	NR @ 70°	NO DATA	C @ 70 - 122°	C @ 70 - 122°	A to 140°	NO DATA	NO DATA	A to 140°	C @ 70°	NR @ 70°
METHANESULFONIC ACID (MSA) (Alkane Sulfonic Acid)	CH4O3S (75-75-2)	NO DATA	NO DATA	NO DATA	NR	A	A to 125° NR @ 140°	NR @ 70° **(OK Fluorinated/TEST)	A to 200°	A	NO DATA	NO DATA	NO DATA	NO DATA	A to 70°	NR	A	A to 70°	NO DATA	AB to 70° (static) C (dynamic)
METHOXYBUTANOL (3-Methoxy-1-Butanol)	C5H12O2 (2517-43-3)	NO DATA	NO DATA	NO DATA	A	A	NO DATA	NO DATA	NO DATA	A	NO DATA	NO DATA	NO DATA	NO DATA	A to 70°	AB @ 70°	A	A to 70°	NO DATA	NO DATA
METHOXYETHANOL (Ethylene Glycol Monomethyl Ether)	C3H8O2 (109-86-4)	NO DATA	NO DATA	NO DATA	A	A	A to 122°	A to 122°	A to 122°	A	NO DATA	NO DATA	NR	NR	BC @ 70° NR (Dynamic) HIFLUOR A to 70°	A to 70°	A	BC @ 70° NR (Dynamic)	NO DATA	AB to 70° C (Dynamic)
Methyl Alcohol (Methanol) (Wood Alcohol)	CH3OH (67-56-1)	A to 212°	A	A to 150°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 70° BC 100 @ 180°	A to 100% to 122° AB at 100% at 140° B/NR at 100% at 150-180°	A to 148° AB 212-257°	A	A to 140° B at 180°	NR	A at 100% to 70° C at 100% at 120° NR at 100% at 200°	AB at 50% to 70° B at 70° C at 122°	NR HIFLUOR A to 70°	A to 160° AB to 176°	A	A to 70° AB any conc to 150°	A to 70°	A
Methylene Chloride	CH2CL2 (75-09-2)	A	A to 100% to 200° A to 90% to 212°	A 100% to 70°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	NR	NR **(OK Fluorinated/TEST)	AB to 100°	A	A to 70°	NR	NR at 100% at 70°	NR at 70°	B @ 70°	BC to 130°	A	NR at 70°	NR @ 70°	A
Methyl Ethyl Ketone (MEK)	C4H8O (78-93-3)	A to 200°	A to 200°	A to 100% to 70°	A to 212°	A to 500°	A to 100% to 70° AB at 100% at 125° AB at 100% at 122°	BNR @ 70-`122° **(OK Fluorinated/TEST)	NR	A to 500°	A to 70° AB at 70-180°	NR	NR at 40-100% at 70°	NR at 100% at 70°	NR at 70° HIFLUOR AB to 70°	A to 140° AB to 240°	A to 70°	NR any conc at 70°	BC @ 70°	NR at 70°
MINNCARE® Cold Sterilant (Hydr. Peroxide (24%), Peracetic acid (6%), Acetic acid (10%))	H2O2 C2H4O3 C2H4O2	A	A	AB	A	A	A	AC (Embrittles over time) **(OK Fluorinated/TEST)	AB	A	NR	B	A	A	B	B	A	B	A	A
Mineral Oil (Baby Oil, Petrolatum)	NA (8012-59-1)	A to 200°	A	A	A to 70°	A	A to 100% B @ 104° C @ 120-140°	C @ 70° **(OK Fluorinated/TEST)	A	A	A to 140°	AB to 70°	AB to 70°	A to 70°	A to 70°	NR	A	A	B/NR @ 70°	B @ 70°
Mineral Spirits (Petroleum Distillates, Dispersol) (Stoddard Solvent, Paint Thinner)	NA (8052-41-3) (64742-47-8)	B @ 70°	A	A to 70°	NO DATA	A	NR	C @ 70° **(OK Fluorinated/TEST)	A	A	A to 70°	A/NR @ 70°	NR	B/NR @ 70°	A	NR	A	A	AB to 70°	NR
Motor Oil	N/A	A to 70°	A to 140°	A to 200°	A	A	A 100% to 70° C @ 120° NR @ 140°	B/NR @ 70° **(OK Fluorinated/TEST)	A	A	A to 160°	B @ 70°	A to 200°	A to 200°	A to 190°	NR	A	A to 190°	AB to 70°	AB to 70°

Colder Products Company

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)					
	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	Formula (CAS #)	Hastelloy C (276)	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS (TESS)	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)	ABS	Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	TPO (Santoprene)	Silicone
N-Methyl 2-Pyrrolidone (NMP)	**NMP CH3N(CH2)3CO (872-50-4)**	A	A	A to 70°	A	A (PTFE Encapsulated 316 Stainless St.)	A	A	C/NR @70°	A	NO DATA	NO DATA	NR at 70°	NO DATA	AB @ 70° HIFLUOR A to 70°	A to 70°	A	NO DATA	NO DATA	A
Naptha (Coal Tar)	**(8030-30-6)**	A to 140° AB to 200°	A 100% A 96% to 170° A 60% to 70°	A	A	A	A to 140° C @ 180°	NR **(OK Fluorinated/TEST)	A	A	A to 70°	NR	B @ 70°	NO DATA	A	NR	A	AB to 250°	C/NR @ 70°	NR
Naptha (Heavy Aromatic Naptha Solvent) (Hans Solvent, Aromatic 100, Solvent Naptha)	**(64742-94-5)**	A to 140° AB to 200°	A 100% A 96% to 170° A 60% to 70°	A	A	A	AB @ 70 - 150° C/NR @ 150 - 180°	BC @ 70° B/NR @ 120° **(OK Fluorinated/TEST)	A	A	A to 70°	B/NR @ 70°	AB to 140°	A to 70°	A	NR	A	AB to 250°	C/NR @ 70°	NR
Napthalene (Coal Tar Distillate)	**C10H8 (91-20-3)**	A to 130° B @ 180°	A	A	A	A	B @ 70° BC @ 70-140° NR @ 170°	B @ 70° (short duration) NR @ 70° (1 year) **(OK Fluorinated/TEST)	A	A	A to 70° AB @ 140°	NR	C @ 70°	NO DATA	A to 176°	NR	A	NR	BC @ 70°	NR
Nitric Acid (Hydrogen Nitrate)	**HNO3 (7697-37-2)**	A to 99% to 130° A to 50% to 140° AB@10% to 185°	A to 100% to 120° A to 60% to 175° A to 50% to boiling	A to 30% to 100° AB to 40% to 80° NR 50-100% @ 70°*	A to 30% to 70° A to 10% to 212° NR 50% @ 70°	A (PTFE Encapsulated 316 Stainless St.)	A to 50% to 104° A to 30% to 180° A to 10% to 210°	A to 30% to 140° AB at 50% to 70° BC 50-70% @70°	A to 98% to 70° A to 90% to 140° A to 30% to 212°	A	NR	B 5-20% @ 70° NR @ 50%	A to 5% to 140° A to 40% to 70° B at 10% at 140°	A to 20% to 70° AB at 20-50% to 70° B to 10% at 120°	A 50% to 140° A 90-100% to 158° AC 60-70% to 70°	A to 25% to 70° A to 10% to 104° B 25-30% to 140°	A	NR 0-100% at 70°	A to 10% to 70° B 20% @ 70° C 50-70% @ 70°	A
OIL, Corn	**NA**	A to 70°	A	A to 175°	A to 140†	A to 140°	B/NR to 104°	AB to 70°	A	A	AB to 70°	A to 70°	A to 70°	A to 150°	A to 140°	NR	A	AB any conc to 150°	A to 212°	A to 70°
OILS/LUBRICANTS, General	**NA**	A	A	AB to 70° NR @ 120°	AB to 70° (SEA) NR (Crude & Diester)	A to 70°	NR	A	A	A	A to 158°	B @ 70°	A	A to 70°	A to 158°	NR	A	A	NR	NR
OIL, Mineral	**NA**	A	A to 150°	A to 100° C/NR @ 140-160	C @ 70° NR @ 100°	A	A to 100° C/NR @ 140°	A to 140°	A	A	A to 140°	A to 70°	A to 200°	A to 70° B @ 120°-200°	A to 70°	NR	A	A	B/NR @ 70°	B @ 70°
OIL, Olive	**NA**	A to 70°	A	A 100% to 176°	AB to 70°	A	B @ 70°	A to 150°	A	A	A to 150°	A to 70°	A to 73°	A to 150°	A to 176°	B @ 70°	A to 70°	A	B @ 70°	NR
OIL, Vegetable	**NA**	A	A	A to 140° AB @ 160°	AC @ 70°	A	AC	A to 70°				C @ 70°			A to 200°	AC to 200°	A	A to 200°	BC @ 70°	A to 70°
Oxalic Acid (Ethanedioic Acid)	**C2H2O4 (144-62-7)**	A to 100% to 140° A to 50% to Boil B 60-100% to Boil	A to 50% to 100° A 20-50 to 125° B 60-90% @ 70°	A	A	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 140° A to 50% to 180°	A to 100% to 160° AB to 100% to 180° NR at 100% at 212°	A to 100% to 125° A to 60% to 212° B @ 100% @ 158°	A	C at 5% at 70-150° C at 10% at 70°	A to 70°	A to 100% to 70° AB at 5% to 180°	A to 10% to 70° B at 70°	A to 100% to 140° A to 50% to 176°	A	A	AB to 100% to 140° NR 10% boiling	A to 70°	A
Ozone (trioxygen)	**O3 (10028-15-6)**	A@2% to 140°	A to 70° A@2% to 140°	NO DATA	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	NR	AB weak conc. At 70° C sat'd in H2O at 70° NR at 2-100% at 105°	A	A	NR	B @ 70°	A to 122°	AB 10 ppm in H2O at 70° NR 1-100% at 70°	A to sat. to 70° NR sat @ 140°	A to sat. to 70° NR sat. @ 140	A (White 571 & 592) AB (Black 550)	NR 2% to sat'd at 70°	A to 70°	A (White 571 & 592) AB (Black 550)
Peracetic Acid (Peroxyacetic Acid, POAA)	**C2H4O3 (79-21-0)**	A	A	A	A	A	AC 40% @ 70°	AC/NR (Embrittles over time) **(OK Fluorinated/TEST)	AB to 40% to 70°	A	NR	NO DATA	NO DATA	NR	A to 1% @ 70° C @ 100% @ 70° HIFLUOR A to 70°	A 1 & 100% @ 70° B 10% @ 70°	A to 1% @ 70° A (HIFLUOR)	C 100% @ 70° NR 1-10% @ 70°	NO DATA	B 100% @ 70° NR 1-10% @ 70°
Phenol (Carbolic Acid)	**C6H6O (108-95-2)**	A	A	A to 100° C @ 100% @ 200°	A Dilute to 70° NR 75-100% @ 70° Dissolves @ 75%	A	A to 104° AB to 130°	A to 5% to 70° AB 70-85% @ 70° NR 90-100% @ 70°	A to 100% to 158°	A	NR	NR	A to 5% to 70° NR 100% @ 70°	A to 5% @ 70°	A to 140°	NR 5 - 100%	A	NR	A/NR @ 70°	NR
Phosphoric Acid	**H3PO4 (7664-38-2)**	A to 200° A to 50% to boiling	A to 40% to 240° A to 70% to 150°	A	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 185° A to 75% to 225°	A to 100% to 140° A to 75% to 160° AB to 90% at 160-180°	A A 85% to 230°	A	C at 0.3-10% at 70° NR at 10-100% at 70°	AB to 40% to 70° B 40% @ 70° C 50-100% @ 70°	A to 100% to 200° A to 85% to 250° NR at 85% at 300°	A to 100% to 70° A to 25% to 158° B at 85% at 120°	A to 140° A to 85% to 176° A 75% to 212°	A to 130° A to 85% to 176° B to 30% to 212°	A	A to 10% to 104° AB to 50% to 104° AB 30% to 104°	A to 45% @ 70° B 45 @ 70†8 C 50-100% @ 70	A
Phosphorous Trichloride (PICl)	**CL3P (7719-12-2)**	A	A to 120°		A	A	B/NR @ 70°	A to 100% to 150°	A	A	AB to 180°	NR	NO DATA	NR	A to 70°	A to 70°	A	NR	NO DATA	NO DATA
Piranha (3:1 Mixture of Concentrated Sulfuric Acid & 30% Hydrogen Peroxide)	**N/A**	A	NR	AB	NR	A	A to 90% to 104°	A to 75% to 70° BC 96-98% @ 70-120° **(OK Fluorinated/TEST)	A to 98% to 120°	A	NR	NR	NR	NR	A	NR	A	NR	A	NR
Plating Solution, General	**N/A**	A to 70°	A to 140°	A to 70°	Generally OK (Etching Solution **may affect, test)**	A	A	A to 140°	A	A	A to 100°	NO DATA	NO DATA	NO DATA	A to 70°	A to 70°	A	A to 70°	A to 70°	NR
Plating Solution, Cadmium	**N/A**	A to 90°, Cyanide A/NR @100°, Fluob.	A to 140°	A to 70°	Generally OK (Etching Solution may affect, test)	A	A	A	A	A	A to 90, Cyanide C @ 100°, Fluoborate	NO DATA	NO DATA	NO DATA	A to 140°	A to 70°	A	A to 140°	NO DATA	NR
Plating Solution, Chrome	**N/A**	A to 130°, Flouride NR @ 90°, Barrel NR @ 115°, Black	A to 70° NR @ 95°, Barrel	A to 70°	Generally OK (Etching Solution may affect, test)	A	AC to 70° C @ 95° (Barrel)	A	A	A	B/NR @ 70°	C/NR @ 70°	NO DATA	A to 70°	A to 140°	A to 70°	A	NR	NO DATA	NR
Plating Solution, Copper	**N/A**	A to 120°	A to 70°, Barrel A to 120°, Copper A to 120°, Cyanide	A to 70°	Generally OK (Etching Solution may affect, test)	A	A	A	A	A	NR, Electroless A to 120°, Strike A to 70°Sulfate	NO DATA	NO DATA	NO DATA	A to 200°	A to 140°	A	A to 140°	NO DATA	NR
Plating Solution, Nickel	**N/A**	A to 140°	A to 70° A, Cyanide C @ 70°, Sulfamate	A to 70°	Generally OK (Etching Solution may affect, test)	A	A	A	A	A	NO DATA	NO DATA	NO DATA	NO DATA	A to 70°	A to 140°	A	A to 140° NR @ 70°, Electroless	NO DATA	NR
Plating Solution, Tin	**N/A**	A to 125°	A to 70° C 100-125°, Fluoborate	A to 70°	Generally OK (Etching Solution may affect, test)	A	A	A to 180°	A	A	NO DATA	NO DATA	NO DATA	NO DATA	A to 140°	A to 104° B @ 140°	A	AB to 140°	NO DATA	NO DATA
Plating Solution, Zinc	**N/A**	A to 70°, Alk-Cyanide A top 150°, Cyanide NR @ 140°, Chloride	A to 70°, Cyanide A to 70°, Fluoborate NR, Acid	A to 70°	Generally OK (Etching Solution may affect, test)	A		A to 150°	A	A	NO DATA	NO DATA	NO DATA	NO DATA	A to 140°	A to 70°	A	A to 140°	NO DATA	NO DATA
Polyethylene Glycol (PEG, Carbowax)	**C2H6O2 (71767-64-1)**	A	A (Short Term) B (Long Term)	NO DATA	A	A	A to 140° AB to 180°	AB to 70°	A to 250°	A	A to 70°Sulfate	NO DATA	NO DATA	A to 70°	A to 212°	A to 176°	A	A to 70° C @ 70° (dynamic)	NO DATA	NO DATA
Potassium Borate (Potassium Metaborate)	**BKO2 (20786-60-1)**	NO DATA	NO DATA	NO DATA	A	A	A to 180°	A to 150°	A	A	NO DATA	NO DATA	A to 70°	NO DATA	A to 212°	A to 100% @ 212°	A (Aqeuous Sol to 70°)	AB 70-140° NR @ 176°	NO DATA	NO DATA
Potassium Carbonate (Carbonic Acid) (Potash)	**CK2O3 (584-08-7)**	A to 90% to 212° AB@100% to 140°	A to 17% to 240° AB 20- 100% to boil	A to 100% to 200°	A at 60-100% to 70°	A to 100% to 500°	A to 225°	A to 160° AB at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A at 60-100% to 180°	A to 70°	A to 200°	A at 5% to 70° NR at 70°	A to 212°	A to 176° AB to 200°	A aqueous sol'n to 70°	A to 200° A to 180°	A to 70°	AC to 70°
Potassium Chlorate (Chloric Acid)	**CLKO3 (3811-04-9)**	B 30-60% 125-212° B to 60%@212°	A	A	A	A	A to 100% to 180°	A to 100% to 160°	A	A	A to 10% to 70° AB to 100% to 180°	NR	A to 100% to 200°	A to 70°°	A to 140° AB to 200°	A to 130° AB to 140-200°	A	A to 70° AC to 130°	A to 70°	AB to 125° C @ 70° (dynamic)

Colder Products Company

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)

	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	**Formula (CAS #)**	**Hastelloy C (276)**	**316 SS**	**PPS**	**PEEK™**	**Teflon® Encapsulated 316SS (TESS)**	**Polypropylene**	**HDPE**	**PVDF**	**PTFE/PFA**	**Acetal/POM (Celcon)**	**ABS**	**Polysulfone**	**Polycarbonate**	**FKM (Viton®)**	**EPDM**	**FFKM (Chemraz® / Simriz® / Kalrez®)**	**Buna**	**TPO (Santoprene)**	**Silicone**
(Potassium Salt)		AB @ 100%																		
Potassium Chloride (Salt Substitute)	**CLK (7447-40-7)**	A to 10% A 10-30% to 125° AB @ 100%	A to 32% to 180° AB 40-100% to 150°	A	A	A	A to 100% to 180°	A to 100% to 160°	A	A	A to 100% to 140° AB to 100% @ 180°	A to 100% to 70°	A to 100% to 200°	A to 100% to 120°	A to 212°	A to 176° AB to 212°	A	A to 176° B @ 212°	A to 70°	A to 100% to 200°
Potassium Hydroxide (Caustic Potash)	**KOH (1310-58-3)**	A to 50% to 200° AB@100% to 185°	A to 100% to 70° A to 70% to 150°	A to 200° A to 50% to 268°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A A 70% to 185°	A to 100% to 160° AB to 100% at 180°	*A to 25% to 140° A to 10% to 280° A 60-100% to 212°	A	B to 100% to 180°	A to 30% to 70° AB to 100% to 70°	A to 100% to 200°	C at 1% at 70° NR at 1% at 125° NR at 5-100% at 70°	AB to 70° AB to 70% to 140° A 5% to 150°	A to 200° B 25% @ 212	A (Black 550) AB (White 571 & 592)	A to 5% to 150° AB to 150°	A to 70°	A (Black 550) AB (White 571 & 592)
Potassium Permanganate	**KMN04 (7722-64-7)**	A to 50% to 75° AB@100% to 200° B to 30% 75-212°	A to 25% to 70° AB to 100% to 100° A@100% to 130°	A to 200°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 70° A to 25% to 140° A to 10% to 180°	A to 100 % to 160° A to 10% to 180° AB at 20% to 180°	A	A	A to 10% to 140° NR conc.-100% at 70°	B @ 70°	A to 200°	A to 100% to 200°	A to 140°	A to 200°	A	AC to 150°	A to 70°	A
Potassium Sulfite (Sulfurous Acid)	**K2O3S (10117-38-1)**	A @ 100% to 70° A @ 50% to 280°	AB to 100% to 100° A @ 100% to 70°	A to 70°	NO DATA	A	A to 100% to 140°	A	A to 212°	A	AB to 70°	NO DATA	A to 70°	NO DATA	A to 210°	A to 200°	A	A to 100% to 80° AB to 100% to 150%	NO DATA	A to 70°
Propanol (Propyl Alcohol) (Rubbing Alcohol)	**C3H8O (67-63-0)**	A to 200°	A	A	A	A	A to 140°	A to 150°	A to 100% to 150°	A	A to 70°	NO DATA	AB to 185°	A to 125°	A to 212°	A to 200°	A	A	A to 120°	A to 200°
Propionic Acid (Propanoic Acid)	**C3H6O2 (79-09-4)**	A	A	NO DATA	A to 212°	A	A to 100% to 70°	AB to 70° C @ 122° **(OK Fluorinated/TEST)	A to 100% to 280°	A	NR	NR	B @ 70-122°	A to 20% to 70° NR 100% @ 70°	50% tio 100° NR 100% @ 70°	A to 100% to 200°	A	AC Sat 70-200° NR 50% @ 70°	A to 70°	B @ 70° C @ 70°, dynamic
Propylene Glycol (PG-12)	**C3H8O2 (57-55-6)**	B@100% @ 70°	A to 30% A@80-90% A@60%	A to 70°	A	A to 500°	AB to 160°	A to 140° AB at 180°	A to 275° AB at 280°	A to 500°	A to 70°	A to 70°	B at 70-122°	BC at 70° C/NR at 122°	A to 140°	A to 70°	A to 70°	A to 250°	AB to 70°	A to 70°
PGMEA (Propylene Glycol Monomethyl Ether Acetate)	**C6H12O3 (108-65-6)**	A	A	A	B	A	A to 140°	A	AB	A	A to 70° AB to 140°	A to 70°	NO DATA	NO DATA	NR	A 50% to 70°	A	NO DATA	AB to 70°	A
PGME (Propylene Glycol Monomethyl Ether) (Dowtherm 209 / Dowanol PM)	**C4H10O2 (107-98-2)**	A	A	A	B	A	A to 140° AB to 150°	A	AB	A	A to 70 AB to 140°	A to 70°	NO DATA	NO DATA	NR	A 50% to 70°	A	NO DATA	AB to 70°	A
2 Propanone (Hexachloroacetone)	**C3Cl6O (116-16-5)**	NO DATA	NO DATA	**A to 200°**	**A to 212°**	**A**	A	C @ 70° NR @ 140° **(OK Fluorinated/TEST)	A to 10% to 122° AB 50% @ 77°	A	B @ 100% @ 70° NR @ 140°	B !0% @ 70° NR 50 - 100%	A to 20% to 70° NR 100% @ 70°	NR	C 10% @ 70-104° NR 20-100% @ 70°	A to 200°	A	NR 50 - 100%	A to 70°	B/NR @ 70°
Propylene Oxide (Methyle Ethylene Oxide)	**C3H6O (75-56-9)**	A to 70°	A to 140°	NO DATA	A	A	A to 70° AB @ 125°	A to 122° AB @ 140°	NR @ 100% @ 70°	A	NO DATA	NO DATA	B @ 70 -122°	NR	NR HIFLUOR A to 70°	B to 120°	A	NR	A to 120°	NR
Pyridine (Azine)	**C5H5N (110-86-1)**	A to 100% to 100° A@100% to 140°	A to 100% to 212°	A to 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	A to 100% to 75° AB 100% 120-180° NR 100% @ 120°	BC at 70° C at 140° **(OK Fluorinated/TEST)	NR	A	AB to 70°	NO DATA	AB to 50% to 70° NR at 70°	NR at 70°	NR HIFLUOR AB to 70°	B to 160°	A	NR at 70°	AC 70-120°	A
Sodium Bicarbonate (Baking Soda)	**CHNaO3 (144-55-8)**	A to 100% to 150° AB to 20% to boiling	A to 100% to 150° A to 20% to 212°	A to 100% to 300°	A to 250°	A to 100% to 500°	A to 225°	A to 160° AB at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A to 200°	A to 100% to 70°	A to 100% to 70°	A to 100% to 200°	A to 212°	A to 176° B at 212°	A to 70°	A to 140° AB to 200°	A to 70°	A to 70°
Sodium Carbonate (Soda Ash)	**CNa2O3 (497-19-8)**	A to 100% to 212°	A to 100% to 212°	A to 100% to 300°	A to 100% to 212°	A to 100% to 500°	A to 100% to 225°	A to 100% to 160° AB to 100% at 180°	A to 100% to 275° AB to 100% at 285°	A to 100% to 500°	A to 100% to 140° A to 20% to 180°	AB to 100% to 70°	A to 100% to 200°	A to 100% to 200°	A to 212°	A to 176° B at 212°	A to 70°	A to 100% to 160° AB to 100% to 200°	A to 70°	A to 70°
Sodium Chloride (Salt)	**ClNa (7647-14-5)**	A to 100% to 176°	A to 16% to 212° A 25 - 80% to 160° A@100% to 212°	A	A	A	A	A to 100% to 160°	A	A	A to 100% to 70° AB to 100% 150-180°	A to 100% to70°	A to 100% to 200°	A to 100% to 120°	A to 100% to 212°	A to 100% to 176°	A to 70°	A to 160°	A to 100% to 120°	NO DATA
Sodium Chlorite (Sodium Salt)	**ClNaO2 (7758-19-2)**	NO DATA	NO DATA	AB	A	A	A to 100% to 70° A to 50% 100° AB to 100% @ 200°	A to 140°	A	A	NO DATA	NO DATA	A to 70°	NO DATA	A to 70°	A to 70°	A	NR	A to 70°	B @ 70° C (Dynanic)
Sodium Hydroxide (Caustic Soda)	**NaOH (1310-73-2)**	A to 100% to 70° A to 50% to 200° AB 50-80% to 170°	A to 20% AB 20- 70% to 212° AB 70-100% to 125°	A to 100% to 70° A to 50% to 140° A to 20% to 200°	A to 100% to 70° A to 54% to 392°	A (PTFE Encapsulated 316 Stainless St.)	A to 125° A to 70% to 225°	A to 100% to 140° A to 70% to 160° AB to 100% at 180°	A to 50% to 70° A to 20% to 104° B 50% @ 100-120°	A	A to 60% to 180° AB at 60-80% to 180° BC at 80-100% at 70°	A to 25% to 70° AB to 100% to 70° B 10-50% @ 70-180°	A to 50% to 120° A to 20% to 200° AB to 50% to 250°	A to 20% to 120° A to 15% to 200° C at 25% at 70-120°	B to 70° B 80% @140°	A to 70° A to 50% to 176° B 20% @ 212°	A (Black 550) AB (White 571 & 592)	A to 20% to 212° A to 50% to 176°	A to 100% to 70°	A (Black 550) AB (White 571 & 592)
Sodium Hypochlorite (Bleach)	**CLNaO (7681-52-9) (10022-70-5)**	A to 50% to 115° **A to 20% to 140°** AB@100% to 200	Generally NR **A to 6% to 160°** A sat'd to 200°	BC 5% to 200°	AB to 100%	A **(PTFE Encapsulated** 316 Stainless St.)	A to 100% to 70° **A to 5% to 120°** C 12-13%>70°, NR @104°	A to 100% to 160° **AB to 100% at 180°**	A to 17% **AB to 100%**	A	NR at 10-100% at 70°	BC to 10% to 70° C **@ 5% @ 70°** NR @ 70°	A to 100% to 200° **A to 17% to 300°**	A to 10% to 70° **AB to 100% to 70°** C at 15% at 125-150°	A to 100% to 130° **BC 20% @ 158°**	AB 20-100% to 130	A	NR	A to 20% to 70°	A
Sodium Metasilicate (Silicic Acid)	**Na2O3Si (68-34-0)**	A to 100% to 212°	A	NO DATA	A	A	A to 180° B @ 212°	A	A	A	B @ 70°	NO DATA	A	NO DATA	A	A to 176° B @ 212°	A	A to 180°	A to 70°	AB to 70°
Sodium Silicate (Water glass) (Silicic Acid Sodium Salt)	**Na4O4Si (1344-09-8)**	A to 140°	A to 212°	A	A	A	A to 180°	A to 150°	A	A	AB to 70°	NO DATA	A to 200°	NO DATA	A to 212°	A to 176°	A	A to 140°	A to 70°	A to 70°
Sodium Sulfide (Sodiu8m Monosulfide)	**Na2S (1313-82-2)**	A to 25% to 70° A to 20% to 125° A @ 100% to 130°	AB 20-30% to 175° AB @ 100%	A	A	A	A to 100% to 180°	AB to 100% to 150°	A	A	A to 70°	A to 70°	A to 200°	A to 200°	A to 70°	A to 100% to 200°	A	A to 100% to 140°	A to 100% to 70°	A to 100% to 70°
Sodium Sulfite (Disodium Sulfite) (Sulfurous Acid)	**Na2O3S (7757-83-7)**	A 20-100% to 130° A to 5% to 100° B to 30% to 212°	A to 100% to 70° AB to 30% t0 175°	A to 70°	A	A	A	A to 140°	A	A	A to 70° A to 10% to 150°	AB to 70°	A Solution to 70°	A/NR @ 70°	A to 100% to 140°	A to 100% to 140° AB to 100% to 200°	A	A to 100% to 70° AB to 100% to 200°	A to 70%	A to 100% to 70°
Sodium Tripolyphosphate	**Na5O10P3 (7758-29-4)**	NO DATA	A to 100% to 120° A 16-50% to 175°	NO DATA	A	A	A to 175°	A to 140°	A	A	NO DATA	NO DATA	A to 70°	NO DATA	AB to 70°	AB to 70°	A	A to 70°	NO DATA	C
Soybean Oil	**No Formula**	A	A	A	A	A	A	A	A	A	A	B @ 70°	NO DATA	A	A	NR	A	A	B @ 70°	A
STERIS® CIP 100 (Potassium Hydroxide & Tetrasodium EDTA)	**Alkaline Cleaner KOH & C10H12N2Na4O8**	A to 200°	A to 150°	A	A to 212°	A	A	NO DATA	A to 140°	A	NO DATA	A to 30% to 70° AB to 100% to 70°	NO DATA	NO DATA	AB to 140°	A to 200°	A (Black 550) AB (White 571 & 592)	NO DATA	A	A (Black 550) AB (White 571 & 592)
STERIS® CIP 200 (Phosphoric Acid & Citric Acid)	**Acid Cleaner H3PO4 C6H8O7**	A to 200°	A to 150°	A to 220°	A	A	A	A	A	A	C	B	A	B	A	A to 176°	A	AB to 104°	A to 70°	A
Sulfuric Acid (Air-free) (Better when aerated)	**H2SO4 (7664-93-9)**	A to 60% to 70° A 90-100% to 100° (A to 100% to 140°)	NR 10-100% @ 70° B 100% to 125° (Sensetive to concen.)	A 10-75% to 70° AB to 98% to 220°	A to 40% to 212° NR > 40%	A (Encaps. 316ss)	* A to 90% to 104° * AB 93-95% @ 70° * BC 98%@ 70-122° NR 100% @ 70°	A to 75% to 70° AB 80 -90% to 122° AC 90-95%@ 70-122° NR 100% @ 70°	A to 90% to 212° A to 96% to 175° A to 98% to 120° A to 100% to 176°	A A to 90% (Boiling)	A to 3% to 70° NR at 10-100% at 70° NR at 30% at 70° A to 70°	A to 25% to 70° B 30% 70-100° NR 80-100%@ 70° NR	A to 65% to 200° A to 35% to 300° AB at 85% to 210° NR	A to 50% to 70° A to 10% to 180° AB 20-30% at 122-200° NR	A to 100% to 158° A to 70% to 176° A to 50% to 212° A	A to 90% to 70° A to 80% to 140° A 10% to 176° NR	A	A at 60% to 140° A at 50% to 70° A to 30% to 140° NR @ 70°	A to 95% to 70° BC 95-98% @ 70° NR 95-100% @ 70° NR	A B/NR @ 70° NR
Tetrachloroethylene	**C2CH4**	A	A	AB @ 100%	A	A														

Colder Products Company

CHEMICAL COMPATIBILITY TABLE

For ChemQuik®, DrumQuik®, DrumQuik PRO & Other Common Colder Series Coupling Materials

(Updated 01/14/2010)

INTERPRETATION OF TEST DATA (In 30 days to 1 year of exposure)					
	Swelling		Loss of Tensile Strength		
	Linear (Plastics)	Volumetric (Elastomers)	(Plastics)	(Elastomers)	Description of Chemical Attack
A	< 10%	<= 15%	< 15%	<=15%	Excellent, little or no swelling, softening or surface deterioration
B	< 15%	<= 30%	< 30%	<= 30%	Good chemical resistance, minor swelling, softening or deterioration
C	< 20%	<= 50%	< 50%	<= 60%	Limited chemical resistance, moderate attack, conditional service
NR	> 20%	> 50%	> 50%	> 60%	Severe attack, not recommended for use

NOTE: All temperatures are in degrees Fahrenheit. Conversion: °C = (°F - 32)/1.8

CHEMICAL		SPRING Materials					COUPLING Materials								SEAL Materials					
Name	Formula (CAS #)	Hastelloy C (276)	316 SS	PPS	PEEK™	Teflon® Encapsulated 316SS (TESS)	Polypropylene	HDPE	PVDF	PTFE/PFA	Acetal/POM (Celcon)	ABS	Polysulfone	Polycarbonate	FKM (Viton®)	EPDM	FFKM (Chemraz® / Simriz® / Kalrez®)	Buna	TPO (Santoprene)	Silicone
(PERC/PERK)	**(127-18-4)**						B Low Conc. @ 70°	B 10% @ 70° **(OK Fluorinated/TEST)			AB 70°-140°									
Tetra Ethyl Ortho Silicate (TEOS, tetraethoxysilane)	**Si(OC2H5)4 (78-10-4) (9044-80-8)**	A to 212°	A to 212°	NO DATA	A	A to 212°	A to 100°	A to 100°	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	A to 70°	A to 125°	A to 125°	NR	NO DATA	NO DATA
Tetrahydrofuran (Tetramethylene Oxide) (THF)	**C4H8O (109-99-9)**	A to 200°	A to 200°	A 100% to 140° C 100% @ 200°	A to 70°	A (PTFE Encapsulated 316 Stainless St.)	BC @ 70° C/NR @ 100-120° NR @ 140°	NR at 70° **(OK Fluorinated/TEST)	C 10-100% @ 70° NR @ 120°	A	A to 70°	NR	NR at 200°	NR at 70°	NR HIFLUOR A to 70°	NR	A	NR at 70°	B @ 70°	NR
Tetra Methyl Ammonium Hydroxide (TMAH)	**C4H13NO (75-59-2) (93615-68-0)**	NO DATA	NO DATA	NO DATA	A	A to 100% to 500°	A to 150°	NO DATA	A to 100% to 200° A to 50% to 215°	A to 100% to 500°	NO DATA	NO DATA	NO DATA	NO DATA	NR HIFLUOR A to 70°	A to 70°	A	NR	NO DATA	B @ 70°
Thionyl Chloride (Sulfinyl Chloride) (Sulforous Chloride)	**CL2OS (7719-09-7)**	NO DATA	NR	NO DATA	A to 70°	A	B/NR 10 - 100%@70°	NR **(OK Fluorinated/TEST)	NR	A	AC at 70°	NO DATA	NR at 70°	NR at 70°	AB to 70°	NR	A	NR at 70°	B @ 70°	A
Toluene (Toluol)	**C7H8 (108-88-3)**	A to 212°	A@100% to 212°	A to 100°	A to 75°	A (PTFE Encapsulated 316 Stainless St.)	NR	AB to 70° C/NR at 70° NR at 140°	A to 140° AB @ 176° BC 176-212°	A	A to 70° AB at 140° C at 180°	NR	NR at 70°	NR at 70°	A to 100° BC to 200°	NR	A	NR 30-100% at 70°	NR	A
Trichloroacetic Acid (TCA)	**C2HCL302 (76-03-9)**	A@100% to boiling AB to 100% to boil.	NR	A to 200°	A to 68° (Fluoroware)	A (PTFE Encapsulated 316 Stainless St.)	A to 140° AB @ 150°	A to 10% to 140° AC at 70-150° **(OK Fluorinated/TEST)	A to 75° A to 65% to 212° AB 104-125°	A	NR at 70°	NO DATA	B at 70-122°	A to 20% to 70° C/NR 100% at 70° NR at 100% at 122°	NR HIFLUOR A to 70°	B at 70°	A	NR at 70°	BC @ 70°	A
Trichloroethylene (Ethylene Trichloride) (Triad)	**C2HCL3 (79-01-6)**	B@90% to 212° A@100% to 212°	A@90% to 212° A@100 to 140°	AC 70-100° NR @ 200°	A to 212°	A (PTFE Encapsulated 316 Stainless St.)	NR	B at 70° C at 122° **(OK Fluorinated/TEST)	A to 189° (blackens)	A	AB at 70-180°	NR	NR at 70°	NR at 70°	A to 200°	B	A	NR at 70°	NR	A
Triethylamine (Triethyle Amine)	**C6H15N (121-44-8)**	NO DATA	A	NO DATA	A to 130° NR > 150°	A	NR	AB to 70° C @ 120° **(OK Fluorinated/TEST)	A to 70° (Turns Brown)	A	A to 70°	NO DATA	NO DATA	NO DATA	NR HIFLUOR A to 70°	A	A	A to 140°	B @ 70°	NO DATA
Triethanolamine (TEA)	**C6H15NO3 (102-71-6)**	A 100 to 200°	AB to 100% to 75° A 1% & 100% to 200°	A 100% to 200°	A to 70°	A	AB @ 100% 70-185°	AB to 70% NR @ 120° **(OK Fluorinated/TEST)	AB to 100% to 125°	A	NR	AB to 70°	NR	NO DATA	NR HIFLUOR A to 70°	A to 160°	A	B to 100°	A to 70°	NR
Trifluoroacetic Acid (Perfluoric acid, Perfluoroacetic acid) (TFA)	**C2HF3O2 76-05-1**	B	A	NO DATA	NO DATA	A	C @ 70°	B	A to 125°	A	NO DATA	NO DATA	C/NR	NR	C @ 70° HIFLUOR A to 70°	A	B	C @ 70°	NO DATA	B @ 70° (Static) C @ 70° (Dynamic)
Trimethylbenzene (Pseudocumene)	**C9H12 (95-63-6)**	NO DATA	NO DATA	NO DATA	A	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	A to 70°	NR	A	B @ 70° C @ 70° (dynamic)	NO DATA	NO DATA
UREA (AdBlue, AUS32, Aqueous Urea Sol. 32.5%) (DEF, Diesel Exhaust Fluid, BlueTec)	**CH4N2O 57-13-6**	A to 130° AB to 200°	A to 200°	A to 200°	A to 212°	A	A to 100% to 180°	A to 100% to 150°	A to 100% to 250°	A	A to 100% to 70°	B @ 70°	C @ 70°	NR	A to 70° AB to 200°	A to 70° AB to 200°	A	AB to 150°	NO DATA	AB to 70°
Xylene (Xylol)	**C8H10 (1330-20-7)**	A	A 75-100% A@50% to 220°	A to 200°	A to 70°	A (PTFE Encapsulated	C @ 70-140° NR @ 150°	NR at 70°	A to 175° A to 100% to 175°	A	A to 140° AB at 180°	NR	NR at 100% at 70°	NR at 70°	A to 140°	NR	A	NR at 70°	NO DATA	NR @ 70°

WARNING:
The compatibility data was assembled from 3 main sources, a) the Chemical Resistance Guides published by COMPASS PUBLICATIONS ©, b) the Chemical Resistance guide published by VICTREX, the manufacturer of PEEK™ and c) the chemical manufacturers themselves. **The table is to be used as a general guide only. Colder Products Company is not responsible for the accuracy of this data and assumes no obligation of liability in connection with its use. Therefore, CPC insists that all customers test and evaluate the suitability for use of CPC couplings in their particular application before using the couplings!**

NOTES:
* PVDF may discolor after prolonged exposure in Potassium Hydroxide.
***** Polypropylene may discolor after prolonged exposure in Sulfuric Acid.
** Flourination of HDPE has been shown to dramatically improve the chemical resistance of HDPE material with certain chemicals. Samples are available to allow customers to evaluate in their specific application. Contact CPC Inside Sales for assiatance.
HIFLUOR® Fluorinated FKM will often be compatible in applications where standard FKM is "NR". It bridges the price gap between FKM & FFKM perfluoroelastomers and is available only by special order (minimums may apply). Contact CPC Inside Sales for assistance.