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Chemical Resistance Data

Town & Country Plastics, LLC uses only the highest quality raw materials available. These raw materials have outstanding resistance to both physical and chemical attack. The following chart should be used as a guide for evaluating the suitability of our products with the chemical agent to be used. Special consideration must be given to the expected service temperature, stress involved in the application and length and type of exposure (i.e. intermittent, or continuous). Contact our staff for information on chemicals not listed or when uncertain conditions exist.

	TANK MATERIALS							FITTING MATERIALS							
		LM	DPE DPE DPE	pp		XL	DE	PVC CPV EPDM NEOPRENE VITON 316 SS TITANIUM HASTELLOY							
REAGENT	CONC.	70°	140°	70' 1	40"	70°	140								
Acetone Acetaldehyde*	100%	C	ç	A	A B	C B	c	c	CCC	C A	C	C	A	A A	A A
Acetic Acid*	10%	A	Α	Α	Α	Α	Α	Α	Α	Α	Α	B	Α	Α	Α
Acetic Acid* Acetic Anhydride*	60%	A	В		A	A	A	A	A	A	B A	B C	A	A A	A
Air		C	C A	Ā	Ā	C A	A	C	C A	B A	Ä	Ä	Â	Â	Â
Aluminum Chloride	all concentr.	A	Α	Α	Α	Α	A	Α	Α	Α	A	Α	C	В	Α
Aluminum Fluoride Aluminum Sulphate	all concentr. all concentr.	A	A	A	A	A	A	A	A	A	A A	A	C B	A	B B
Alums	all types	Â	Â	Α	Â	Â	Â	Â	Â	Â	Α	Α	Α	_	Α
Ammonia Ammonium Carbonate	100% dry gas	A	A	A	A	A	A	B	A	A	A	Α	A	C A	A
Ammonium Chloride	sat'd	A	A	Â	Â	Â	Â	A	A	A	A A	Α	B C	B	B A
Ammonium Fluoride	sat'd	Α	Α	Α	Α	Α	A	A	A	В	Α	A B	С	Α	Α
Ammonium Hydroxide Ammonium Hydroxide	10% 28%	A	A	A	A	A	A	A	A	В	A	B B	A	A A	B B
Ammonium Nitrate	sat'd	A	A	Â	Â	A	A	A	A	A	B	Ä	Â	Â	В
Ammonium		**													
Persulphate Ammonium Sulphate	sat'd sat'd	Ă	A	A	À	Ą	A	A	A	A	A	A	В	A	В
Ammonium '		A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	^	В
Metaphoshate	sat'd	A	A	A	Ą	A	A	A	A	A	A	A	В	A	В
Ammonium Sulfide Amyl Acetate*#	sat'd 100%	A	A		A C	A	A	A	A	A	A C	A C	B A	A A	B A
Amyl Alcohol*#	100%	Ã	Ă	Α	В	Α	Α	Α	Α	Α	Α	В	Â		Â
Amvl Chloride*#	100%	A	Å	C	C	C	C	C	C	С	Ĉ	B C	Α	B C	A B
Aniine"# Aqua Regia +	100%	C	C	ĉ	ĉ	A	C	Č Č	C	B C A	C	C B	B	C A	B C
Arsenic Acid	all concentr.	Ă	Ă	Ă	Ă	C	Ă	Ă	Ä	Ă	Ă	Ă	Ă	B	В
Aromatic		_	_				_			_	_		_		
Hydrocarbons *# Ascorbic Acid	10%	C	C	Ā	Ā	C A	C	C A	C	C	C A	A	С	-	_
Barium Carbonate	sat'd	Â	Â	Α	Α	Α	Â	Â	Â	Â	Â	Â	В	Α	В
Barium Chloride	sat'd	Α	A	Ą	Ą	A	A	A	A	A	A	A	A	A	В
Barium Hydroxide Barium Sulphate	sat'd	A	A	A	A	A	A	A B	A B	A	A A	A	B B	B B	A
Barium Sulphide	sat'd	Α	A	Α	Α	Α	A	Α	Ä	Α	Α	Α	В	Α	Α
Beer Benzene*#		A	A	A B	ê	Č	C	A	A	A	c	A	A B	B A	В
Benzoic Acid	all concentr.	C A	C A	A	Ă	C	Ä	C	C A	ç	Ä	A	В	B	B A
Bismuth Carbonate	sat'd	Â	Â	A	Â	Α	A	A	Â	Α	A	Â	Ã	Α	В
Bleachlye	10% sat'd	A	A	A	Ą	A	A	A	A	A	A	A	A	B B	В
Borax Boric Acid	all concentr.	A	A	A	A	A	A	A	A B	A	A	A	A A	Ä	A
Boron Trifluoride		A	Α	_	_	Α	Α	Α		Α	Α	Α	-	В	-
Brine Bromine +	liquid	A	A		A C	A	A	A	A	A	A C	A	C	A A	A A
Bromine Water #	sat'd	S	S	č	_	č	č	č	A C C	č	č	Â	č	Â	Â
Butanediol* Butanediol*	10%	Α	Α	Α	Ą	Α	Α	-	-	-	-	-	-	-	-
Butanediol*	60% 100%	A	A	A	A	A	A	_	-	-	-	-	-	-	_
Butter*		A	Α	Α	Α	C	C	-	Ā	A	В	Α	Α	-	-
n-Butyl Acetate*# n-Butyl Alcohol	100% 100%	A	C		С	A	Č	C	B B	B B	Ç	В	B A	A	A
Butyric Acid #	conc.	ĉ	ĉ	A	_	_	A	A B	В	B	A C	A B		Â	A
Calcium Bisulphide		Α	Α	A	Ą	A	A	Α	A	Α	C A	Α	B	A	-
Calcium Carbonate Calcium Chlorate	sat'd sat'd	A	A	A	A	A	A	A	A	A	A	A A	В	В	В
Calcium Chloride	sat'd	Â	Â	Â	Â	Â	Â	Â	Â	В	Ā	Â	В	Ā	Ā
Calcium Hydroxide Calcium	conc.	Α	Α		Α	Α	A	Α	Α	В	C	Α	В	Α	В
Hypochlorite	bleach sol'n	Α	Α	Α	В	В	В	В	В	Α	С	Α	С	_	В
Calcium Nitrate	50%	Α	Α		Ă	Α	Α	Α	Α	Α	В	Α	A	Α	
Calcium Oxide Calcium Sulphate	sat'd	A	A	A		A	A	A	A	A	A	Α	A	A	A
Camphor Oil*#		A	A		A C	A	A	Α	Α	Α	С	Α	B A	^	Α
Carbon Dioxide	all concentr.	Α	Α	A	C A	Ã	Ã	A	Α	Å	A	Α	Α	A	A
Carbon Disulphide Carbon Monoxide		Č	Č	B A	C A	C A	C A		C	C A	C	A	B A	B A	B A
Carbon		Α	Α	A	A	А	М	Α	A	A	Α	Α	A	A	A
Tetrachloride#		Ç	Ç		Ç	Ç	Ç	В	Ç	Ç	C	A	В	A	A
Carbonic Acid Caster Oil #	0000	A	A	Α	A	A	A	A	A	A		A	A	B A	A A
Chlorine +	conc. 100% dry gas	A	A	C	C	A B	Ĉ	A	A Ç	A C C	A C	Ä	ĉ	ĉ	B
Chlorineliquid +		C	C	C	C	C	C	Α	Ă	Ĉ	C	Α	С	Α	Α
Chlorine Water+	2% sat'd sol'n	A	Α	Α	В	Α	Α	Α	A	С	С	Α	С	Α	Α
"Contact Sales Office re-	aardina chomical (conce	nhafia	n and to	omno	enthre	ranae	e.		FOR C	ordes: N=NV	/ T_TX I_	II C-C/	A F-FI P-P	A. H=HLTn=TN

Chemical Resistance Data (cont.)

			K MATERI	ALS	FITTING MATERIALS								
		LDPE LMDPE HDPE	pp	XLPE	PVC CPVC EPDM NEOPRENE VITON 316 SS TITANIUM HAS								
REAGENT Chlorobenzene*#	CONC.	70" 140"	70' 140'	70° 140°					A			В	
Chlorofoam*# Chlorosulphonic Acid Chrome Alum Chromic Acid Chromic Acid Chromic Acid Chromic Acid Cider* Cifric Acid* Coconuf Oil Alcohols* Coffee Cola Concentrates*	100% sat'd 80% 50% 10% sat'd	CBCA BAAAAAA			CCCACBA - AAA	CCCACBA - BAAA	CCCACBB - AAAA	CCCACCCAAAAA	A C A B A A A A A A A	A A B A B B B A A A A A A	AA C A C C C C A A A A A	A A A B B B - A A A A A	
Copper Chloride Copper Cyanide Copper Fluoride Copper Nitrate Copper Sulphate Corn Oil* Cottonseed Oil* Cuprous Chloride	sat'd sat'd 2% sat'd sat'd	A A A A A A A A A A A A A A A A A A A	A A A A A A A A A	A A A A A A A A A A A A A A A A A A A	A A A A A A A	A A A A A A A	A	A A A A	444444	CB A B B A A C	A B A A A	B A A A A	
Detergents, Synthetic* Developers,		A A	A A	A A	Α	Α	Α	Α	Α	Α	Α	Α	
Phofographic Dextrin Destrose Diazo Salts Dibutylphthalate"# Dichloroberizene"# Diethyl Ketone"# Diethyl Ketone"# Diethylene Glycol" Diglycolic Acid" Dimethylamine Disodium Phosphate	sat'd sat'd	A A A A B C B A A C A	A A A A A A A A A A A A A A A A A A A	A A A A B C B A A C A	AAACCCACA	A A A C - C A C A	A A C	Ā A	A A - - A A C A	A	A A - - - A A	A A - - - B - -	
Emulsions, Photographic* Ethyl Acetate*# Ethyl Alcohol* Ethyl Berzene*# Ethyl Berzene*# Ethyl Chloride # Ethylene Chloride*# Ethylene Chloride*# Ethylene Chloride Ferric Nitrate Ferric Nitrate Ferric Sulphate Fish Solubles* Huoboric Acid Huosilic Acid Fructose Fruit Pulp* Furfural # Furfural # Furfural # Galic Acid Gasoline*# Glucose Glycerine* Glycol* Glycolc Acid* Grape Sugar n-Heptane*# Hexachlorobenzene	100% 100% 35% sat'd sat'd sat'd conc. 32% all concentr. sat'd 100% sat'd		ABAACCBCAAAAAAAAAAAACCABAAAA	ADAACCCCAAAAAAAAAAAAACCAAAAAAAAAAAAAAA	ACAA - CCCABAAAAAAAAAAAC - ACAAAAC -	ACAA - CCCCABAAAAAAAAAAC - BCAAAAA -	ABAA - ACAACAAAAAAAAAAAA - BCAAAAAC -	ACAA - BCBABBAAAAAAAAAC - BBAAAAAA	ACAA - ACAAAAAAAAAAAAAAAAAAAAAAA	AAAAAAAAACACAAABBCAABABAAAAAA	AAAA - AABABAAAAAACCCCCAAB - AAAAAAAA	AAAA - ABCBABBBAAAAAAA A - BAAAAAA -	
Hexanol, Terfiary" Hydrobromic Acid Hydrobloric Acid Hydrocyanic Acid Hydrogenic Acid Hydrogen Chloride Hydrogen Peroxide Hydrogen Peroxide Hydrogen Sulphide Hydrogen Sulphide Hydroquinone Hypochlorous Acid Inks # lodine + Isopropyl Alcohol Lead Acetate Lead Nitrate Lactic Acid"	50% all conc. sat'd 60% 100% dry gas 30% 10% conc. in k1 sol'n 100% sat'd	AAAAAAABAAAAA AAA	AA - AAA A AAA AA - AA - A	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	- AAAAAAAAAAAAA	- A A A A A A A A A A A A A A A A A A A	A A A	B A A C C A A A A	BAAAA - AACAAAAAAA	ACCCCA - BBB CCAAAB	AACBCA - BBA - AACAAAB	- BA - AAA - AABAAAB	

Chemical Resistance Data (cont.)

	TANK MATERIALS						FITTING MATERIALS							
		LMDP HDPE		рр	XLPE		СС	PVC	EPDM	NEOPRENE	VITON	316 SS	TITANIUM	HASTELLOY C
REAGENT Linseed Oil* Magnesium Carbonate Magnesium Chloride Magnesium Hydroxide Magnesium Nitrate Magnesium Sulphate Mercuric Chloride Mercuric Cyanide Mercury Methyl Alcohol* Methylethyl	CONC. 100% sat'd sat'd sat'd sat'd sat'd sat'd sat'd 100%	70° 14 B A A A A A A A A A A A A A B C		A A A A A A A A	70° 14 A A A A A A A A A A A A A A A A A A A	A A A A B B A		AAAAAAAAC	- A A A A A A A B A	A A A A A A A B C	A A A A A A A A C C	A A A A A C C A A A	A A A A A A A A A A	A A A A A C ACA
Ketorie*# Methylene Chloride*# Milk Mineral Oils # Molasses Naphtha*# Naphthalene*# Naphthalene*# Nickel Chloride Nickel Nitrate Nickel Sulphate Nickel Sulphate Nickel Sulphate Nickel Sulphate Nickel Sulphate Nitric Acid Nitric Acid + Nitric Acid - Nitri	conc. sat'd conc. dilute 0-30% 30-50% 70% 95-98% 100% sat'd	CABABBAAAAAAACCABACA		BA AAAACCCCC BB A	CCAABCAAAAAAACCAAACA	A A A A A A A B C C C C A C B		CAAAAAAAABCCC ACBA	CAACCCAAA BBCCC BACB	CAAACCAAA AAA .C .CBCB	CAAAAAA AAAAB BAAA	AAAAACBB AAAAA BBAB	AAAAAABB AAAAA CCAB	BAAAABBB AAAAC:BBBBA
Photographic Solutions Plating Solutions" Brass Cadium Chromium Copper Gold Indium Lead Nickel Rhodium Silver Tin Zinc Potassium Bicarbonate Potassium Bromate Potassium Carbonate Potassium Carbonate Potassium Carbonate Potassium Chorate	sat'd sat'd 10% sat'd sat'd 40% sat'd	A AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		A AAAAAAAAAAA AAAAAA	A AAAAAAAAAAA AAAAAA			<u> </u>	B AC	A ACBAAA AA AAAAAAA		A A CA A - CC A CC C B B B B B B B B B B B B B B B	A ACCAA CACCAAA AAAAAA	A AACAA ACAAABB BBBBBBBBBB
Potassium Ferti/Ferro Cyanide Potassium Fluoride Potassium Hydraxide Potassium Nitrate Potassium Perborate Potassium Perchlorate Potassium	40% sat'd conc. sat'd sat'd 10%	A		A A A A A	A	A A A A A		A	A A A A A A A	A A B A A A A	A A B A A	B B B B B B	A A A A A	B B B B B B
Permanganate Potassium Persulphate Potassium Sulphate Potassium Sulphide Potassium Sulphide Potassium Sulphide Propargyl Alcohol" n-Propylene Dichloride"# Propylene Glycol" Pyndine" Resorcinol Sallcylic Acid Sea Water Selenic Acid Shortening" Silver Nitrate Solution Soap Solution" Sodium Acetate	sat'd conc. conc. conc. 100% sat'd sat'd sat'd	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA		AAA AC A - AAA	AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	A A A A A A A A A A A A A A A A A A A		AAAA B - AAAAAAB	A A A A A A A A A A A A A A A A A A A	ACCC - A - CC - AA - AAAB	AAAA - AAAC - AA - AAAC	BBBB - ACBA - AA - AAB	AAAA - AAAB - AA - AAAA	BBBB - ABBB - AA - AAA

Chemical Resistance Data (cont.)

LIDPE LIMDRE FP XLE LIMDRE XLE X			FITTING MATERIALS										
BEAGENT CONC. 70 140 7 7													
BRAGNT CONC. 70° 140° 70° 140° 70° 140° 80° 80° 80° 80° 80° 80° 80° 80° 80° 8				PP	XLPE	PVC	CPVC	EPDM	NEOPRENE	VITON	316 SS	TITANIUM	HASTELLOY C
Sodium Biosuphate sat'd A A A A A A A A A A A B C B B B B A Sodium Biosuphate sat'd A A A A A A A A A A A A A A A A A A A	REAGENT	CONC.	70" 140"	70" 140"	70" 140"					******			
Sodium Bisulphate ***at'd*** A													
Sodium Boulphite Sodium Sodium Chronte Sodium Chront													
Sodium Borate													
Sodium Romaide Conc. A.		sat'd											
Sodium Carbonate		dilute											
Sodium Chlorate								-					
Sodium Chloride													
Sodium Dichromate Sai'd A A A A A A A A A													
Sodium Dichromate													
Cyanide		sat'd	A A	A A	A A	Α	Α	Α	Α	Α	Α	Α	Α
Sodium Hydroxide	Sodium Ferri/Ferro												
Sodium Hydroxide													
Sodium Niprochlorite								-					
Sodium Sulphate													
Sodium Sulphide		15%											
Sodium Sulphide													
Sodium Sulphite		200 Per											
Stamous Chloride													
Stannous Chloride										-			
Staric Solution* Sat'd A A A A A A A A A													
Sulphuric Acid								-					
Sulphuric Acid +	Stearic Acid*	100%	A A	A A	A A	В	В	В	В	Α	Α	Α	В
Sulphuric Acid + 80% C C C C C C C C C	Sulphuric Acid	0-50%			A A	Α	Α	В		Α			
Sulphuric Acid + 96% C C C C C C C C C							Α		C	Α			
Sulphuric Acid + 98-conc. C C C C C C C C C													
Sulphuric Acid + fuming													
Sulphurous Acid													
Tallow #		fuming											
Tannic Acid* sat'd A A A A A A A A A B B A A A B B Tartanic Acid A A A A A A A A A A B B A A A B B Tartanic Acid A A A A A A A A A A A B B B A C A B B Tartanic Acid B B C C C C C C C C C C C C C A A A A A													
Tartaric Acid		sat'd											
Tetrolydrofuran*#		satu											
Titanium Tetrachloride*													
Trichloroethylene*# C C C C C C C C C C C C C A B A B A B Triethylene Glycol* A A A A A A A A A A A A A A A A A		sat'd	C -		C C	_	_	_		_	Α	_	
Triethylene Glycol* A A A A A A A A A A A A	Toluene*				CC	C	C	C	C	C		Α	
Trisodium Phosphate				C C	CC	C	C	C	C	Α	В	Α	В
Turpentine #													
Urea 30% A A A A A A B B B A		sat'd											
Urine A A A A A A A A A A A A A A A A A A A		2006											
Vanilla Extract* A A A A A A A A A A A A A A A A A A A		30%										_	_
Vinegar A </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>^</td> <td>n</td> <td>^</td> <td>_</td> <td></td> <td>^</td> <td></td> <td>_</td>						^	n	^	_		^		_
Water A <td></td> <td></td> <td></td> <td></td> <td></td> <td>A</td> <td>A</td> <td>A</td> <td>C</td> <td></td> <td>A</td> <td>A</td> <td>A</td>						A	A	A	C		A	A	A
Wetting Agent* A													
Whiskey* A<						_	-	_	-	-	-	-	-
Wines* A <td></td> <td></td> <td></td> <td></td> <td></td> <td>Α</td> <td>A</td> <td>Α</td> <td>Α</td> <td>Α</td> <td>Α</td> <td>Α</td> <td>Α</td>						Α	A	Α	Α	Α	Α	Α	Α
Xylene # C A A A A<					A C	C	Α	Α			A	Α	
Zinc Bromide sat'd A A - - A					C C	C	C	C	C		Α		A
Zinc Carbonate sat'd A A - - A				A A									
Zinc Chloride sat'd A													
Zinc Oxide sat'd A A A A A A A A A A A A A A A A A A A													
Zinc Stearate A A A A A A A A A A A													
		sat'd											
Ellis-September Soliu non non non non non non non non non no		end of											
	zar suprat	adt U	n n	n n	n n	^	^	^	^	^	^	^	^

- Stress-crack agent Certain surface active materials, although they have no chemical effect on polyethylene, can
 accelerate the cracking of polyethylene when it is under stress. Although our tanks are generally stress-free, caution
 should be used when large tanks are unsupported, and welded fittings are used.
- # Plasticizer Certain types of chemicals are absorbed to varying degrees by polyethylene, causing swelling, weight gain, softening, and some loss of yield strength. These plasticizing materials cause no actual chemical degradation of the resin. Some of these chemicals have a strong plasticizing effect (e.g. aromatic hydrocarbons benzene), whereas others have weaker effects (e.g. gasoline). Certain plasticizers are sufficiently volatile that if they are removed from contact with the polyethylene, the part will "dry" out and return to it's original condition with no loss of properties.
- Oxidizers Oxidizers are the only group of materials capable of chemically degrading polyethylene. The effects on the
 polyethylene may be gradual even for strong oxidizers, and short term effects may not be measurable. However, if continuous, long-term exposure is intended, the chemical effects should be checked.
- Welded tank connections are not recommended.
- (A) Resistant, no indication that serviceability would be impaired.
- (B) Variable resistance, depending on conditions of use.
- (C) Unresistant, not recommended for service applications under any conditions
- (-) Information not yet available.