



Manufacturers of Tough and Durable Polypropene® Water & Foam Tanks and PolyBilt Bodies for the Fire Industry

CHEMICAL RESISTANCE OF POLYPROPYLENE

REAGENT	EXPOSURE CONDITION		WEIGHT CHANGE %	SPECIMEN APPEARANCE
	Temp ° F	Time Days		
INORGANIC CHEMICALS				
Ammonia, 15%	72	30	nil	No Change
Ammonia, 30%	72	180	plus 0.5	No Change
Borax, sat. solution	212	30	nil	No Change
Boric acid, 5%	212	30	nil	No Change
Bromaine water, sat	72	30	plus 25	Dark brown color - swelling
Calcium carbonate	212	30	nil	No Change
Calcium-chloride acid	72	10	nil	No Change
Calcium chloride, 50%	72	30	-	No Change
Chloro-sulfonic acid	72	10	-	Decomposed
Chloro-sulfonic hypochlorite 5%, 25% active ingredient	72	30	plus 0.1	No Change
Chronic acid, 2N	72	30	plus 0.2	No Change
Chronic acid, 2N	140	30	plus 0.2	N.C. - slight brown color
Chronic acid, 2N	140	180	plus 3.1	N.C. - slight brown color
Cupric nitrate, sat. solution	212	30	-0.2	No Change
Hydrochloric acid, 36%	72	90	plus 0.5	N.C. - slight brown color
Hydrochloric acid, 36%	176	10	plus 0.5	N.C. - slight brown color
Hydrofluoric acid, 38 - 40%	72	90	plus 0.5	N.C. - slightly opacified
Hydrogen peroxide	72	90	nil	N.C. - slightly yellowing
Iodine, 50% KI sloution	72	30	nil	N.C. - brown color
Iron chloride, sat solution	212	30	nil	No Change
Magnesium chloride, sat. solution	212	30	nil	No Change
Nitric acid, 30%	72	90	plus 0.4	N.C. - slightly yellowing
Nitric acid, 50%	176	10	-	Decomposed
Nitric acid, 68%	72	30	plus 0.7	N.C. - slightly yellowing
Nitric acid, 68%	176	10	-	Decomposed
Nitric acid, fuming	72	30	-0.1	N.C. - slightly yellowing
Oleus, 100%	72	-	-	Decomposed after 5 hours
Phosphoric acid, 30%	212	30	nil	No Change
Phosphoric acid, 60%	212	30	-0.1	No Change
Phosphoric acid, commercial	72	90	nil	N.C. - slight brown color
Phosphoric acid, commercial	176	30	nil	N.C. - slight brown color
Potassium bromate, sat. solution	212	30	nil	No Change
Potassium bromate, sat. solution	212	30	-0.1	No Change
Potassium chlorate, sat. solution	212	30	-0.1	No Change
Potassium dichronate 10% HzSO4 1:1	72	90	plus 0.6	N.C. - slight brown color
Potassium dichronate 10% HzSO4 1:1	176	10	-2.2	Attacked
Potassium hydroxide, 54%	72	30	nil	No Change
Potassium hydroxide, 54%	140	30	plus 1.3	No Change
Potassium peranganate, 2N	72	30	plus 0.2	N.C. - slight brown color
Potassium peranganate, 2N	140	30	plus 0.7	N.C. - slight brown color
Silver nitrate, 20%	72	30	nil	N.C. - slight brown color
Sodium bicarbonate, sat. sodium	212	30	-0.2	No Change
Sodium carbonate, sat. sodium	72	30	nil	No Change
Sodium carbonate, sat. sodium	176	30	nil	No Change
Sodium chloride, sat. sodium	72	90	nil	No Change
Sodium chloride, sat. sodium	176	30	nil	No Change
Sodium dichronate, sat. sodium	212	30	plus 0.1	Superficial crust

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N.C. = No corrosion



Manufacturing and Service Centers
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ISO 9001 CERTIFIED

TABLE 1, continued

REAGENT	EXPOSURE CONDITION		WEIGHT CHANGE %	SPECIMEN APPEARANCE
	Temp ° F	Time Days		
INORGANIC CHEMICALS (continued)				
Sodium hydroxide, 30%	72	90	nil	No Change
Sodium hydroxide, 30%	176	30	nil	No Change
Sodium hypochlorite, 13%	72	90	plus 0.7	N.C. - slight yellowing
Sodium hypochlorite, 13%	176	10	plus 0.9	N.C. - slight yellowing
Sodium phosphate, sat. solution	212	30	-0.3	No Change
Sodium sulfite, 40%	72	30	nil	No Change
Sodium sulfite, 40%	176	30	nil	No Change
Sodium sulfite, sat. solution	212	30	-0.1	No Change
Sulfuric acid, 50%	72	90	nil	No Change
Sulfuric acid, 96%	72	90	nil	No Change
Sulfuric acid, 96%	176	10	nil	Slight corrosion and brown color
ORGANIC CHEMICALS				
Acetic acid, 10%	72	30	nil	No Change
Acetic acid, 50%	72	30	nil	No Change
Acetic acid, 50%	176	90	plus 0.5	N.C. - slightly opacified
Acetic acid, glacial	72	90	plus 1.3	N.C. - slight brown color
Acetic acid, glacial	176	10	plus 2.4	N.C. - mech. properties altered
Acetic acid, glacial	212	30	plus 0.7	Slight cracking
Acetic acid, glacial, 30%	212	30	plus 0.6	No Change
Acetic acid, glacial, 70%	212	30	plus 0.4	No Change
Acetone	72	30	plus 2.0	Slight swelling
Acetophone	72	30	plus 1.6	Slight swelling
Acetophone	140	30	plus 1.8	Slight swelling
Aniline	72	30	nil	No Change
Aniline	140	30	plus 2.3	N.C. - brown color
Benzene	72	90	plus 12	Swelling
Benzoyl chloride	72	30	plus 5.8	No Change
Butyl acetate	72	30	plus 3.9	No Change
Butyl alcohol	72	90	plus 0.4	No Change
Carbon bisulfide	72	30	plus 7.6	Swelling
Carbon tetrachloride	22	90	plus 35	Swelling
Chloroform	72	30	plus 5.5	Swelling
Chloroform	140	10	-	Decomposed
Citric acid, 10%	72	30	nil	No Change
Citric acid, 50%	72	30	nil	No Change
Citric acid, sat. solution	212	30	-0.1	No Change
Cyclohexanol	72	30	-0.2	No Change
Cyclohexanol	140	30	plus 6.0	No Change
Decalin	72	30	plus 10	Considerable swelling
Decalin	140	30	plus 3.4	Considerable swelling
Decalin	140	180	plus 2.9	Considerable swelling
Dibutylphthalate	72	90	plus 0.3	Swelling
Dibutylphthalate	176	30	plus 5.0	Swelling
Dichloroethylene	72	90	plus 8.7	Swelling
Diethanolamine	72	90	nil	No Change
Di-iso-octylphthalate	72	30	plus 0.3	No Change
Dioxane	72	30	plus 3.3	Slight swelling
Ethyl acetate	72	90	plus 4.9	Swelling
Ethyl alcohol, 95%	72	30	nil	No Change
Ethyl ether	72	30	plus 9.5	Swelling
Ethylene dichloride	32	10	plus 10	Swelling

TABLE 1, continued

REAGENT	EXPOSURE CONDITION		WEIGHT CHANGE %	SPECIMEN APPEARANCE
	Temp ° F	Time Days		
ORGANIC CHEMICALS (continued)				
Ethylene glycol	72	90	nil	No Change
Formaldehyde, 35%	72	90	nil	No Change
Formic acid, 85%	72	30	nil	No Change
Gasoline	72	90	plus 13	Slight Swelling
Glycerine	72	90	nil	No Change
Heptane	72	30	plus 9.3	Swelling
Hydrazine sulfate, 10%	72	30	nil	No Change
Hydrazine sulfate, 10%	176	10	nil	No Change
iso-Butylaldehyde	72	90	plus 4.6	Swelling
iso-Propyl alcohol	72	30	nil	No Change
Lactic acid, 20%	72	30	nil	No Change
Lactic acid, 20%	140	30	plus 0.4	No Change
Lactic acid, 20%	140	180	plus 0.3	No Change
Linseed oil	73	30	plus 0.1	No Change
Linseed oil	140	30	plus 2.0	No Change
Malic acid	72	180	plus 0.4	No Change
Malic acid	140	180	-0.4	Slight brown color
Methanol	72	30	plus 0.2	No Change
Methanol	140	30	plus 0.1	No Change
Methylene chloride	72	30	plus 5.5	Slight Swelling
Methylene chloride	140	60	plus 1.6	Slight Swelling
Methylene chloride	140	180	plus 2.2	Slight Swelling
Naphthalene-paraffin mixed base oil, viscosity at 50°C:8.5 Engler, I.V.72	72	90	plus 0.4	No Change
Naphthalene-paraffin mixed base oil, viscosity at 50°C:8.5 Engler, I.V.72	176	30	plus 6.6	Opacified-Slight swelling
Nitrobenzene	72	30	plus 1.6	No Change
Nitrobenzene	140	30	plus 2.0	No Change
Oleic acid	72	30	nil	No Change
Oleic acid	140	30	plus 4.8	No Change
Oxalic acid, 30%	212	30	plus 0.2	No Change
Oxalic acid, 50%	72	30	plus 0.1	No Change
Oxalic acid, 50%	140	30	plus 0.5	No Change
Oxalic acid, 50%	140	180	plus 5.6	No Change
Oxalic acid, sat. solution	212	30	plus 0.2	No Change
Paraffin base oil, viscosity at 50°C:12-15 Engler, I.V. 98-100	72	90	nil	No Change
Paraffin base oil, viscosity at 50°C:12-15 Engler, I.V. 98-100	176	30	plus 5.1	Opacified-Slight swelling
Petroleum ether	72	30	plus 5.0	Slight Swelling
Petroleum ether	140	30	plus 2.3	Slight Swelling
Petroleum ether	140	180	plus 2.7	Slight Swelling
Phenol	72	90	plus 2.6	Slight Swelling
Pyridine	72	30	plus 3.4	No Change
Sodium acetate, sat. solution	212	30	-0.1	No Change
Succinic acid	72	30	-0.3	No Change
Succinic acid	140	30	-0.1	No Change
Succinic acid	140	180	plus 5.5	No Change
Tetrahydrofuran	72	30	plus 3.7	No Change
Tetralin	72	30	plus 8.0	Slight Swelling
Tetralin	140	30	plus 3.8	Slight Swelling
Tetralin	140	180	plus 3.6	Slight Swelling
Thiophene	72	30	plus 3.6	Slight Swelling

REAGENT	EXPOSURE CONDITION		WEIGHT CHANGE	SPECIMEN APPEARANCE
	Temp ° F	Time Days		
ORGANIC CHEMICALS (continued)				
Toluene	73	30	plus 12	Slight Swelling
Transformer oil	72	90	plus 0.5	No Change
Transformer oil	176	30	plus 8.0	Slight Swelling
Trichloroacetic acid, 2N	72	30	plus 0.5	No Change
Trichloroacetic acid, 2N	140	30	plus 2.9	Slight brown color
Trichloroethylene	72	30	plus 5.0	No Change
Trichloroethylene	140	30	-5.4	No Change
Turpentine	72	30	plus 9.5	No Change
Turpentine	140	30	plus 11	Slight yellow color; slight swelling
Vaseline oil	72	90	plus 0.5	No Change
Vaseline oil	176	30	plus 8.0	Slight Swelling
p-Xylene	72	30	plus 11	Swelling
FOOD AND BEVERAGES				
Beer	72	30	nil	No Change
Milk	72	30	nil	No Change
Olive oil	72	30	nil	No Change
Olive oil	176	30	plus 3.0	Opacified
Vinegar	72	30	nil	No Change
Water, potable	176	30	nil	No Change
Wine	72	30	nil	No Change

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CONTACT CHEMICAL	STATE OF CHEMICAL CONTACT	QUALITATIVE ASSESSMENT OF CHEMICAL RESISTANCE		
		20° C	60° C	100° C
INORGANICS				
Ammonia	Gas	S	-	-
	Liquid	S	-	-
Boric acid	30% solution	S	-	-
	Saturated solution	S	S	S
Calcium chloride	Saturated solution	S	S	S
Hydrobromic acid	45-48% solution	S	L	U
Hydrofluoric acid	40% solution	S	-	-
Hydrochloric acid	36% solution	S	-	-
Hydrogen Peroxide	10% solution	S	-	-
	30% solution	S	L	-
Iodine	Alcoholic solution	S	-	-
Nitric acid	10% solution	S	U	U
	30% solution	S	-	-
	40-50% solution	L	-	-
Phosphoric acid	25% solution	S	S	S
	85% solution	S	S	S
Potassium bromate	10% solution	S	S	-
Potassium bromide	Saturated solution	S	S	-
Potassium chlorate	Saturated solution	S	S	-
Potassium chromate	Saturated solution	S	S	-
Potassium hydroxide	40-50% solution	S	S	S
Potassium nitrate	Saturated solution	S	S	S
Potassium permanganate	2N solution	S	-	-
Sodium hydroxide	50-60% solution	S	S	S
Sodium hypochlorite	10% solution	S	S	-
	20% solution	S	L	-
Sodium nitrate	Saturated solution	S	S	-
Sodium perborate	Saturated solution	S	-	-
Sodium sulfate	Saturated solution	S	S	-
Sodium sulfite	40% solution	S	S	S
Sulfuric acid	10% solution	S	S	S
	30% solution	S	S	S
	50% solution	S	S	S
	96% solution	S	L	U
Water	98% solution	L	U	U
	Potable	S	S	S

S=Satisfactory; L=Limited use within temperature/contact indicated; U= Unsatisfactory; - = Unknown (untested)

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CONTACT CHEMICAL	STATE OF CHEMICAL CONTACT	QUALITATIVE ASSESSMENT OF CHEMICAL RESISTANCE		
		20° C	60° C	100° C
ORGANICS				
Acetic acid	40% solution	S	S	-
	50% solution	S	S	L
	Glacial	S	L	U
Acetone	100% pure	S	S	-
Aniline	100% pure	S	L	-
Benzoyl chloride	100% pure	L	-	-
Benzene	100% pure	L	U	U
Butyl phthalate	100% pure	S	L	L
Carbon disulfide	100% pure	S	U	U
Carbon tetrachloride	100% pure	U	-	-
Chloroform	100% pure	L	U	U
Cyclohexanol	100% pure	S	L	-
Decalin	100% pure	U	U	U
Dioxane	100% pure	L	-	-
Ethanol	95% solution	S	S	S
Ethyl acetate	100% pure	L	U	U
	100% pure	L	-	-
Ethylene chloride	100% pure	L	-	-
Ethyl ether	100% pure	L	-	-
Ethylene glycol	100% pure	S	S	S
Formaldehyde	40% solution	S	-	-
Formic acid	10% solution	S	S	L
	85% solution	S	U	U
	Commercial blends	L	U	U
Gasoline	100% pure	S	S	-
n-Heptane	100% pure	L	U	U
iso-Octane	100% pure	L	U	U
iso-Propanol	100% pure	S	S	S
Lactic acid	90% solution	S	S	-
Methanol	100% pure	S	-	-
Methylene chloride	100% pure	L	U	U
Mitrobenzene	100% pure	L	L	-
Oleic acid	100% pure	S	L	-
Oxalic acid	Saturated solution	S	L	U
Phenol	5% solution	S	S	-
Phenol	100% pure	L	-	-
Pyridine	100% pure	L	-	-
Tetrahydrofuran	100% pure	L	U	U
Tetralin	100% pure	U	U	U
Thiophene	100% pure	S	L	-
Toluene	100% pure	L	U	U
Xylene	100% pure	U	U	U

S=Satisfactory; L=Limited use within temperature/contact indicated; U= Unsatisfactory; - = Unknown (untested)

CONTACT CHEMICAL	STATE OF CHEMICAL CONTACT	QUALITATIVE ASSESSMENT OF CHEMICAL RESISTANCE		
		20° C	60° C	100° C
EDIBLE CHEMICALS				
Beer	Commercial blend	S	-	-
Milk	Commercial type	S	S	S
Oils, corn	Commercial type	S	-	-
olive	Commercial type	S	S	-
peanut	Commercial type	S	S	-
sunflower	Commercial type	S	S	-
soybean	Commercial type	S	-	-
Vinegar	Commercial type	S	S	-

S=Satisfactory; L=Limited use within temperature/contact indicated; U= Unsatisfactory; - = Unknown (untested)

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