



## Chemical Resistance Chart

Medium	Concentration	PVC	PE	PP	ABS
Acetic acid, Aqueous	25%	60	60	82	N
CH <sub>3</sub> COOH	40%	-	-	-	-
	60%	23	23	82	N
	85%	23	23	49	N
Ammonium Sulfate (Alum) AlNH <sub>4</sub> (SO <sub>4</sub> ) <sub>2</sub> 12H <sub>2</sub> O	Sat'd	60	60	60	-
Ammonium Hydroxide	10%	60	60	100	49
NH <sub>4</sub> OH	30%	-	R to 60	-	-
Ammonium Nitrate NH <sub>4</sub> NO <sub>3</sub>	Sat'd	60	60	100	49
Ammonium Phosphate (Monobasic) NH <sub>4</sub> H <sub>2</sub> PO <sub>4</sub>	All	60	60	100	49
Ammonium Sulfate (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>	Sat'd	60	60	100	49
Borax Na <sub>3</sub> B <sub>4</sub> O <sub>7</sub> ·10H <sub>2</sub> O	Sat'd	60	60	100	71
Calcium Carbonate CaCO <sub>3</sub>	Sat'd	60	60	82	-
Calcium Chloride	5%	-	-	-	-
CaCl <sub>2</sub>	Sat'd	60	60	82	49
Calcium Hypochlorite	30%	60	60	60	71
Ca(OCl) <sub>2</sub>	Sat'd	-	-	-	-
CuSO <sub>4</sub> · 5H <sub>2</sub> O	Sat'd	60	60	49	49
Chlorine Gas (Moisture Content)	0-20 ppm	C to 23	C to 23	N	N
	20 - 50 ppm	N	C to 23	N	N
	50+ ppm	N	C to 23	N	N
Chlorine	Liquid	N	N	N	N
Chlorinated Water	10 ppm	60	60	82	-
Chlorinated Water	Sat'd	60	C to 49	82	-
Detergents	-	60	R to 60	82	-
Ferrous Sulphate FeSO <sub>4</sub>	-	60	60	60	71
Hydrochloric Acid	1%	-	-	-	-
HCl	10%	60	60	60	C to 49
	20%	-	-	-	-
	30%	60	60	60	C to 23
	Conc.	-	-	-	-
Hypochlorous Acid	10%	60	60	23	23
HOCl	70%	-	-	-	-
Nitric Acid	5%	-	-	-	-
HNO <sub>3</sub>	10%	60	23	82	C to 23
	20%	-	-	-	-
	30%	60	23	60	N
	35%	-	-	-	-
	40%	60	23	23	N
	50%	38	C to 23	N	N
	70%	23	C to 23	N	N

	100%	N	N	N	N
Lubricating Oil	-	60	23	C to 60	-
Phosphoric Acid	10%	60	60	100	-
H <sub>3</sub> PO <sub>4</sub>	50%	60	60	100	-
	85%	60	23	100	23
	98%	-	-	-	-
Potassium Permanganate	10%	23	60	82	-
KmnO <sub>4</sub>	25%	23	60	23	-
Soap	-	60	R to 60	60	23
Sodium Bicarbonate NaHCO <sub>3</sub>	-	60	60	100	23
Sodium Carbonate Na <sub>2</sub> CO <sub>3</sub>	-	60	60	100	23
Sodium Chloride NaCl	-	60	60	100	49
Sodium HypoChlorite NaOCIO 5H <sub>2</sub> O	-	60	60	100	49
Sulfur S	-	60	60	100	-
Sulphuric Acid	30%	60	60	82	49
H <sub>2</sub> SO <sub>4</sub>	50%	60	49	82	23
	60%	60	49	23	C to 23
	70%	60	R to 49	23	C to 23
	80%	60	R to 49	82	C to 23
	90	23	49	66	C to 23%
	93%	23	C to 23	C to 23	N
	94% - 98%	N	C to 23	C to 23	N
	100%	N	C to 23	C to 23	N
Urea	-	60	60	82	-
Urine	-	60	60	82	71
Water, Acid Mild H <sub>2</sub> O	-	60	60	60	71
Water, Deionized H <sub>2</sub> O	-	60	60	60	71
Water, Distilled H <sub>2</sub> O	-	60	60	100	71
Water, Potable H <sub>2</sub> O	-	60	60	100	71
Water, Salt H <sub>2</sub> O	-	60	60	100	71
Water, Sea H <sub>2</sub> O	-	60	60	100	71
Water, Soft H <sub>2</sub> O	-	60	60	100	71
Zinc Sulphate	-	60	60	82	71

Code	Meaning	Typical Result
60	Plastic type is generally resistant to temperature (°C) indicated by code.	Swelling < 3% or weight loss < 0.5% and elongation at break not significantly changed.
R to 23	Plastic type is generally resistant to temperature (°C) indicated by code and may have limited resistance at higher temperatures.	Swelling < 3% or weight loss < 0.5% and elongation at break not significantly have limited resistance at higher temperatures. changed.
C to 23	Plastic type is generally resistant to temperature (°C) indicated by code and may be suitable for some conditions	Swelling 3-8% or weight loss < 0.5-5% and / or elongation at break decreased by suitable for some conditions. < 50%.
N	Plastic type is not resistant.	Swelling < 8% or weight loss < 5% and / or elongation at break decreased by > 50%.
--	Data not available	

Chemicals that do not normally affect the properties of an unstressed thermoplastic may cause completely different behavior (such as stress cracking) when under thermal or mechanical stress (such as constant internal pressure or frequent thermal or mechanical stress cycles).

Unstressed immersion test chemical resistance information is applicable only when the thermoplastic pipe will not be subject to mechanical or thermal stress that is constant or cycles frequently.

When the pipe will be subject to a continuous applied mechanical or thermal stress or to combinations of chemicals, testing that duplicates the expected field conditions as closely as possible should be performed on representative samples of the pipe product to properly evaluate plastic pipe for use in this application.

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