

Chemical Resistance Guide

Please refer to "Chemical Resistance Manual for Esilon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "Hl-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant -- : Not recommended
 (Actual testing suggested)

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal		
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316	
Hydrochloric acid HCl	15	20	68	+	++	++	++	++	++	++	++	++	++	---	---
		40	104	+	++	++	++	++	++	+	+	++			
		60	140	+	++	++	++	++	++	-	-	++			
		80	176		++	++	++	++	++	---	---	+			
		100	212					++	++						
		120	248												
	35	20	68	+	++	++	++	++	++	+	++	++	---	---	
		40	104	+	++	++	++	++	++	-	-	++			
		60	140	+	+	++	++	++	++	---	---	+			
		80	176		+	+	++	++	++			+			
		100	212					+	++						
		120	248												
	38	20	68	+	++	++	++	++	++	+	+	++	---	---	
		40	104	-	++	++	++	++	++	-	-	+			
		60	140	-	+	++	+	++	++	---	---	+			
		80	176		+	+		++	++			-			
		100	212					+	++						
		120	248												
Nitric acid HNO ₃	10	20	68	++	++	++	++	++	++	++	++	++	++	++	
		40	104	++	++	++	++	++	++	++	++	++	++	++	
		60	140	+	++	++	++	++	++	+	+	++	++	++	
		80	176		+	+		++	++	---	---	++	++	++	
		100	212					++	++				+		
		120	248												
	30	20	68	++	++	++	++	++	++	+	++	++	++	++	
		40	104	+	+	++	++	++	++	+	+	++	++	++	
		60	140	-	-	+	++	++	++	---	+	++	+	+	
		80	176		---	+		++	++		-	+	+	+	
		100	212					++	++		-	+	+	+	
		120	248												
	50	20	68	++	++	++	++	++	++	---	++	++	++	++	
		40	104	-	-	+	++	++	++		+	++	+	+	
		60	140	---	---	-		+	++		-	+	+	+	
		80	176			---		+	++		---	+	-	-	
		100	212					-	++				-	-	
		120	248												
	60	20	68	+	+	-	++	++	++	---	---	++	++	++	
		40	104	-	-	---		++	++			+	+	+	
		60	140	---	---			+	++			+	+	+	
		80	176					-	++			-	-	-	
		100	212						++				-	-	
		120	248												
70	20	68	---	---	---	---	-	++	---	---	-	++	++		
	40	104					---	+							
	60	140						+							
	80	176						-							
	100	212						++							
	120	248													
Sulfuric acid H ₂ SO ₄	10	20	68	++	++	++	++	++	++	++	++	++	---	+	
		40	104	++	++	++	++	++	++	++	++	++		---	
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	++	++	++			
		100	212					++	++		++	++			
		120	248												
	30	20	68	++	++	++	++	++	++	++	++	++	---	---	
		40	104	++	++	++		++	++	++	++	++			
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	+	++	++			
		100	212					++	++	---	++	++			
		120	248												
	50	20	68	++	++	++	-	++	++	++	++	++	---	---	
		40	104	++	++	++		++	++	++	++	++			
		60	140	++	++	++		++	++	++	++	++			
		80	176		++	++		++	++	+	++	++			
		100	212					++	++	---	++	++			
		120	248												

Please refer to "Chemical Resistance Manual for Esilon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "HI-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Sulfuric acid H ₂ SO ₄	70	20	68	++	++	++	--	++	++	++	++	++	---	---
		40	104	++	++	++		++	++	++	++	++		
		60	140	++	++	++		++	++	+	++	++		
		80	176		+	+		+	++	-	++	++		
		100	212					+	++		+	+		
	80	20	68	++	++	++	--	++	++	++	++	++	--	--
		40	104	++	++	++		++	++	++	++	++		
		60	140	+	+	+		++	++	+	++	++		
		80	176		-	+		+	++	-	+	++		
		100	212					+	++		-	+		
	90	20	68	+	+	++	--	++	++	++	++	++	--	--
		40	104	+	+	++		++	++	+	++	++		
		60	140	-	-	+		++	++	-	++	++		
		80	176			+		+	++	--	+	+		
		100	212					+	+		--	-		
	98	20	68	+	+	--	--	++	++	--	++	++	--	--
40		104	-	-			+	++		+	++			
60		140	--	--				++		-	+			
80		176						+						
100		212												
Hydrofluoric acid HF	Dilute	20	68	++	++	++	++	++	++	++	++	++		
		40	104	++	+	+	++	++	++	++	++	++		
		60	140	-	+	+	++	++	++	++	++	++		
		80	176		-	+	++	++	++	++	++	++		
		100	212			+		++	++	++	++	++		
	30	20	68	++	++	++	++	++	++	++	++	++		
		40	104	+	+	+	++	++	++	++	++	++		
		60	140	-	-	+	++	++	++	++	++	++		
		80	176	--	--	+	++	++	++	+	++	++		
		100	212					++	++	--	++	++		
	40	20	68	+	+	++	++	++	++	++	++	++		
		40	104	-	-	+	++	++	++	+	++	++		
		60	140	--	--	+	++	++	++	-	++	++		
		80	176			+	++	++	++	--	++	++		
		100	212					++	++		+	++		
	50	20	68	+	+	++	++	++	++	++	++	++	--	--
40		104	--	--	+	++	++	++	+	++	++			
60		140			+	++	++	++	-	++	++			
80		176			+		++	++		++	++			
100		212					++	++		+	++			
Acetic acid CH ₃ COOH	20	20	68	++	++	++	++	++	++	++	++	++	++	++
		40	104	+	++	++	++	++	++	++	+	++	++	++
		60	140	-	+	+		++	++	+	-	+	++	++
		80	176		-	-		++	++		--	+	++	++
		100	212					+	++				++	++
	50	20	68	++	++	++	++	++	++	+	+	+	++	++
		40	104	+	+	+	++	++	++	-	-	-	++	++
		60	140	-	-	-		++	++	--	--	--	++	++
		80	176		--			++	++				++	++
		100	212					+	++				++	++
	120	20	248											
		20	68	+	+	--	++	++	++	+	+	+	+	+
		40	104	+	+		+	++	++	--	+	+	-	-
		60	140	+	+		+	++	++		+	+	--	-
		80	176					++	++		-	-	--	-
	20	100	212					++	++		--	--	--	--
120		248												

Please refer to "Chemical Resistance Manual for Eslon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "HI-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 -- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Chromic acid H ₂ CrO ₄	50	20	68	+	+	--	++	++	++	--	+	+	+	+
		40	104	+	+		+	-	++				--	--
		60	140				+	--	++					
		80	176						++					
		100	212						++					
Hydrogen peroxide H ₂ O ₂	20	20	68	++	++	++	++	++	++	++	++	++	--	--
		40	104	+	+	++	++	++	++	+	++	++	--	--
		60	140	-	-	++		++	++	+	++	++	--	--
		80	176		-	+		++	++	-	++	++		
		100	212											
	30	20	68	++	-	++	++	++	++	++	++	++	--	--
		40	104	+	-	+	++	++	++	+	+	+	--	--
		60	140	-		+		++	++	-	-	-	--	--
		80	176			-		++	++					
		100	212											
	50	20	68	+	-	-	++	++	++	--	-	-	--	--
		40	104	-	--	--	++	++	++		--	--	--	--
		60	140					++	++					
		80	176					++	++					
		100	212											
Caustic potash (Potassium hydroxide) KOH	5	20	68	++	++	++	++	++	++	++	+	++	+	+
		40	104	++	+	++	++	++	++	++			+	+
		60	140	+	+	++		+	++	++			+	+
		80	176		+	++		-	++	++			+	+
		100	212					--	++	+			+	+
	14	20	68	+	+	++	++	++	++	++	+	++	+	+
		40	104	+	--					++	--		+	+
		60	140	+	--					++			+	+
		80	176							++			+	+
		100	212							+			+	+
	25	20	68	++	++	++	++	++	++	++	+	++	+	+
		40	104	++	+	++	++	++	++	++			+	+
		60	140	++	+	++		+	++	++			+	+
		80	176		+	++		-	++	++			+	+
		100	212					--	++	+			+	+
Sodium hydroxide NaOH	5	20	68	+	+	++	++	++	++	++	++	++	++	++
		40	104	+	--	++			++	++	++	++	++	++
		60	140	+	--	++			++	++	+	+	++	++
		80	176						++	+			++	++
		100	212										++	++
	15	20	68	++	+	++	++	++	++	++	+	++	++	++
		40	104	++	-	++		++	++	++	-	+	++	++
		60	140	++	-	++		+	++	++	--		++	++
		80	176		--	+		-	++	+			++	++
		100	212					--	++	+			++	++
	30	20	68	++	++	++	++	++	++	++	-	+	++	++
		40	104	++	++	++		+	++	++	--	--	++	++
		60	140	++	+	++		-	++	++			++	++
		80	176		-	+		--	++	++			++	++
		100	212						++	+			-	
50	20	68	++	++	++	++	++	++	++	--	--	+	+	
	40	104	++	++	++		+	++	++			+	+	
	60	140	++	++	++		-	++	++			+	+	
	80	176		+	+		--	++	++			+	+	
	100	212						++				+	+	
120	248										--	-		

Please refer to "Chemical Resistance Manual for Esilon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "HI-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal		
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316	
Sodium hypochlorite NaClO	1ppm	20	68	++	++	++	++	++	++	++	++	++			
		40	104												
		60	140												
		80	176												
		100	212												
	3	20	68	++	++	+	++	++	++	++	+	++	++	+	+
		40	104	++	++	+	++	++	++	++	+	++	++	-	+
		60	140	+	-	+	+		++	++	-	++	++	--	-
		80	176					++							
		100	212					++							
	5	20	68	++	++	+	++	++	++	++	+	++	++	+	+
		40	104	++	++	+	++	++	++	++	+	++	++	-	+
		60	140	+	-	-	+	++	++	++	-	++	++	--	-
		80	176					++							
		100	212					++							
	7	20	68	++	++	+	++	++	++	++	+	++	++	+	+
		40	104	++	++	-	++	++	++	++	+	++	++	-	+
		60	140	+	-	-	+	++	++	++	-	++	++	--	-
		80	176					++							
		100	212					++							
	10	20	68	++	++	+	++	++	++	++	--	++	++	--	--
		40	104	++	++	-	+	++	++	++		++	++		
		60	140	+	-	-	+	++	++	++		++	++		
		80	176					++							
100		212					++								
13	20	68	++	++	+	++	++	++	++	--	++	++	--	--	
	40	104	++	++	-	+	++	++	++		+	+			
	60	140	+	-		+	++	++	++						
	80	176					++								
	100	212					++								
Ferric chloride FeCl ₃	Satu	20	68	++	++	++	++	++	++	++	++	++	--	--	
		40	104	++	++	++	++	++	++	++	++	++			
		60	140	+	++	++		++	++	++	++	++			
		80	176		++	++		++	++	++	++	++			
		100	212					++	++	++	+	+	+		
Ammonia water NH ₃ Aq	10	20	68	+	--	++		++	++	++	+	+	++	++	
		40	104	+	--	++		++	++	++	-	-	+	+	
		60	140	+	--	++		++	++	++	--	--	+	+	
		80	176		--	+		++	++	++			+	+	
		100	212					++	++	++			+	+	
	28	20	68	+	--	++	--	++	++	++	+	-	-	++	++
		40	104	+	--	++		++	++	++	-	-			
		60	140	-	--	++		++	++	++	--	--			
		80	176		--	++		++	++	++					
		100	212					++	++	++					
Toluene (Toluol) C ₆ H ₅ CH ₃	Pure	20	68	--	--	+	--	++	++	--	-	-			
		40	104			-		++	++						
		60	140			--		+	++						
		80	176					+	++						
		100	212					-	+						
Benzene C ₆ H ₆	Pure	20	68	-	-	+	++	++	++	--	+	+			
		40	104	--	--	-		+	++		+	+			
		60	140					+	++		+	+			
		80	176					+	++		+	+			
		100	212												
120	248														

Please refer to "Chemical Resistance Manual for Eslon Plastics Pipe, Valves and Relative Materials" for details.

1 Please note that plastic might be strongly affected by surface-activating agent.
 2 "PVC" in chemical resistance guide does not include "HI-PVC".
 3 This table is intended to serve as guide only. The information based on data accumulated from immersion test and experiments herein is believed to be reliable, but no representations, guarantee or warranties of any kinds are made as to its accuracy, suitability for particular applications or results to be obtained.

++ : Excellent Resistant - : Caution
 + : Good Resistant (Actual testing suggested)
 --- : Not recommended

Chemical	Concentration(%)	Temp.		Plastic						Rubber			Metal	
		(°C)	(°F)	PVC	CPVC (HT)	PP	PVDC	PVDF	PTFE	EPDM	FKM	FKM FB	SUS 304	SUS 316
Non-ionic Surfactant	10	20	68	-	---			+	+					
		40	104	-	---			+	+					
		60	140											
		80	176											
		100	212											
Cationic surfactant	10	20	68	+	-			++	++					
		40	104	+	-			++	++					
		60	140											
		80	176											
		100	212											
Anionic surfactant	10	20	68	+	-			++	++					
		40	104	+	-			++	++					
		60	140											
		80	176											
		100	212											
Methyl alcohol (Methanol) CH ₃ OH	Pure	20	68	-	-	++	++	++	++	++	++	++	+	++
		40	104	---	---	++	++	++	++	++	++	++	+	++
		60	140			+	+	+	+	+	+	+		++
		80	176											
		100	212											
	20	20	68	++	++	++	++	++	++	++	++	++	+	++
		40	104	+	+	++	++	++	++	++	++	++	+	++
		60	140			+	+	+	+	+	+	+		++
		80	176											
		100	212											
Soybean oil	-	20	68	-	-	++		++	++	++	++	++		
		40	104	-	-	++		++	++	++	++	++		
		60	140	-	-	++		++	++	++	++	++		
		80	176		-	+		++	++	-	++	++		
		100	212					++	++	---	-	-		
Gasoline	-	20	68	-	-	---		++	++	---	+	+		
		40	104					++	++					
		60	140					++	++					
		80	176					++	++					
		100	212											
Kerosene (kerosine)	-	20	68	-	-	+		++	++	---	++	++		
		40	104	-	-			++	++					
		60	140	---	---			++	++					
		80	176					++	++					
		100	212											
Aniline (Aminobenzene) C ₆ H ₅ NH ₂	Pure	20	68	-	-	+	---	++	++	++	++	++	+	+
		40	104	---	---	+		+	++	-	+	+	+	+
		60	140			-		+	++	---	-	-	+	+
		80	176			---		-	++				+	+
		100	212					---	++				+	+
Ethanolamine H ₂ NCH ₂ CH ₂ OH	Pure	20	68	---	---	++		---	++	+	---	---	+	+
		40	104						++				+	+
		60	140										+	+
		80	176										+	+
		100	212										+	+
120	248										+	+		