

Durability and Performance

Chemical Resistance Guide



AOC
Trusted Solutions

The Right Solutions

Our world is changing rapidly. Every day we face new challenges, and we are finding new opportunities. We must rethink, reshape and reinvent. We must find new solutions. Not just any solution, but we must find the right one. And, that's exactly what we do.

Trust AOC to create and deliver the solutions to help your business grow. We will partner with you to expand your business and your industry. With open collaboration we will make innovation truly happen.

Strength and durability

The combination of fiber and resin into one composite system takes advantage of the positive contributions of the individual constituents. The fibers bring elevated mechanical strength and stiffness. The resins bring resistance to elevated temperatures, durability and protection against aggressive environments (including water and chemicals). This translates into structural integrity, a continued operation capability, and minimized maintenance during part life.



Design flexibility

Composite materials can be easily formed. They bring designers, engineers, and architects the unique capability to personalize part shape and aesthetics, while having the benefit of tailoring part functionality to the application. Compared to traditional materials like steel and concrete, using composites solutions enables in many cases the integration of multiple components and functions.



AOC. Trusted Solutions

Environmentally sound

Associated with the low weight and long life durability of composite components and their limited requirement for maintenance, the lifetime cost and ecological footprint are highly beneficial.

Light weight capability

Unlike steel and concrete, composites feature high strength, stiffness and inherent low weight at the same time. This allows to design lighter and thinner, translating into faster installation of industrial and infrastructure components.



The Corrosion Resistant Product Range

When choosing resins for corrosion resistant applications, it is important to select products that give the right performance and are fit for the job in question. In this guide we describe the key properties of our high performance, chemical resistant resins.

Atlac® 430

Standard Bisphenol A Vinyl Ester resin. Provides resistance to a wide range of acids, alkali, and bleaches for the use in corrosive environments in the chemical processing industry. The favorable combination of thermal resistance and elongation makes this resin suitable for applications exposed to intermittent temperatures

Atlac® F010 series

Versatile Vinyl ester resin series broadly used in anti-corrosion. Components based on Atlac® F010 feature high mechanical strength and exhibit excellent resistance to chemicals and heat. With Atlac® F010 resins you can make strong and durable parts, both with carbon and glass fiber.

Atlac® F013 series

Versatile Vinyl ester resin series for corrosive environments (especially alkali). Components based on Atlac® F013 feature high mechanical strength and exhibit excellent resistance to chemicals and heat.

Atlac® 5200 FC

Vinyl ester resin specifically formulated for food contact and potable water applications. Suitable for applications in a wide range of corrosive environments. This product is a FC (Food Contact) grade manufactured in line with GMP according to EU food contact law EU 10/2011 and Commission regulation EC 2023/2006.

Atlac® 590/ Atlac® 590Z

Epoxy Novolac Vinyl ester resins. Provide excellent thermal and chemical resistance against solvents, acids and oxidizing media like Chlorine. The resin offers high retention of strength at elevated temperatures.

Atlac® F086A

High heat Novolac Vinyl ester resin for demanding corrosive environments. With Atlac® F086A resin you can make strong and durable parts that feature great heat resistance. Components based on Atlac® F086A resin also provide excellent chemical resistance against multiple solvents, acids and oxidizing media like Chlorine.

Atlac® E-Nova FW 2045

Epoxy Bisphenol A Urethane vinyl ester, with similar performance as Novolac Vinyl ester resins, with additional resistance against alkalis. This product shows excellent fiber wetting and processing compared to other vinyl esters, with the benefit of low MEKP foaming.

Atlac® 580

Bisphenol A urethane resin. Suitable for high temperature water, acid and salt solutions. Low peak exotherm allows the manufacture of thick laminates.

Atlac® Premium 600

Styrene-free, thixotropic Vinyl ester resin dissolved in methacrylates, with good resistance to hydrolysis and various chemicals (esp. organic solvents). Reinforcements may need to be optimized for use with styrene-free resins.

Atlac® 382

Bisphenol A Unsaturated Polyester resin. Suitable for high temperature water, acid and salt solutions and medium temperature alkali solutions.

Atlac® 4010

Flexible Bisphenol A Unsaturated Polyester resin. Flexibilized Atlac® 382, suitable for chemical linings.

Advise on Chemical Resistance

AOC has the ability to help you in making the best resin selection for your application exposed to a specific chemical environment (temperature, chemical type, exposure time). We can offer insights through our Chemical Resistance Information service, that builds on years of chemical resistance testing on our resins, combined with the experience gained in many projects around the world. Please contact us for more information.

F774 series

Terephthalic Unsaturated Polyester providing high heat distortion temperature while maintaining elongation. F774 series also meet UL 1316, UL 1746 and Steel Tank Institute requirements. Field proven for many fuel blends.

Palatal® A 410

Isophthalic Unsaturated Polyester resin based on Neopentyl Glycol. Suitable for medium temperature aqueous media and medium temperature acidic media. Resin gives good adhesion between PVC liners and composite laminates.

Synolite™ 0266

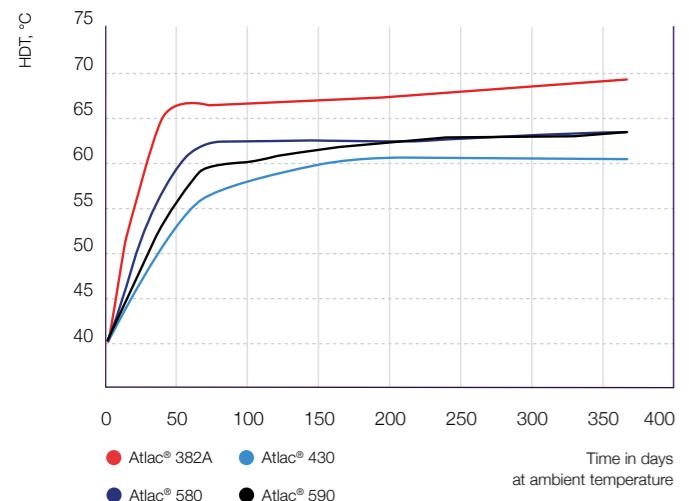
Isophthalic Unsaturated Polyester resin with standard glycols. Suitable for medium temperature aqueous media. Low peak exotherm allows for the manufacturing of thick laminates.

Palatal® P 69

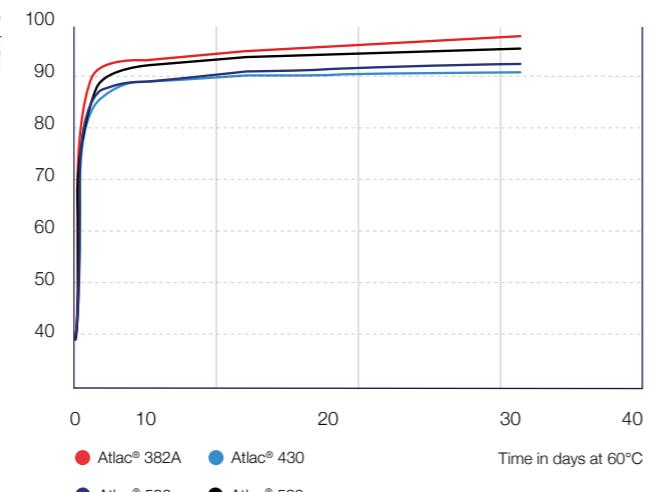
High-end Orthophthalic Unsaturated Polyester resin. Suitable for low temperature aqueous media. This product is manufactured according to GMP.

Development of HDT at Ambient Temperature

At ambient temperature high HDT levels are not reached, so postcuring is required

**Post-cure will improve HDT**

Note that at 60°C the HDT does not reach the maximum level possible

**EN13121-1: European design standard for GRP tanks and vessels for use above ground**

Classification scheme for UP- and VE-resins (minimum requirements, please note these are not actual product properties from AOC resins).

	Group	Resin type	Type of Glycols	Type of Acids	Resin Family	Cont. of Styrene mass (%) max.	Tg (°C) min.	HDT (°C) min.	Tensile Strength (MPa) min.	Elongation at Break (%) min.	Flexural Strength (MPa) min.
Ortho	1A 1B	UP UP	Standard Glycols 1,2 Standard Glycols 1,2	OPA/MZA OPA/MZA	Palatal® P69	45 45	85 120	60 50	60 50	2 1.5	90 75
Iso	2A 2B	UP UP	Standard Glycols 1,2 Standard Glycols 1,2	IPA/MZA/HET IPA/MZA/HET	Synolite™ 266	50 50	85 120	60 90	60 50	2 1.5	90 75
TPA	3	UP	Standard Glycols 1	TPA/MZA	F774	50	140	110	75	3	120
NPG	4	UP	NPG/Halogenated NPG 3	OPA/IPA/MZA	Palatal® A410	55	120	90	65	3	110
	5	UP	HMTCD	OPA/MZA		45	120	90	50	1.5	100
BPA	6	UP	BPA/Halogenated BPA 4	MZA	Atlac® 382, Atlac® 4010	55	130	110	60	2	110
VE/VEU	7A	VE	BPA/Halogenated BPA	MA/AA MZA	Atlac® 430, Atlac® 5200 FC Atlac® F010, F013 Atlac® 580 Atlac® E-Nova FW 2045	55	110	90	75	4	130
	7B	VEU	aBPA/Halogenated aBPA			50	120	105	75	3.5	130
NOV	8	VE	Novolac	MA/AA	Atlac® 590 (Z), Atlac F086A	50	150	120	75	2.5	130

1 Ethylene-, 1,2-propylene-, diethylene-, dipropylene-, neopentylglycol, 1,3-butanediol 1,4-butanediol and corresponding halogenated glycols

2 May also contain cyclic unsaturated hydrocarbons

3 NPG/Halogenated NPG (min. 80 mol-%) and diol with at least one secondary OH-group (max. 20 mol-%). Mol-% related to the sum of the diol components

4 Min. 90 mol-%

How to use this guide?

In the table on the following pages you can find information about the long-term durability of properly manufactured laminates, made from our most important vinyl ester and unsaturated polyester resins used in corrosion resistant applications.

We have listed the maximum temperatures in Celcius at which laminates based on these resins have demonstrated a good service life, and/ or shown positive test results in accordance with the mentioned test methods.

The temperature recommendations are mostly applicable to the complete families of Atlac® Premium 600, Palatal® P 69, Synolite™ 0266, Palatal® A410, Atlac® 4010, 382, 5200, 430, 580, 590, Atlac® E-Nova FW 2045 resins and F774, F013, F010, F086, 590Z. Specific remarks with additional information on chemical resistance are added in the Notes (see page 33 for detail). In the case of chemical exposure above 80°C, or when using strong acids, alkalines, oxidizing media (high percentage and/ or high temperature) together with thixotropic resins, we recommend that you contact your AOC Technical Service representative for additional advice.

Please note that concentration values in the table are always in water unless otherwise specified. The number "100" in concentration column refers to the pure chemical.

AOC can help you in making the best resin selection for your application. To make accurate recommendations we need to know:

- Chemical environment; composition, concentrations, pH values, storage conditions
- Service temperature, temperature profiles, maximum temperatures
- Mechanical exposure, pressure, static and cyclic loading
- Type of composite material and build-up used (fiber volume, chemical resistance layer)
- Equipment and process

This Chemical Resistance Guide is updated on a regular basis to include all new experience and laboratory testing results. The most recent (leading) update is available on the website: aocresins.com/en-emea/downloads/

Chemical Resistance Inquiries

Extensive chemical resistance testing has been performed for many resins according to quality standards ASTM C581-83/ DIN 53393/ DIN 18820, or EC design standard for Composite tanks and vessels for above ground, EN 13121 part 1 and 2 (see page 6). The laboratory tests have been conducted on well-prepared and fully cured test samples.

With Atlac® resins we now have a history that goes back more than sixty years, where components have been in continuous service and exposed to different chemical substances and aggressive environments. By logging all these experiments, combined with our ongoing development and testing program, we have been able to build up an extensive knowledge base of how our resins perform in contact with a vast range of corrosive media in different concentrations and at different temperatures.

So far more than 16,000 entries are in our corrosion resistance database. Wherever possible, advice is given within 24-48 hours and in the local language!

For questions on the chemical resistance of AOC or for receiving further advice, please contact us at:
chemical.resistance@aocresins.com

Glossary of terms

NR	Not recommended at any temperature.
-	Not tested
Sat'd	Saturated
FRP	Composite materials (Fiber Reinforced Plastics)



AOC Expertise

Delivering Innovation

AOC experts will help you push the limits of part performance and component manufacturing. Together we will work together to literally shape our world with products that are lighter, stronger, versatile and more competitive.

AOC takes an integral approach to new product development, using our full expertise in polymer science, manufacturing, testing and component manufacturing. Industry specialists at AOC's R&D centers around the world support customers with state-of-the-art equipment, including resin synthesis, mechanical property testing capabilities and analytical testing laboratories.

Our scientists are continuously working on new solutions to help you be more competitive today. And, they are creating the innovation to drive your success in the future.

Quality

You need consistent and reliable materials that you can trust, day after day. Your customers are counting on you. AOC produces the highest quality and most consistent products in the industry. Manufacturing expertise, proprietary equipment and automated process operation systems provide you with the consistency you can trust. AOC delivers the products you need and brings peace of mind so you can focus on your business and your customers.

Your trusted partners

The AOC team is dedicated to finding the right solutions to help drive your success. We understand your business and will work together to determine how AOC products and service can help optimize your part performance and meet your customers' requirements.

AOC experienced professionals are experts in both product performance and manufacturing processes.



From our polymer scientists, manufacturing, technical service and sales experts, the AOC team will be a true partner for your business.

A world of experience

AOC's foundation began more than 60 years ago. Through the decades, AOC has been focused on creating innovation, producing quality, and developing the type of partnerships that have helped our customers

grow their businesses and expand their markets. With facilities and global experts around the world, AOC is ready to work with you to find the solutions you can trust.

Previously serving the market under the names Aliancys, AOC Aliancys, and DSM Composite Resins, AOC has transformed the industry and has earned the position of the leading global supplier.

Chemical substance	Concentration	Resistance																	Notes
		Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69						
A																			
Acetaldehyde	100	NR	NR	NR	NR	NR	NR	NR	NR										
Acetic acid	0.5-10	95	95	95	95	40	100	100	95	95	90	55	60	40	40	4			
Acetic acid	11-25	90	90	90	90	25	100	100	95	95	90	55	60	NR	NR	4			
Acetic acid	26-50	70	70	70	70	NR	80	80	80	70	70	50	40	NR	NR	4			
Acetic acid	51-75	60	60	60	60	NR	65	65	65	60	60	60	NR	25	NR	NR	4		
Acetic acid	76-85	45	45	45	45	NR	45	45	45	45	45	45	45	NR	NR	NR	NR	4,8	
Acetic acid	86-100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	NR	NR	4,8	
Acetic anhydride	100	NR	NR	NR	NR	NR	-	-	-	NR	NR	NR	NR	NR	NR	NR	1		
Acetone	10	-	-	-	-	NR	80	80	80	80	80	80	-	NR	NR	NR	NR	8	
Acetone	20-100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acetone : Methylethyl ketone : Methylisobutyl ketone : H₂O	2 : 2 : 2 : 94	-	-	-	-	NR	40	40	40	-	-	NR	NR	NR	NR	NR	NR	8	
Acetonitrile	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acetyl acetone	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acetyl chloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acrolein (= Acrylaldehyde)	1-20	30	30	30	30	-	40	40	-	-	-	-	NR	-	-	-	-	8	
Acrolein (= Acrylaldehyde)	21-100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acrylamide	50	-	-	-	-	25	40	40	40	-	-	-	-	-	NR	NR	NR	8	
Acrylic acid	1-25	40	40	40	40	-	40	40	40	40	40	40	-	NR	NR	NR	NR	8	
Acrylic acid	26 -100	NR	N.R.	N.R.	NR	NR	N.R.	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Acrylic latex	All	80	80	80	80	-	80	80	80	80	80	80	-	60	-	-	-		
Acrylonitrile	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Adipic acid	All	80	80	80	80	40	80	80	80	80	80	80	-	60	40	30			
Adiponitrile	All	50	50	50	50	NR	50	50	50	50	50	50	-	NR	NR	NR	NR		
Alkylaminopolycycoether	All	-	-	-	-	-	25	25	25	-	-	-	-	-	-	-	-		
Alkylaryl ammonium salt	All	80	80	80	80	25	80	80	80	80	80	80	-	60	25	25			
Alkylaryl sulfonate salts	All	60	60	60	60	-	60	60	60	60	60	60	-	-	-	-	-		
Alkylaryl sulfonic acid	All	60	60	60	60	-	60	60	60	60	60	60	-	25	-	-	4		
Alkylbenzene ammonium salt	All	80	80	80	80	25	80	80	80	80	80	80	-	60	25	25			
Alkylbenzene sulfonic acid	All	60	60	60	60	-	60	60	60	60	60	60	-	25	-	NR			
Alkylnaphthalopolycycoether	All	60	60	60	60	40	60	60	60	60	60	60	-	40	25	25			
Alkyl phenol polyglycoether and salts sulfates	All	60	60	60	60	25	60	60	60	60	60	60	-	25	25	25			
Alkyl sulfonate	All	60	60	60	60	-	60	60	60	60	60	60	-	25	-	NR			
Allyl alcohol	100	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	NR	NR			
Allyl chloride	All	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	NR	NR			
Alpha-methylstyrene (Methylstyrene)	100	25	25	25	25	NR	50	50	50	NR	NR	NR	NR	NR	NR	NR	NR		

Chemical substance	Concentration	Vinyl Ester				Novolac		Vinyl Ester Urethane		BPA		TPA		Iso/NPG		Iso		Ortho	Notes
		Attac® 430	Attac® F010 Series*	Attac® F013 Series*	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z Attac® 590	Attac® F086A	Attac® E-Nova FW 2045	Attac® 580	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69				
A																			
Alum	> 0.5	90	90	90	90	90	-	-	100	100	100	95	100	90	75	70	-	-	
Aluminium chloride	> 0.5	90	90	90	90	90	-	-	100	100	100	95	100	90	75	60	40	40	
Aluminium chlorohydrate	> 0.5	90	90	90	90	90	-	-	100	100	100	95	100	90	75	60	-	-	
Aluminium chlorohydroxide	50	90	90	90	90	90	-	-	100	100	100	95	100	90	75	-	-	-	
Aluminium citrate	> 0.5	90	90	90	90	90	60	60	100	100	100	95	100	90	75	60	-	-	
Aluminium fluoride	All	25	25	25	25	NR	30	30	30	25	25	25							

Chemical substance	Concentration	Resistance														Notes								
		Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Attac® 430	Attac® F010 Series*	Attac® F013 Series*	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z Attac® 590	Attac® F086A	Attac® E-Nova FV 2045	Attac® 580	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69	
Ammonium phosphate, dibasic	> 0.5	90	90	90	90	NR	100	100	100	95	100	90	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ammonium phosphate, monobasic	> 0.5	90	90	90	90	NR	100	100	100	95	100	90	65	60	50	40	NR	NR	NR	NR	NR	NR	NR	
Ammonium polysulfide	All	50	50	50	50	NR	65	65	65	45	45	45	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ammonium sulfate	> 0.5	90	90	90	90	50	100	100	100	95	100	90	75	60	50	40	NR	NR	NR	NR	NR	NR	NR	
Ammonium sulfide	All	45	45	45	45	NR	50	50	50	45	45	45	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ammonium sulfite	All	60	60	60	60	NR	65	65	65	60	60	55	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ammonium thiocyanate	All	45	45	45	45	25	50	50	50	45	45	45	25	25	-	-	NR	NR	NR	NR	NR	NR	NR	
Ammonium thioglycolate	All	40	40	40	40	25	50	50	50	40	40	40	-	30	-	-	NR	NR	NR	NR	NR	NR	NR	
Ammonium thiosulfate	All	50	50	50	50	25	50	50	50	50	50	45	NR	40	25	25	NR	NR	NR	NR	NR	NR	NR	
Amyl acetate (n-)	All	-	-	-	-	25	50	50	50	-	40	-	NR	-	-	-	NR	NR	NR	NR	NR	NR	NR	
Amyl alcohol	100	50	50	50	50	40	65	65	65	50	65	40	40	25	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Amyl alcohol, vapors	100	50	50	50	50	-	100	100	100	-	100	-	40	40	-	NR	NR	NR	NR	NR	NR	NR	NR	
Amyl chloride	All	50	50	50	50	NR	50	50	50	NR	*	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Aniline	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Aniline hydrochloride	> 0.5	80	80	80	80	25	80	80	80	80	80	80	-	25	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Aniline sulfate	> 0.5	90	90	90	90	40	100	100	100	95	100	90	NR	25	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Antimony pentachloride	All	40	40	40	40	NR	40	40	40	40	40	40	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Antimony trichloride	All	80	80	80	80	-	80	80	80	80	80	80	60	60	40	40	NR	NR	NR	NR	NR	NR	NR	
Aqua regia (HCl : HNO₃ = 3 : 1)	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Arsenic acid	> 0.5	80	80	80	80	-	80	80	80	80	80	80	-	NR	25	-	-	NR	NR	NR	NR	NR	NR	NR
Arsenious acid	All	80	80	80	80	-	80	80	80	80	80	80	-	25	-	-	NR	NR	NR	NR	NR	NR	NR	
B																								
Barium acetate	All	80	80	80	80	80	60	80	80	80	80	80	80	60	40	40	NR	NR	NR	NR	NR	NR	NR	
Barium bromide	> 0.5	90	90	90	90	90	60	100	100	100	95	100	90	-	70	50	40	NR	NR	NR	NR	NR	NR	NR
Barium carbonate	All	80	80	80	80	-	80	80	80	80	80	80	80	40	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Barium chloride	> 0.5	90	90	90	90	60	100	100	100	95	100	90	75	70	50	40	NR	NR	NR	NR	NR	NR	NR	
Barium cyanide	All	65	65	65	65	25	65	65	65	65	65	65	65	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Barium hydroxide	All	65	65	65	65	NR	-	-	-	50	65	50	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Barium nitrate	> 0.5	90	90	90	90	40	100	100	100	95	100	90	-	70	50	40	NR	NR	NR	NR	NR	NR	NR	
Barium sulfate	> 0.5	90	90	90	90	40	100	100	100	95	100	90	75	70	50	40	NR	NR	NR	NR	NR	NR	NR	
Barium sulfide	All	80	80	80	80	NR	80	80	80	75	80	70	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Beer	50	50	50	50	40	-	-	-	-	50	50	32	30	-	-	1	NR	NR	NR	NR	NR	NR	NR	
Beet sugar liquor	80	80	80	80	80	60	80	-	80	80	80	80	49	-	-	-	1	NR	NR	NR	NR	NR	NR	NR
Benzaldehyde	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene	100	NR	NR	NR	NR	35	40	40	40	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene	vapour	NR	NR	NR	NR	35	40	40	40	NR	NR	NR	32	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene : Ethyl benzene	All	NR	NR	NR	NR	35	35	35	35	NR	NR	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Benzene sulfonic acid	All	65	65	65	65	65	-	65	65	65	65	65	65	NR	-	NR	NR	NR	NR	NR	NR	NR	NR	
Benzoic acid	> 0.5	90	90	90	90	40	100	100	100	95	100	90	60	60	40	30	NR	NR	NR	NR	NR	NR	NR	
Benzoquinones	100	65	65	65	65	65	-	80	80	80	80	80	80	-	-	-	-	NR	NR	NR	NR	NR	NR	
Benzoyl benzoic acid	All	90	90	90	90	40	100	100	100	95	100	90	-	60	40	40	NR	NR</td						

Chemical substance	Concentration	Resistance														Notes	
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69		
C																	
Cadmium chloride	> 0.5	95	95	95	95	95	50	95	95	95	95	90	60	60	25	25	
Calcium bisulfite	> 0.5	95	95	95	95	95	-	100	100	100	95	100	90	75	-	-	
Calcium bromide	> 0.5	95	95	95	95	95	50	100	100	100	95	100	90	60	70	50	40
Calcium carbonate (lime stone slurry)	> 0.5	80	80	80	80	80	NR	80	80	80	80	80	70	NR	NR	NR	
Calcium chlorate	> 0.5	95	95	95	95	95	40	100	100	100	95	100	90	60	60	40	40
Calcium chloride	> 0.5	95	95	95	95	95	50	100	100	100	95	100	90	82	70	50	40
Calcium hydroxide	All/ Slurry	80	80	80	80	NR	40	40	60	50	60	50	50	-	NR	NR	1,2,8
Calcium hypochlorite, pH > 11, active chlorine < 18%		80	80	80	80	NR	40	40	50	50	60	50	50	NR	NR	NR	1,2,6,8,9
Calcium nitrate	> 0.5	95	95	95	95	95	50	100	100	100	95	100	90	80	70	50	40
Calcium sulfate	> 0.5	95	95	95	95	95	50	100	100	100	95	100	90	80	70	50	40
Calcium sulfite	> 0.5	95	95	95	95	95	-	95	95	95	95	100	90	-	-	-	-
Cane sugar liquor & sweet water	> 0.5	80	80	80	80	-	95	95	95	80	95	80	50	-	-	-	-
Capric acid	> 0.5	80	80	80	80	-	80	80	80	80	80	80	50	80	-	-	-
Caprolactam	50	40	40	40	40	-	40	40	40	40	40	40	40	-	-	-	-
Caprolactam	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Caprolactone	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Caprylic acid	100	90	90	90	90	50	100	100	100	90	90	90	70	80	50	40	
Carbolic acid		See Phenol															
Carbon dioxide gas, dry		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Carbon disulfide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Carbon monoxide gas, dry		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Carbon tetrachloride	100	40	40	40	40	25	65	65	65	45	45	45	45	NR	25	NR	8
Carbonic acid	All	70	70	70	70	60	70	-	70	70	70	70	-	60	40	40	
Carboxy ethylcellulose	10	65	65	65	65	-	65	65	65	65	65	65	-	-	-	-	
Carboxy methylcellulose	10	65	65	65	65	-	65	65	65	65	65	65	-	-	-	-	
Cashew nut oil	100	80	80	80	80	60	90	90	90	80	80	80	60	60	50	50	
Castoroil	100	80	80	80	80	60	90	90	90	80	80	80	60	80	60	60	
Caustic		See Sodium hydroxide															
Chloric acid	All	25	25	25	25	NR	25	25	25	25	25	25	NR	NR	NR	NR	8
Chlorine / Hydrochloric acid, wet		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,12
Chlorinated brine, pH < 2.5	Sat'd Cl ₂	80	80	80	80	NR	95	95	95	90	95	85	NR	NR	NR	NR	1,3,4,5,8
Chlorinated brine, pH 2.5-9		NR	-	-	NR	NR	NR	-	NR	NR	NR	NR	-	NR	NR	NR	1
Chlorinated brine, pH > 9	Sat'd Cl ₂	80	80	80	80	NR	55	55	60	50	60	50	NR	NR	NR	NR	1,2,4,6,8
Chlorinated water		See Chlorinated brine															
Chlorinated waxes	100	80	80	80	80	60	80	80	80	70	80	70	60	60	40	40	
Chlorine	Liquid	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	1
Chlorine dioxide	0.1	60	60	60	60	NR	80	80	80	60	70	50	NR	NR	NR	NR	1
Chlorine gas, dry	100	80	80	80	80	NR	100	100	100	90	100	80	NR	NR	NR	NR	3,4,5,8

Chemical substance	Concentration	Resistance				Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Notes
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac								
C													
Chlorine gas, wet	100	80	80	80	80	NR	100	100	90	100	80	NR	NR
Chloroacetic acid (Monochloroacetic acid)	1-25	50	50	50	50	-	50	50	50	50	25	NR	25
Chloroacetic acid (Monochloroacetic acid)	25-50	40	40	40	40	-	40	40	40	40	NR	NR	NR
Chloroacetic acid (Monochloroacetic acid)	>50	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chlorobenzene	100	NR	NR	NR	NR	-	35	35	35	NR	NR	NR	NR
Chlorocholinchloride	75	70	70	70	70	50	70	70	60	60	60	-	60
Chloroethylene (1,1,1-)	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroform	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Chloroparaffin	100	80	80	80	80	6							

Chemical substance	Concentration	Resistance														Notes
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Attac® A 410	Synolite™ 0266	Palatal® P 69	
Cottonseed oil	100	95	95	95	95	80	100	100	95	100	90	60	80	60	60	
Cresol	10	NR	NR	NR	NR	NR	25	25	25	NR	NR	-	NR	NR	NR	8
Crudeoil, sour and sweet	100	95	95	95	95	80	100	100	95	100	90	80	60	40	40	
Cyclohexane	100	50	50	50	50	40	65	65	50	50	50	50	-	-	NR	
Cyclohexanol	100	40	40	40	40	40	50	50	50	50	40	40	40	NR	NR	
Cyclohexanone	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	25	NR	NR	8
Cyclohexylamine	100	-	-	-	-	NR	25	25	25	NR	NR	NR	NR	NR	NR	
D																
Decalin	All	60	60	60	60	60	-	60	60	60	60	60	-	60	NR	NR
Decanes	100	90	90	90	90	80	100	100	90	90	90	90	-	60	40	30
Decanol (decyl alcohol)	100	50	50	50	50	60	80	80	80	70	80	50	40	50	40	30
Decenes	100	90	90	90	90	80	100	100	90	90	90	90	-	60	40	30
Deionized water	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Demineralised water	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	1,8
Detergents, sulfonated	All	70	70	70	70	-	80	80	80	80	80	80	70	60	NR	NR
Di 2-ethylhexyl phosphoric acid (in kerosene)	20	-	-	-	-	-	80	80	80	-	-	-	-	-	-	-
Diacetone alcohol	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Diallyl phthalate	100	80	80	80	80	80	100	100	80	80	80	80	30	25	25	25
Diammonium phosphate	> 0.5	90	90	90	90	-	95	95	95	90	90	90	-	-	-	-
Dibromophenol	100	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	NR	NR	NR	8
Dibromopropanol	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Dibutyl ether	100	NR	NR	NR	NR	NR	65	65	65	NR	45	NR	NR	NR	NR	8
Dibutyl phthalate	100	80	80	80	80	80	100	100	80	80	80	80	30	60	25	25
Dibutyl sebacate	100	50	50	50	50	-	65	65	65	50	50	50	-	50	25	25
Dibutylamine (n-)	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Dichloroacetic acid		See Chloroacetic acid														
Dichlorobenzene	100	NR	NR	NR	NR	NR	45	45	45	NR	NR	NR	NR	NR	NR	8
Dichloroethane	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Dichloroethylene (= dichloroethylene)	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	8
Dichloromethane (= Methylene chloride)	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Dichloroproppane	100	NR	NR	NR	NR	NR	30	30	30	NR	NR	NR	NR	NR	NR	8
Dichloropropene	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Dichloropropionic acid	100	NR	NR	NR	NR	NR	30	30	30	NR	NR	NR	-	NR	NR	8
Dichlorotoluene	100	25	25	25	25	NR	50	50	50	NR	NR	NR	-	NR	NR	
Diesel fuel, Aromatics, Methanol	100	-	-	-	-	-	-	-	-	-	-	30	-	-	-	1,12
Diesel fuel, No Aromatics, No Methanol	100	80	80	80	80	80	95	95	95	80	80	80	75	60	40	40
Diethanol amine	100	50	50	50	50	NR	65	65	65	45	50	45	-	NR	NR	NR
Diethyl amine	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Diethyl aniline N,N	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	NR	
Diethyl benzene	100	30	30	30	30	-	65	65	65	NR	NR	NR	NR	NR	NR	

Chemical substance	Concentration	Resistance														Notes
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Attac® A 410	Synolite™ 0266	Palatal® P 69	
Diethyl carbonate	100	NR	NR	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	-	NR
Diethyl ether	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Diethyl formamide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Diethyl ketone	100	NR	NR	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	8
Diethyl maleate	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Diethyl phthalate	100	60	60	60	60	60	60	60	80	80	80	60	60	40	60	25
Diethyl sulfate	100	40	40	40	40	-	50	50	50	NR	40	-	NR	NR	NR	
Diethylene glycol	100	80	80	80	80	80	80	80	50	100	100	95	100	90	70	50
Diethylene glycol dimethyl ether	100	NR	NR	NR	NR	NR	NR	NR	25	25	25	NR	NR	-	NR	NR
Diethylene glycol monobutyl ether	100	-	-	-	-	-	NR	25	25	25	NR	25	NR	-	NR	NR
Diethylenetriamine	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Diisobutyl ketone	100	NR	NR	NR	NR	NR	NR	NR	50	50	50	NR	NR	-	NR	NR
Diisobutyl phthalate	100	65	65	65	65	60	70	70	70	70	70	70	45	60	25	25
Diisobutylene	100</															

Chemical substance	Concentration	Resistance														Notes
		Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69			
Dodecyl benzene sulfonic acid	100	80	80	80	80	40	100	100	95	100	90	25	60	25	25	
Dodecyl guanidine hydrochloride	All	80	80	80	80	40	80	80	80	80	80	25	60	40	40	
E																
Embalming fluid	100	40	40	40	40	-	50	50	50	40	50	40	-	-	-	8
Epichlorohydrin	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Epoxidized soybean oils	100	65	65	65	65	50	65	65	65	65	65	40	65	50	50	
Epoxidized vegetable oils	100	65	65	65	65	50	65	65	65	65	65	40	65	40	40	
Esters, fatty acid	100	80	80	80	80	60	80	80	80	80	80	40	80	40	40	
Ethanol (Ethyl alcohol)	10	50	50	50	50	40	65	65	65	50	50	25	50	40	30	
Ethanol (Ethyl alcohol)	50	40	40	40	40	NR	65	65	65	40	65	40	30	NR	NR	
Ethanol (Ethyl alcohol)	95	25	25	25	25	NR	40	40	40	25	40	25	30	NR	NR	8
Ethanol (Ethyl alcohol)	100	NR	NR	NR	NR	NR	40	40	40	NR	40	NR	NR	NR	NR	8
Ethanolamine	100	25	25	25	25	NR	40	40	40	NR	NR	NR	NR	NR	NR	1,8
Ethyl acetate	100	NR	NR	NR	NR	NR	-	25	-	NR	NR	NR	NR	NR	NR	8
Ethyl acrylate	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Ethyl amine	40	NR	NR	NR	NR	NR	25	25	25	25	25	NR	-	NR	NR	8
Ethyl benzene	100	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	NR	NR	NR	8
Ethyl bromide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethyl chloride	100	NR	NR	NR	NR	NR	-	25	-	NR	NR	NR	NR	NR	NR	8
Ethyl ether	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethyl sulfate	100	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	-	NR	NR	8
Ethylene chloride (= 1,2-dichloroethane)	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	8
Ethylene chlorohydrin (Ethyl chlorohydrin)	100	35	35	35	35	-	40	40	40	40	40	35	-	NR	NR	
Ethylenediaminetetraacetic acid, EDTA	All	80	80	80	80	-	80	80	80	60	60	60	-	NR	NR	
Ethylene dibromide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylene dichloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylene glycol	100	95	95	95	95	60	100	100	95	100	90	80	70	40	30	
Ethylene glycol monobutyl ether (2-Butoxyethanol)	100	30	30	30	30	NR	40	40	30	35	NR	-	NR	NR	NR	8
Ethylene oxide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Ethylhexanol (2-)	100	70	70	70	70	60	80	80	80	80	60	40	25	NR	NR	
Ethylhexylacrylat (-2)	100	25	25	25	25	NR	25	25	25	25	25	-	NR	NR	NR	8
Eucalyptus oil	100	60	60	60	60	70	70	70	60	60	60	50	60	40	40	
F																
Fatty acids (C12 or higher)	All	90	90	90	90	90	80	120	120	120	95	100	90	80	80	40
Ferric acetate	All	80	80	80	80	60	80	80	80	80	80	-	60	40	40	
Ferric chloride (III)	> 0.5	95	95	95	95	60	100	100	95	100	90	80	60	40	30	4
Ferric chloride : Ferrous chloride	5:20	95	95	95	95	95	60	100	100	95	100	90	80	60	40	30

Chemical substance	Concentration	Resistance				Notes	
		Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA		
Ferric chloride : Ferrous chloride : Hydrochloric acid (48:2:2)	52	80	80	80	80	-	
Ferric chloride : Hydrochloric acid	29:18,5	80	80	80	30	NR	
Ferric nitrate	> 0.5	95	95	95	60	30	
Ferric sulfate	> 0.5	95	95	95	60	30	
Ferric sulfate : Sulfuric acid	0-40 : 0-25	95	95	95	60	30	
Ferrous chloride (II)	> 0.5	95	95	95	60	30	
Ferrous nitrate	> 0.5	100	100	100	60	30	
Ferrous sulfate	> 0.5	100	100	100	60	30	
Ferrous sulfate : Magnesium oxide	30	95	95	95	100	30	
Fertilizer (general)		60	60	60	60	1,12	
Flue gas, dry		-	-	-	-	1	
Flue gas, wet		-	-	-	-	1	
Sulfur dioxide gas, dry	All	105	105	105	60	65	
Sulfur dioxide gas, wet	All	80	80	80	60	70	
Fluoboric acid	1-10	80	80	80	80	2,4	
Fluoboric acid	11-15	65	65	65	80	2,4	
Fluoboric acid	16-25	50	50	50	65	2,4	
Fluoboric acid	>25	40	40	40	50	2,4	
Fluoride salts : Hydrochloric acid	30 : 10	50	50	50	50	2,4,8	
Fluorine gas		NR	NR	NR	NR		
Fluosilicic acid		See Hydrofluosilicic acid					
Formaldehyde	38	50	50	50	40	NR	
Formamide	20	25	25	25	25	NR	
Formamide	100	-	-	-	NR	NR	
Formic acid	10	80	80	80	80	40	
Formic acid	30	50	50	50	40	30	
Formic acid	50	45	45	45	50	40	
Formic acid	85	25	25	25	40	25	
Formic acid	100	NR	NR	NR	NR	NR	
Fuel oil, no aromatics, no methanol	100	80	80	80	60	25	
Furfural	10	40	40	40	50	40	
Furfural	> 10	NR	NR	NR	NR	NR	
Furfuryl alcohol	100	NR	NR	NR	NR	8	
G							
Gallic acid	All	80	80	80	80	25	
Gasoline fuel		-	-	-	-	1	
Gasoline : MTBE	85 : 15	40					

Chemical substance	Concentration	AOC Products														Notes	
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69		
Glucose	> 0,5	80	80	80	80	80	60	100	100	95	100	90	70	60	40	30	
Glutaraldehyde	50	50	50	50	50	NR	50	50	50	50	50	40	25	25	NR	NR	
Glutaric acid	50	50	50	50	50	40	50	50	50	50	50	-	50	40	40	4	
Glycerine	100	95	95	95	95	60	100	100	100	95	100	90	65	70	40	30	
Glycerine triacetate	All	25	25	25	25	-	25	25	25	-	-	-	-	-	-	-	
Glycolic acid (Hydroxyacetic acid)	35	50	50	50	50	40	65	65	65	50	65	50	50	25	-	4	
Glycolic acid (Hydroxyacetic acid)	70	40	40	40	40	-	40	40	40	25	40	25	-	NR	NR	4	
Glyme		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Glyoxal	40	40	40	40	40	NR	45	40	45	45	45	45	45	NR	25	NR	NR
Green liquor (pulp mill)		80	80	80	80	-	80	80	80	80	80	80	80	NR	-	NR	NR
Gypsum Slurry		See Calcium sulfate															
H																3,4,5,8	
Heptane	100	95	95	95	95	80	95	95	95	90	90	65	50	50	40	30	
Heptene	100	90	90	90	90	80	90	90	90	90	90	65	50	50	40	30	
Hexachlorocyclopentadiene	100	-	-	-	-	-	50	50	50	40	45	-	-	-	NR	NR	
Hexachloroethane	100	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	NR	NR	NR	NR	
Hexamethylenetetramine	60	40	40	40	40	-	50	50	50	45	45	45	45	-	NR	NR	
Hexane	100	65	65	65	65	60	65	65	65	65	65	50	50	50	40	30	
Hexanediol	All	80	80	80	80	60	80	80	80	80	80	60	-	60	25	25	
Hexene	100	60	60	60	60	60	60	60	60	60	60	50	-	50	40	30	
Hydraulic fluid, neutral	100	80	80	80	80	60	80	80	80	80	80	25	25	25	25	1,12	
Hydraulic fluid, other types		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,12	
Hydrazine	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR		
Hydrobromic acid	1-25	80	80	80	80	NR	80	80	-	80	80	80	-	40	NR	NR	
Hydrobromic acid	48	65	65	65	65	NR	65	65	65	65	65	65	NR	40	NR	NR	
Hydrobromic acid	62	40	40	40	40	NR	40	40	-	40	40	40	-	NR	NR	NR	
Hydrochloric acid	1-18	80	80	80	80	40	100	100	80	90	80	40	40	NR	NR	NR	
Hydrochloric acid	19-20	80	80	80	80	NR	100	100	100	70	75	70	40	NR	NR	NR	
Hydrochloric acid	21-25	65	65	65	65	NR	95	95	95	55	65	55	-	NR	NR	NR	
Hydrochloric acid	26-30	60	60	60	60	NR	90	90	90	40	40	40	-	NR	NR	NR	
Hydrochloric acid	31-32	60	60	60	60	NR	80	80	80	40	40	40	-	NR	NR	NR	
Hydrochloric acid	33-34	50	50	50	50	NR	70	70	70	40	40	40	-	NR	NR	NR	
Hydrochloric acid	35-36	45	45	45	45	NR	60	60	60	40	40	40	-	NR	NR	NR	
Hydrochloric acid	37	40	40	40	40	NR	50	50	50	40	40	40	-	NR	NR	NR	
Hydrochloric acid (fumes)		See Hydrogen Chloride gas, wet															
Hydrochloric acid and trace organics	0-33	NR	NR	NR	NR	NR	50	50	-	NR	NR	NR	-	NR	NR	NR	

Chemical substance	Concentration	AOC Products				Notes										
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac											
Hydrocyanic acid	10	90	90	90	90	55										
Hydrofluoric acid	1-10	50	50	50	50	40										
Hydrofluoric acid	11-20	40	40	40	40	NR										
Hydrofluoric acid	>20	NR	NR	NR	NR	NR										
Hydrofluosilicic acid	10	65	65	65	65	80										
Hydrofluosilicic acid	25	40	40	40	40	40										
Hydrofluosilicic acid	35	25	25	25	25	40										
Hydrofluosilicic acid	fumes	80	80	80	80	-										
Hydrogen bromide gas, dry	All	80	80	80	80	-										
Hydrogen bromide gas, wet	All	80	80	80	80	-										
Hydrogen chloride gas, dry	100	95	95	95	95	-										
Hydrogen chloride gas, wet	100	80	80	80	80	-										
Hydrogen fluoride gas, dry	100	-	-	-	-	80										
Hydrogen fluoride gas, wet	100	-	-	-	-	-										
Hydrogen peroxide	5	65	65	65	65	-										
Hydrogen peroxide	30	40	40	40	40	-										
Hydrogen peroxide	50	NR	NR	NR	NR	-										
Hydrogen sulfide, gas	100	95	95	95	95	60										
Hydroxyacetic acid		See Glycolic acid														
Hydroxybenzenesulfonic acid	All	60	60	60	60	40										
Hypophosphorous acid	50	50	50	50	50	50										
I																
Iodine, crystals	100	65	65	65	65	60										
Iodine, vapor	100	65	65	65	65	60										
Isoamyl alcohol (= Isobutyl carbinol)	100	50	50	50	50	25										
Isobutanol (= isobutyl alcohol)	100	50	50	50	50	30										
Isodecanol	100	50	50	50	50	40										
Isononyl alcohol	100	65	65	65	65	40										
Iooctyl adipate	100	50	50	50	50	-										
Iooctyl alcohol	100</															

Chemical substance	Concentration	Resistance																		Notes	
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FV 2045	Attac® 580	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266
K																					
Kerosene	100	80	80	80	80	80	80	80	80	80	80	-	80	-	-	-	-	-	-	-	
L																					
Lactic acid	20	80	80	80	80	80	60	80	80	80	80	80	80	80	80	60	60	40	30		
Lactic acid	80	40	40	40	40	25	40	40	40	25	40	25	-	-	25	-	-	-	-	-	
Latex, alkaline	All	25	25	25	25	NR	25	25	25	25	25	25	-	25	-	-	-	-	-	-	
Latex, paint emulsion	All	40	40	40	40	25	50	50	50	45	45	45	-	25	-	-	-	-	-	-	
Latex, PVA emulsion	All	40	40	40	40	25	50	50	50	45	45	45	-	25	-	-	-	-	-	-	
Latex, rubber emulsion	All	40	40	40	40	25	50	50	50	45	45	45	-	25	-	-	-	-	-	-	
Lauric acid	> 0.5	95	95	95	95	60	100	100	95	100	90	80	80	80	50	40					
Lauryl alcohol	100	65	65	65	65	60	80	80	65	65	65	50	60	40	30						
Lauroyl chloride	100	40	40	40	40	50	50	50	40	40	40	-	40	-	-	-	-	-	-	-	
Lauryl alcohol	100	65	65	65	65	60	80	80	65	80	65	50	60	40	30						
Lauryl chloride	All	80	80	80	80		80	80	80	80	80	50	50	50	40						
Lauryl ether sulfate	All	60	60	60	60	50	60	60	60	60	60	25	25	25	25						
Lauryl mercaptan	100	80	80	80	80	60	95	95	95	90	95	80	-	80	50	50					
Lead acetate	> 0.5	100	100	100	100	60	100	100	100	100	100	80	70	70	40	25					
Lead chloride	All	95	95	95	95	60	100	100	95	100	90	90	-	60	25	25					
Lead nitrate	All	95	95	95	95	60	100	100	95	100	90	50	60	25	25						
Levulinic acid	> 0.5	95	95	95	95	60	100	100	95	100	90	70	60	50	50						
Lignin sulfate, pH 3-7	All	80	80	80	80	60	80	80	80	80	80	-	40	NR	NR						
Lignin sulfonate sodium salt	All	80	80	80	80	80	60	80	80	80	80	-	40	NR	NR						
Lime	See Calcium hydroxide																				
Limestone slurry	See Calcium carbonate																				
Linoleic acid	100	90	90	90	90	60	100	100	95	100	90	70	80	60	60						
Linolenic acid	100	90	90	90	90	60	100	100	95	100	90	70	80	60	60						
Linseed oil	100	100	100	100	100	80	100	100	95	100	90	80	80	60	60						
Liquid sugar	> 0.5	80	80	80	80	80	80	100	100	80	100	80	70	60	25	25					
Lithium bromide	> 0.5	100	100	100	100	60	100	100	100	95	100	90	60	70	50	40					
Lithium carbonate	All	80	80	80	80	40	80	80	80	80	80	-	NR	NR	NR	2					
Lithium chloride	> 0.5	100	100	100	100	60	100	100	95	100	90	60	70	50	40						
Lithium hydroxide	All	80	80	80	80	NR	40	40	60	50	60	50	-	NR	NR	NR	2,8				
Lithium hypochlorite, pH > 11, active chlorine < 18%		80	80	80	80	NR	40	40	50	50	60	50	NR	NR	NR	NR	2,6,8,9				
Lithium sulfate	> 0.5	90	90	90	90	80	100	100	95	100	90	90	-	70	40	40					
M																					
Magnesium bicarbonate	All	80	80	80	80	80	40	80	80	80	80	80	60	60	40	30	2				
Magnesium bisulfite	All	80	80	80	80	40	80	80	80	80	80	80	-	40	25	25					
Magnesium carbonate	All	80	80	80	80	50	80	80	80	80	80	65	NR	NR	NR	2					
Magnesium chloride	> 0.5	100	100	100	100	60	100	100	95	100	90	60	70	50	40						
Magnesium hydroxide	> 0.5	90	90	90	90	NR	80	80	80	95	100	90	-	NR	NR	NR	2				
Magnesium nitrate	> 0.5	95	95	95	95	60	100	100	95	100	90	60	70	50	40						
Magnesium sulfate	> 0.5	100	100	100	100	100	60	100	100	95	100	90	60	70	50	40					
Maleic acid	> 0.5	80	80	80	80	80	60	100	100	90	100	85	60	60	25	25					

Chemical substance	Concentration	Vinyl Ester				Novolac		Vinyl Ester Urethane		BPA		TPA	Iso/NPG	Iso	Ortho	Notes
Attac® 430	Attac® F010 Series*	Attac® F013 Series*	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FV 2045	Attac® 580	Attac® 4010	F774					

Chemical substance	Concentration	Vinyl Ester						Novolac		Vinyl Ester Urethane		BPA		TPA		Iso/NPG		Iso		Ortho	
		Attac® 430	Attac® F010 Series*	Attac® F013 Series*	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FW 2045	Attac® 580	Attac® 382	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69	Notes			
Morpholine	100	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	NR	NR	NR	8		
Motor oil	100	100	100	100	100	80	120	120	120	95	100	90	80	70	50	40					
Muriatic acid		See Hydrochloric acid																			
Myristic Acid	> 0.5	95	95	95	95	95	60	100	100	100	95	100	90	80	80	25	25				
N																					
Naphta, Aromatic (heavy)	100	45	45	45	45	45	50	50	50	45	45	45	50	-	-	-	-				
Naphta, aliphatic	100	80	80	80	80	80	100	100	100	90	95	90	50	50	40	40					
Naphthalene	All	100	100	100	100	100	60	100	100	100	60	100	60	65	50	-	-				
Naphthenoic acid	> 0.5	80	80	80	80	80	60	100	100	100	95	100	90	-	60	25	25				
Naphthylamine-1-sulfonic acid (2-)	> 0.5	80	80	80	80	-	100	100	100	80	100	80	-	-	-	-	-				
Neopentyl glycol	All	80	80	80	80	60	80	80	80	80	80	80	60	60	60	40	30				
Nickel chloride	> 0.5	100	100	100	100	100	80	100	100	100	95	100	90	80	60	50	40				
Nickel nitrate	> 0.5	100	100	100	100	100	80	100	100	100	95	100	90	80	60	50	40				
Nickel sulfamate	> 0.5	80	80	80	80	80	80	80	80	80	80	80	80	-	-	-	-				
Nickel sulfate	> 0.5	100	100	100	100	100	80	100	100	100	95	100	90	80	60	50	40				
Nicotinic acid	All	45	45	45	45	30	50	50	50	45	45	45	-	25	-	-	-				
Nitric acid	2-5	65	65	65	65	40	80	80	80	60	80	55	-	40	NR	NR	4,8				
Nitric acid	6-10	65	65	65	65	65	65	65	65	60	65	55	40	NR	NR	NR	4,8				
Nitric acid	11-20	50	50	50	50		65	65	65	50	60	50		25	NR	NR	4,8				
Nitric acid	21-30	40	40	40	40		40	40	-	40	40	40		25	NR	NR	4,8				
Nitric acid	31-35	25	25	25	25		40	40	-	25	40	25		NR	NR	NR	4,8				
Nitric acid	36-40	NR	NR	NR	NR		30	30	-	NR	NR	NR		NR	NR	NR	NR	4,8			
Nitric acid	>40	NR	NR	NR	NR		NR	NR	NR	NR	NR	NR		NR	NR	NR	NR	4,8			
Nitric acid (no condensation)	Fumes	80	80	80	80	-	80	80	-	80	80	80	-	-	-	-	4,8				
Nitric acid : Chromic acid	15 : 3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR				
Nitrobenzene	100	NR	NR	NR	NR	NR	40	40	40	NR	NR	NR	NR	NR	NR	NR	NR	8			
Nitrogen tetroxide	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR				
Nitrophenol	All	NR	NR	NR	NR	NR		40	40	40	NR	NR	NR	-	NR	NR	NR	1,8,12			
Nitrous acid	10	25	25	25	25	-	25	25	-	25	25	25	25	NR	-	-	-	8			
N-methyl-2-pyrrolidone (NMP)	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR				
Nonanes	100	95	95	95	95	80	100	100	100	95	95	95	60	60	40	40					
Nonenes	100	95	95	95	95	80	100	100	100	95	95	95	60	60	40	40					
O																					
Octane	100	95	95	95	95	80	100	100	100	95	95	95	60	60	40	40					
Octanoic acid	100	See Caprylic acid																			
Octanol		80	80	80	80	60	80	80	80	80	80	80	60	40	25	NR	NR				
Octene	100	95	95	95	95	80	100	100	100	95	95	95	60	60	-	-					
Octylamine (all Isomers)	100	-	-	-	-	-	40	40	40	40	40	40	-	-	NR	NR	8				
Oil, sour and sweet crude	100	95	95	95	95	80	100	100	100	95	100	90	80	60	40	40					

Chemical substance	Concentration	Vinyl Ester				Novolac		Vinyl Ester Urethane		BPA		TPA		Iso/NPG	Iso	Ortho
		Attac® 430	Attac® F010 Series*	Attac® F013 Series*	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FW 2045	Attac® 580	Attac® 382	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266
Oils (grease, lube, vegetable)	100	95	95	95	95	80	100	100	100	90	95	90	50	60	25	25
Oleic acid	100	95	95	95	95	80	100	100	100	95	100	90	75	80	25	25
Oleum (fuming Sulfuric acid)		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Olive oil	100	95	95	95	95	80	100	100	100	95	100	90	50	80	-	-
Orange oil	100	80	80	80	80	80	80	80	80	80	80	80	70	70	-	-
Oxalic acid	All	50	50	50	50	60	50	50	50	50	50	50	40	40	NR	NR
Ozone in solution 2 mg/l	-	NR	NR	NR	NR	NR	-	-	-	NR	-	NR	NR	NR	NR	NR
P																
Palm oil	100	90	90	90	90	80	100	100	100	95	100	90	70	80	-	-
Palmitic acid	100	100	100	100	100	80	100	100	100	95	100	90	75	80	25	25
Palmitoyl chloride	All	50	50	50	50		50	50	50	50	50	50	-	50	40	40
Paraffin wax	100	90	90	90	90	60	90	90	90	90	90	90	80	60	50	40
Peanut oil	100	85	85	85	85	80	95	95	95	95	95	85	75	80	50	40
Pentachloroethane	100	NR	NR	NR	NR	NR	35	35	35	NR	NR	NR	NR	NR	NR	NR
Pentane	100	35	35	35	35	35	35	35	35	35	35	35	35	-	35	35
Pentanedioic acid		See Tetrapotassium diphosphate														
Pentanol		See Amyl alcohol														
Pentasodium triphosphate		See Sodium triphosphate														
Pentene	100	25	25	25	25	25	25	25	25	25	25	25	-	25	25	25
Peracetic acid	20	30	30	30	30	NR	40	40	40	-	-	-	NR	NR	NR	NR
Peracetic acid	35	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Peracetic acid	10	65	65	65	65	40	65	65	-	-	65	30	NR	30	NR	NR
Perchloric acid	20	45	45	45	45	-	35	45	-	-	45	30	NR	30	NR	4,8
Perchloric acid	30	35	35	35	35	NR	35	35	-	-	35	-	NR	NR	NR	4,8
Perchloroethylene		See Tetrachloroethylene														
Phenol (Carbolic acid)	1	25	25	25	25	-	50	50	50	45	45	45	NR	25	NR	NR
Phenol (Carbolic acid)	2-5	NR	NR	NR	NR	NR	25	25	25	NR	NR	NR	NR	NR	NR	NR
Phenol (Carbolic acid)	> 5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phenolformaldehyde resin	All	40	40	40	40	-	50	50	50	40	45	40	-	-	-	8
Phenolsulfonic acid	All	25	25	25	25	NR	25	25	25	-	-	-	-	25	NR	NR
Phosphoric acid	0.5-85	100	100	100	100	60	100	100	100	95	100	90	70	60	40	30
Phosphoric acid	85-100	100	100	100	100	50	100	100	100	95	100	90	30	25	NR	NR
Phosphoric acid (Super phosphoric acid)	105	100	100	100	100	40	100	100	100	95	100	90	30	25	NR	NR
Phosphoric acid (Poly phosphoric acid)	115	95	95	95	95	40	100	100	100	95	100	90	-	NR	NR	NR
Phosphorous acid (H ₃ PO ₃)	70	80	80	80	80	-	80	80	80	80	80	80	-	60	NR	NR
Phosphorous trichloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	-	NR	NR	NR
Phossy water		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Phthalates/ Phthalate esters	All	60	60	60	60	60	60	60	60	60	60	60	-	50	25	25

Chemical substance	Concentration	Resistance																Notes								
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® 580	Attac® E-Nova FV 2045	Attac® 382	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69		
Phthalic acid	100	95	95	95	95	80	100	100	95	100	90	-	60	40	30	11										
Phthalic anhydride	100	95	95	95	95	80	100	100	95	100	90	-	60	-	-	-	11									
Picric acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,11,12									
Pine oil	100	90	90	90	90	80	90	90	90	90	90	-	80	50	50											
Pine oil disinfectant	100	50	50	50	50	-	50	50	50	50	50	-	-	-	-	-										
Piperazine dihydrochloride	All	-	-	-	-	-	45	45	45	45	45	40	-	-	-	-	8									
Plating solution, Cadmium (3.2% Cadmium oxide, 10% Sodium cyanide, 1.2% Sodium hydroxide)		60	60	60	60	NR	50	50	60	60	60	-	NR	NR	NR	NR	2									
Plating solution, Chrome (18.5% Chromic acid, 0.6% Sodium fluosilicate, 0.01% Sodium sulfate)		50	50	50	50	NR	50	50	-	NR	NR	-	25	NR	NR	NR	2									
Plating solution, Gold (23% Potassium ferrocyanide, 0.2% Potassium gold cyanide, 0.8% Sodium cyanide)	-	90	90	90	90	-	100	100	100	95	100	90	-	-	-	-										
Plating solution, Lead (8% Lead, 0.8% Fluoboric acid, 0.4% Boric acid)		80	80	80	80	-	100	100	100	95	100	80	-	-	-	-	2									
Plating solution, Nickel (11.3% Nickel sulfate, 1.4% Nickel chloride, 1.1% Boric acid)		80	80	80	80	-	90	90	90	85	90	80	-	-	-	-										
Plating solution, Nickel (43.7% Nickel sulfate, 3.5% Ammonium chloride, 3.5% Boric acid)		80	80	80	80	-	90	90	90	85	90	80	-	-	-	-										
Plating solution, Silver (3.9% Silver cyanide, 6.5% Potassium cyanide, 1.6% Potassium carbonate, 4.5% Sodium cyanide)		80	80	80	80	-	60	60	70	60	-	60	-	-	-	-	2									
Plating solution, Tin Fluoborate (18.3% Stannous fluoborate, 7.4% Metallic tin, 9.1% Fluoboric acid, 2.3% Boric acid, 0.1% Naphtol)		80	80	80	80	-	100	100	100	80	80	80	-	-	-	-	2									
Plating solution, Zinc Fluoborate (49% Zinc fluoborate, 4.4% Ammonium chloride, 5.9% Ammonium fluoroborate)		80	80	80	80	-	100	100	100	95	100	90	-	-	-	-	2									
Plating solutions (other types)																	1,12									
Pluronic surfactant 25R-2	All	60	60	60	60	60	60	60	60	60	60	60	-	60	60	60										

Chemical substance	Concentration	Resistance																Notes							
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Attac® 5200 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® 580	Attac® E-Nova FV 2045	Attac® 382	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69	
Polyacrylamide	All	80	80	80	80	80	-	80	80	80	80	-	-	-	-	-	-	-	-	-	-	-	-	-	
Polyester resins (styrenated)	100	NR	NR	NR	NR	NR	-	40	40	40	NR	25	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	8	
Polyethylene glycol	100	95	95	95	95	95	80	100	100	100	95	100	90	60	70	50	30								
Polymeric phosphoric acid	115																	See Phosphoric acid							
Polys	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	
Polyvinyl acetate emulsion	All	40	40	40	40	40	40	50	50	50	45	45	45	45	45	45	45	45	45	45	45	45	45	45	
Polyvinyl alcohol	All	80	80	80	80	80	80	60	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
Potassium aluminium sulfate	> 0.5	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Potassium bicarbonate	All	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	
Potassium bromate	> 0.5	90	90	90	90	90	60	100	100	100	95	100	90	60	60	40	40	40	40	40	40	40	40	40	
Potassium bromide	> 0.5	100	100	100	100	100	60	100	100	100	95	100	90	60	70	50	40	40	40	40	40	40	40	40	
Potassium carbonate	0-Sat'd	80	80	80	80	80	NR	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	
Potassium chlorate	> 0.5	90	90	90	90	90	60	100	100	100	95	100	90	60	40	40	40	40	40	40	40	40	40	40	
Potassium chloride	> 0.5	100	100	100	100	100	65	100	100	100	95	100	90	80	70	50	40	40	40	40	40	40	40	40	
Potassium chromate	> 0.5	90	90	90	90	90	60	100	100	100	95	100	90	60	70	50	40	40	40	40	40	40	40	40	
Potassium cyanide	All	60	60	60	60	60	40	65	65	65	65	65	65	60	60	60	60	60	60	60	60	60	60	60	
Potassium dichromate	> 0.5	90	90	90	90	90	60	100																	

Chemical substance	Concentration	AOC Products														Notes					
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FV 2045	Attac® 580	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266
Q																					
Quaternary ammonium salts	All	80	80	80	80	80	60	80	80	65	65	65	-	50	40	40					
Quinoline	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR					
R																					
Rayon spin bath	-	-	-	-	-	-	60	60	60	60	60	60	60	-	-	-	NR	NR			
Ref. Fuel C (Isooctane/Toluene)	100	-	-	-	-	-	-	-	-	-	-	-	-	-	NR	NR	1				
S																					
Salicylaldehyde	100	25	25	25	25	NR	25	25	25	-	-	-	-	25	NR	NR	8				
Salicylic acid	All	70	70	70	70	40	65	65	65	65	65	65	-	25	25	25					
Salt brine	See Sodium chloride																				
Sea water	See Water, Sea																				
Selenious acid	> 0.5	100	100	100	100	100	60	100	100	80	80	80	-	40	25	25					
Sewage municipal	All	40	40	40	40	40	-	40	40	40	40	40	40	40	-	-	1				
Silicone oils or greases	100	90	90	90	90	60	90	90	90	90	90	90	80	80	80	40	40				
Silver cyanide	> 0.5	95	95	95	95	95	60	100	100	95	100	90	-	60	-	-					
Silver nitrate	> 0.5	95	95	95	95	80	100	100	95	100	90	75	60	40	40						
Soaps	All	60	60	60	60	NR	60	60	60	60	60	60	-	25	NR	NR	1				
Sodium acetate	> 0.5	95	95	95	95	95	60	100	100	95	100	90	65	60	40	30					
Sodium alkylaryl sulfonate	All	80	80	80	80	NR	80	80	80	80	80	80	-	40	-	-					
Sodium aluminate	All	70	70	70	70	NR	50	50	60	55	65	55	NR	NR	NR	NR	2				
Sodium benzoate	All	80	80	80	80	40	80	80	80	80	80	80	45	40	NR	NR					
Sodium bicarbonate	All	80	80	80	80	30	80	80	80	80	80	80	60	60	40	30					
Sodium bicarbonate : Sodium carbonate (15%:20%)	35	80	80	80	80	30	65	65	65	65	65	65	-	NR	NR	NR	2				
Sodium bifluoride	All	45	45	45	45	40	50	50	50	45	45	45	-	40	-	-	2				
Sodium bisulfate	> 0.5	95	95	95	95	95	60	100	100	95	100	90	75	60	40	40					
Sodium bisulfite	> 0.5	95	95	95	95	95	40	100	100	95	100	90	70	40	NR	NR					
Sodium borate	See Borax																				
Sodium bromate	> 0.5	90	90	90	90	90	60	100	100	95	100	90	-	60	40	40					
Sodium bromide	> 0.5	100	100	100	100	100	60	100	100	95	100	90	60	70	50	40					
Sodium bromide : Sodium bromate	20 : 20	90	90	90	90	60	100	100	95	100	90	50	60	40	40						
Sodium butyl xanthane	5	65	65	65	65	-	65	65	65	65	65	65	-	-	-	-					
Sodium carbonate	10	80	80	80	80	NR	65	65	65	80	80	80	40	NR	NR	NR	2				
Sodium carbonate	11-Sat'd	70	70	70	70	NR	60	60	60	60	60	60	30	NR	NR	NR	2				
Sodium chlorate	> 0.5	90	90	90	90	60	100	100	95	100	90	-	60	40	40						
Sodium chlorate : Sodium chloride	34 : 20	90	90	90	90	90	-	100	100	95	100	90	-	60	40	40					
Sodium chloride (= Salt brine)	> 0.5	100	100	100	100	60	100	100	95	100	90	70	70	50	40						
Sodium chlorite, pH > 6	All	80	80	80	80	-	80	80	-	-	-	-	-	-	-	-	8,9				
Sodium chlorite, pH < 6	See Chlorine dioxide																				
Sodium chromate	> 0.5	90	90	90	90	60	100	100	95	100	90	-	60	40	40						
Sodium cyanide	All	80	80	80	80	40	80	80	80	80	80	80	40	40	NR	NR					
Sodium dichromate	> 0.5	90	90	90	90	60	100	100	95	100	90	-	60	40	40						

Chemical substance	Concentration	AOC Products				Notes
		Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	
S						
Sodium dihydrogenphosphate	> 0.5	95	95	95	40	100
Sodium diprophosphate	> 0.5	95	95	95	40	100
Sodium dodecylbenzene sulfonate	All	65	65	65	-	70
Sodium ferric cyanide	> 0.5	95	95	95	40	100
Sodium ferro cyanide	> 0.5	95	95	95	40	100
Sodium fluoride	All	80	80	80	40	80
Sodium fluorosilicate	All	50	50	50	25	50
Sodium hexametaphosphate	All	80	80	80	40	80
Sodium hydrosulfide	All	80	80	80	40	80
Sodium hydrosulfite	All	40	40	40	40	40
Sodium hydroxide	1	80	80	80	50	50
Sodium hydroxide	5	65	50	70	65	60
Sodium hydroxide</td						

Chemical substance	Concentration	Resistance Data (AOC Products)														Notes	
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac	Vinyl Ester Urethane	BPA	TPA	Iso/NPG	Iso	Ortho	F774 Series*	Attac® A 410	Palatal® A 410	Synolite™ 0266	Palatal® P 69	
Soya oil	100	95	95	95	95	80	100	100	95	100	90	75	80	50	40		
Soybean oil																	
Stannic chloride	> 0.5	95	95	95	95	95	80	100	100	100	95	100	90	75	60	40	40
Stannous chloride	> 0.5	95	95	95	95	95	80	100	100	100	95	100	90	75	60	40	40
Stannous sulfate	> 0.5	95	95	95	95	80	100	100	100	95	100	90	60	70	40	40	
Starch 4 < pH < 9	> 0.5	90	90	90	90	80	100	100	100	95	100	90	70	60	40	40	
Stearic acid	100	95	95	95	95	80	100	100	100	95	100	90	75	80	40	40	
Styrene	100	NR	NR	NR	NR	-	40	40	40	NR	25	NR	NR	NR	NR	8	
Succinonitril (aqueous)	All	25	25	25	25	60	40	40	40	40	40	NR	NR	NR	NR		
Sucrose	> 0.5	100	100	100	100	80	100	100	100	95	100	90	60	60	40	30	1
Sulfamic acid	10	95	95	95	95	-	100	100	100	95	100	90	65	NR	NR	NR	
Sulfamic acid	25	65	65	65	65	-	65	65	65	65	65	65	40	NR	NR	NR	
Sulfated detergents	See Sulfonated detergents																
Sulfanilic acid	> 0.5	95	95	95	95	95	60	100	100	90	95	85	-	-	-	-	1,11,12
Sulfonated detergents	All	70	70	70	70	60	80	80	80	80	80	80	-	60	NR	NR	
Sulfur chloride	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sulfur dichloride	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sulfur dioxide gas, dry	All	105	105	105	105	60	120	120	120	90	105	90	65	70	-	-	1
Sulfur dioxide gas, wet	All	80	80	80	80	60	80	80	80	80	80	80	40	70	NR	NR	1
Sulfur trioxide gas, dry	Fumes	100	100	100	100		100	100	100	100	100	100	-	-	-	NR	
Sulfur trioxide gas, wet	Fumes		See Sulfuric acid														
Sulfuric acid	0.5-10	95	95	95	95	95	60	100	100	90	90	80	70	70	30	30	4,8
Sulfuric acid	11-25	95	95	95	95	95	50	100	100	90	90	80	65	60	30	30	4,8
Sulfuric acid	26-50	95	95	95	95	40	100	100	90	90	70	50	60	30	NR	4,8	
Sulfuric acid	51-60	80	80	80	80	-	80	80	80	75	75	60	NR	40	NR	NR	4,8,10
Sulfuric acid	61-70	80	80	80	80	-	80	80	75	75	75	40	NR	NR	NR	NR	4,8,10
Sulfuric acid	71-75	40	40	40	40	NR	55	55	55	40	50	25	NR	NR	NR	NR	4,8,10
Sulfuric acid	76-80	30	30	30	30	NR	40	40	40	NR	30	NR	NR	NR	NR	NR	4,8,10
Sulfuric acid	>80	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sulfuric acid (= Oleum)	Fuming	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sulfuric acid : Ferrous sulfate	10 : Sat'd	95	95	95	95	60	100	100	95	100	90	-	-	-	-	-	
Sulfuric acid : Phosphoric acid	10 : 20	80	80	80	80	40	80	80	80	80	80	-	-	-	-	-	
Sulfurous acid	10	50	50	50	50	NR	50	50	-	45	50	45	NR	40	NR	NR	
Sulfuryl chloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Sulfite/ Sulfate liquors (Pulp mill)		90	90	90	90	-	95	95	95	95	100	90	-	40	NR	NR	
Sulfonyl chloride, aromatic	All	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	
Superphosphoric acid	See Phosphoric acid																
T																	
Tall oil	100	95	95	95	95	60	100	100	95	100	85	60	80	-	-	-	
Tannic acid	> 0.5	95	95	95	95	80	100	100	95	100	90	75	60	25	25		
Tartaric acid	> 0.5	95	95	95	95	80	100	100	95	100	90	60	60	40	30		
Tetrachloroethane	100	25	25	25	25	25	50	50	50	25	40	NR	NR	NR	NR		
Tetrachloroethylene (Tetrachloroethene)	100	25	25	25	25	25	50	50	50	25	40	NR	NR	NR	NR		

Chemical substance	Concentration	Resistance Data (AOC Products)				Notes										
		Attac® 430	Attac® F010 Series*	Vinyl Ester	Novolac											
Tetrachloropyridine	100	25	25	25	25	NR										
Tetrapotassium pyrophosphate (Potassium pyrophosphate)	≤ 60	50	50	50	50	-										
Tetrasodium ethylene-diaminetetraacetate (Na-EDTA)	All	80	80	80	80	40										
Tetrasodium pyrophosphate	≤ 60	50	50	50	50	-										
THF (tetrahydrofuran)	≤ 5	40	40	40	40	-										
THF (tetrahydrofuran)	> 5	NR	NR	NR	NR	NR										
Thioglycolic acid	See Mercaptoacetic acid															
Thionyl chloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
"Tobias acid (2-naphthylamine-1-Sulfonic)"	> 0.5	80	80	80	80	-	100	100	100	80	100	80	-	-	-	

Chemical substance	Concentration	AOC FRP Resins														Notes
		Attac® 430	Attac® F010 Series*	Vinyl Ester			Novolac		Vinyl Ester Urethane		BPA		TPA	Iso/NPG	Iso	Ortho
		Attac® F013 Series*	Attac® F013 FC	Attac® Premium 600	Attac® 590Z	Attac® 590	Attac® F086A	Attac® E-Nova FV 2045	Attac® 580	Attac® 382	Attac® 4010	F774 Series*	Palatal® A 410	Synolite™ 0266	Palatal® P 69	
Triphenyl phosphate	100	60	60	60	60	30	60	60	60	60	60	25	60	NR	NR	
Triphenyl phosphite	100	60	60	60	60	30	60	60	60	60	60	-	60	NR	NR	
Tripotassium phosphate (K5O10P3)	All	65	65	65	65	40	50	50	60	50	60	50	NR	NR	NR	
Tripropyl amine -N	All	40	40	40	40	NR	50	50	50	50	50	NR	-	NR	NR	NR
Tripropylene glycol	100	95	95	95	95	60	100	100	100	95	100	90	80	70	40	30
Trisodium phosphate	See Sodium Orthophosphate															
Tritolyl phosphate	All	60	60	60	60	60	-	60	60	60	60	60	-	60	NR	NR
Turpentine	100	65	65	65	65	65	100	100	100	65	65	25	40	25	25	
U																
Urea	All	70	70	70	70	30	70	70	70	70	70	70	65	65	40	30
Urea : Ammonium nitrate : H₂O	35 : 44 : 21	60	60	60	60	-	60	60	60	60	60	60	-	-	-	1,12
Urea formaldehyde resins pH < 7	All	40	40	40	40	25	50	50	50	40	40	30	-	25	25	25
V																
Vinegar	100	95	95	95	95	50	100	100	100	95	95	90	55	60	25	25
Vinyl acetate	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl chloride	100	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Vinyl toluene	100	NR	NR	NR	NR	-	40	40	40	NR	25	NR	NR	NR	NR	8
W																
Water, condensate	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Water, deionized	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Water, demineralized	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Water, distilled	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Water, sea	100	90	90	90	90	50	90	90	90	90	90	90	65	70	50	40
Water, steam, condensate	100	80	80	80	80	40	80	80	80	80	80	80	65	60	40	40
Water, tap, hard	100	90	90	90	90	50	90	90	90	90	90	90	65	70	50	40
Water, tap, soft	100	80	80	80	80		80	80	80	80	80	80	65	60	40	40
Whisky	-	-	-	-	-	40	-	-	-	45	45	45	25	25	-	-
White liquor (pulp mill)	-	-	-	-	NR	-	-	-	-	-	-	-	NR	NR	NR	1
Wine	-	-	-	-	-	40	-	-	-	45	45	45	25	25	-	-
X																
Xylene	100	25	25	25	25	25	50	45	45	45	NR	-	NR	30	25	NR
Z																
Zeolite	All	-	-	-	-	-	-	-	-	95	100	90	-	-	-	-
Zinc chlorate	> 0.5	95	95	95	95	80	100	100	100	95	100	90	-	60	25	25
Zinc chloride	> 0.5	95	95	95	95	80	100	100	100	95	100	90	75	60	40	40
Zinc cyanide	> 0.5	80	80	80	80	60	80	80	80	80	80	80	-	-	-	-
Zinc nitrate	> 0.5	95	95	95	95	80	100	100	100	95	100	90	75	60	40	40
Zinc sulfate	> 0.5	95	95	95	95	80	100	100	100	95	100	90	75	70	40	40
Zinc sulfite	> 0.5	90	90	90	90	80	95	95	95	95	90	60	60	40	40	

Notes

1	Contact our corrosion specialists
2	Double synthetic veil should be used in the chemical resistant barrier
3	Double C-glass veil should be used in the chemical resistant barrier
4	Acid resistant glass should be used in the chemical resistant barrier
5	Chemical resistance barrier thickness should be 5 mm
6	Benzoyl peroxide/amine cure system is recommended (for chemical resistant barrier)
7	Acid resistant glass recommended in the structural wall
8	Post cure recommended for improved service life.
9	Satisfactory up to maximum stable temperature of stored component
10	Stored chemical can discolour in contact with FRP laminate
11	Attac® F013 series should be used instead of Attac® F010 series.
12	Safety Data Sheet of specific chemical required
13	Stored chemical can discolour in contact with Novolac Vinyl Ester FRP laminates
*	For non-thixotropic resins only. For thixotropic resin versions, please consult AOC.

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