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Chemical Resistance Chart SITRANS F M

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z				Plasti	c and r	ubbers								Ceramic	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Acetaldehyde	CH ₃ CHO	40	TBD	A80	A60 B80	-	B40 C60 X80	-	х	Х	A150	A150	Х	A23	A23	-	-	A	A	A	A	-	A	-	-	-
Acetaldehyde	CH ₃ CHO	100	<5	-	A40 B60	С	C40 X60	C23	х	С	A150	A150	Х	-	-	-	-	A	A93	A93	A60	A200	A150	B23	-	A23
Acetamide	C ₂ H ₅ NO	100	TBD	A23	A93	-	A40	Х	A40	A80	A120	A120	A25	-	-	-	-	Α	B171	-	В	-	-	-	-	-
Acetic acid	CH ₃ COOH	5	>100	A23 B100	A93	-	C23	B23	B23	A40	A150	A200	-	A120	A120	-	A93	Α	A80	A150	A150	A100	A100	A80	-	_
Acetic acid	CH ₃ COOH	10	>100	A23	A60	A30	C23 X80	B23	B23	A30	A200	A200	A105	A120	A120	-	A93	Α	A200	A150	A150	A100	A100	A120	-	-
Acetic acid	СНЗСООН	20	>100	A23	A60	-	C23 X80	B23	C23	A30	A200	A200	A60	-	-	-	A93	Α	A200	A150	A150	A100	A100	A120	-	_
Acetic acid	CH ₃ COOH	30	>100	A23	A23	B30	С	B23	B23	C23	A200	A200	A60	-	-	-	-	Α	A93 B150	-	A132	Α	A100	A120	_	-
Acetic acid	CH₃COOH	50	>100	A23	A23	A40	C23 X40	X	C23	C23	A200	A200	A38	A120	A120	-	-	Α	A23 B100	A100	A80	A100	A127	A120		C23
Acetic acid	CH ₃ COOH	80	>100	A23	A23	-	C23	X	X	C23	A200	A200	A40	A120	A120	-	-	Α	B80 C93	A93	A90	A100	A100	A120		_
Acetic acid	CH₃COOH	100	<5	B23	X	A23	Х	X	Х	Х	A200	A200	A40	A120	A120	-	-	Α	B80 C93	A93	A120	A118	A100	A120	Α	C23
Acetic anhydride	(CH ₃ CO) ₂ O	100	<5	B23	C23	B	X	B23	X	B23	A200	A200	X	A120	A120			A23	B120	A120	A120	A100	B120	A23		A23
Acetone	CH ₃ CHOCH ₃	10 ppm	TBD	-	A60	-	A23	-	-	-	-	-	A60 B120	_	-	-	B93	Α	A200		_	-	_	_		-
Acetone	CH ₃ CHOCH ₃	100	<5	A60	A23 B40	A23	X	B23	X	X	A200	A200	Х	A100	A100	-	B93	Α	A200	A100	A54 B93	A56	A80	A120		A23
Acetonitrile	C ₂ H ₃ N	100	>5	B23	A70	-	X	X	X	X	A93	A200	A50 X80	-	-	-	-	Α	B60	Α	A100		Α	B23	-	-
Acetyl chloride	CH ₃ COCI	100	<5	Х	Х	Х	В	Х	Х	Х	A200	A200	A30	-	-		_	A	B60	A37	A100	A100	A100	B23	-	
Acrylic acid	C ₃ H ₄ O ₂	100	TBD	X	Х	-	Х	X	Х	Х	A70	A100	A40	-	-			Α	A50	A53	C98	-	-	-	_	_
Acrylonitrile	C ₃ H ₃ N	100	TBD	X	Х	B30	Х	C23	Х	A60	A200	A200	A25	_	-			Α	A80	A100	A100	A100	A93	B93		A23
Allyl alcohol	C ₃ H ₆ O	100	>5	A23	B150	X	A80	A23	A23 B60	A23	A200	A200	A50	_	-	-	-	Α	A200	A100	A100	A100	B80	A100	-	A23
Allyl chloride	C ₃ H ₅ Cl	100	TBD	X	X	-	B40	X	Х	X	A200	A200	A100	-	-	-	-	Α	A23 B100	A26	-	A100	A82	A80	-	-
Alum	K ₂ Al ₂ (SO ₄) ₂	10	>100	Α	A95	A95		-	-	A23	A175	A175	-	-	-	-	-	Α	A23 B100	-	B80	A80	A100	A80	-	-
Alum	K ₂ AI2(SO ₄) ₂	sat	>100	A87	A60 B93	A95	A90	A23	A60 B93	A23	A200	A200	A100	-	-	-	-	Α	B100	A30	B65	A80	A100	A80	_	-
Aluminium chloride	AICI ₃	10	>100	A100	A80	A100	A100	A23		A100	A120	A120	_	A100	A100		A93	Α	C23	A93	A80	A23	A93	A40	_	
Aluminium chloride	AICI ₃	25	>100	A100	A95	A70	A100	A23		A60	A175	A175		A100	A100	-	A93	Α	X	A93	A80	A23	Х	A93	_	
Aluminium chloride	AICI ₃	40	>100	_	_		-			-	_		A140	_	_		A93	Α	X	A93	A80	A23	X	A93		
Aluminium chloride	AICI ₃	sat	>100	A65	A80	A23	A100	A60	A60	A80	A120	A120	A60	A100	A100		A93	Α	X	A93	A80	A23	X	C23		_ X
Aluminium fluoride	AIF ₃	sat	TBD	A60	A80	A95	A100	A60	A80	A80	A120	A120	A135	-	-	-	-	Α	C23	Α	X	A100 (20%)	х	X	-	-
Aluminium hydroxide	Al(OH) ₃	sat	TBD	A30	A60	A100	A80	A23	A60	A80	A120	A120	A120	-	-	-	A93	-	A120	-	B23	A100 (10%)	B87	A23	-	-
Aluminium nitrate	AI(NO ₃) ₃	sat	TBD	A23	A80	A80	A100	A60	A60	A80	A175	A175	A120	Α	Α		A93	С	B80	Α	B23	A23	A98	B23		
Aluminium sulfate	Al ₂ (SO ₄) ₃	20	TBD	A100	-	A70	A100	A60	-	A60	A120	A120		A100	A100	_	A93	A	A100	-	A55	_	A93	-	A100 (10%)	-
Aluminium sulfate	Al ₂ (SO ₄) ₃	sat	<5 (50%)	A87	A60 B123	A60	A100	A23	A60	A70	A175	A175	A135	A120 (57%)	A120 (57%)	=	A93	Α	A23	A40	B97	A100	A93	A120	-	-

© Siemens 2021 Chemical Resitance Chart - Chemicals A

Stainless Steel Hastelloy® Tantalum Platinum **Overview**

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

	:			Plasti	c and r	uppers								Ceramic	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Aluminum Chlorodydrate	AInCl(3n-m) (OH)m		TBD	-	Х	Х	-	х	-	Х	A175	A175	-	-	-	-	-	-	Х	-	В	А	Х	A	-	-
Ammonia gas, wet saturated	NH ₄	sat	TBD	-	-	A40	-	-	-	A70	-	-	Х	-	-	-	-	Α	-	-	-	-	-	-	-	_
Ammonium Bicarbonate	NH ₄ HCO ₃	sat	TBD	A70	A60	A60	A60	A23	A60	B93	A200	A200	A100	-	-	-	-	-	A80	-	B26	A100	B93	A120	-	_
Ammonium bifluoride	F ₂ H ₅ N	sat	>100	Х	A50	A60	A50	Х	B30	Х	A120	A120	A65	=	-	-	-	A	Х	-	B60	A23	Х	Х	-	-
Ammonium carbonate	(NH ₄) ₂ CO ₃	sat	TBD	A90	A80	A90	A100	A60	Х	A80	A120	A120	A135	A120	A120	-	A93	Α	B120	A120	B149	A23	A80	A80	-	B23
Ammonium chloride	NH ₄ Cl	25	>100	A90	-	A100	A100	-	-	A60	A120	A120	A135	A120	A120	_	A93	A	B100	A80	A80	A100	A100	A100	-	-
Ammonium chloride	NH ₄ Cl	sat	>100	A100	A80	A100	A100	A60	A80	A80	A120	A120	A120	A120	A120	-	A93	A	Х	A23	B120	A100	A100	A120	-	B23
Ammonium fluoride	NH ₄ F	10	>100	A80	-	A100	A60	B23	A40	A23	A120	A120	_	-	-	-	-	A	B30	-	A80	A23	B31	Х	-	-
Ammonium fluoride	NH ₄ F	20	>100	A80	A60	A100	A60	_	A40	A23	A120	A120	A65	_	_	_	_	A	B23	_	A80	A23	B23	X	_	
Ammonium hydroxide	NH ₄ OH	10	>100	A90	A100	A60	B23	Х	A23	A93	A200	A200	-	=	-	-	A20	A	A23 B100	A150	A23 B100	A100	A30	A30 X	-	-
Ammonium hydroxide	NH ₄ OH	25	>100	A60	A75	A40	B23	Х	A60	B80	A120	A120	A105	A60	A60	A 23	A20	A	A25 B100	A150	A 23	A 23	A30	A30 X	-	B23
Ammonium hydroxide	NH ₄ OH	sat	>100	A80	A75	Х	B23	х	Х	A80	A180	A200	A105	A120	A120	-	A93	A	A100	-	-	A100	-	-	-	B23
Ammonium nitrate	NH,NO,	50	>100	A100	_	A80	A80	_	-	A60	A180	A200	_	A120	A120	_	A93	С	A100	A93	_	A100	A93	A93	_	B23
Ammonium nitrate	NH,NO,	sat	>100	A80	A80	A60	A80	B23	A80	A80	A180	A200	A135	_	_		A93	C	A100	A93	_	A120	В	A80	_	
Ammonium sulfate	(NH,),SO,	sat	>100	A100	A80	A100	A80	A60	A80	A80	A150	A200	A135	A120	A120	_	A93	A	A100	X	A100	A150	A100	A149	-	B23
Ammonium sulfide	(NH ₄) ₂ S	sat	TBD	A23	A60	-	-	A23	A60	A60	A150	A150	A50	=	-	-	-	A	B100	A70	A23 (10%)	-	-	B23	-	_
Ammonium thiocyanate	NH ₄ SCN	sat	>100	A23	A80	-	-	A23	A60	A80	A120	A120	A135	=	-	-	-	=	B23	А	B97	A100	A100	B23	-	-
Amyl acetate	C ₂ H ₁₄ O ₂	100	TBD	X	B23	_	X	X	X	X	A120	A120	A50	_	_	_	_	Α	A120	Α	A200	A100	A100	B120	_	A23
Amyl alcohol	C,H,,OH	100	TBD	A23	A80	A60	A40	B23	A60	A60	A150	A200	A135	_	_	_	A93	Α	A100	Α	B93	A100	B100	B120	_	
Aniline	C,H,NH,	100	<5	A60	A23	X	B60	X	X	×	A120	A200	A40	A180	A180			A	A250	A120	B293	A180	A93	B93	A184	A23
Aqua regia	HCI:HNO ₃		TBD	С	X	Х	B23	X	Х	С	A120	A200	A25	A23	A23	-	-	Х	Х	Х	Х	Х	A23 C60	A60	Х	
Arsenic acid	H,AsO,	sat	TBD	A23	A40	A	A60	A60	A40	A60	A120	A200	A135	_	_	_	_	A	B100	X	B93	A93	A23	B93	A23	
Asphalt		100	TBD	X	X	_	_	X	X	X	A90	A200	A120	_	_	_	_	A	A23	_	_	_	A200	_	_	
ASTM Oil No. 1			<5	X	X	A60	_	X	A23	×	_	_	_	_	_	_		_	_	_	_	_	_	-	_	
ASTM Oil No. 2			<5	X	X	A60	_	X	A23	X	_	_	_	_	_	_		_	_	_	_	_	_	_	_	
ASTM Oil No. 3			<5	X	X	A60	_	X	A23	×	_	_	zx	_	_	_	_	_	_	_	_	_	_	_	_	
Barium carbonate	BaCO ₂	sat	>5	A23	A80	A80	A100	A80	A60	A60	A200	A200	A140	_	_	_	A93	_	B23	Α	B293	A23	A23	B23	_	B23
Barium chloride	BaCl ₂	sat	>100	A80	A80	A90	A100	A23	A60	A80	A120	A200	A140	A	А	-	A93	A	B80	A	A97	A100	A23	A93 (25%)	-	_
Barium hydroxide	Ba(OH) ₂	sat	>100	A80	A80	A80	A100	A60	A60	A80	A180	A200	A135	A120	A120	_	A93	A	B120	A23	B93	A93	A80	A120	_	B23
Barium sulfate	BaSO ₄	sat	<5	A23	A80	-	A100	A80	A60	A60	A165	A200	A140	_	-	_	A93	A	B93	A93	B23	A60	A93	B93	_	B23
Beer		100	>100	A30	A80	A23	A80	A23	A23	A23	A120	A200	A110	A	Α	_	_	A	A150	A37	A32	A23	B23	A38	_	A23
Benzaldehyde	C,H,O	100	<5	A30	B23	X	C	×	X	X	A150	A200	A20	_	_	_	A50	Α	B200	Α	A93	A100	B23	B93	_	A23
Benzene	C ₆ H ₆	100	<5	Х	Х	Х	A60	Х	Х	Х	A100	A120	A23 B80	A23	A23	-	A93	A	B120	-	B93	A93	A93	A100	A93	A23
Benzene sulfonic acid	C ₆ H ₅ SO ₃ H	sat	TBD	-	Х	-	A100	Х	Х	B30	A100	A200	A20	A70	A70	-	-	A	B80	-	B93	A93	Х	B93	A93	-
Benzoic acid	C _c H _c COOH	sat	<5	A30	X	_	A80	C30	X	B30	A200	A200	A110	A23	A23	_	_	Α	B93	A23	A93	A93	A93	A93	A93	B23

© Siemens 2021 Chemical Resitance Chart - Chemicals A-B

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended- = No data available

Chemicals A – Z	:			Plast	ic and r	ubbers								Ceramic	s and re	esins		Metals	;							
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Benzoyl chloride	C ₇ H _s CIO	100	TBD	-	Х	-	A100	Х	Х	Х	A120	A200	A75	-	-	-	-	-	A23	Α	B93	A93	-	A93	A93	-
Benzyl alcohol	C ₇ H ₈ O	100	<5	B60	B23	Х	A60	Х	Х	Х	A150	A200	A120	-	-	-		A	A93	Α	B93	A93	B93	B93	A93	A23
Benzyl chloride	C ₇ H ₇ CI	100	TBD	X	X	-	A90	X	X	Х	A150	A150	A140	-	-			A	B93	-	A180	A180	-	B100	A180	_
Black liquor		100	>100	A65	A100	A80	A80	A23	A60	A30	A200	A200	A80	-	-	-	-	A	B93	A90	C120	A	Х	Х	-	-
Bleach, 12,5% active chlorine			TBD	-	-	A65	A100	X	X	B30	A160	A200	A135	_	-	-	-	Α	X	-	A52	-	A120	Α	_	_
Borax	Na ₂ B ₄ O ₇ ·10H ₂ O	sat	TBD	A30	A60	A80	A80	B23	B40	B90	A120	A200	A135	=	-	-	A93	Α	A120	_	A43 G97	A23	B23	X	_	_
Boric acid	H ₃ BO ₃	sat	TBD	A90	A100	A80	A100	A23	A60	A80	A150	A200	A135	A120	A120	-	A93	Α	B120	A23	A120	A150	A80	A120	A150 (10%)	B23
Bromine	Br ₂	dry	<5	X	X	-		Х	Х	Х	-	-	A60	A120	A120	-		Х	X	A66	A50	Х	Х	Α	X	-
Bromine solution, aqueous		sat	TBD	X	X		A100	Х	Х	X	A120	A120	A100	_	-	-	-	X	X	-	A97	_	A32	A32	_	-
Butadiene	C ₄ H ₆	100	TBD	B60	Х	-	A100	Х	B23	A23	A120	A120	A120	-	-	-	-	Α	B100	A120	A100	A100	A100	B23	A100	A23
Butyl acetate	C ₆ H ₁₂ O ₂	100	TBD	х	C23	х	Х	Х	Х	Х	A120	A120	A25	A23	A23	_		Α	A120	A120	B150	A93	A93	B23	A93	A23
Butyl alcohol / Butanol	C ₄ H ₉ OH	100	<5	A60	B100	A70	A100	A60	B60	A80	A200	A200	A110	A120	A120	-	A93	A	A100	A120	A100	A117	A120	A100	A100	-
Butyric acid	C ₃ H ₇ COOH	100	<5	Х	B23	Х	A40	Х	Х	Х	A200	A200	A110	A160	A160	-	-	A	B93	A23	A93	A93	A93	A23	A93	B23
Calcium bisulfite	Ca(HSO ₃) ₂	sat	TBD	A30	Х	A70	A100	C23	B90	A40	A200	A200	A95	A23	A23	-	-	Α	B120	-	B23	A150	A93	A23	-	-
Calcium carbonate	CaCO ₃	sat	>5	A60	A60	A70	A100	A60	A40	A60	A200	A200	A140	-	-	-	A93	-	B97	Α	B93	A93	A93	A100	A93	-
Calcium chlorate	Ca(CIO ₃) ₂	sat	TBD	A80	A60	-	A100	A60	A23	A40	A200	A200	A140	-	-	-	-	A60	B60	В	B93	A93	B60	B93	A93	-
Calcium chloride	CaCl ₂	sat	>100	A80	A80	A70	A100	A60	A40	A60	A200	A200	A140	-	-	-	A93	A	B97	A200	A93	A100	A93	A100	A100	-
Calcium disulfide	CaS ₂		TBD	C100	-	-	A100	A23	-	-	-	-	-	A120	A120	-	-	-	-	-	-	-	-	-	-	-
Calcium hydroxide	Ca(OH) ₂	sat	TBD	A80	A100	A80	A100	A80	A60	A100	A200	A200	A135	A120	A120	-	A93	A	B80	A100	A100 (50%)	A93	A110	A120	A93	B23
Calcium hypochlorite	Ca(CIO) ₂	sat	TBD	Х	B40	B80	A80	C23	C23	A23	A200	A200	A95	A40	A40	-	-	A30 @ 30%	Х	A23	A38 B93 (50%)	A93	A100	A93	A93	C23
Calcium nitrate	Ca(NO ₂) ₂	sat	>100	A80	A80	A80	A100	A60	A80	A80	A200	A200	A135	A120	A120	-	A93	Х	B120	A23	B93	A100	B97	B23	A100	B23
Calcium phosphate	Ca ₃ (PO ₄) ₂	sat	TBD	_	Α	Α	A	A	A	A	A200	A200	A140	A	A	_	_	A	-	A23	A23	A23	A23	A23	_	
Calcium sulfate	CaSO	sat	>100	A40	A100	A100	A100	A80	A60	A60	A200	A200	A140	A120	A120		A93	Α	B97	A23	B120	A93	A93	B97	A93	B23
Carbon monoxide		100	TBD	A80	A60	A80	-	B23	A60	A60	A200	A200	A140	-	-	-	-	A	A250	-	A250	A250	A250	A250	A250	_
Carbon tetrachloride	CCI4	100	<5	X	X	X	A80	X	X	X	A120	A120	A135	A23	A23	_	A93	A	A93	A60	A60	A76	A93	A120	_	A23
Carbonic acid	H,CO ₃	sat	TBD	A80	A100	A100	A80	A80	A60	A60	A180	A200	A135	A23	A23	-	-	-	B176	A120	A26	A120	A100	B149	-	_
Castor oil		100	<5	B71	B60	A60	A80	A60	A60	A60	A200	A200	A140	-	-	-	_	A	B87	A	A26	-	-	-	-	A23
Chloride, aqueous solution	CI ₂	0,04	>100	С	B23	A90	-	B23	Х	A30	A200	A200	-	-	-	-	-	A30	-	-	-	-	-	-	-	-
Chloride, aqueous solution	Cl ₂	1	>100	С	-	В	-	B23	Х	A30	A200	A200	-	-	-	-	-	A30	-	-	-	-	-	-	-	-
Chloride, aqueous solution		sat	>100	X	B23	A60	A80	Х	Х	Х	A120	A200	A110	-	-	-	-	Х	Х	-	E93	-	A97	B149	-	-
Chlorine dioxide	CIO ₂	15	TBD	Х	X	-	A60	Х	Х	X	A200	A200	A65	A	A	-	_	Х	X	-	B23	-	A80	A149	Х	-
Chloroacetic acid	CH ₂ CICOOH	sat	<5	B65	_	_	-	Х	X	X	A200	A200	X	A120	A120	_	_	_	X	A	B93	A93	B93	A200	A93	x
Chlorobenzene	C ₆ H ₅ CI	100	TBD	×	×	×	A100	Х	X	X	A200	A200	A75	A23	A23	-	_	A	×	-	B93	A93	B80	B120	A93	A23
Chloroform	CHCI ₃	100	<5	Х	Х	Х	A100	Х	Х	X	A200	A200	A50	-	-	-	-	A	A23	A21	B93	A93	A93	A93	A93	A23
Chlorosulfonic acid	SO ₂ (OH)Cl	100	TBD	X	×	X	-	Х	X	X	A200	A200	X	A150	A150	_	_	A	X	A85	A93	A150	A93	B93	A150	X
Chromic acid	H ₂ CrO ₄	10	>100	A35	A23	C23	A100	Х	A60	A23	A200	A200	A80	A120	A120	-	_	X	A38	Α	A23	A93	A97	B149	A93	X
Chromic acid	H ₂ CrO ₄	50	>100	X	×	X	A100	Х	A60	A23	A200	A200	A50	A120	A120	_	_	Х	B71	В	B97	A93	A80	A120	A93	X
Citric acid	C ₆ H ₈ O _{vy}	sat	>100	A90	A100	A80	A100	A50	A80	A93	A200	A200	A135	A120	A120	-	A93 up to 25%	A	B100	-	A93	A93	A80	A93	A100	C23

Chemical Resitance Chart – Chemicals B-C

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A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z				Plasti	ic and r	ubbers								Ceramics	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbid
Copper acetate	Cu(CH ₃ COO) ₂	sat	TBD	-	A60	A80	-	A23	A23	B23	A140	A200	A120	-	-	-	-	A	A23	A23	B38	A100	-	A149	A100	-
Copper chloride	CuCl ₂	sat	>100	A100	A75	A90	A100	A60	A80	A60	A200	A200	A135	A120	A120	-	-	A	Х	B23	C23	Х	A80	A149	A100	-
Copper cyanide	CuCN	sat	TBD	Α	A80	A80	A100	A60	A80	A60	A200	A200	A80	-	-	-	-	Α	B97	A100	A65	A23	A23	B149	-	-
Copper difluoride	CuF ₂	sat	TBD	-	A60	-	A100	-	A23	A60	A120	A200	A135	-	-	-	-	Α	Х	-	X	A23	Х	Х	-	-
Copper nitrate	Cu(NO ₃) ₂	sat	>100	C23	A100	A80	A100	B40	A70	A80	A200	A200	A135	-	-	-	-	Α	B93	-	B26	A23	A23	A149	-	Х
Copper sulfate	CuSO ₄	sat	>100	C80	A90	A100	A100	B60	A80	A60	A200	A200	A120	A120	A120	-	A93	Α	C23	A100	A93	A150	A100	A120	-	C23
Crude oil		100	<5	Х	Х	-	A100	Х	A80	Х	A120	A200	A140	-	-	-	A93	Α	A97	Α	E32	-	A23	A23	-	B23
Cyclohexane	C ₆ H ₁₂	100	TBD	Х	Х	-	A80	Х	A80	Х	A200	A200	A120	-	-	-	A93	Α	B93	Х	B93	A93	A120	B23	A93	A23
Cyclohexanol	C ₆ H ₁₂ O	100	TBD	-	Х	-	A80	Х	Х	х	A200	A200	A65	-	-	-	-	Α	B93	-	B26	A93	B23	B23	A93	-
Cyclohexanone	C ₆ H ₁₀ O	100	TBD	Х	Х	Х	-	Х	Х	Х	A200	A200	B80	-	-	A 23	-	A	B82	-	B82	-	B23	B23	-	A23
Detergents			TBD	A23	A100	A90	A100	B23	A80	A70	A200	A200	A120	-	-	-	A93	-	B100	-	A49	-	A60	A75	-	-
Dibutyl Phtalate	C ₁₆ H ₂₂ O ₄	100	TBD	B60	A23	-	Х	х	Х	Х	A200	A200	Х	-	-	-		A	A93	-	B93	A200	B93	B93	A200	A23
Dichlorobenzene	C ₆ H ₄ C ₁₂	100	TBD	Х	Х	-	A80	Х	Х	Х	A200	A200	A60	-	-	-	-	-	B42	A	A93	A93	X	A93	A93	-
Dichloroethane	C ₂ H ₄ Cl ₂		TBD	X	Х	Х	A100	Х	Х	Х	A200	A200	-	A50	A50	-	-	A	B200	-	B110	A100	B80	A93	-	
Dichloroethylene	C ₂ H ₂ Cl ₂	100	TBD	-	Х	Х	A100	Х	Х	Х	A200	A200	A100	A60	A60	-	-	-	B93	-	B93	A93	B80	B93	A93	-
Diesel fuel		100	TBD	-	×	-	A100	×	A40	A23	A200	A120	A140	-	-	-	A93	A	A23	A120	B93	-	B80	A120	-	_
Diethyl ether	(C,H,),O	100	TBD	X	X	-	Х	Х	B23	Х	A200	A200	A30	-	-	-	-	A	B97	-	B93	A93	A93	A93	A93	
Diethylamine	C ₄ H ₁₁ N	sat	<5	A100	A23	-	X	A23	Х	A23	A120	A120	A25	-	-	-	-	A	A93	-	A40	A93	A93	A93	A93	
Dimethyl phtalate	C ₁₀ H ₁₀ O ₄	100	TBD	B23	B23	-	B100	X	X	X	A200	A200	A25	_	_	_	_	A	A38	_	_	_	_	_	_	
Dioctyl phtalate	C ₂₄ H ₃₈ O ₄	100	TBD	A30	A23	_	A30	X	X	X	A200	A200	A25	_	_	_	_	A	B38	_	_	A93	A93	A93	A93	
Dioxane	O ₂ (CH ₂) ₄	100	TBD	B23	B70	_	X	X	X	X	A200	A200	×	Α	A	_	_	A	B97	Α	B93	A93	B93	B93	A93	A23
Epichlorhydrin	C,H,CIO	100	<5	X	X	_	X	X	X	X	A200	A200	A40	_	_	_	_	Α	B93	A60	A23	A93	A60	B23	A93	
Ether	(C,H,),O		TBD	X	X	_	X	X	X	X	A180	A200	_	A23	A23	_	_	A	A93	X	B80	A35	B23	B93	A35	A23
Ethyl acrylate	C _s H _g O ₂	100	TBD	X	A30	_	×	×	X	×	A180	A200	A25	_	_	_	_	A	B82	_	A82	A93	B23	B23	A93	
Ethylacetate	CH,COOC,H,	100	<5	A38	A23	A23	×	X	X	X	A180	A200		A23	A23	_	-	Α	A149	A65	B149	A200	A93	B93	A200	A23
Ethylalcohol, Ethanol	C,H,OH	100	<5	A90	A100	A70	A80	A23	A80	A70	A200	A200	A140	A120	A120		A93	A	A93	B97	A93	A93	A93	A93	A93	
Ethylchloride	C,H,CI	100	<5	X	A60	X	A60	X	A93	X	A200	A200	A140	A23	A23	_	_	Α	A93	_	B97	A120	A93	A93	_	C23
Ethylene glycol	C ₂ H ₆ O ₂	100	TBD	A85	A120	A70	A100	A60	A93	A60	A200	A200	A140	_	_	_	A93	Α	A93	A200	A200	A93	A93	A32	A93	A23
Ethylene oxide	C ₂ H ₄ O	100	TBD	X	Х	-	Х	X	Х	X	A200	A200	A95	-	-	-	-	A	A40 B150	A31	A23	A93	A31	A32	A93	=
Ethylenediamine	C,H _o N,	100	TBD	A23	B120	_	A65	A26	A26	B30	A120	A120	A105	_	_	_	_	Α	A93		X	A93	A40	B23	A93	
Fatty acids	-2 8 2	100	TBD	C23	X	A30	A80	X	A80	23	A200	A200	A140	_	_	_		A	A200	A200	A200	A120	A80	A200	A200	B23
Ferric chloride	FeCl ₃	sat	>100	A90	A90	A100	A80	A60	A60	A40	A200	A200	A140	A120	A120	-	A93 up to 50%	A	Х	X	B38	B23	A93	A93	-	=
Ferric nitrate	Fe(NO ₃) ₃	sat	TBD	A90	A80	A70	A100	A60	A60	A60	A200	A200	A135	A120	A120	-	A93	С	B93 (10%)	A23	B65	A23	A120	A93	-	-
Ferric sulfate	Fe ₂ (SO ₄) ₃	sat	TBD	A65	A80	A70	A80	A60	A60	A80	A200	A200	A140	A65	A65	-	A93	A	A93 (10%)	-	B23	A23	A100	A80	-	X
Ferrous chloride	FeCl ₂	sat	TBD	A100	A80	A90	A90	A60	A80	A30	A200	A200	A140	A100	A100	-	-	A	Х	Х	B138	A100	A100	A93	-	X
Ferrous nitrate	Fe(NO ₃) ₂	sat	TBD	A90	A80	A90	A100	A60	A60	A80	A200	A200	A135	-	-	-	A93	A	B23	-	B23	A23	A23	A23	-	
Ferrous Sulfate	FeSO ₄ ,7h ₂ O	sat	>100	A90	A80	A70	A80	A60	A60	A70	A200	A200	A140	A120	A120	-	A93	A	B23	A120	B93 (50%)	A23	A32	A71	-	Х
Formaldehyde	НСНО	37	>100 @38°C	A60	A80	A40	-	B23	Х	A60	A120	A200	A50	A100	A100	-	A93 up to 100%	A	A93	B100	B93	A250	A93	A93	-	C23
Formic acid	НСООН	conc	>100	A100	A100	B23	B100	Х	Х	A23	A120	A120	A120	A100	A100	-	A93 up to 10%	A	B93	A23	A93	A93	Х	A93	A93	C23
		100	>100		A80		A100		A80	A90	A200	A200	A120					A	B150	A23	A82	Α	A23	A38		A23

Chemical Resitance Chart - Chemicals C-F © Siemens 2021

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Chemical Resistance Chart SITRANS F M

A = Excellent B = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended- = No data available

Chemicals A – Z				Plast	ic and r	ubbers								Ceramic	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Fuel oil		100	<5	Х	Х	-	A23	Х	A100	A60	A200	A200	A140	-	-	-	-	-	B71	A80	B93	-	A32	B82	-	-
Furfuryl alcohol	C ₅ H ₄ O ₂	100	TBD	A170	C23	-	Х	х	Х	Х	A120	A120	A40	A170	A170	-	-	-	-	-	-	A93	A93	A93	A93	B23 (25%)
Gasoline – Leaded		100	<5	Х	Х	Х	A80	Х	A80	A23	A120	A120	A140	-	-	-	A93	A	B32	A120	A38	-	A23	A38	-	A23
Gasoline – Unleaded		100	<5	Х	Х	Х	A80	Х	A90	A23	A120	A120	A140	-	-	-	A93	A	B23	A120	A160	-	B23	A38	-	A23
Glucose		sat	TBD	A80	A120	-	A150	A23	A100	A70	A200	A200	A140	-	-	-	-	A	B176	-	B165	-	A23	A23	-	A23
Glycerine	C ₃ H ₈ O ₃	100	<5	A150	A80	A80	A120	A60	A100	A80	A200	A200	A140	A200	A200	-	A93	A	A97	A100	A250	A250	A80	B23	A250	A23
Glycols			<5	A90	A90	A80	A100	A23	A80	A60	A120	A200	-	-	-	-	-	A	B160	-	A290	-	A97	A32	-	A23
Heptane	C ₇ H ₁₆	100	<5	-	Х	-	A150	Х	A80	A80	A120	A200	A140	-	-	-	A93	A	A93	A98	A93	A93	B93	B93	A93	A23
Hexafluorosilicic acid	H ₂ SiF ₆	30	TBD	A80	A60	A60	-	A23	A70	A60	A170	A200	-	A30	A30	-	-	-	B23	-	B23	A93	Х	Х	A93	-
Hexafluorosilicic acid	H ₂ SiF ₆	50	TBD	A80	A60	-	A100	A23	A70	A60	A170	A200	A135	A30	A30	-	-	-	B42	-	B23	A93	Х	Х	A93	-
Hexane	C ₆ H ₁₄	100	<5	X	Х	-	A100	Х	A80	A23	A200	A200	A140	-	-	-	A93	A	A93	A	A93	A93	A65	B32	A93	A23
Hydrazine	N ₂ H ₄	100	>100	A23	A23	A50 @15%	Х	Х	A23	Х	A120	A120	A95	-	-	-	-	A	B65	A	A23	A23	A40	A40	A23	_
Hydrobromic acid	HBr	20	>100	A71	A60	-	A90	-	Х	Х	A120	A120		-	-	-		A	Х	-	A32	A93	A93	A120	A93	-
Hydrobromic acid	HBr	up to 50%	>100	A42	A40	A40	A90	A23	Х	Х	A120	A120	A135	-	-	-	_	A	X	X	-	A93	A80	A120	A93	X
Hydrochloric acid	HCI	10	>100	B50	A60	A70	A50	A60	A23	A50	A120	A120		A120	A120	-		A	X	A45	A45	A93	B23	A70	A120	-
Hydrochloric acid	HCI	37	>100	Х	B40	B40	A40	B23	Х	Х	A93	A120	A140	A120	A120	Х	A93 up to 25%	A	Х	Х	A38	A93	Х	A93	A120	-
Hydrochloric acid + Nitric acid	HCI:HNO ₃	3:1	>100	C23	-	-	B23	C23	-	C23	A120	A120	-	A23	A23	-	-	=	X	-	-	Х	-	-	х	-
Hydrochloric acid + Sulfuric acid	HCI:H ₂ SO ₄	1:1	>100	-	Х	-	Х	-	C23	-	A120	A120	A23	-	-	-	-	-	Х	-	-	-	-	-	-	_
Hydrocyanic acid	HCN	10	>100	A60	A90	A90	A90	B23	A90	Х	A200	A200	A135	A23	A23	-	-	A	A23	A23	B23	A93	-	A93	A93	Х
Hydrofluoric acid	HF	40	>100	B23	A40	B23	A90	A23	Х	A80	A120	A120	A120	A50	A50	-	A93	A	Х	Х	B60	A93	Х	Х	A93	X
Hydrofluoric acid	HF	70	>100		Х	C23	A90	Х	Х	A50	A120	A120	A95	-	-	-	-	A	Х	Х	B60	A93	Х	Х	A93	X
Hydrogen bromide	HBr	50	<5	A100	-	-	-	B23	Х	Х	A120	A120	-	A120	A120	-	-	A	Х	Х	-	-	-	A23	-	-
Hydrogen peroxide	H ₂ O ₂	30	TBD	Х	B70	Х	A70	Х	Х	X	A120	A120	A70	-	-	-	-	A	B93	A90	A23	A93	A80	B120	A93	х
Hydroiodic acid	HI	50	>100	-	A40	B23	A100	-	-	Х	A120	A120	-	A23	A23	-	-	-	Х	-	B93	-	C32	A60	A23	-
Hydroquinone	C ₆ H ₆ O ₂	sat	TBD	B23	Х	-	A90	B23	A23	Χ	A120	A200	A120	-	-	-	-	-	B93	Α	A93	A250	B93	B97	A250	-
Hypochlorous acid	HOCI	100	TBD	Х	A40	A65	A50	B23	Х	Х	A200	A200	A20	-	-	-	-	-	Х	A	B23	A93	B23	A93	A93	-
lodine	I ₂		<5	-	B23	A20	A23	Х	B23	A23	A200	A200	-	A23	A23	-	-	B23	Х	C23	A250	A250	C23	B120	A250	-
Isopropanol (propan-2-ol)	(CH ₃) ₂ CHOH	100	<5	A80	A60	A60	A90	A23	A23	A23	A200	A200	A60	=	-	-	A93	Α	A93	А	A93	A93	A93	B100	-	A23
Jet Fuels – JP4		100	<5	Х	Х	-	A150	Х	A100	Х	A200	A200	A95	-	-	-	-	-	B204	-	A38	-	A30	-	-	A23
Jet Fuels – JP5		100	<5	×	х	_	A150	х	A100	Х	A200	A200	A95	_	-	_	_		B204	_	A38	_	A30	_		A23
Kerosene		100	<5	X	х	Х	A150	Х	A100	Х	A200	A200	A120	A120	A120	-	A93	A	B120	A30	B97	A23	A23	B23	-	-
Lactic acid	H ₆ C ₃ O ₃	80	>5	A65	A65	A60	A80	B23	A23	A23	A200	A200	A65	A120	A120	-	-	A	B93	Х	B93	A93	A93	A120	A93	C23
Lead acetate	Pb(CH ₃ COO) ₂	sat	TBD	A50	A80	A80	Х	A23	A60	A80	A200	A200	A135	A23	A23	-	-	A	B93	A100	B93	A93	A80	B93	A93	-
Lead nitrate	Pb(NO ₃) ₂	sat	>100	A23	A80	-	A100	B23	A80	A80	A200	A200	_	-	-	-	-	A	B23	-	B93	A93	-	A93	A93	-
Linseed oil		100	<5	B65	Х	A80	A100	Х	A90	A80	A200	A200	A140	-	-	-	A93	-	B97	A23	B32	A93	A23	B93	A93	A23
Magnesium carbonate	MgCO ₃	sat	>100	-	A80	A80	A100	A80	A60	A80	A200	A200	A140	-	-	_	A93	A	B97	А	-	A23	A23	B93	_	_
Magnesium chloride	MgCl ₂	sat	>100	A90	A100	A100	A80	A60	A80	A80	A200	A200	A140	A120	A120	-	A93	A	B97	A120	A120	A	A120	A120	A150	
Magnesium hydroxide	Mg(OH) ₂	sat	TBD	A90	A80	A80	A100	A80	A80	A80	A200	A200	A135	A120	A120	-	A93	A	A100	A100	A93	A	A32	A32	-	B23
Magnesium nitrate	Mg(NO ₃) ₂	sat	>100	A90	A80	A80	A100	A60	A60	A80	A200	A200	A135	A120	A120	-	A93	-	B149	A93	E23	Α	A23	A93	-	B23
Magnesium sulfate	MgSO ₄	sat	>100	A90	A90	A100	A100	A60	A80	A80	A200	A200	A135	A120	A120	-	A93	A	B120	A93	A93	A100	B80	A60	-	B23

Chemical Resitance Chart – Chemicals F-M

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Stainless Steel Hastelloy® Titanium Tantalum Platinum Overview

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z				Plasti	ic and r	ubbers								Ceramics	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbid
Maleic acid	C ₄ H ₄ O ₄	sat	TBD	×	A23	A80	A40	A23	Х	Х	A120	A200	A135	A100	A100	-	-	A	B204	A80	B93	-	A93	A80	-	C23
Malic acid	C ₄ H ₆ O ₅	sat	TBD	A23	Х	A65	A100	A23	A40	A23	A200	A200	A120	A120	A120	-	-	A	A120	A120	B97	-	A80	B80	-	-
Manganese chloride	MnCl ₂	sat	>100	-	A60	A100	A100	-	A60	A100	A120	A200	A120	A100	A100	-	-	=	B93	-	A93 (40%)	B93	A93	A93	B93	_
Manganese sulfate	MnSO ₄	sat	>100	A23	A80	A60	A100	B23	A60	A70	A200	A150	A120	A23	A23	-	-	A	A93 (50%)	A63	B65	A93	A63	A93	A93	-
Mercuric chloride	HgCl ₂	sat	>100 @ 5%	A65	A60	A90	A80	A60	A60	Х	A120	A120	A120	-	-	-	A93	Α	Х	-	-	A100	B80	A100	Х	Х
Mercuric cyanide	Hg(CN) ₂	sat	TBD	A65	A23	A90	A23	A60	A60	Х	A120	A120	A120	_	_			A	B23	-	B23		A23	A100	-	
Mercury	Hg	100	>100	A50	A80	-	A90	A60	A40	A80	A120	A120	A140	A150	A150	-	-	Α	A200	Α	A200	Х	Χ	A23	Х	-
Methanol	CH₃OH	100	<5	A65	A40	A60	Х	A60	B40	A80	A120	A120	A140	A65	A65	-	A93	Α	B100	A100	A121	A65	B80	B120	A65	-
Methyl ethyl ketone	C ₄ H ₈ O	100	<5	B40	B90	-	х	Х	Х	Х	A120	A120	х	-	-	-	A93	A	B100	A93	B97	-	B80	B93	-	-
Methyl isobutyl ketone	C ₆ H ₁₂ O	100	TBD	Х	B23	-	Х	х	Х	Х	A120	A120	Х	-	-	-	A93	Α	B100	-	B100	-	B93	B93	-	-
Methyl methacrylate	C ₅ H ₈ O ₂	100	TBD	X	Х	-	Х	X	Х	Х	A120	A120	A50	-	-	-	-	A	B23	A	-	-	-	B23	-	A23
Methylene chloride	CH,Cl,	100	TBD	X	Х	-	Х	Х	X	X	A120	A120	A50	-	_	-	_	-	B204	Х	A93	A40	A100	Х	A300	B23
Milk		100	>100	A40	A120	A	A90	B23	A60	A80	A200	A200	A120	A	A	-	-	A	A120	A80	A38	A100	A32	A149	A100	A23
Molasses		100	>100	A90	A40	A90	A90	A60	A90	A90	A200	A200	A120	_	_	_	A93	A	A176	-	A38	Α	A23	A38	_	
Monochloro acetic acid	CH ₂ CICO ₂ H	100	TBD	A190	C23	-	Х	B23	Х	Х	A190	A190	A80	A190	A190	-	-	A	Х	-	B149	A150	A42	A42	-	-
Naphta		100	TBD	X	Х	Х	A60	X	A60	X	A200	A200	A135	A23	A23	-	A93	A	B97	Α	B93	A100	B32	B38	A100	A23
Naphtalene	C ₁₀ H ₈	100	<5	X	Х	Х	A80	X	Х	X	A200	A200	A95	_		-	_	A	A200	A120	B93	A200	A100	A120	A200	-
Nickel chloride	NiCl ₂ ,6H ₂ O	sat	TBD	A95 @80%	A80	A95	A100	A60	A80	A80	A200	A200	A120	A95	A95	-	A93	A	B23	A90	A100	A100	A80	A100	A100	Х
Nickel nitrate	Ni(NO ₃) ₂	sat	TBD	A65	A100	A90	A120	A60	A80	A80	A200	A200	A140	A	A	-	A93	A	A200	-	B23	A100	A32	B80	A100	-
Nickel sulfate	NiSO ₄	sat	>100	A90	A80	A90	A80	B23	A80	A80	A200	A200	A140	A80	A80	-	A93	A	A100	-	B93	A100	X	Х	A100	X
Nitric acid	HNO ₃	10	>100	A23	A23	A20	A80	Х	Х	X	A200	A200	A80	A120	A120	-	_	A	A100	A52	A80	A	A120	A120	A120	X
Nitric acid	HNO ₃	30	>100	Х	х	Х	A40	Х	Х	Х	A200	A200	A50	A120	A120	-	A93	Х	A50	-	A50 B70 C90	-	A120	A187	A120	Х
Nitric acid	HNO ₃	50	>100	х	×	Х	Х	х	Х	Х	A200	A200	A50	A120	A120	-	Х	Х	A38	-	A50 80 C120	A100	A85	A187	A120	х
Nitric acid	HNO ₃	98	>100	Х	Х	Х	Х	Х	Х	Х	A120	A120	A50	A100 @70%	A100 @70%	-	A93 up to 30%	Х	B23	A23	B23	A100	B97	A150	-	X
Nitric acid + Hydrofluoric acid	HNO ₃ / HF (1:1)		>100	Х	A23	Х	A40	Х	Х	Х	A120	A120	-	B23	Х	-	-	Х	х	B23	C23	A100	Х	A100	Х	х
Nitrobenzene	C ₆ H ₅ NO ₂	100	<5	A23	Х	-	A23	Х	Х	Х	A200	A200	A25	A120	A120	-	-	A	B176	A	-	A100	A80	B97	A100	A23
Oil, vegetable			<5	X	X	A23	A90	Х	A90	A20	A200	A200	-	-	-	-	-	A	B97	A43	A32	-	A40	A93	-	-
Oleic acid		100	<5 @15°C	Х	Х	A65	A80	Х	A23	Х	A120	A200	A120	-	-	-	-	A	A149	-	B80	A120	A23	B97	-	C23 (40%)
Oxalic acid	H ₂ C ₂ O ₄	25	>100	A100	A140	A80	A100	-	X	X	A200	A200	A60	A120	A120	-	_	A	X	-	_	-		-	-	C23
Oxalic acid	H ₂ C ₂ O ₄	sat	>100	A100	A140	-	-	B23	Х	Х	A200	A200	A50	A120	A120	-	A93	A	х	-	B80	A150	B23	A93	A100	-
Ozone solution, aqueous	O ₃	10 ppm	TBD	-	A40	-	A40	-	-		A150	A150	A120	-	-	-	-	A	B176	-	-	-	A	-	-	
Ozone solution, aqueous	O ₃	0,5 mg/L	TBD	-	A40	-	A40	-	-	-	A150	A150		-	-	-	-	A	B176	-	-	-	A	-	-	
Palmitic acid		sat	TBD	B23	A23	X	A200	×	A100	X	A200	A200	A120	_	-	_	_	A	B200	-	B40	_	_	-	-	C23
Paraffin		100	<5	-	×	A80	A200	×	A60	A60	A200	A200	A135	_	-	_	_	A	A60	A60	B40	_	Α	A93	-	A23
Perchloric acid	HCIO ₄	10	TBD	A65	A60	_	A200	A60	X	A23	A200	A200	A95	_	_	_	_	A	X	_	B100	_		A150	_	
Perchloric acid	HCIO,	70	TBD	_	A60	_	A200	_		X	A200			_	_			X	X	_	B100	A23		A150	_	

Chemical Resitance Chart - Chemicals M-P

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A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z	<u> </u>			Plasti	ic and ru	ıbbers								Ceramics	and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbic
Perchloroethylene	C ₂ Cl ₄	100	TBD	Х	х	-	A200	х	Х	Х	A120	A200	A135	A120	A120	-	A93	A	A23 B200	-	B97	-	A 100	B93	-	A23
Petroleum oil (crude oil)		100	<5	Х	Х	-	A80	Х	A80	A40	A120	A120	A135	-	-	-	-	A	-	A	-	A23	Α	-	-	-
Petroleum oil, refined			<5	Х	Х	-	A100	Х	A80	A40	A120	A120		-	-	-	-	A	B26	-	-	-	-	A150	-	-
Petroleum oil, Sour			<5	Х	Х	Х	A100	х	A80	Х	A120	A120		-	-	-	-	A	B26	-	-	-	-	-	-	-
Phenol	C ₆ H ₅ OH	5	TBD	-	-	A20	-	-	-	-	-	-	A80	-	-	-	-	A	B93	-	-	-	-	-	-	A23
Phenol	C ₆ H₅OH	100	<5	Х	Х	Х	A100	Х	Х	Х	A200	A200	A50	A180	A180	-	-	A	A200	A95	A200	A180	A23	A120	A180	-
Phosphoric acid	H ₃ PO ₄	10	>100	A65	A80	A90	A90	B23	A23	-	A200	A200	A135	A120	A120	-	A93 up to 50%	A	A60	А	A40	A100	A23	A175	A100	Х
Phosphoric acid	H ₃ PO ₄	50	>100	A65	A80	B90	A90	C23	A23	Х	A120	A120	-	A120	A120	-	-	A	A100	A	A40 C93	A100	Х	A100	A100	-
Phosphoric acid	H ₃ PO ₄	85	>100	A65	A80	B80	A90	C23	X	Х	A120	A120	A105	A60	A60	Х	-	A	B23	A110	A93	A100	X	A200	-	×
Phosphoric acid + Hydrofluoric acid	H ₃ PO ₄ / HF (1:1)		>100	-	-	Х	-	-	-	-	A	A	A	Х	Х	-	-	-	Х	C23	C23	A23	Х	Х	-	-
Phosphoric acid + Hydrofluoric acid + Nitric acid	H ₃ PO ₄ / HF / HNO ₃ (1:1:1)		>100	-	-	Х	-	-	-	-	A	A	A	Х	Х	-	-	-	X	C23	C23	C23	X	Х	-	-
Phosphoric acid + Sulphuric acid	H ₃ PO ₄ / H ₂ SO ₄ (1:1)		>100	=-	-	Х	-	-	-	-	Α	A	A	B23	B23	-	-	-	Х	A23	A23	A23	Х	A	-	-
Phosphoric acid + Sulphuric acid + Nitric acid	H ₃ PO ₄ / H ₂ SO ₄ / HNO ₃ (1:1:1)		>100	-	-	х	-	-	-	-	А	A	A	B23	B23	-	-	-	х	A23	A23	A23	х	A	-	-
Phosphorus trichloride	PCI ₃	100	TBD	Α	A23	-	A90	Х	Х	Х	A120	A200	A95	-	-	-	A93	Α	A32	Х	B38	Х	A23	A60	-	-
Plating solutions, brass	3% Cu, 1% Zn, 5.6% Rh; 3% cyanide, sodium carbonate	100	TBD	A90	A23	A90	A60	B23	A80	A60	A200	A200	A100	-	=	=	=	-	B149	=	A38	_	A38	-	=	=
Plating solutions, cadmium	3% Cadmium oxyde, 10% sodium cyanide, 1.2% sodium hydroxide	100	TBD	A70	A150	A90	A80	A23	A80	A90	A200	A200	A100	-	-	-	-	-	B176	-	A38	-	A32	-	-	-
Plating solutions, Chrome	25% Cr ₂ O ₃ , 12% H ₂ SO ₄ , H ₂ O	100	TBD	Х	A100	Х	A90	Х	Х	Х	A200	A200	A65	=	-	-	-	Х	B176	-	A54	-	Х	A150	-	-
Plating solutions, Copper (Cyanide)	10.5% Cu, 14% sodium cyanide, 6% rochelle salts	100	TBD	A80	B150	A90	A90	B23	A80	A70	A200	A200	A105	-	-	-	-	_	A50	-	A49 B97	-	A32	A23	-	=
Plating solutions, Gold	22.8% potassium ferrocyanide, 0.2% potassium gold cyanide, 0.8% sodium cyanide, water	100	TBD	A80	B150	A90	A90	B23	A80	A50	A200	A200	A93	-	-	-	-	_	A38	-	A23	-	A23	A23	-	=
Plating solutions, Lead	8% Pb, 0.8% fluoboric acid, 0.4% boric acid, water	100	TBD	A70	B150	A90	A90	A23	A80	A80	A200	A200	A93	-	_	_	_	_	A32	-	_	-	х	_	_	-

© Siemens 2021 Chemical Resitance Chart - Chemicals P

Stainless Steel Hastelloy® Tantalum Platinum **Overview**

A = Excellent B = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended- = No data available

Chemicals A – Z				Plasti	ic and ru	ubbers								Ceramic	s and re	esins		Metals	;							
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Plating solutions, Nickel	11% nickel sulfate, 2% nickel chloride, 1% boric acid, H ₂ O	100	TBD	_	B150	A90	A90	B23	A80	A90	A200	A200	A93	-	-	-	-	A	A38 B60	-	A60	-	A60	-	-	-
Plating solutions, Silver	4% silver, 7% potasium cyanide, 5% sodium cyanide, 2% potassium carbonate	100	TBD	A65	B150	A90	A90	B23	A80	A90	A200	A200	A93	=	-	-	-	-	A38	-	A38	-	A38	-	-	-
Plating solutions, Tin	7% Sn, 18% Stannous fluoborate, 9% fluoboric acid, 2% boric acid	100	TBD	A65	A90	A70	A90	-	A80	A90	A200	A200	A93	-	-	-	-	-	C38	-	A42	-	Х	-	-	_
Plating solutions, Zinc	9% Zinc cyanide, 9% sodium hydroxide, 4% sodium cyanide	100	TBD	A65	B150	A90	A90	B23	A80	A90	A200	A200	A93	-	-	-	-	-	=	-	A71- B97	-	A60	=	-	-
Potassium aluminium sulfate	KAI(SO ₄) ₂ 12H ₂ O	sat	TBD	A	A80	A100	A100	A23	A80	A60	A200	A200	A120	=	-	-	A93	A	B55	-	A23	A23	A100	A80	-	C23
Potassium bicarbonate	KHCO ₃	sat	>100	A	A90	A100	A100	A23	A80	A70	A200	A200	A95	-	-	-	A93	-	B97	-	B23	-	A100 (30%)	B97 (30%)	-	-
Potassium bromide	KBr	sat	>100	A	A100	A90	A100	A60	A80	A60	A200	A200	A140	-	-	-	-	A	B100 (30%)	Х	-	A100	A23	A100 (<50%)	A100	-
Potassium carbonate	K ₂ CO ₃	sat	>100	A80	A80	A70	A90	A60 @50%	A80	A60	A120	A200	A140	-	-	-	A93	Α	B100	А	B100	A100	A100	-	A100	_
Potassium chlorate	KCIO ₃	sat	TBD	A	A40	A90	A60	A23	A23	A23	A200	A200	A95	-	-	-	=	Х	A100	=	A23 B100 (30%)	A100 (30%)	A100	B23 (30%)	A120	-
Potassium chloride	KCI	sat	>100	A100	A80	A90	A100	A60	A80	A60	A200	A200	A140	A100	A100	-	A93	A	A100 (30%)	A110	A170	A23	A80	A160	-	C23
Potassium chromate	K ₂ CrO ₄	sat	>100	-	A80	-	A100	-	A60	A23	A120	A200	A140	-	-	-	-	Х	B100 (<40%)	-	B93 (30%)	-	A 100 (<40%)	B23 (30%)	-	-
Potassium cyanide	KCN	All	>100	A65	A80	A90	A90	A60	A80	A80	A120	A120	A140	A	А	-	-	A	B93	C23	B93 (30%)	B23	Х	A32 (30%)	Х	X
Potassium dichromate	K ₂ Cr ₂ O ₇	sat	>100	A65	A90	Х	A90	X	A70	X	A120	A200	A140	=	-		A93 up to 10%	Х	A93 (<50%)	=	B93 (<50%)	A93 (<50%)	A32	A120	A120	
Potassium hydroxide	кон	20	>100	A120	A120	A90	X	A23	B23	A90	A120	A120	X	A120	A120	-	A93	A	B93	A93	B150	A200	B100	Х	-	B23
Potassium hydroxide	кон	50	>100	A80	A120	A90	X	A23	B23	A80	A120	A120	X	B120	A120	_	A93	A	B60	A93	B150	A200	A23	Х	A300	
Potassium hypochlorite	KOCI	sat	TBD	-	A23	-	A40	Х	х	B23	A200	A200	A95	A150	A150	-	-	Α	B23	Α	-	-	A93 (<40%)	B97	-	-
Potassium nitrate	KNO ₃	sat	>100	A120	A80	A80	A100	A60	A60	A60	A200	A200	A140	A120	A120	_	A93	х	B93 (<80%)	A23	B93 (<80%)	A23	A93 (<80%)	B100	A120	-
Potassium perchlorate	KCIO ₄	sat	TBD	_	A60	-	A80	-	X	A23	A120	A120	A95	A25	A25	-	-	-	B93 (20%)	-	A23	-	A93 (20%)	-	-	-
Potassium permanganate	KMnO ₄	25	>100	A50	A100	Х	A70	A23	Х	A40	A100	A200	A120	A120	A120	-	-	A23	B93	A100	A32	A100	B23	-	-	-

Chemical Resitance Chart – Chemicals P © Siemens 2021

Stainless Steel Hastelloy® Titanium Tantalum Platinum Overview

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z				Plast	ic and r	ubbers								Ceramic	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Potassium sulfate	K ₂ SO ₄	sat	>100	-	A60	A80	A100	A23	A60	A60	A100	A200	A140	A50	A50	-	A93	A	A93 (10%)	A23	B26	A93 (10%)	A32	A23	A120	B23
Propan-1-ol	C ₃ H ₈ O	100	<5	A50	A80	A90	A100	A60	A40	A80	A120	A200	A65	-	-	-	-	A	A93	A104	A93	-	A23	B40	-	_
Propylene glycol	C ₃ H ₈ O ₂	100	<5	A23	A100	-	A120	A23	A80	A23	A200	A200	A65	-	-	-	A93	A	B97	Α	B32	-	A23	A32	-	A23
Propylene oxide	C ₃ H ₆ O	100	TBD	-	B23	-	х	х	Х	Х	A200	A200	Х	-	-	-	-	A	A60	-	-	-	-	B32	-	A23
Pyridine	C ₅ H ₅ N	100	<5 @18°C	B23	Х	-	Х	Х	Х	Х	A120	A200	Х	A60	A60	-	-	A	A93	Х	A60	A93	B93	B100	A115	B23
Salicylic acid	C ₇ H ₆ O ₃	sat	TBD	A23	A150	_	A150	A23	A23	A23	A200	A200	A95	-	_	_	_	Α	A60	A120	A120	A93	A23	B93	A120	C23
Salt water (brine)		sat	>100	A90	A120	A90	A100	A60	A70	A80	A200	A200	A120	A	А	-	-	A	B121	Α	A120	-	A23	A38	-	-
Seawater		100	>100	A	A120	A100	A80	A23	A70	A80	A200	A200	A120	-	-	-	A93	A	A23	A	A120	-	A93	A38	-	B23
Silicone oil		100	<5	A23	A60	A80	A100	C23	A60	A20	A200	A200	A120	-	-	-	-	A	B38	Α	-	-	Α	A	-	-
Soap solution			>100	A65	A150	A80	A100	A60	A110	A80	A200	A200	-	-	-	-	A93	A	B23	A	A23	A93	A32	A23	-	A23
Sodium acetate	C ₂ H ₃ NaO ₂	sat	>100	A	A100	A80	Х	C23	Х	C23	A120	A200	A140	-	-	-	-	A	A60 B120	A	A93	A200	A93	A23	A120	-
Sodium bicarbonate	NaHCO ₃	sat	>100	A80	A100	A100	A100	A40	A60	A70	A120	A200	A140	A120	A120	-	A93	-	A65	A65	A65	-	A93 (20%)	A65	-	B23 (50%)
Sodium bisulfate	NaHSO ₄	sat	TBD	A80	A90	A90	A100	A60	A80	A90	A200	A200	A140	A120	A120	-	A93	-	Х	A	B93	A93 (<50%)	A70 (20%)	A23	A300	_
Sodium bisulfite	Na HSO ₃	sat	TBD	A80	A80	A90	A100	A60	A60	A80	A200	A200	A140	A120	A120	=	=	-	B23	A	B93	A93 (<40%)	B97 (10- 40%)	B23	A100	=
Sodium borate	Na ₂ B ₄ O ₇ ·10H ₂ O	sat	TBD	A80	A80	A90	A100	A23	B100	B100	A200	A200	A100	-	-	-	-	Α	A200	A	A38	-	B87	A23	-	-
Sodium carbonate	Na ₂ CO ₃	sat	>100	A100	A80	A70	A100	A80	A90	A60	A200	A200	A140	A120	A120	-	A93	A	B150	A100	B93	A100	A93	A93 (<25%)	A100	B23 (<20%)
Sodium chlorate	NaClO ₃	sat	TBD	A90	A80	A80	A60	A60	A80	A23	A200	A200	A120	A120	A120	-	A93	A23	X	A150	A93	-	A93	X	-	-
Sodium chloride	NaCl	sat	>100	A80	A60	A90	A100	A23	A80	A70	A200	A200	A120	A120	A120	-	A93	A	Х	A60	A120	A93	A93	A120	A100	B23 (30%)
Sodium chlorite	NaClO ₂	sat	TBD	-	х	A30	B60	х	Х	Х	A200	A200	A120	A	А	-	-	×	B23 (25%)	-	B23 (10%)	-	-	-	A100	-
Sodium chromate	Na ₂ CrO ₄	sat	TBD	=	A23	A60	A23	-	A23	A23	A120	A120	A95	=	-	-	-	X	A93	-	A93 (80%)	A93 (80%)	A93 (80%)	A93 (80%)	-	B23
Sodium cyanide	NaCN	sat	TBD	A65	A80	A80	A80	A80	A60	A60	A120	A200	A135	-	-	-	-	A100	A23	-	B38	Х	A32	A93	Х	X
Sodium dichromate	Na ₂ Cr ₂ O ₂	sat	>100	A60	A60	A80	B100	Х	A60	Х	A120	A200	A100	-	-	-	-	X	B23	-	A32	-	A32	A23	-	-
Sodium hydrogen sulfite	NaHSO ₃	sat	TBD	-	-	A80	-	-	-	-	-	-	-	_	-	-	-	A	-	-	-	-	-	-	-	_
Sodium hydroxide	NaOH	30	>100	A90	A80	A70	A23	A60	A80	A60	A200	A200	-	A120	A120	-	-	A	A60 X93	A86	B97	A93	A93	Х	-	A23
Sodium hydroxide	NaOH	50	>100	A90	A80	A70	X	A60	A65	A60	A200	A200	Х	B100	A100	A 23	A93	A	A40- B60- X93	A86	A87- B97	A93	A 23	Х	-	C23
Sodium hydroxide	NaOH	70	TBD	A80	A40	A70	X	A23	X	A60	A200	A200		X	B100	_		Α	A40	-	A104	_	B93	X	A100	C23
Sodium hypochlorite	NaOCI	5	TBD	B23	B23	A23	A80	C23	X	X	A200	A200	A135	A120	A120	-	-	A	B23	A60	A23	A93	В	A120	-	C23
Sodium hypochlorite	NaOCI	12,5%, 150 g/L Cl2	TBD	Х	B23	B30	A80	Х	Х	Х	A200	A200	A95	A120	A120	х	-	A	×	A60	A23	A93	A 23	B120	-	_
Sodium metabisulphite	Na ₂ S ₂ O ₅		TBD		A		A				Α	A				-		-	-	A	-	-	-	-	-	_
Sodium nitrate	NaNO ₃	sat	>100	A100	A100	A70 @25%	A100	B23	A60	A70 @25%	A200	A200	A135	A100	A100	-	A93	A	A93	A	Х	A93	A23	B93	A100	C23
Sodium nitrite	Na NO ₂	sat	TBD	A100	A80	-	A100	-	A60	A60	A120	A200	A135	A100	A100	-	-	A	B23	Α	Х	-	A97	B93	-	-

© Siemens 2021 Chemical Resitance Chart – Chemicals P-S

Stainless Steel Hastelloy® Tantalum Platinum **Overview**

A = ExcellentB = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z				Plast	c and r	ubbers								Ceramic	s and re	esins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Sodium perborate	NaBO ₃ ·nH ₂ O	sat	TBD	A23	A60	-	A80	B23	A23	C23	A120	A120	A120	-	-	-	-	A	A40	-	B93 (10%)	A50	-	-	A50	B23 (10%)
Sodium peroxide	Na ₂ O ₂	10	TBD	A80	A150	A90	A80	A60	A90	A80	A120	A200	A95	A120	A120	_	_	X	B93	A100	B93	A93	_	C23	_	B23
Sodium phosphate	Na ₃ PO ₄	sat	>100	A90	A80	A90	A100	A60	A80	A60	A120	A200	A140	_	-	_	_	A	B97	A100	B93	A100	B80	A23	A100	_
Sodium sulfate	Na ₂ SO ₄	sat	>100	A65	A80	A70	A100	A60	A60	A60 @ 25%	A200	A200	A140	A120	A120	=	A93	A	A93	A	A60	-	A93 (10- 20%)	A23	A100	B23 (<50%)
Sodium sulfide	Na ₂ S	50	>100	A65	A60	A80	A80	A60	A60	A80	A200	A200	A120	A120	A120	=	=	A	B80	=	B93	A93	B93	B100 (10%)	A100	B23
Sodium sulfite	Na ₂ SO ₃	sat	TBD	A100	A60	A70	A60	A23	A60	Х	A120	A120	A140	A120	A120	-	-	A	A93 (50%)	-	Х	A93 (25%)	A	A120	A100	-
Sodium thiosulfate	Na ₄ S ₂ O ₃	sat	>100	A90	A60	A80	A90	A60	A60	A80	A200	A200	A135	-	-	-	A93 up to 50%	A	A93	-	B32	A93	A93 (25%)	A93	-	B23 (25%)
Soybean oil		100	<5	A	×	-	A90	×	A60	A70	A200	A200	A135	_	_	_	_	A	B65	Α	A	_	A23	A23	_	A23
Spirit			TBD	-	-	A60	-	-	_	_	-	-	_	_	-	_	_	_	_	_	_	-	_	_	_	_
Starch solution		100	>100	-	A60	A80	A90	B23	A50	A70	A150	A150	A110	-	-	-	_	A	A23	-	-	-	-	A23	-	A23
Steam, high pressure			TBD	X	x	X	Х	X	X	X		Х	_	-	_	-	-	-	B293	-	B149	-	A293	-	-	-
Steam, low pressure			TBD	X	х	X	Х	X	Х	X	A90	A200	-	-	-	-	-	-	B293	-	B97	-	B97	B149	_	-
Steam, medium pressure			TBD	Х	Х	Х	Х	х	Х	Х	A90	A200	-	-	-	-	-	-	B293	-	B121	-	A187	-	-	-
Stearic acid	C ₁₇ H ₃₅ COOH	100	<5	X	x	A80	A40	X	A40	A80	A120	A200	A140	A120	A120	-	-	A	A200	A	A93	A200	A180	B200	A300	C23
Sugar solution		sat	>100	-	A60	A60	A80	A23	A60	B60	A120	A120	A140	A120	A120	-	-	A	A43	A32	A149	-	-	A32	_	A23
Sulfur chloride	S ₂ Cl ₂	sat	TBD	X	Х	-	A60	Х	Х	Х	A120	A200	A25	A120	A120	-	-	A	Х	A	B97	A150	Х	A150	-	-
Sulfur trioxide	SO ₃	100	TBD	A	Х	A90	B60	Х	Х	X	A120	A200	X	-	_	-	_	X	B200	A25	B120	Х	X	Х	_	-
Sulfuric acid	H ₂ SO ₄	10	>100	B23	B80	A80	A120	A60	A60	A50	A200	A200	A120	A120	A120	-	A93	A	A 23	A52	A75	A120	Х	A93	A250	C23
Sulfuric acid	H ₂ SO ₄	50	>100	B23	B23	A60	A100	B23	B23	Х	A200	A200	A95	A120	A120	Х	-	A	Х	A24	A23	A120	Х	A54	A250	X
Sulfuric acid	H ₂ SO ₄	70	>100	B23	Х	B40	A80	Х	Х	Х	A200	A200	-	A120	B120	-	-	A100	Х	A24	B80	A120	Х	A54	A250	Х
Sulfuric acid	H ₂ SO ₄	98	>100	Х	х	Х	A40	Х	Х	Х	A200	A200	A50	B120	х	-	-	Х	A38	A50	A50	A120	Х	A54	A250	Х
Sulfuric acid + nitric acid	H ₂ SO ₄ :HNO ₃	50:50	TBD	х	-	В	B35	-	-	Х	A200	A200	-	B35	Х	-	-	-	-	A23	A23	A23	Х	B23	X50	-
Sulfuric acid fuming	H ₂ SO ₄ + SO ₃	25	TBD	Х	Х	-	A100	Х	Х	Х	A200	A200	Х	A120	A120	-	-	Х	-	-	-	A120	Х	Х	-	-
Sulfuric dioxide, gaseous, dry and wet	SO ₂		<5	-	-	A30	-	-	-	-	-	-	-	-	-	-	-	A	-	-	-	-	-	-	-	-
Sulfurous acid, aqueous solution	H ₂ SO ₃	5	TBD	A65	х	A20	A60	B23	Х	Х	A200	A200	A120	-	-	-	-	Α	B93	-	B93	A93	A60	A150	A100	-
Tall oil		100	<5	Х	Х	-	A100	Х	A100	Х	A200	A200	A140	_	-			A	B93	A	A150	-	-	B149	_	A23
Tannic acid	C ₇₆ H ₅₂ O ₄₄	100	>5 (50%)	A23	A23	A60	A100	A23	A100	A80	A200	A200	A110	A120	A120	-		A	B93	-	Х	A93	A93	B80	-	-
Tartaric acid	C ₄ H ₆ O ₆	sat	>100	A90	Х	A80	A80	A80	A60	A100	A200	A200	A120	A120	A120	-		-	A93	-	B93	A93	B93	A93	A120	
Tin (II) chloride	SnCl ₂	25	TBD	Α	B100	A100	A80	A60	A60	A60	A120	A120	-	A150	A150	-	-	Α	A93 (10%)	-	B80	A100	A23	B80	-	-
Tin (IV) chloride	SnCl ₄	sat	TBD	A150	Α	-	-	A60	A23	A80	A120	A120	-	A150	A150	-	-	A	Х	C23	-	-	-	B120	-	-
Titanium dioxide		sat	>100	-	-	A80	-	-			-	-		-	-	-		_	-	-	-	-	-	-	-	-
Titanium tetrachloride	TiCl ₄	sat	TBD	-	Х	-	A70	Х	Х	Х	A200	A200	A65	-	-	-	-	A	B23	A	B23	-	A120	A32		-
Toluene	C ₆ H ₅ CH ₃	100	<5	Х	Х	Х	A23	Х	Х	Х	A120	A120	A80	A	Α		A93	A	A176	A	A93	A93	A93	A93	A111	A23
Tomato juice		100	TBD	-	A90	-	A60	-	A60	A60	A200	A200	A120	-	-	-	-	A	B120	-	B43	-	-	A32	-	-
Transformer oil			<5	Х	Х	-	A180	Х	В	Х	A200	A200	-	-	-	-	-	Α	B32	-	B32	-	-	-	-	-
Tributyl phospahte	C ₁₂ H ₂₇ O ₄ P	100	TBD	Х	A23	-	Х	Х	Х	Х	A200	A200	A25	-	-	-	-	Α	B23	-	B38	-	-	-	-	-

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Chemical Resistance Chart SITRANS F M

A = Excellent B = Good, minor effect C = Conditional, not recommended for continuous use

X = Not recommended - = No data available

Chemicals A – Z	<u>:</u>			Plasti	ic and r	ubbers								Ceramic	s and re	sins		Metals								
Agent	Chemical formula	Concentra- tion (%)	Electrical conductivi- ty (µS/cm) @ 25 °C	Butyl	EPDM	Ebonite	FKM- FPM	Lina- tex	NBR	Neo- prene	PFA	PTFE	PVDF	Aluminium oxide	Zirco- nium oxide	Ceramic coated	Novolac	Graphite	AISI 316L	Hastel- loy C-22	Hastel- loy C-276	Platinum	Titanium	Tantalum	Gold	Tung- sten carbide
Trichloroacetic acid		50	<5	X	×	_	A80	х	B23	Х	A200	A200	A50	-	_	-	_	Α	X	A120	A93	_	Х	B149	-	X
Trichloroethylene	CHCI=CCI ₂	100	TBD	X	Х	Х	A100	Х	Х	Х	A120	A120	A140	A23	A23	-	-	A	B120	A	A93	-	A93	B97	-	A23
Triethanolamine	C ₆ H ₁₅ NO ₃	100	TBD	A65	A23	Х	Х	B23	A23	A60	A200	A200	A50	-	-	-	-	A	B23	A95	A23	A200	A40	B97	-	A23
Trisodium phosphate	Na ₃ PO ₄	sat	TBD	A90	A23	A90	A80	A23	A90	A90	A200	A200	A120	-	-	-	A93	A	E71 (10%)	A200	E49 (10%)	-	-	B26	-	-
Urea		50	>100	A65	A60	A90	A80	A23	A60	A65	A100	A120	A95	-	-	-	A93	A	B97	A90	B23	-	A90	A90	-	A23
Vinegar		100	>100	A65	A60	A65	A100	B23	Х	A80	A200	A200	A120	-	-	-	A93	A	B82	A	-	-	A23	A23	-	C23
Vinyl acetate	C ₄ H ₆ O ₂	100	TBD	-	Х	-	Х	Х	Х	Х	A100	A200	A120	-	-	-	-	-	A40	Α	A40	-	-	-	-	-
Waste water		100	>100	-	Х	Α	A60	Α	A60	В	A120	A120	-	A	Α	-	-	A	B23	Α	A23	A	A23	A23	-	-
Water, demineralized		100	<5	A70	A80	A80	A100	A23	A80	-	A200	A200	-	A100	A100	-	A93	Α	B100	Α	A200	A	-	A23	-	-
Water, potable		100	>5	A100	A80	A80	A80	A23	A80	B23	A200	A200	A150	A100	A100	A 23	A93	A	B100	A	A 23	A	A23	A 23	-	-
Wine		100	>100	A65	A80	A	A80	A23	A80	A	A200	A200	A120	A100	A100	-	-	A	A23	A	A38	-	A23	A23	-	-
Xylene	(CH ₃) ₂ C ₆ H ₄	100	<5	Х	Х	Х	B80	Х	Х	Х	A100	A200	A95	-	-	-	-	A	B93	A120	A150	A100	A93	A93	-	A23
Zinc chloride	ZnCl ₂	sat	>100	A90	A80	A70	A100	A60	A100	A60	A200	A200	A120	A120	A120	-	A93	Α	X	C23	B120	A93	A93 (<70%)	A80	-	Х
Zinc sulfate	ZnSO ₄	sat	>100	A60	A60	A70	A100	A60	A60	A60	A200	A200	A140	-	-	-	A93	Α	A97	A100	A100	A100	A93 (<40%)	A32	A100	-

Chemical Resitance Chart – Chemicals T-Z