

## The chemical resistance of ADEKA ULTRA SEAL

The following table shows resistance properties of ADEKA ULTRASEAL (KM, KC, KBA, MC, A-30 and A-50N) to various chemicals.

Unless otherwise specified, test samples were soaking in 100% concentrated or saturated solutions at room temperature.

Use this table as a guideline to determine suitability for product use. The table is the best estimation by the manufacturer of ADEKA Ultra Seal. Call 800.999.3959 or your local representative to confirm use under exact conditions.

**Acceptable pH range for MC, KM, KBA, P-201, A-30 = pH 3 ~ pH 11**

(clean up within 24 hours for low and high ranges)

Chemical	concentration/ temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30	A-50N
1 Acetaldehyde		F	F	N	N	N	N
2 Acetic acid	(10/RT)	F	F	F	N	F	N
3 Acetone		F	F	N	N	N	N
4 Acetylene		E	E	G	G	G	N
5 Alums NH <sub>3</sub> ,Cr,K		E	E	E	E	E	E
6 Aluminum acetate		E	E	E	E	E	E
7 Aluminum bromide		E	E	E	E	E	E
8 Aluminum chloride		E	E	E	N	F	N
9 Aluminum fluoride		E	E	E	E	E	E
10 Aluminum nitrate		E	E	E	E	E	E
11 Aluminum sulfate		E	E	E	E	E	E
12 Ammonia gas		E	E	E	E	E	E
13 Ammonium carbonate		E	E	E	E	E	E
14 Ammonium chloride		E	E	E	F	F	F
15 Ammonium hydroxide		N	N	N	N	N	N
16 Ammonium persulfate		E	E	E	N	F	N
17 Ammonium phosphate		E	E	E	E	E	E
18 Ammonium sulfate		E	E	E	E	E	E
19 Amyl alcohol		E	E	G	G	G	G
20 Aniline dyes		G	G	F	N	N	N
21 Lard oil		F	F	N	N	N	N
22 Arsenic acid		E	E	E	F	F	F
23 Asphalt		N	N	N	F	F	N
24 ASTM oil NO.1		N	N	N	N	N	N
25 ASTM reference fuel A		N	N	N	N	N	N
26 Barium chloride		E	E	E	E	E	E
27 Barium hydroxide		E	E	E	E	E	E
28 Barium sulfate		E	E	E	E	E	E
29 Barium sulfide		E	E	E	E	E	E

	NOTE: Adeka products can be used even if the contaminant is rated "N" as long as the concentration of the contaminant is less than 10,000 ppm.		Natural Rubber	KM/KC/KBA	MC	P-201	A-30	A-50N
	Chemical	concentration/ temperature (wt%/deg)						
30	Benzene		N	N	N	N	N	N
31	Benzine		N	N	N	N	N	N
32	Benzyl alcohol		G	G	F	F	F	F
33	Boric acid		E	E	E	E	E	E
34	Butane		N	N	N	F	F	F
35	Butyl alcohol		E	E	G	N	F	N
36	Calcium acetate		E	E	G	E	E	E
37	Calcium bissulfite		E	E	E	E	E	E
38	Calcium chloride		E	E	E	E	E	E
39	Calcium hydroxide		E	E	E	E	E	E
40	Calcium hypochlorite		N	N	N	N	N	N
41	Calcium nitrate		E	E	E	E	E	E
42	Calcium sulfide		G	G	G	E	E	G
43	Carbon dioxide		G	G	G	E	E	G
44	Carbonic acid		N	N	N	N	N	N
45	Castor oil		E	E	G	G	G	F
46	Cellsolve		N	N	N	N	N	N
47	Cellsolve,Acetate		G	G	F	F	F	N
48	Cellsolve,Butyl		E	E	G	G	G	F
49	Chlorinated solvents		N	N	N	N	N	N
50	Chromic acid	(2/70)	N	N	N	N	N	N
51	Citric acid		E	E	G	G	G	F
52	Copper chloride		E	E	E	E	E	E
53	Copper cyanide		E	E	E	E	E	E
54	Copper sulfate		E	E	E	E	E	E
55	Corn oil		N	N	N	N	N	N
56	Cottonseed oil		N	N	N	N	N	N
57	Cresol		N	N	N	N	N	N
58	Cycrohexanone		F	F	N	N	N	N
59	Developing solutions(Hypos)		E	E	E	E	E	E
60	Dibutyl phthalate		N	N	N	F	F	F
61	Diesel Fuel		N	N	N	F	F	N
62	Diethylene glycol		E	E	G	N	N	N
63	Diisopropyl ketone		F	F	N	N	N	N
64	Dimethyl formamide		G	G	F	N	N	N
65	Dioethyl phthalate		F	F	N	G	G	F
66	Dioxane		N	N	N	N	N	N
67	Ethanolamine		G	G	F	F	F	F
68	Ethyl acetate		F	F	N	N	N	N
69	Ethyl aceetoacetate		E	E	G	G	G	F
70	Ethyl alcohol (Ethanol)		E	E	G	G	G	G
71	Ethyl cellulose		G	G	G	G	G	F

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	Chemical	concentration/ temperature (wt%/deg)						
72	Ethyl chloride		E	E	G	G	G	F
73	Ethyl chlorohydrin		G	G	F	F	F	F
74	Ethylene diamine		E	E	G	G	G	F
75	Ethylene glycol		E	E	G	G	G	F
76	Ethyl oxalate		E	E	G	G	G	F
77	Ethyl silicate		G	G	F	F	F	F
78	Fatty acid		F	F	N	F	F	N
79	Ferric chloride		E	E	E	E	E	E
80	Ferric sulfate		E	E	E	E	E	E
81	Fluorboric acid		E	E	E	E	E	E
82	Fluosilicic acid		E	E	E	E	E	E
83	Formaldehyde	(40/RT)	G	G	F	N	N	N
84	Formic acid	(25/RT)	F	F	N	N	N	N
85	Fuel oil		N	N	N	F	F	N
86	Gasoline		N	N	N	F	F	N
87	Gelatin		E	E	G	E	E	G
88	Galuber's salt		E	E	E	E	E	E
89	Glycerin		E	E	E	E	E	E
90	Hexane		N	N	N	F	F	N
91	Hexyl alcohol		E	E	G	N	N	N
92	Hydrobromic acid	(37/RT)	E	E	E	N	N	N
93	Hydrochloric acid	(3/RT)	E	E	E	E	E	G
94	Hydrochloric acid	(10/RT)	F	F	N	N	F	N
95	Hydrogen		G	G	G	E	E	G
96	Hydrogen peroxide	(5/RT)	N	N	N	N	N	N
97	Hydrogen sulfide		N	N	N	N	N	N
98	Hydroquinone		E	E	G	G	G	G
99	Hydrochloric acid		E	E	E	E	E	E
100	Isobutyl alcohol		E	E	G	N	N	N
101	Isopropyl alcohol		E	E	F	F	F	N
102	Jet Fuel		N	N	N	F	F	N
103	Lacquer		N	N	N	N	N	N
104	Lactic acid		E	E	G	G	G	G
105	Lead acetate		E	E	E	E	E	E
106	Lead nitrate		E	E	E	E	E	E
107	Lead sulfamate		G	G	G	G	G	G
108	Linseed oil		G	G	F	G	G	F
109	Liquifide petroleum gas		N	N	N	F	F	N
110	Lubricating oil		N	N	N	F	F	F
111	Magnesium chloride		E	E	E	E	E	E
112	Magnesium hyroxide		E	E	E	E	E	E
113	Magnesium sulfate		E	E	E	E	E	E

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	Chemical	concentration/ temperature (wt%/deg)						
114	Maleic acid		E	E	G	G	G	F
115	Malic acid		E	E	G	G	G	F
116	Mercuric chloride		E	E	E	E	E	E
117	Mercury		E	E	E	E	E	E
118	Methyl alcohol		E	E	G	G	G	F
119	Methyl ethyl ketone		F	F	N	N	N	N
120	Mineral oil		N	N	N	N	N	N
121	Monoethanolamine		G	G	F	F	F	N
122	Motor Oil		N	N	N	F	F	F
123	Naptha		N	N	N	F	F	N
124	Natural gas		G	G	G	G	G	G
125	Nickel acetate		E	E	E	E	E	E
126	Nickel chloride		E	E	E	E	E	E
127	Nikkel sulfate		E	E	E	E	E	E
128	Nitric acid	(10/RT)	N	N	N	N	N	N
129	Nitroethane		E	E	G	N	N	N
130	Nitromethane		E	E	G	F	F	F
131	Nitrogen		E	E	E	E	E	E
132	Octyl alcohol		G	G	F	N	N	N
133	Oleic acid		F	F	N	F	F	F
134	Oleive oil		N	N	N	F	F	F
135	Oxalic acid		G	G	F	F	F	N
136	Oxygen		G	G	G	E	E	G
137	Ozone		N	N	N	F	F	F
138	Palmitic acid		G	G	F	G	G	F
139	Petroleum		N	N	N	N	N	N
140	Phenyl hydrazine		E	E	G	G	G	G
141	Phenol		F	F	N	N	N	N
142	Phosphoric acid	(50/RT)	E	E	E	E	E	E
143	Potassium chloride		E	E	E	E	E	E
144	Potassium cyanide		E	E	E	E	E	E
145	Potassium dichlomite	(10/RT)	E	E	E	E	E	E
146	Potassium hydroxide		E	G	G	G	G	G
147	Potassium permanganate	(5/RT)	N	N	N	N	N	N
148	Potassium sulfate		E	E	E	E	E	E
149	Propane		N	N	N	F	F	F
150	Propyl alcohol		E	E	G	F	F	F
151	Propylene Glycol		E	E	G	G	G	G
152	Pyridine		N	N	N	N	N	N
153	Salicylic acid		E	E	G	G	G	G
154	Salt water		E	E	E	E	E	E
155	Silicon greases		E	E	G	E	E	G

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	Chemical	concentration/ temperature (wt%/deg)						
156	Silicon oil		E	E	G	E	E	G
157	Silver ritrate		E	E	E	E	E	E
158	Soap solutions		E	E	E	E	E	E
159	Soda ash		E	E	E	E	E	E
160	Sodium bicaarbonate		E	E	E	E	E	E
161	Sodium bisulfate		E	E	E	E	E	E
162	Sodium bisulfite		E	E	E	E	E	E
163	Sodium borate		E	E	E	E	E	E
164	Sodium chloride		E	E	E	E	E	E
165	Sodium cyanide		E	E	E	E	E	E
166	Sodium hydroxide	(10/RT)	E	G	G	F	F	N
167	Sodium hydroxide	(30/RT)	E	G	G	N	F	N
168	Sodium hypochlorite	(5/RT)	F	F	F	N	N	N
169	Sodium metaphosphate		E	E	E	E	E	E
170	Sodium nitrate		E	E	E	E	E	E
171	Sodium perborate		E	E	E	E	E	E
172	Sodium peroxide		E	E	E	N	N	N
173	Sodium phosphate		E	E	E	E	E	E
174	Sodium thiosulfate		E	E	E	E	E	E
175	Sodium sulfide		E	E	E	E	E	E
176	Soybean oil		N	N	N	F	F	F
177	Stannic chloride		E	E	E	E	E	E
178	Stearic acid		G	G	F	G	G	F
179	Sulfur		G	G	G	G	G	G
180	Sulfur dioxide		G	G	G	G	G	G
181	Sulfurric acid	(3/RT)	E	E	E	G	G	G
182	Sulfurric acid	(10/RT)	E	G	N	N	F	N
183	Sulfurous acid	(10/RT)	G	G	G	N	F	N
184	Tannic acid		E	E	G	G	G	F
185	Tar		G	G	N	F	F	F
186	Tartaric acid		E	E	G	G	G	F
187	Toluene		N	N	N	N	N	N
188	Transformer Oil		N	N	N	F	F	F
189	Tributyl phosphate		G	G	F	N	N	N
190	Triethanolamine		E	E	G	N	N	N
191	Vegitabule oil		F	F	F	F	F	F
192	Water		E	E	E	E	E	E
193	Xylene		N	N	N	N	N	N
194	Zinc acetate		E	E	E	E	E	E
195	Zinc chloride		E	E	E	E	E	E
196	Zinc sulfate		E	E	E	E	E	E

Chemical	<p>NOTE: Adeka products can be used even if the contaminant is rated "N" as long as the concentration of the contaminant is less than 10,000 ppm.</p>	<p>concentration/ temperature (wt%/deg)</p>	<p>Natural Rubber</p>	<p>KM/KC/KBA</p>	<p>MC</p>	<p>P-201</p>	<p>A-30</p>	<p>A-50N</p>
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We determined chemical resistance for inorganic chemicals by change of sample's surfaces, rate of soaking water and change of physical properties.

- E: Excellent Service
- G: Good Service
- F: Fair Service
- N: Not Recommended/Poor