

## Chemical Resistance

The following table shows resistance properties of ADEKA ULTRASEAL (KM, KC, KBA, MC and A-30) 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 ULTRASEAL. Call 866-457-5710 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)

**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**.

	Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30
1	Acetaldehyde		F	F	N	N	N
2	Acetic acid (10/RT)		F	F	F	N	F
3	Acetone		F	F	N	N	N
4	Acetylene		E	E	G	G	G
5	Alums NH <sub>3</sub> ,Cr,K		E	E	E	E	E
6	Aluminum acetate		E	E	E	E	E
7	Aluminum bromide		E	E	E	E	E
8	Aluminum chloride		E	E	E	N	F
9	Aluminum fluoride		E	E	E	E	E
10	Aluminum nitrate		E	E	E	E	E
11	Aluminum sulfate		E	E	E	E	E
12	Ammonia gas		E	E	E	E	E
13	Ammonium carbonate		E	E	E	E	E
14	Ammonium chloride		E	E	E	F	F
15	Ammonium hydroxide		N	N	N	N	N
16	Ammonium persulfate		E	E	E	N	F
17	Ammonium phosphate		E	E	E	E	E
18	Ammonium sulfate		E	E	E	E	E
19	Amyl alcohol		E	E	G	G	G
20	Aniline dyes		G	G	F	N	N
21	Lard oil		F	F	N	N	N
22	Arsenic acid		E	E	E	F	F
23	Asphalt		N	N	N	F	F

E = Excellent Service • G = Good Service • F = Fair Service • N = Not Recommended/Poor

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	Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30
24	ASTM oil NO.1		N	N	N	N	N
25	ASTM reference fuel A		N	N	N	N	N
26	Barium chloride		E	E	E	E	E
27	Barium hydroxide		E	E	E	E	E
28	Barium sulfate		E	E	E	E	E
29	Barium sulfide		E	E	E	E	E
30	Benzene		N	N	N	N	N
31	Benzine		N	N	N	N	N
32	Benzyl alcohol		G	G	F	F	F
33	Boric acid		E	E	E	E	E
34	Butane		N	N	N	F	F
35	Butyl alcohol		E	E	G	N	F
36	Calcium acetate		E	E	G	E	E
37	Calcium bisulfite		E	E	E	E	E
38	Calcium chloride		E	E	E	E	E
39	Calcium hydroxide		E	E	E	E	E
40	Calcium hypochlorite		N	N	N	N	N
41	Calcium nitrate		E	E	E	E	E
42	Calcium sulfide		G	G	G	E	E
43	Carbon dioxide		G	G	G	E	E
44	Carbonic acid		N	N	N	N	N
45	Castor oil		E	E	G	G	G
46	Cellsolve		N	N	N	N	N
47	Cellsolve,Acetate		G	G	F	F	F
48	Cellsolve,Butyl		E	E	G	G	G
49	Chlorinated solvents		N	N	N	N	N
50	Chromic acid	(2/70)	N	N	N	N	N
51	Citric acid		E	E	G	G	G
52	Copper chloride		E	E	E	E	E
53	Copper cyanide		E	E	E	E	E
54	Copper sulfate		E	E	E	E	E
55	Corn oil		N	N	N	N	N
56	Cottonseed oil		N	N	N	N	N
57	Cresol		N	N	N	N	N
58	Cycrohexanone		F	F	N	N	N
59	Developing solutions (Hypos)		E	E	E	E	E

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Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30	
60	Dibutyl phthalate	N	N	N	F	F	
61	Diesel Fuel	N	N	N	F	F	
62	Diethylene glycol	E	E	G	N	N	
63	Diisopropyl ketone	F	F	N	N	N	
64	Dimethyl formamide	G	G	F	N	N	
65	Diethyl phthalate	F	F	N	G	G	
66	Dioxane	N	N	N	N	N	
67	Ethanolamine	G	G	F	F	F	
68	Ethyl acetate	F	F	N	N	N	
69	Ethyl acetoacetate	E	E	G	G	G	
70	Ethyl alcohol (Ethanol)	E	E	G	G	G	
71	Ethyl cellulose	G	G	G	G	G	
72	Ethyl chloride	E	E	G	G	G	
73	Ethyl chlorohydrin	G	G	F	F	F	
74	Ethylene diamine	E	E	G	G	G	
75	Ethylene glycol	E	E	G	G	G	
76	Ethyl oxalate	E	E	G	G	G	
77	Ethyl silicate	G	G	F	F	F	
78	Fatty acid	F	F	N	F	F	
79	Ferric chloride	E	E	E	E	E	
80	Ferric sulfate	E	E	E	E	E	
81	Fluorboric acid	E	E	E	E	E	
82	Fluosilicic acid	E	E	E	E	E	
83	Formaldehyde	(40/RT)	G	G	F	N	N
84	Formic acid	(25/RT)	F	F	N	N	N
85	Fuel oil	N	N	N	F	F	
86	Gasoline	N	N	N	F	F	
87	Gelatin	E	E	G	E	E	
88	Galuber's salt	E	E	E	E	E	
89	Glycerin	E	E	E	E	E	
90	Hexane	N	N	N	F	F	
91	Hexyl alcohol	E	E	G	N	N	
92	Hydrobromic acid	(37/RT)	E	E	E	N	N
93	Hydrochloric acid	(3/RT)	E	E	E	E	E
94	Hydrochloric acid	(10/RT)	F	F	N	N	F
95	Hydrogen		G	G	G	E	E

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Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30
96	Hydrogen peroxide	(5/RT)	N	N	N	N
97	Hydrogen sulfide		N	N	N	N
98	Hydroquinone		E	E	G	G
99	Hydrochloric acid		E	E	E	E
100	Isobutyl alcohol		E	E	G	N
101	Isopropyl alcohol		E	E	F	F
102	Jet Fuel		N	N	N	F
103	Lacquer		N	N	N	N
104	Lactic acid		E	E	G	G
105	Lead acetate		E	E	E	E
106	Lead nitrate		E	E	E	E
107	Lead sulfamate		G	G	G	G
108	Linseed oil		G	G	F	G
109	Liquifide petroleum gas		N	N	N	F
110	Lubricating oil		N	N	N	F
111	Magnesium chloride		E	E	E	E
112	Magnesium hydroxide		E	E	E	E
113	Magnesium sulfate		E	E	E	E
114	Maleic acid		E	E	G	G
115	Malic acid		E	E	G	G
116	Mercuric chloride		E	E	E	E
117	Mercury		E	E	E	E
118	Methyl alcohol		E	E	G	G
119	Methyl ethyl ketone		F	F	N	N
120	Mineral oil		N	N	N	N
121	Monoethanolamine		G	G	F	F
122	Motor Oil		N	N	N	F
123	Naptha		N	N	N	F
124	Natural gas		G	G	G	G
125	Nickel acetate		E	E	E	E
126	Nickel chloride		E	E	E	E
127	Nickel sulfate		E	E	E	E
128	Nitric acid	(10/RT)	N	N	N	N
129	Nitroethane		E	E	G	N
130	Nitromethane		E	E	G	F
131	Nitrogen		E	E	E	E

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Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30
132	Octyl alcohol	G	G	F	N	N
133	Oleic acid	F	F	N	F	F
134	Olive oil	N	N	N	F	F
135	Oxalic acid	G	G	F	F	F
136	Oxygen	G	G	G	E	E
137	Ozone	N	N	N	F	F
138	Palmitic acid	G	G	F	G	G
139	Petroleum	N	N	N	N	N
140	Phenyl hydrazine	E	E	G	G	G
141	Phenol	F	F	N	N	N
142	Phosphoric acid	(50/RT)	E	E	E	E
143	Potassium chloride	E	E	E	E	E
144	Potassium cyanide	E	E	E	E	E
145	Potassium dichromate	(10/RT)	E	E	E	E
146	Potassium hydroxide	E	G	G	G	G
147	Potassium permanganate	(5/RT)	N	N	N	N
148	Potassium sulfate	E	E	E	E	E
149	Propane	N	N	N	F	F
150	Propyl alcohol	E	E	G	F	F
151	Propylene Glycol	E	E	G	G	G
152	Pyridine	N	N	N	N	N
153	Salicylic acid	E	E	G	G	G
154	Salt water	E	E	E	E	E
155	Silicon greases	E	E	G	E	E
156	Silicon oil	E	E	G	E	E
157	Silver nitrate	E	E	E	E	E
158	Soap solutions	E	E	E	E	E
159	Soda ash	E	E	E	E	E
160	Sodium bicarbonate	E	E	E	E	E
161	Sodium bisulfate	E	E	E	E	E
162	Sodium bisulfite	E	E	E	E	E
163	Sodium borate	E	E	E	E	E
164	Sodium chloride	E	E	E	E	E
165	Sodium cyanide	E	E	E	E	E
166	Sodium hydroxide	(10/RT)	E	G	G	F

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Chemical	Concentration/ Temperature (wt%/deg)	Natural Rubber	KM/KC/KBA	MC	P-201	A-30	
167	Sodium hydroxide	(30/RT)	E	G	G	N	F
168	Sodium hypochlorite	(5/RT)	F	F	F	N	N
169	Sodium metaphosphate		E	E	E	E	E
170	Sodium nitrate		E	E	E	E	E
171	Sodium perborate		E	E	E	E	E
172	Sodium peroxide		E	E	E	N	N
173	Sodium phosphate		E	E	E	E	E
174	Sodium thiosulfate		E	E	E	E	E
175	Sodium sulfide		E	E	E	E	E
176	Soybean oil		N	N	N	F	F
177	Stannic chloride		E	E	E	E	E
178	Stearic acid		G	G	F	G	G
179	Sulfur		G	G	G	G	G
180	Sulfur dioxide		G	G	G	G	G
181	Sulfuric acid	(3/RT)	E	E	E	G	G
182	Sulfuric acid	(10/RT)	E	G	N	N	F
183	Sulfurous acid	(10/RT)	G	G	G	N	F
184	Tannic acid		E	E	G	G	G
185	Tar		G	G	N	F	F
186	Tartaric acid		E	E	G	G	G
187	Toluene		N	N	N	N	N
188	Transformer Oil		N	N	N	F	F
189	Tributyl phosphate		G	G	F	N	N
190	Triethanolamine		E	E	G	N	N
191	Vegitabule oil		F	F	F	F	F
192	Water		E	E	E	E	E
193	Xylene		N	N	N	N	N
194	Zinc acetate		E	E	E	E	E
195	Zinc chloride		E	E	E	E	E
196	Zinc sulfate		E	E	E	E	E

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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.*