Comparison of Phenolic vs epoxy

CHEMICALS	PHENOLIC RESIN	EPOXY RESIN
ACIDS		
ACETIC ACID	✓	✓
FORMIC ACID	✓	
HYDROCHLORIC ACID	✓	✓
HYDROFLUORIC ACID	✓	✓
NITRIC ACID	✓	
NITRIC ACID	✓	
PHOSPHORIC ACID	✓	✓
SULFURIC ACID	✓	
BASES		
AMMONIUM HYDROXIDE	✓	✓
SODIUM HYDROXIDE	✓	✓
SODIUM HYDROXIDE FLAKE	✓	✓
SALTS		
COPPER SULPHATE	✓	✓
FERRIC CHLORIDE	✓	✓
POTASSIUM PERMANGANADE	✓	✓
SILVER NITRATE	✓	✓
SODIUM CHLORIDE	✓	✓
HALOGENS		
IODINE (CRYSTALS)	✓	
IODINE SOLUTION	✓	
ORGANIC CHEMICALS		
CRESOL	✓	
FORMALDEHYDE	✓	✓
FURFURAL	✓	✓
HYDROGEN PEROXIDE	✓	
PHENOL	✓	
SOLVENTS		
ACETONE	✓	
BUTYL ALCOHOL	✓	✓
CHLOROFORM	✓	✓
ETHANOL	✓	✓
ETHYLALCOHOL	✓	✓
METHYLALCOHOL	✓	✓
BIOLOGIC STAINS		
ACRIDINE ORANGE	✓	✓
BASIC FUCHSIN	✓	✓
CONGO RED	✓	✓
METHYLENE BLUE	✓	✓
WRIGHT'S BLOOD STAIN	✓	✓

Chemical Test

Testing was necessary to ascertain the quality and superiority of the product over others. Testing was conducted by SGS U.S. Testing Company Inc. on March 26th, 2008 in accordance with SEFA 8-1988, Method B for 24 hours and rated as follows:

Level 0 = No Detectable Chance
Level 1 = Slight Change in Color or Gloss
Level 2 = Slight Surface Etching or Severe Staining
Level 3 = Pitting, Cratering, or Corrosion (Obvious and Significant Deterioration)

The following test results were gotten:

S/N	Chemicals	Ratings
1.	Amyl Acetate	0
2.	Ethyl Acetate	0
3.	Acetic Acid 98%	0
4.	Acetone	0
5.	Acid Dichromate 5%	1
6.	Butyl Alcohol	0
7.	Ethyl Alcohol	0
8.	Methyl Alcohol	0
9.	Ammonium Hydroxide 28%	0
10.	Benzene	0
11.	Carbon Tetrachloride	0
12.	Chloroform	0
13.	Chromic Acid 60%	0
14.	Cresol	0
15.	Dichloroacetic Acid	0
16.	Dimethylformamide	0
17.	Dioxane	0
18.	Ethyl Ether	0
19.	Formaldehyde	0
20.	Formic Acid	1
21.	Furfural	0
22.	Gasoline	0
23.	Hydrochloric Acid 37%	1
24.	Hydroflouric Acid 48%	2
25.	Hydrogen Peroxide	0

S/N	Chemicals	Ratings
26.	Tincture of Iodine	0
27.	Methyl Ethyl Ketone	0
28.	Methylene Chloride	0
29.	Monochlorobenzene	0
30.	Napthaline	0
31.	Nitric Acid 20%	1
32.	Nitric Acid 30%	1
33.	Nitric Acid 70%	2
34.	Phenol 90%	0
35.	Phosphoric Acid 85%	0
36.	Silver Nitrate	0
37.	Sodium Hydroxide 10%	0
38.	Sodium Hydroxide 20%	0
39.	Sodium Hydroxide 40%	0
40.	Sodium Hydroxide Flakes	0
41.	Sodium Sulfide Saturated Solution	0
42.	Sulfuric Acid 33%	1
43.	Sulfuric Acid 77%	1
44.	Sulphuric Acid 96%	2
45.	50% Sulfuric Acid (77%) +	2
	50% Nitric Acid (70%)	
46.	Toluene	0
47.	Trichloroethylene	0
48.	Xylene	0
49.	Saturated Zinc Chloride	0

Technical Data Sheet

Performance Properties as per NEMA Standards

	Test	Results
Coefficient of linear expansion	ASTM D696	1.65 x 105 in/degC
Compressive Strength	ASTM D695	43,000 PSI
Fire Resistance	ASTM D635	Self Extinguishing
Flexural Strength	ASTM D790	
Ultimate		23,000 PSI
Modulus		15,000 PSI
Impact Strength	ASTM D256	0.68 ft-lbs inch
Tensile Strength	ASTM D638	0
Ultimate		22,000 PSI
Modulus		17,000 PSI
Rockwell Hardness	ASTM D785	120
Water Absorption	ASTM D570	0.30%
Direct Flame Resistance	Bunsen Burner	3 Minute

Maximum Uniform Self Load Test (lbs)

1/4 Deflection at Center Shelf

Thickness	24” x 12”	36” x 12”	48” x 12”	36” x 24”
1/4”	40	15	7	25
3/8”	172	52	24	110
1/2”	371	110	50	225
3/4”	1400	401	172	815
1”	2605	785	335	1500

* Shelf sizes and thickness are represented in inches.

* Deflection tests conducted with shelves supported at both ends.