

CHEMICAL RESISTANT PROPERTIES TESTING

CHEMICAL Tested	TEST method	EPOXY RATING	SPC-CR RATING
Amyl Acetate	A	1	0
Ethyl Acetate	A	1	0
Acetic Acid, 98%	B	0	0
Acetone	A	1	0
Acid Dichromate, 5%	B	0	1
Butyl Alcohol	A	1	0
Ethyl Alcohol	A	1	0
Methyl Alcohol	A	0	0
Ammonium Hydroxide, 28%	B	1	1
Benzene	A	1	0
Carbon Tetrachloride	A	1	0
Chloroform	A	1	0
Chromic Acid, 60%	B	3	1
Cresol	A	1	1
Dichloroacetic Acid	A	1	1
Dimethylformamide	A	1	0
Dioxane	A	1	0
Ethyl Ether	A	0	0
Formaldehyde, 37%	A	0	0
Formic Acid, 90%	B	1	1
Furfural	A	1	0
Gasoline	A	0	0
Hydrofluoric Acid, 37%	B	1	0
Hydrofluoric Acid, 48%	B	2	1
Hydrogen Peroxide, 28%	B	0	0
Tincture of Iodine	B	0	1
Methyl Ethyl Ketone	A	0	1
Methylene Chloride	A	1	0
Monochlorobenzene	A	1	1
Naphthalene	A	0	0
Nitric Acid, 20%	B	0	0
Nitric Acid, 30%	B	1	0
Nitric Acid, 70%	B	1	0
Phenol, 90%	A	1	1
Phosphoric Acid, 85%	B	0	0
Silver Nitrate, Saturated	B	1	0
Sodium Hydroxide, 10%	B	1	0
Sodium Hydroxide, 20%	B	1	0
Sodium Hydroxide, 40%	B	1	0
Sodium Hydroxide, Flake	B	0	0
Sodium Sulfide, Saturated	B	1	0
Sulfuric Acid, 33%	B	0	0
Sulfuric Acid, 77%	B	1	0
Sulfuric Acid, 96%	B	3	0
Sulfuric Acid 77%, and Nitric Acid 70%, equal parts	B	1	0
Toluene	A	1	0
Trichloroethylene	A	1	0
Xylene	A	1	0
Zink Chloride, Saturated	B	0	0

After 24-hours exposure, areas are washed with water, then a detergent solution and finally with isopropyl alcohol. Materials are then rinsed with distilled water and dried with a cloth.

0 = No effect, 1 = Excellent, 2 = Good, 3 = Fair

EPOXY PHYSICAL PROPERTIES TESTING

TEST Identification	TEST Description	EPOXY RESULTS [imperial]
ASTM D785-08	Rockwell Hardness	109 [M scale]
ASTM D696-03	Linear Thermal Expansion	1.2x 10 ⁻⁵ in/in°F
ASTM D3801-00	Burning Characteristics Sample as Received	30 seconds max burning time
ASTM D3801-00	Burning Characteristics Samples as Received	41 seconds max burning time
ASTM D635-06	Fire Resistance	Self-extinguishing
ASTM D570-98	Water Absorption	0.03% [after 24 hours]
ASTM D792-00	Density	133.6 lb/ft ³
ASTM D695-02	Compressive Strength	32.7 kpsi
ASTM D648-07	Heat Distortion Temperature	380°F
ASTM E84-06	Fire Resistance - Flame Spread Index	0 [Class A]
ASTM E84-06	Fire Resistance - Smoke Developed Index	300 [Class A]
ASTM D790-07	Flexural Strength	12.6 kpsi

SOLID PHENOLIC COMPACT - CHEMICAL RESISTANCE GRADE PHYSICAL PROPERTIES TESTING

TEST Identification	TEST Description	SPC-CR RESULTS
EN 438-2:10	Resistance to Surface Wear	≥150 Revolutions (Initial Point)
EN 438-2:21	Resistance to Impact	0.4 Indentation Diameter (mm) No Cracks or Scoring
EN 438-2:25	Resistance to Scratch	5 Rating (Based on Load)
EN 438-2:16	Resistance to Dry Heat (320°F)	5 Appearance*
EN 12721	Resistance to Wet Heat (212°F)	5 Appearance*
EN 438-2:12	Resistance to Immersion in Boiling Water	5 Appearance* 0.4 Mass Increase % 1.9 Thickness Increase %
EN 438-2:17	Dimensional Stability in Elevated Temperature	0.05 Longitudinal (Parallel) % 0.05 Transversal (Perpendicular) %
EN 438-2:26	Resistance to Staining (Appearance Rating)	5 Acetone 5 NaOH 5 Hydrogen Peroxide (H ₂ O ₂ 3%)
ASTM G53/ EN 4382:27	Resistance to Color Change	5 Appearance* (Grey Wool Scale)
EN 438-2:24	Resistance to Crazeing	5 Appearance*
ASTM 638-08/ EN ISO 178	Modulus of Elasticity	≥1.85e ⁶ psi
ASTM 790-08/ EN ISO 178	Flexural Strength	≥2.87e ⁴ psi
ASTM 638-08/ EN ISO 527-2	Tensile Strength	≥2.71e ⁴ psi
ASTM 792-08/ EN ISO 1183	Density	≥86.15 lbs/ft ³

* Appearance Rating 5 = No Change