



Specification Report

CHEMICAL RESISTANCE High-Pressure Decorative Laminates

FORMILINE Chemical Resistant Laminate is unaffected by the majority of solvents, dyes, alkalis, acids and other chemicals. Specific applications include laboratory cabinets, casework, counters and tabletops in hospitals, photographers darkrooms, and beauty salons. Ideal for nurses station, dentists examining and treatment rooms and pathologists work rooms.

Property or attribute	Standard Test method	Unit	Typical Formiline Values				
			0,6 mm	0,7 mm	0,8 mm	1,0 mm	1,2 mm
<i>Appearance</i>	Nema LD 3 – 2005	Rating	No ABC Defects	No ABC Defects	No ABC Defects	No ABC Defects	No ABC Defects
<i>Boiling Water Resistance</i>	Nema LD 3 – 2005	Rating	NE	NE	NE	NE	NE
<i>Ball Impact Resistance</i>	Nema LD 3 – 2005	mm (min)	≥ 400	≥ 500	≥ 800	≥ 900	≥ 1250
<i>Wear Resistance</i>	Nema LD 3 – 2005	Cycles	≥ 400	≥ 400	≥ 400	≥ 400	≥ 400
<i>Dimensional Change</i>	Nema LD 3 –2005	% MD (máx) % CD (máx)	≤ 0,80 ≤ 1,30	≤ 0,70 ≤ 1,20	≤ 0,65 ≤ 1,10	≤ 0,60 ≤ 1,00	≤ 0,50 ≤ 0,90
<i>High Temperature Resistance</i>	Nema LD 3 –2005	Rating	NE	NE	NE	NE	NE
<i>Chemical & Stain Resistance</i>	<i>See list attached (page 2)</i>						

Where:

MD = machine direction

CD = cross direction

Maintenance and Cleanness:

We do not recommend to use cleanness products that contain abrasives in its composition, as well as the use of materials that can provoke grooves (steel straw), exactly with moderate action mechanics, preventing of this form to cause risks in superficies that it possess additives special that confer to plated optima chemical resistance.

TECHNICAL DATA

Table 1 "Chemical and stain resistance" provides a list of chemicals tested for their effect on our chemical resistant laminate.



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TABLE 1 – CHEMICAL & STAIN RESISTANCE

ACIDS

1. Nitric Acid (all concentrations)*
2. Glacial Acetic Acid. 99%
3. Sulfuric Acid (all concentrations)*
4. Hydrochloric Acid (all concentrations)*
5. Phosphoric Acid (all concentrations)*
6. Formic Acid (all concentrations)*
7. Acetic Acid (all concentrations)
8. Hydrofluoric Acid (48%)
9. Agua Regia *
10. Chromic Trioxide (Chromoc Acid)
11. Perchloric Acid, concentrated
12. Picric Acid, 0,05M
13. Tannic Acid saturated
14. Uric Acid, saturated

SOLVENTS

15. Trichloroethylene
16. Carbon Disulfide
17. Acetone
18. Formaldehyde
19. Methanol
20. Ethyl Acetate
21. Toluene
22. n- Hexane
23. Ethyl Alcohol
24. Chloroform
25. Phenol
26. EDTA
27. Xylene
28. Butyl Alcohol damage
29. Amyl Alcohol
30. Amyl Acetate
31. o – Cresol
32. Dioxane
33. Trichloroethane
34. Chlorobenzene
35. Dimethyl Foramide
36. Methylene Chloride
37. Methyl Ethyl Ketone
38. Naphthalene
39. Tetrahydrofuran

BASES

40. Sodium Hydroxide
41. Sodium Sulfide, 15%
42. Ammonium Hydroxide (all concentrations)

GENERAL REAGENTS

43. Sodium Hypochlorite, 5%
44. Calcium Hypochlorite (concentrated)*
45. Hydrogen Peroxide 3%
46. Trisodium Phosphate, 30%
47. Sodium Thiocyanate
48. Zinc Chloride (all concentrations)
49. Lactated Ringers (salted mixture)
50. Sucrose, 50%
51. Gasoline
52. Kerosene
53. Mineral Oil
54. Vegetable Oil
55. Water
56. Sodium Chromate (Phosphorus Pentoxide)
57. Potassium Permanganate *
58. Silver Nitrate *
59. Formalin
60. Benedict's Solution
61. Phosphate Buffered Saline
62. Copper Sulfate
63. Petroleum Jelly
64. Aluminum (Tannic Acid)
65. Ethylene Glycol
66. Pine Oil
67. Methyl Methacrylate
68. Alconox (lab. Detergent)I
69. Karl Fsher Reagent
70. Urea
71. Naphtha
72. Cellosolve
73. Ammonia Phosphate
74. Iodine
75. Providone Iodine
76. Tincture of Mercurochrome *
77. Tincture Iodine
78. Tincture of Merthiolate
79. Eucalyptol
80. Marcaine
81. Zephiran Chloride
82. Zinc Oxide Ointimet
83. Lysol (without hydrogen chloride)
84. Ammonia

85. Thimol and Alcohol
86. CMC (camphorated para-chlorophenol)
87. Quaternary Ammonia Compounds (Eugenol)
88. Monsel's Solution (Ferric Subsulfate)*
89. Sodium Carbonate, 12,5%

STAINS AND INDICATORS

90. Bromothymol Blue
91. Phenolphthalein
92. Methyl Red
93. Methyl Orange
94. Ag. Eosin Bluish, 5% in Alcohol
95. Ag. Gentian Violet, 1%
96. Wright's Blood Stain
97. Methylene Blue
98. Sudan III
99. Nigrosine (India Ink)
100. Crystal Violet
101. Malachite Green
102. Cresol Red
103. Gram Stains
104. Safranin O
105. Thymol Blue

*** Causes slight change of gloss in dark colors, and severe change of in clear colors. The degree of is proportional to the length of exposure and concentration. All other items have no visible effect on the Laminates**

RESISTANCE TEST PROCEDURE

The above chemicals were placed on the laminate under a watch glass for 16 hrs. Exposure effects were then evaluated.