



SPECIFICATION INFORMATION

CHEMARMOR®

CHEMICAL RESISTANT LAMINATE

1. PRODUCT IDENTIFICATION

Nevamar ® Chemical Resistant Decorative Laminate.

2. MANUFACTURER

NEVAMAR DECORATIVE SURFACES
One Nevamar Place
Hampton, South Carolina 29924
Phone: (803) 943-7200 or (800) 638-4380
www.nevamar.com

3. PRODUCT DESCRIPTION

GRADE: H-4 (HGL) (0.037" - 1.0mm)

FINISH: Textured

Basic Uses: NEVAMAR brand chemical resistant laminates are manufactured for application to interior horizontal surfaces where a superior wear and chemical resistant surface is required. In addition to providing resistance to chemical spills, it provides excellent resistance to scuff and abrasion. Specific applications may include laboratory bench tops, hospital or health facility countertops, and photographic processing work areas.

Limitations: High pressure laminates are not recommended for exterior use. The laminate should not be bonded to plaster board, gypsum board, plaster, concrete blocks or similar materials.

Composition and Materials: NEVAMAR chemical resistant laminate consists of several sheets of phenolic resin saturated kraft paper (the core) covered by a specially formulated chemical resistant resin. These sheets are consolidated under heat and pressure into a thermosetting plastic sheet. Sheets are then sanded and trimmed to ensure proper bonding.

Colors: Chemical resistant laminate is stocked in solid black and white. Additional solids and patterns (excluding Hallmark series and crystal finish) will be available on a made-to-order basis (10 sheets minimum).

Size Availability: Stocked in 48"x96" and 60"x 144".

Other sizes will be available on a made-to-order basis (10 sheets minimum).

Applicable Standards: NEVAMAR brand chemical resistant laminate meets the surface requirements published in NEMA LD3 current edition for Type HGL.

It also meets performance standards of the following:

- ANSI (American National Standard Institute)
- Federal Specifications LP 508H
- Mil. Spec. P-17171E (ships)
- NSF-35

4. TECHNICAL DATA

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

See Table 2 "Laminate Typical Test Values" for physical properties of laminate compared to requirements of NEMA Standards (LD3 current edition). Superior properties are bolded within the table.

5. INSTALLATION

Suitable Subsurfaces: Chemical resistant laminate should be bonded to a core material such as plywood, particleboard, flake board or metal using adhesives and techniques as recommended by reliable adhesive manufacturers, and American National Standard Performance Standards for Fabricated High Pressure Decorative Laminate Countertops ANSI A161 2-1979 (sponsored by National Association of Plastic Fabricators).



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Methods: Fabrication of high pressure laminate can be done generally with conventional wood-working or metalworking equipment, either hand operated or power driven. Sawing, drilling, edge filing, sanding and routing should be done with the decorative side up to prevent cracking or chipping of the

laminate surface. Curved edges should be cut slightly oversize and finished by sanding, filing or routing for smooth edges. Carbide tipped cutting edges should be used on saws, drills and routers to produce chip free edges and to avoid frequent resharpening of tools. High pressure laminate should be drilled with a wood backing to prevent "breakout" at the bottom of the drilled hole.

6. AVAILABILITY AND COST

Contact the nearest sales office or customer service center for specific price according to quantity required and sheet size.

7. LIMITATION OF WARRANTY AND LIABILITY

(a) We warrant solely to the original Buyer that the Products will be free from defects in materials and workmanship, when given normal, proper and intended usage, for a period of one year from the date of sale to the Buyer.

(b) At our expense, we agree to repair or replace at our option all defective Products not performing substantially in accordance with applicable Product specifications, provided that Buyer has given us written notice of such warranty claim within the one year warranty period. If we are unable, after reasonable efforts, to repair or replace such defective Product, Buyer's sole remedy shall be the refund of an amount not to exceed the actual payments received by us for such Product. All replaced items shall become our property.

(c) Buyer is responsible for inspection of the product upon receipt and prior to any cutting, gluing or attaching of the product to any other material ("Fabrication"). Any claim by Buyer for breach of warranty shall be deemed waived to the extent it could have been determined by such inspection and any claim by Buyer for breach of warranty shall also be deemed waived if, after the Buyer determines the existence of a possible claim, fabrication is not delayed until we have been notified and have had an opportunity to resolve it in accordance with this warranty.

(d) We shall have no obligation to make repairs, replacements or corrections which result, in whole or in part, from (i) normal wear and tear, (ii) fault or negligence of Buyer, (iii) improper or unauthorized use of the Products, (iv) use of the Products in a manner for which they were not designed, (v) modifications of the Products by anyone other than us, (vi) any act of nature, act of God, fire, casualty, flood or war, (vii) any other causes external to the Products, or (viii) use of the Products in combination with equipment or materials not supplied by us.

(e) If notified within 10 days in writing of any action (and all prior related claims) brought against Buyer based on a claim that a Product infringes any valid United States patent, copyright or trade secret, we shall defend such action at our expenses and pay all costs and damages finally awarded in such action or settlement which are attributable to such claim. We shall have sole control of the defense of any such action and all negotiations for its

settlement or compromise. Buyer shall cooperate fully with us in the defense, settlement or compromise of any such action. In the event that a final injunction is obtained against Buyer's use of a Product by reason of infringement of a valid United States patent, copyright or trade secret, or if in our opinion any Product is likely to become the subject of a successful claim of such infringement, we may, at our option and expense, (i) procure for Buyer the rights to continue using the Product, (ii) replace or modify the Product so that it becomes non-infringing (so long as its functionality is essentially unchanged), or (iii) accept the return of the Product and refund the Buyer the purchase price therefore. We may withhold further shipments of any such Products.



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(f) We shall not have any liability to Buyer to the extent that any infringement or claim thereof is based upon (i) the use of a Product in combination with equipment or materials not supplied by us where the Product would not itself be infringing, (ii) compliance with Buyer's designs, specifications or instructions, (iii) use of the Product in an application or environment for which it was not designed, (iv) modifications of the Product by anyone other than us, or (v) any claims of infringement of any patent, copyright or trade secret in which Buyer or any affiliate or customer of Buyer has an interest or license.

(g) Buyer shall not bring any suit or action against us for any reason whatsoever more than one year after the related cause of action has accrued.

EXCEPT AS STATED ABOVE, WE DISCLAIM ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, WITH RESPECT TO THE PRODUCT, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

THE FOREGOING INDEMNIFICATION PROVISIONS STATE OUR ENTIRE LIABILITY WITH RESPECT TO INFRINGEMENT OR ALLEGED INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS, TRADE SECRETS AND OTHER INTELLECTUAL PROPERTY OR PROPRIETARY RIGHTS BY THE PRODUCTS.

OUR MAXIMUM LIABILITY ARISING OUT OF THE SALE OF THE PRODUCTS OR THEIR USE, WHETHER BASED UPON WARRANTY, CONTRACT, TORT OR OTHERWISE, SHALL NOT EXCEED THE ACTUAL PAYMENTS RECEIVED BY US IN CONNECTION THEREWITH. IN NO EVENT SHALL WE BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, OR LOSS OF USE DAMAGES, ARISING HEREUNDER OR FROM THE SALE OF THE PRODUCTS.

Consumers who purchase our Products for personal or household use may have other rights, which will vary from state to state or, in Canada, from province to province. Federal law and some states law do not permit the disclaimer or modification of implied warranties for consumers, but may permit limitation of the duration of the implied warranties for consumers. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages. Therefore, the above warranty limitations may not apply to you.

8. MAINTENANCE

Use a damp cloth or sponge and a mild soap or detergent to clean the surface. Difficult stains may require use of organic solvents such as alcohol, acetone, ketone, (MEK), lacquer thinner or paint solvent. Complete care instructions are available upon request.

9. TECHNICAL SERVICES

Nevamar maintains trained sales personnel servicing all sections of the country. Consult local telephone yellow page directory under "Plastic High Pressure Laminates" or contact Nevamar Decorative Surfaces, One Nevamar Place, Hampton, South Carolina 29924.

Phone: (803) 943-7200 or (800) 638-4380

Website: www.nevamar.com



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TABLE-I CHEMICAL & STAIN RESISTANCE

ACIDS	BASES	79. Eucalyptol
1. Nitric Acid (all concentrations) **	40. Sodium Hydroxide	80. Marcaine
2. Glacial Acetic Acid, 99%	41. Sodium Sulfide, 15 %	81. Zephiran Chloride
3. Sulfuric Acid (all concentrations)**	42. Ammonium Hydroxide(all concentrations)	82. Zinc Oxide Ointment
4. Hydrochloric Acid (all concentrations)**		83. Lysol (without hydrogen chloride)
5. Phosphoric Acid (all concentrations)*	GENERAL REAGENTS	84. Ammonia
6. Formic Acid (all concentrations)*	43. Sodium Hypochlorite, 5 %	85. Thymol and Alcohol
7. Acetic Acid (all concentrations)	44. Calcium Hypochlorite (concentrated)*	86. CMC (camphorated para-chlorophenol)
8. Hydrofluoric Acid (48%) **	45. Hydrogen Peroxide, 3 %	87. Quaternary Ammonia Compounds (Eugenol)
9. Aqua Regia*	46. Trisodium Phosphate, 30 %	88. Monsel's Solution (Ferric Subsulfate)*
10. Chromic Trioxide (Chromic Acid)	47. Sodium Thiocyanate	89. Sodium Carbonate, 12.5 %
11. Perchloric Acid, concentrated	48. Zinc Chloride (all concentrations)	
12. Picric Acid, 0.05M	49. Lactated Ringers (salted mixture)	STAINS AND INDICATORS
13. Tannic Acid, saturated	50. Sucrose, 50 %	90. Bromothymol Blue
14. Uric Acid, saturated	51. Gasoline	91. Phenolphthalein
	52. Kerosene	92. Methyl Red
SOLVENTS	53. Mineral Oil	93. Methyl Orange
15. Trichloroethylene	54. Vegetable Oil	94. Ag Eosin Bluish, 5 % in Alcohol
16. Carbon Disulfide	55. Water	95. Ag Gentian Violet, 1 %
17. Acetone	56. Sodium Chromate (Phosphorus Pentoxide)	96. Wright's Blood Stain
18. Formaldehyde	57. Potassium Permanganate *	97. Methylene Blue
19. Methanol	58. Silver Nitrate *	98. Sudan III
20. Ethyl Acetate	59. Formalin	99. Nigrosine (India Ink)
21. Toluene	60. Benedict's Solution	100. Crystal Violet
22. n-Hexane	61. Phosphate Buffered Saline	101. Malachite Green
23. Ethyl Alcohol	62. Copper Sulfate	102. Cresol Red
24. Chloroform	63. Petroleum Jelly	103. Gram Stains
25. Phenol	64. Aluminon (Tannic Acid)	104. Safranin O
26. EDTA	65. Ethylene Glycol	105. Thymol Blue
27. Xylene	66. Pine Oil	
28. Butyl Alcohol	67. Methyl Methacrylate	** Causes slight damage. The degree of damage is proportional to the length of exposure and concentration.
29. Amyl Alcohol	68. Alconox (lab detergent)l	
30. Amyl Acetate	69. Karl Fisher Reagent	
31. o-Cresol	70. Urea	
32. Dioxane	71. Naphtha	* Causes slight change of gloss or color. All other items have no visible effect on ChemArmor® laminates.
33. Trichloroethane	72. Cellosolve	
34. Chlorobenzene	73. Ammonia Phosphate	
35. Dimethyl Foramide	74. Iodine	
36. Methylene Chloride	75. Providone Iodine	
37. Methyl Ethyl Ketone	76. Tincture of Mercurochrome*	RESISTANCE TEST PROCEDURE
38. Napthalene	77. Tincture of Iodine	The above chemicals were placed on ChemArmor® laminate under a watch glass for 16 hrs. Exposure effects were then evaluated.
39. Tetrahydrofuran	78. Tincture of Merthiolate	(Test Method 3.4 per ANSI/NEMA LD3 current edition)



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TABLE 2 – TEST VALUES		
Test	NEMA STANDARD (HGL)	TYPICAL NEVAMAR VALUES
Wear Resistance: Wear Value (cycles)	400 min.	1200
Dart Impact Resistance	300MM	500MM
Impact Resistance: (Inches dropped)	35	44
Dimensional Change: Length (Machine direction) Width (Cross direction)	0.6% max 1.0% max.	0.35% 0.85%
Resistance to Boiling Water	No Effect	No Effect
Resistance to High Temperature	Slight Effect	No Effect
Radiant Heat Resistance	100 sec. Min.	300 seconds
Stain Resistance	Unaffected by reagents I-10; moderate II-15	Unaffected by reagents I-15
Light Resistance	Slight Effect	No Effect
Cleanability	20	7-10