

Wilsonart® Chemsurf® Chemical-Resistant Laminate

Technical Data

1. Manufacturer

Wilsonart LLC
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Temple, Texas 76503-6110
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2. Product Description

Recommended Uses: Wilsonart® Chemsurf® Chemical-Resistant Laminate is produced for work tops and cabinet surfacing in intermediate-type laboratories where weight or cost constraints rule out slate, epoxy or stainless steel; the possibility of chemical spills rules out conventional high-pressure decorative laminate; or where a trend-aware colored or patterned surface is desired. Chemsurf is also recommended in areas where indiscriminate use of a variety of cleaning agents may be used.

Specific applications include laboratory cabinets, casework, counters and tabletops in hospitals, photographers' darkrooms, beauty salons and product testing facilities. Chemsurf is ideal for nurses' stations, physicians' and dentists' examining and treatment rooms and pathologists' work rooms. It is also practical and attractive surfacing for wainscoting in any of these areas.

- Type 390 is intended for horizontal, vertical and postforming surfaces and applications, including those where it is necessary or desirable to roll the laminate on a simple radius over the edge of a substrate. This eliminates seams, which are otherwise vulnerable to chemical attack. This type also may be applied to horizontal and vertical surfaces where a functional, durable, decorative material should also be chemical-resistant.

Note: If a high-wear surface is needed, Wilsonart® High Wear Laminate is recommended.

Product Composition: A special resin formulation is applied over the decorative surface paper to achieve chemical resistance. The decorative paper is treated with melamine resin; and the core is composed of kraft papers impregnated with phenolic resin. These sheets are then bonded at pressures greater than 1000 pounds per square inch at temperatures approaching 300°F (149°C). Finished sheets are trimmed and the backs sanded to facilitate bonding.

Basic Limitations

Chemsurf Laminates are intended for interior surfacing only, and not as structural materials. They must be bonded to suitable substrates.

Do not subject these laminates to extremes in humidity or to temperatures over 275°F (135°C) for sustained periods of time.

You should not expose these laminates to flame, molten metal, metallic sparks or intense, direct sunlight. They should not be used as cutting surfaces.

Note: Chemsurf Laminate should be protected from damage caused by high heat, such as heat created by Bunsen burners. The burners should be placed on a trivet to protect the laminate surface.

Due to resin composition, a slight color-shift can occur in Chemsurf. Please request a 'lab' sample for color confirmation.

Pattern and Color Availability:

Chemical-Resistant Laminate is available in most **Standard Line (DG1)** patterns. Please note the patterns that are **not** available in Chemsurf:

Custom Laminate: Silk Screen & Digital Image are NOT available
Non-Standard Line (DG2) patterns are NOT available

Please verify pattern, size and finish availability by checking the Laminate Pattern Availability Search @ <http://www.wilsonart.com>

Finishes:

- #60 Matte

A fine matte texture with a slight sheen offers scratch-resistance properties of 2.0 or 2.5 Newtons (measure of force). Recommended for horizontal and vertical applications. *Glossometer reading: MD and CD 16 ± 2.*

NOTE: Glossometer readings are made at a 60° angle of incidence. MD refers to the machine direction of a laminate sheet, and CD refers to the cross direction.

Phenolic Core: Brown

Product Type Available:

Postforming Type	390-60
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Sheet Width	48" (1219mm)	60" (1524mm)
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Sheet Length	96" (2438mm)	120" 3048mm	144" (3658mm)
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Note: An 8 sheet minimum order applies to 4x10', 4x12', 5x8' & 5x10' sizes.

Sheet Thicknesses

Type	Typical Wilsonart Thickness	Weight per Square foot
Postforming Type 390 (HGP)	0.034" ± 0.005" (0.86mm ± 0.13mm)	0.257#

3. Technical Data

Physical Properties of Chemsurf Chemical-Resistant Laminate

NEMA Test	Type390-60	NEMA Standard (HGP Values)
Scratch Resistance (N*)	2.5	N/A
Wear Resistance (cycles #1573, Frosty White & 1595, Black ONLY All other Wilsonart colors)	≥1,500 ≥700	400 (min.)
Boiling Water Resistance	No effect	Slight effect
High Temperature Resistance	Slight effect	Slight effect
Radiant Heat Resistance (seconds)	200	100 (min.)
Stain Resistance† Reagents 1-10 11-15	No effect No effect	No effect Moderate effect

Dimensional Change Machine Direction	0.50%	1.1% (max.)
Cross Direction	0.80%	1.4% (max.)
Ball Impact Resistance	60" (1524mm)	30" (508mm)
Cleanability (cycles)	10	20 (max.)
Blister Resistance (seconds)	70	55
Formability‡ (Type 390 only)	5/8" (15mm) face 3/16" (5mm) back	5/8" (16mm)
Appearance	No ABC defects	No ABC defects

*(N) Newtons - measure of force

†For a complete list of acids, bases, solvents, reagents, indicators and other lab materials safe for use on Chemsurf, please see pages 4 and 5.

‡ Radius listed for face is actually the radius of the form around which the plastic is postformed. The radius listed for back is actually the radius to which the decorative face is postformed.

Codes and Certifications:

Chemsurf conforms to typical standards of ANSI/NEMA LD3-2005 for HGP postforming laminate. At present, there is no general industry standard for a high-pressure, chemical-resistant laminate.

The GREENGUARD Environmental Institute™ has awarded its GREENGUARD® Indoor Air Quality Certification to Wilsonart Laminate. All Wilsonart Laminate product types were tested under the stringent GREENGUARD Standards for low-emitting products. All GREENGUARD Indoor Air Quality Certified products ensure minimal impact on the indoor environment. For a copy of the certificate, visit www.greenguard.org.

Scientific Equipment & Furniture Association SEFA No. 8.1 approved.

New York City Material Equipment Acceptance (MEA) number for Wilsonart® Chemsurf® Chemical-Resistant Laminate, Product Type 390, is 262-95-M.

ISO 4586 Standards

Various grades of Wilsonart Basic Type Laminates meet or exceed the International Standards Organization Specifications as found in ISO 4586 titled, "High-Pressure Decorative Laminate (HPDL) - Sheets Based on Thermosetting Resins - Part I: Specifications."

Chemical and Stain Resistance for Wilsonart® Chemsurf®

No effect was exhibited except as noted (* or **) on the following:

Acids

- | | |
|--|---|
| 1. Nitric Acid (all concentrations)** | 7. Acetic Acid (all concentrations) |
| 2. Glacial Acetic Acid 99%
(concentrated) | 8. Hydrofluoric Acid 48%
(concentrated)* |
| 3. Sulfuric Acid (all
concentrations)** | 9. Aqua Regia |
| 4. Hydrochloric Acid (all
concentrations) | 10. Chromic Trioxide (Chromic Acid
Cleaning Solution)* |
| 5. Phosphoric Acid (all
concentrations) | 11. Perchloric Acid (concentrated) |
| 6. Formic Acid (all concentrations) | 12. Picric Acid 1.2% (0.05M) |
| | 13. Tannic Acid (sat.) |
| | 14. Uric Acid (sat.) |

Solvents

- | | |
|--------------------------|-------------------|
| 15. Carbon Tetrachloride | 18. Formaldehyde |
| 16. Carbon Disulfide | 19. Methanol |
| 17. Acetone | 20. Ethyl Acetate |

21. Toluene
22. n-Hexane
23. Ethyl Alcohol
24. Chloroform
25. Phenol (all concentrations)*
26. EDTA
27. Xylene
28. Butyl Alcohol
29. Amyl Alcohol
30. Amyl Acetate

Bases

40. Sodium Hydroxide (all concentrations)**
41. Sodium Sulfide 15%

General Reagents

43. Sodium Hypochlorite 5%
44. Calcium Hypochlorite (concentrated)
45. Hydrogen Peroxide 3%
46. Trisodium Phosphate 30%
47. Sodium Thiocyanate
48. Zinc Chloride
49. Lactated Ringers
50. Sucrose 50%
51. Gasoline
52. Kerosene
53. Mineral Oil
54. Vegetable Oils
55. Water
56. Sodium Chromate
57. Potassium Permanganate
58. Silver Nitrate
59. Formalin
60. Benedicts Solution
61. Phosphate Buffered Saline (PBS)
62. Copper Sulfate
63. Petroleum Jelly
64. Aluminon
65. Ethylene Glycol
66. Pine Oil

Stains and Indicators

90. Bromothymol Blue
91. Phenolphthalein
92. Methyl Red
93. Methyl Orange
94. Ag Eosin Bluish 5% in Alcohol
95. Gentian Violet 1%
96. Wright's Blood Stain
97. Methylene Blue
98. Sudan III

31. Cresol
32. Dioxane
33. Trichloroethane
34. Chlorobenzene
35. Dimethylformamide
36. Methylene Chloride
37. Methyl Ethyl Ketone
38. Naphthalene
39. Tetrahydrofuran

42. Ammonium Hydroxide (all concentrations)

67. Methyl Methacrylate
68. Alconox (Lab. Detergent)
69. Karl Fisher Reagent
70. Urea
71. Naphtha
72. Cellosolve
73. Ammonium Phosphate
74. Iodine
75. Povidone Iodine
76. Tincture of Mercurochrome
77. Tincture of Iodine
78. Tincture of Merthiolate
79. Eucalyptol
80. Procaine
81. Zephiran Chloride
82. Zinc Oxide Ointment
83. Lysol
84. Aromatic Ammonia
85. Thymol & Alcohol
86. Camphorated para-chlorophenol*
87. Quaternary Ammonia Compounds
88. Monsel's Solution (Ferric Subsulfate)
89. Sodium Azide

99. Nigrosine
100. Crystal Violet
101. Malachite Green
102. Cresol Red
103. Gram Stains
104. Safranin O
105. Thymol Blue

Test procedure: Listed materials were placed in contact with Wilsonart® Chemsurf® Chemical-Resistant Laminate surface under 1" (25.4mm) diameter watch cover glass for **16 hours** duration prior to evaluation for effect.

* *Causes slight change of gloss or color.*

** *Causes slight damage, with degree of damage proportionate to length of exposure and concentration.*

4. Installation: Fabrication and Assembly Recommendations

Wilsonart Chemsurf Chemical-Resistant Laminate must be bonded to a substrate of reliable quality and appropriate fire rating, such as particleboard, incombustible cement board or plywood with one A face. Bond with adhesives, and follow the techniques recommended by the adhesive manufacturer. Permanent adhesives are recommended. Specialized PVAs, epoxy or contact cement, such as Wilsonart Adhesives, also may be used.

The substrate of a performance laminate, such as Chemsurf, should be balanced with a high-pressure phenolic laminate sheet as a backer, to reduce warping and to provide additional protection to the substrate against chemical attack from condensing fumes and runoff.

Take care to ensure an appropriate acclimation balance between the laminate and the substrate prior to fabrication. The face and backing laminates and the substrate should be conditioned in the same environment for 48 hours before fabrication.

Recommended conditioning temperature is about 75°F (24° C). Laminates should be conditioned at 50% relative humidity.

To avoid stress cracking, do not use square-cut inside corners. All inside corners should have a minimum of 1/8" (3.18mm) radius, and all edges should be routed smooth.

Methods

Assembled pieces should meet KCMA (Kitchen Cabinetmakers Manufacturers Association), ANSI-161.2-1998 specifications. Drill oversized holes for screws or bolts. Screws or bolts should be slightly countersunk into the face side of a laminate-clad substrate.

Chemsurf sheets should be cut oversize prior to layup, using a carbide-tipped saw as described in American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005, Annex A. After bonding, laminate should be machined flush on all edges.

Postforming

Postforming is the preferred edge treatment for counters vulnerable to repeated chemical attack. Chemsurf provides excellent chemical and stain resistance as stated herein and postformed edges protect the surface from chemicals accumulating in the seam. Chemsurf sheets may be formed successfully with conventional postforming machinery. Optimum bending temperature for outside radius bends is 275°F (135°C). For inside radius or cove bends, maximum recommended temperature is 325°F (163°C).

5. Warranty

Wilsonart LLC warrants to the original consumer purchaser for one (1) year after date of purchase ("Warranty Period") that, under normal use and service, Wilsonart® Laminate Sheets are free from manufacturing defects and conform to published specifications. This warranty applies only to a Wilsonart Laminate Sheet which has been installed in an interior application and remains installed at that location ("Warranted Product") and is extended only to, and may be enforced only by, the original consumer purchaser. THIS WARRANTY IS NOT TRANSFERABLE. This warranty is expressly conditioned upon submission of proof of date of purchase.

WHAT IS EXCLUDED:

This warranty shall not apply to damage arising from any of the following:

1. Accidents, abuse or misuse;
2. Exposure to extreme temperature;
3. Improper fabrication or installation; or
4. Improper maintenance or repair.

WHAT WILSONART WILL DO IF YOUR CLAIM IS COVERED BY THIS WARRANTY

Wilsonart will provide, at no cost and with delivery prepaid, a Wilsonart® Laminate Sheet to replace the Warranted Product. Wilsonart will not pay for removal of the Warranted Product or for fabrication or installation of the replacement laminate or any other costs. No replacement under the warranty shall extend the Warranty Period.

Any replacement is limited to colors and styles of Wilsonart® Laminate Sheets available at the time of replacement. Exact color matches may not be possible. If the original color or style is no longer available, Wilsonart has the right to substitute another Wilsonart Laminate Sheet of equal or greater value than the Warranted Product.

WHAT YOU NEED TO DO

To make a claim under this warranty, you must contact the Wilsonart Warranty Center at the address listed below before the end of the Warranty Period. You must provide proof of date of purchase, photographs of the Warranted Product and access for inspection for warranty determination by a Wilsonart representative, and thereafter Wilsonart will provide you a determination on your claim.

Wilsonart
Warranty Center
2400 Wilson
Place
Temple, Texas 76504
877-537-0533... Toll Free

THE FOREGOING SHALL CONSTITUTE THE EXCLUSIVE REMEDY OF THE PURCHASER AND THE EXCLUSIVE LIABILITY OF WILSONART.

THE ABOVE WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES WHETHER ORAL OR WRITTEN. ANY IMPLIED WARRANTIES WHICH MAY ARISE BY OPERATION OF LAW, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE PERIOD OF THE WRITTEN WARRANTY SET FORTH HEREIN.

WILSONART SHALL NOT, UNDER ANY CIRCUMSTANCES OR UNDER ANY LEGAL THEORY, BE LIABLE TO THE PURCHASER OR ANY OTHER PERSON FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION DAMAGES TO, OR LOSS OF USE OF, PROPERTY, DAMAGES FOR LOSS OF PROFITS OR REVENUES OR ANY OTHER DAMAGES ARISING FROM THE

PURCHASE. WILSONART'S LIABILITY WILL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE WILSONART® PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

No agent, dealer, employee or representative of Wilsonart nor any installer, fabricator or other person is authorized to modify the warranty in any respect.

The invalidity of all or a part of any of the provisions of the Limited Warranty shall not affect or invalidate any other provision of the Limited Warranty.

WILSONART SHALL NOT, UNDER ANY CIRCUMSTANCES OR UNDER ANY LEGAL THEORY, BE LIABLE TO THE PURCHASER OR ANY OTHER PERSON FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY NATURE, INCLUDING WITHOUT LIMITATION DAMAGES TO, OR LOSS OF USE OF, PROPERTY, DAMAGES FOR LOSS OF PROFITS OR REVENUES OR ANY OTHER DAMAGES ARISING FROM THE PURCHASE. WILSONART'S LIABILITY WILL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE WILSONART® PRODUCT.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

No agent, dealer, employee or representative of Wilsonart nor any installer, fabricator or other person is authorized to modify the warranty in any respect.

The invalidity of all or a part of any of the provisions of the Limited Warranty shall not affect or invalidate any other provision of the Limited Warranty.

For further assistance or questions, contact Wilsonart at the address or telephone number listed above or at www.wilsonart.com.

6. Maintenance

The decorative surface may be cleaned with warm water and mild soaps, such as those used for hands or dishes. The use of cleansers that contain abrasives, acids or alkalis may damage the decorative surface. (Note: See chemical and Stain Resistance section for more detailed information on chemical and stain resistance results.) Stubborn stains may be removed with a 1-1/2 minute exposure to hypochlorite bleach, such as Clorox®, followed by a clean water rinse. Free copies of the "Care and Maintenance Guide", which covers all Wilsonart products, are available. The guide can be accessed at <http://www.wilsonart.com>, or by calling our hotline at (800) 433-3222. It can be used for your own information, for project manuals, and for provision to clients and contractors involved with interior construction and finishing.

7. Technical Services

For samples, literature, questions or technical assistance, please contact our toll-free Hotline at (800) 433-3222, Monday through Friday, 8 am –5 pm, CST.

Specification Form:

Surface shall be Wilsonart Laminate, produced by Wilsonart LLC Temple, Texas 76503-6110.	
Type:	390 Postforming Grade
Surface	
Color Number:	_____
Color Name:	_____
Finish	
Number	_____
Name:	_____
Edge Trim	
Color Number:	_____
Color Name:	_____
Adhesive	
Name:	_____
Grade/Type:	_____
Brand:	Wilsonart Adhesive
<i>Material shall equal or exceed performance standards set by the American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA) LD3-2005 for high-pressure laminate. Fabrication shall comply with "Architectural Woodwork Quality Standards, Guide Specifications and Quality Certification Program" guidelines of the Architectural Woodwork Institute.</i>	

Chemsurf TD (TD0311)
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