

TECHNICAL DATA

Arborite® ArboChem Chemical Resistant Laminate

Type: AC40

1. Manufacturing facility location

80 L a White Dr
Fletcher, NC
28732, USA

2. Product Description

Recommended Uses

Arborite® ArboChem 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.

ArboChem 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. ArboChem 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 AC40 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.

For Chemical resistant Compact laminate, please see the "Compact Laboratory Laminate tech data sheet".

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

ArboChem 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.

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Note: ArboChem 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.

Pattern and Color Availability

Chemical-Resistant Laminate is available in the following patterns:

P500 P885 P886 P999 S405 S406 S407 S431 S463 S466
S486 S513 S548 S550 W403 W405

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

Finish Availability

- Matte (MA)
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.
Nominal Glossometer Reading = 10

NOTE: Nominal Glossometer Readings are made at a 60° angle of incidence.

Phenolic Core
Brown

Standard Sheet Size

Imperial Measurement (feet)	Metric Measure (mm)
4' x 8'	1220 mm x 2440 mm
5' x 10'	1525 mm x 3050 mm
5' x 12'	1525 mm x 3660 mm

Sheet Thicknesses

Type	Typical Arborite Thickness	Weight Per Square Foot
Postforming Type AC40 (HGP)	0.034" ± 0.005" (0.86mm ± 0.13mm)	0.257#

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3. Technical Data

Physical Properties of ArboChem Chemical-Resistant Laminate

ISO 4586 Test	Type AC40-MA	ISO 4586-3
Scratch Resistance (N*)	2.5	3
Wear Resistance Cycles S550 Elegant White & S405 Black ONLY All other Arborite colours	≥1,500 ≥700	350
Boiling Water Resistance	No effect	No effect
High Temperature Resistance	Slight effect	Slight effect
Radiant Heat Resistance (seconds)	200	≥200
Stain Resistance† Reagents 1-10 11-15	No effect No effect	No effect Slight effect
Dimensional Change Machine Direction Cross Direction	0.50% 0.80%	1.1% (max.) 1.4% (max.)
Ball Impact Resistance	60" (1524mm)	31.5" (800mm)
ISO 4586 Test	Type AC40-MA	ISO 4586-3
Cleanability (cycles)	10	20 (max.)
Blister Resistance (seconds)	70	≥ 40 seconds
Formability‡ (Type AC40 only)	5/8" (15mm) face 3/16" (5mm) back	9/16" face (14.27mm) 3/4" back (19.05mm)
Appearance	No ABC defects	N/A

*(N) Newtons - measure of force

†For a complete list of acids, bases, solvents, reagents, indicators and other lab materials safe for use on ArboChem, 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

ArboChem conforms to typical standards of ANSI/ISO 4586 HGP postforming laminate. At present, there is no general industry standard for a high-pressure, chemical-resistant laminate.

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

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ISO 4586 Standards

Various grades of Arborite 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 Arborite ArboChem

No effect was exhibited except as noted

Acids

Nitric Acid (all concentrations)**
Glacial Acetic Acid 99% (concentrated)
Sulfuric Acid (all concentrations)**
Hydrochloric Acid (all concentrations)
Phosphoric Acid (all concentrations)
Formic Acid (all concentrations)
Acetic Acid (all concentrations)

Hydrofluoric Acid 48% (concentrated)*
Aqua Regia
Chromic Trioxide (Chromic Acid Cleaning Solution)*
Perchloric Acid (concentrated)
Picric Acid 1.2% (0.05M)
Tannic Acid (sat.)
Uric Acid (sat.)

Solvents

Carbon Tetrachloride
Carbon Disulfide
Acetone
Formaldehyde
Methanol
Ethyl Acetate
Toluene
n-Hexane
Ethyl Alcohol
Chloroform
Phenol (all concentrations)*
EDTA
Xylene

Butyl Alcohol
Amyl Alcohol
Amyl Acetate
Cresol
Dioxane
Trichloroethane
Chlorobenzene
Dimethylformamide
Methylene Chloride
Methyl Ethyl Ketone
Naphthalene
Tetrahydrofuran

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Bases

Sodium Hydroxide (all concentrations)**
Sodium Sulfide 15%
Ammonium Hydroxide (all concentrations)

General Reagents

Sodium Hypochlorite 5%
Calcium Hypochlorite (concentrated)
Hydrogen Peroxide 3%
Trisodium Phosphate 30%
Sodium Thiocyanate
Zinc Chloride
Lactated Ringers
Sucrose 50%
Gasoline
Kerosene
Mineral Oil
Vegetable Oils
Water
Sodium Chromate
Potassium Permanganate
Silver Nitrate
Formalin
Benedicts Solution
Phosphate Buffered Saline (PBS)
Copper Sulfate
Petroleum Jelly
Aluminon
Ethylene Glycol
Pine Oil

Methyl Methacrylate
Alconox (Lab. Detergent)
Karl Fisher Reagent
Urea
Naphtha
Cellosolve
Ammonium Phosphate
Iodine
Povidone Iodine
Tincture of Mercurochrome
Tincture of Iodine
Tincture of Merthiolate
Eucalyptol
Procaine
Zephiran Chloride
Zinc Oxide Ointment
Lysol
Aromatic Ammonia
Thymol & Alcohol
Camphorated para-chlorophenol*
Quaternary Ammonia Compounds
Monsel's Solution (Ferric Subsulfate)
Sodium Azide

Stains and Indicators

Bromothymol Blue
Phenolphthalein
Methyl Red
Methyl Orange
Ag Eosin Bluish 5% in Alcohol
Gentian Violet 1%
Wright's Blood Stain
Methylene Blue

Sudan III
Nigrosine
Crystal Violet
Malachite Green
Cresol Red
Gram Stains
Safranin O
Thymol Blue

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Branded Cleaner and Sanitizer Resistance for Arborite ArboChem No effect was exhibited except as noted (* or **) on the following:

1. Clorox Healthcare Bleach Germicidal Cleaner
2. Clorox Healthcare Versa Sure Cleaner Disinfectant Wipes
3. Oxivir TB
4. Oxivir 1
5. Virex II 256
6. Benefect
7. PDI Super Sani-Cloth Germicidal Disposable Wipes
8. PDI Sani-Prime Germicidal Spray
9. Expose II 256
10. Stride Floral Neutral Cleaner
11. PURELL Advanced Instant Hand Sanitizer

Test procedure: Listed materials were placed in contact with ArboChem 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

Arborite ArboChem 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 ArboChem, 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.

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ArboChem sheets should be cut oversize prior to layup, using a carbide-tipped saw as described in American National Standards Institute/National Electrical Manufacturers Association After bonding, laminate should be machined flush on all edges.

Postforming

Postforming is the preferred edge treatment for counters vulnerable to repeated chemical attack. ArboChem provides excellent chemical and stain resistance as stated herein and postformed edges protect the surface from chemicals accumulating in the seam. ArboChem 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](#)

6. [Maintenance](#)

7. [Technical Services](#)

For samples, literature, questions or technical assistance, please email us at info@arborite.com or contact our toll-free number, 1-800-996-0366 Monday through Friday, 8:30 am – 5:00 pm, EST.

Specification Form

Surface shall be Arborite® ArboChem® Chemical-Resistant Laminate			
Type: AC40 Postforming Grade			
Surface			
Color Number:	_____	Color Name:	_____
Finish Code	<u>MA</u>	Finish Name:	<u>Matte</u>
Adhesive			
Name:	_____	Grade/Type:	_____
Brand:	Wilsonart® Adhesive		