

Pionite®

ChemGuard Technical Bulletin

Product Identification

Pionite ChemGuard incorporates the decorative features of high-pressure laminate into a durable chemical resistant surfacing material. ChemGuard is available in any Pionite solid color, and can be made in thicknesses between 0.048 inches (1.2mm) and 1 inch (25mm). Thicker grades of ChemGuard can be used as self supporting worktops.

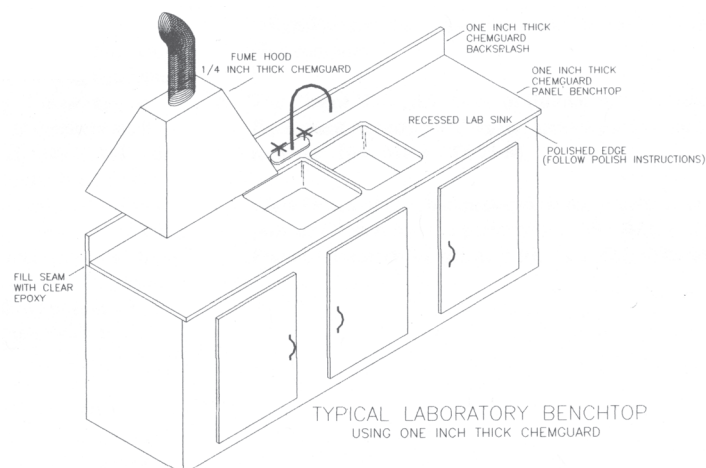
The unique manufacturing process of Pionite ChemGuard results in a product with chemical resistant properties throughout its thickness. This feature ensures that the ChemGuard surface is more durable and chemical resistant than competitive laminate, even after the surface has been scratched. Pionite ChemGuard's superior chemical resistant surface cannot be softened with heat for post-forming.

Product Composition

ChemGuard laminate is manufactured in a flat press by combining decorative papers saturated in chemical resistant resin with phenolic-impregnated kraft layers at pressures exceeding 1000 psi (6895 kPa) and temperatures approaching 300°F (150°C). The panels are trimmed to size and the backs are sanded to facilitate bonding. The thickness of the laminate is determined by the number of kraft layers used. The laminating process combines the durability of chemical resistant resins with the aesthetics of decorative papers creating a surfacing material that has been the standard for well over forty years.

Product Description and Finish Options

Pionite ChemGuard can be manufactured with brown or black phenolic core. Laminate edges can be polished for a finished appearance. To further enhance the edge appearance, ChemGuard can be manufactured with colored stripes within the core. Thicker grades of ChemGuard laminate can be very heavy. Because of this increased weight, manual handling may be difficult. Please consult the chart below for approximate sheet weight and thickness.



Typical ChemGuard Product Types

	H48	HD2	HD5	HD8	HDI	
Thickness	(in)	0.048	0.25	0.50	0.75	1.00
	(mm)	1.2	6.4	13	19	25
Unit Weight (lb/ft ²)		0.34	1.82	3.68	5.43	7.44
	(kg/m ²)	1.7	9.2	18.0	26.6	36.3

Finish Options

Code	Finish	Description
N	Suede	Low gloss, textured finish, 12±3 gloss units
J	Crystal	Fine pebble grained finish with a medium gloss, 15±3 gloss units

ChemGuard is available in the following sizes:

Nominal widths:

36" (915mm), 48" (1220mm) and 60" (1525mm)

Nominal lengths:

96" (2440mm), 120" (3050mm) and 144" (3660mm)

ChemGuard laminates thicker than 0.125" are not available with sanded backs.

Physical Properties:

Flexural Strength:	Machine Direction	22,000psi
	Cross MD	15,000psi
Compressive Strength:	(material at independent lab)	
Hardness:	(material at independent lab)	
Water Adsorption	0.58% 24hr period	
Heat Distortion Point	(material at independent lab)	
Thermal Shock Resistance	(material at independent lab)	

Typical Uses

Typical uses include laboratory benchtops, cabinets, casework, and fume hoods. ChemGuard is ideal for photographic darkrooms, nurses workstations, medical, dental and veterinary work areas, and mortuaries. Thicker ChemGuard laminate can be used as a structural components in laboratory benchtops, precluding the use of a substrate.

Fabrication Tips

When working with ChemGuard, these techniques will promote a quality application.

1. Proper conditioning of the laminate, substrate and backing sheet minimizes possible warping, shrinking, or expansion of assembled panels. Ideally, all components should be conditioned at 70°F to 7°F (21°C to 25°C) and 45 to 50 percent relative humidity for 48 hours prior to assembly.
2. Proper substrate must be used when bonding Pionite ChemGuard. Recommended substrates include particleboard and medium density fiberboard. Plaster walls, gypsum wallboard and concrete substrates are *not* recommended.
3. Permanent adhesive types, such as polyvinyl acetate (PVA), epoxy or resorcinol are recommended for ChemGuard laminates with sanded backs. To enhance the chemical resistance at seams, epoxy adhesive may be utilized. For best results, follow the recommendations by the adhesive manufacturer.
4. The use of a backing sheet is recommended to minimize warpage. The thickness of the backing sheet should be similar to the thickness of the decorative laminate on the face of this assembly.
5. Epoxy adhesive is recommended for joining thick ChemGuard components. Light sanding of the glue surface will improve bond strength.
6. All saw blades and router bits should be carbide tipped and well sharpened. Tool speed should be high and feed rate slow to minimize the possibility of chipping.
7. Inside corners of cutouts for electrical outlets, sinks, etc., should have a minimum radius of 1/8" (3mm) and be filed smooth. This reduces the likelihood of stress cracks.
8. All edges of laminate should be filed smooth with file direction towards substrate to help prevent stress cracks and to minimize chipping.

9. Drill oversize holes for fasteners such as screws or bolts.

10. DO NOT SCREW INTO THE EDGES OF PIONITE CHEMGUARD

11. Revealed edges of thicker panels may be shaped and/or finished using standard woodworking practices. The edges can then be polished with a light oil resulting in an attractive finish that accents the decorative surface.

12. All laminate is intended for interior use only, and should not be exposed to extreme humidity, continuous sunlight, or temperatures above 275°F (135°C) for extended periods of time.

Pionite ChemGuard Chemical Resistance Testing Results Following SEFA Procedures

Summary of Test Procedure (SEFA 8-1999, Section 8.1)

Method A: Volatile chemicals are tested by placing a cotton ball saturated with the reagent in the mouth of a 1-ounce bottle and inverting the bottle on the surface of the laminate.

Method B: Non-volatile chemicals are tested by placing five drops of the reagent on the surface of the laminate and covering with 24mm watch glass.

For both methods, the reagents are left on the laminate for a period of 24 hours. The laminate is then washed with water, cleaned with detergent and naphtha, rinsed with deionized water and dried with a towel. The effect of the different reagents is evaluated according to the rating system below, after the laminate has equilibrated at a temperature of 73±3°F (23±2°C) and relative humidity of 50% for 24 hours.

Following SEFA Test Method - 24 Hour Exposure

Acids		No Effect	Excellent	Good	Fair	Failure
Hydrochloric acid	37%		X			
Sulphuric acid	33%	X				
Sulphuric acid	77%	X				
Sulphuric acid	98%			X		
Nitric acid	30%			X		
Nitric acid	70%				X	
Phosphoric acid	85%		X			
Dichloro Acetic acid		X				
Hydrofluoric acid	48%		X			
Chromic acid	60%	X				
Acid DiChromate	5%		X			
Sulfuric Acid 77%/Nitric Acid 70%	Equal Amounts			X		
Bases						
Ammonium Hydroxide	28%	X				
Sodium Hydroxide	10%	X				
Sodium Hydroxide	20%	X				
Sodium Hydroxide	40%	X				
Sodium Hydroxide, Flake		X				
Salt						
Silver Nitrate	Saturated		X			
Sodium Chloride	10%	X				
Zinc Chloride	Saturated	X				
Organic Chemicals						
Formaldehyde	37%	X				
Furfural		X				
Solvents						
Acetone		X				
Ethylalcohol		X				
Ethylene glycol		X				
Methylethylketone		X				
Dichloromethane		X				
Ethylacetate		X				
Amylacetate		X				
n-Butyl acetate		X				
Methylalcohol		X				
Phenol		X				
Ethyl Ether		X				
Toluene		X				
Trichloroethylene		X				
Xylene		X				

*All tests results based on our knowledge of testing procedures

*Tests results may differ by color

Care and Maintenance

Pionite ChemGuard laminate provides a durable surface that is easy to maintain using ordinary care.

To maintain the laminate's lasting beauty, cleaning with a solution of warm water and liquid dishwashing detergent is all that should be required in most cases. Stains may be removed with most non-abrasive household cleaners such as FORMULA 409[®], FANTASTIK[®], GLASS PLUS[®] or WINDEX WITH AMMONIA D[®]. Light scrubbing with a soft bristled brush may be necessary to remove stains from the depth of the structure on some textured surfaces. If the stain persists, use a paste of baking soda and water and apply with a soft bristled brush. Light scrubbing for 10-20 strokes should remove most stains. Although baking soda is a low abrasive, excessive scrubbing or exerting too much force may damage the decorative surface.

Although ChemGuard laminate provides superior chemical-resistant properties, prolonged exposure to harsh chemicals can cause permanent damage. Timely clean up and neutralization of chemical spills will prolong the useful service life of the laminate.

Codes and Certifications

1. American National Standards Institute/National Electrical Manufacturers Association (ANSI/NEMA)LD3-2000, "High-Pressure Decorative Laminate" for HGS. Type H48 complies.
2. The city of New York, Dept. of Buildings, Materials and Equipment Acceptance Division approval codes are as follows:
H48-MEA 207-93-M

Limited Warranty

Subject to the limitations set forth below, **Pionite[®] Decorative Surfaces** expressly warrants that our products are reasonably free of defects in material and workmanship and when properly handled and fabricated will conform, within accepted tolerances, to applicable manufacturing specifications as set forth in our technical brochure. This warranty shall extend to the original buyer for a period of twelve (12) months from the date of shipment of this product by **Pionite[®] Decorative Surfaces**, and shall not be assignable by the original buyer. This warranty does not cover damage resulting from accident, misuse, alteration, abuse or lack of reasonable care.

Due to the variety of uses and applications to which this product may be put, and because the manufacturer has no control over the end products fabricated, the warranty set forth above is exclusive and in lieu of all other warranties, express or implied, in fact or by operation of law or otherwise or arising by course of dealing or performance, custom or usage in the trade, including, without limitation, the implied warranties of fitness for a particular purpose and merchantability, and **Pionite[®] Decorative Surfaces** shall have no obligation or liability to any person or entity in connection with arising from the furnishing, sale, installation or repair, use or subsequent sale of any product supplied by it.

The buyer's sole and exclusive remedy for any noncompliance with the express warranty set forth above shall be limited to repair or replacement of the defective product, or, in the event that repair or replacement is not feasible, return of the product and refund of the purchase price.

Under no circumstances shall the manufacturer be liable in excess of the purchase price of this product, in either tort or contract or otherwise, for any loss, damage or injury in connection with or arising from the purchase, use or inability to use this product, or for any special, indirect, collateral, incidental, consequential or exemplary damages such as, but not limited to, loss of anticipated profits or other economic loss. Because some states do not allow the exclusion or limitation of incidental or consequential damages, this limitation may not apply to you.

Retaining all documentation after purchasing laminate will significantly expedite claim resolution.

Manufacturing Headquarters

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