

# 4310

## High Performance Lining

### GENERAL DESCRIPTION

**DUROMAR HPL-4310** is a high functionality, 100% solids novolac material, which can be applied by conventional airless spray equipment. It can be used in power plant outlet ducts, utility systems, petrochemical and acid storage tanks, or anywhere requiring outstanding chemical resistance in an easy to apply coating system.

### CHEMICAL DESCRIPTION

Multi-functional epoxy with a uniquely modified cycloaliphatic amine hardener.

#### Typical Properties

Components	2
Visual Appearance	High Gloss
Density	1.32
Solids by weight	100%

#### Chemical Data @ 70°F

pH Range	0.5-14.0
Inorganic Acids	Excellent
Organic Acids	Very Good
Alkalis	Excellent
Solvents	Very Good
Hydrocarbons	Excellent

#### Typical Physical Properties

Max. Dry Operating Temp	350°F
Functional Cure	72 hrs.
Full Cure	168 hrs.
Repair System	EXP
Surface Prep	SSPC-SP 5
Adhesion	Excellent
Flexibility	Good

#### Application Information

Pot Life @ 70°F	45 min.
Equipment	Brush, Roller, Airless
Number of Coats	2-3
Theoretical Coverage	40 ft <sup>2</sup> /gal/40 mils
Film Thickness/Coat	10 mils min. 30 mils max.
Max. DFT	90 mils
Recoat Time @ 70°F	8 hr. min. 72 hr. max.
Min. Application Temp.	65°F
Mixing Ratio by Weight	3.6:1 (B/A)
Mixing Ratio by Volume	2.6:1 (B/A)
Dry to Touch	6-8 hrs.

### FORCE CURING

Force cures are recommended for severe service conditions as both physical and chemical properties are enhanced. Force curing should not start until material has firmly set. Contact **DUROMAR** for specific instructions.

### SHELF LIFE

This product has a minimum shelf life of one year when stored in a dry area at 50-110°F in the original sealed container.

### HANDLING/SAFETY

**Warning! Eye and skin irritant. May cause dermatitis and sensitization.**

**Always read and understand the product MSDS.**

Avoid contact with eyes, skin or clothing. Avoid breathing vapor, mist or spray. Use with good ventilation.

### FIRST AID

**In case of contact:**

**Eyes:** Immediately flush with water for at least 15 minutes.

**Skin:** Immediately remove from skin with dry cloth followed by thorough washing with soap and water.

**Inhalation:** Remove to fresh air. If breathing is difficult, give oxygen.

**Ingestion:** Give large quantity of milk or water, induce vomiting. Contact a physician immediately.

All Duromar products are formulated based on over 25 years of experience, laboratory tests, material data, field installations, and technical publications, which we believe to be, to the best of our knowledge, accurate and reliable. This information is intended to be used for guidance only. Because the only true reliable test is one that is in actual operation, Duromar will make available at no charge samples of materials for that testing purpose. Duromar, Inc. has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Duromar, Inc. does, therefore, not accept any liability arising from loss, injury, or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise). The data contained herein is liable to modification as a result of practical experience and continuous product development. This data sheet replaces and annuls all previous issues, and it is, therefore, the user's responsibility to ensure that this sheet is current prior to using the product.



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# General Application Guidelines

## HPL-4310

Always read and understand the specific product Data and MSDS sheets and the **DUROMAR Information and Application Guide** before using these High Performance Lining Products. For more information contact **DUROMAR** at 781-826-2525 or by email at [information@duromar.com](mailto:information@duromar.com).

### I. STORAGE:

Store all product in a clean, warm area where the temperature remains between 50-110°F (10-43°C). Cold products are very viscous and will be difficult to mix and apply.

Products shipped during cold months can remain cold for many days even when stored as recommended. Paste or trowel applied products will remain cold longer than liquid or spray applied products. Heating of the individual components may be required to bring the products to the recommended temperatures.

### II. SURFACE PREPARATION: SSPC-SP 5

All surfaces to be lined are to be clean, dry, and oil free. Refer to the **DUROMAR Information and Application Guide** for specific instructions for various surfaces such as concrete, metal fiberglass, etc.

Minimum surface temperature during application - refer to Product Data Sheet.

For Brush, Roller, or Spray Applied Products, the surface profile must be 3 mils minimum.

### III. APPLICATION EQUIPMENT:

Brushes - short bristle, nylon, and non-shedding. Replace when products become hot or stiff.

Rollers - short nap (3/8" max.) non-shedding, with a polyethylene core. Replace when products become hot or stiff.

Airless Spray Equipment – Single, Plural recommendations are listed in the **DUROMAR Information and Application Guide**.

### IV. MIXING:

**Do not add solvent to any DUROMAR product.** These 100% solids materials are formulated to be applied as shipped after proper mixing.

The temperature of the Hardener (A) and Base (B) portions should be between 70-80°F (20-25°C). Mix them separately to insure a uniform consistency.

Add the entire contents of the Hardener (A) to the Base (B) bucket. Use a brush or squeegee to assist in the transfer. These portions are accurately measured and best product performance will be obtained if all the Hardener and Base is combined. Pouring from one container to the other (boxing) during mixing is very helpful in insuring complete mixing.

Mix the products until no streaking is observed and then for about one (1) minute longer.

### V. APPLICATION:

For hand application, immediately break down the full unit into smaller portions such as roller pans, small buckets, or trowel boards. This will keep the product cooler and improve the useable life.

For spray application using a single or plural component airless system, see Section 4 in the **DUROMAR Information and Application Guide**. Make sure all components are working according to the airless equipment manufacturers' instructions and the product components are at the recommended temperature before spraying.

### VI. OVERCOATING:

When applying multiple coats of any epoxy products, always check for Amine Blush before applying the next coat. Amine Blush may occur when the epoxy surface is cool or in humid environments. It has the appearance and feel of a light oil film on the surface. When dry it has a white chalky appearance. If detected, wash the surface with a 2% hydrochloric acid solution followed by a water wash until the surface pH is between 6-8. Allow to dry before applying the next coat.

### VII. CLEAN UP

Most solvents and commonly used thinners such as MEK, acetone, xylene, 1,1,1 trichloroethane, and safety solvents such as Ensolv, etc., can be used for cleaning tools and equipment. However, as many of these materials are flammable or present other safety hazards, the user should read the MSDS for these materials before using. In no event should these materials be used to clean material from the skin, eyes or clothing.

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