

# Pentra™ - Protective Coating

Industrial Topcoat Finish  
& Surface Hardener

## Convergent Concrete Specialty Chemical Concrete Treatments

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(Patented) Nano Lithium™ (NL)  
Concrete Floor Treatments

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## PRODUCT DESCRIPTION

**Pentra™ Protective Coating is a Hybrid Inorganic / Organic Nano Lithium™ (Topcoat Finish & Surface Hardener.)** This high solid, high performance lithium-silicate water-based formulation is designed for use as both an interior and/or exterior industrial applications and comes in standard colors – white, gray and green. The unique treatment is extremely low in VOC's (less than 50 grams per liter), environmentally friendly (Green Leaf and can qualify for LEED points) and has a very low polymer odor.

The topcoat and surface hardener is an ideal solution for new construction and maintenance projects that require superior protection against abrasion, corrosion, chemical abuse and easy re-coatability. Pentra offers durability, quality and fast installation – that means lasting protection while minimizing losses due to downtime.

Pentra-Protective Coating dries to a very hard, colored semi-gloss depending on surface porosity and the amount of product applied. This rapid curing, non-yellowing treatment provides long-lasting surface protection, beauty and easy maintenance. Perfect for protecting concrete floors, ferrous metal, concrete block, aluminum/non-ferrous metal, asphalt, and previously existing coatings

## KEY BENEFITS

- Out-performs epoxies, urethanes and acrylics in durability, adhesion, and maintenance costs.
- Tenaciously bonds and chemically reacts forming a durable insoluble bond with the substrate that will not peel, flake or delaminate.
- Creates a stronger, more impenetrable, and better-looking finish (colored semi – gloss) that is dust-proof, resistant to staining (oils and many acids) and deterioration.

- Produces a tough impenetrable surface for high abuse areas (chemical exposure, impact, or abrasion) that is also an attractive finish that is easy to maintain.
- Rapidly cures into durable finish for facilities that require maximum protection and little-to-no- downtime with excellent re-coatability.
- Reduces maintenance, cleaning costs and costly repairs. Simply damp mop or machine scrub

## UNIQUE CHEMISTRY

Pentra's unique reactive chemistry forms an insoluble permanent bond with surfaces rapidly curing (dry to the touch (30 – 60 minutes) into micro (2-3 mil) protective surface film. Pentra protective coating undergoes a series of chemical reactions resulting in total cross-linking, reinforcing and sealing the surface by forming a durable, tenacious chemical bond with the surface and therefore provides a long-term protection (many times longer than conventional epoxies, urethanes and acrylic sealers). Designed for application to a variety of substrates and tightly adheres to some previously existing coatings.

Pentra's adhesion properties will not flake or peel and provides good gloss and color retention on concrete floors and horizontal masonry surfaces. May also be used on a wide range of other substrates and many aged coatings (test patch is recommended.) This topcoat finish and surface hardener offers greater stain and abrasion resistance, and greater strength and durability. In a class of its own, Pentra Protective Coating provides long-term protection and guards surfaces against severe and aggressive outdoor environments and abrasion and chemical abuse.

## ADVANTAGES

**High Performance—High Solids.** High pigment load. Fast Drying. Passes ASTM D- 870 for blistering, adhesion, and discoloration. Passes ASTM D-2795 for gasoline and motor oil resistance. Excellent abrasion resistance ASTM D-4060

**Environmentally Friendly—**Very low VOC's, solvent free. Residue does not bio-accumulate in wildlife.

**Safe—**No noxious fumes, odors, or vapors. Non-Flammable

**Easy Water Clean Up—**Equipment cleans up easily with soap and water.

**Fast Curing—**Minimizes facility downtime. Can bear traffic in hours, not days.

## PRIMARY MARKETS SERVED

### Substrate

Concrete

Concrete Block

Uses

Food Processing Facilities

Material Handling Equipment

Refineries

Pulp and Paper Mills

Marine/Port Facilities

Chemical Processing Facilities

Offshore Platforms

Water and Wastewater Treatment Facilities

## PACKAGING

5 Gal Plastic Pail	45.35 lbs	20.6 kgs
55 Gal Drum	499 lbs	226 kgs
275 Gal Tote (IBC)	2495 lbs	1131 kgs

## USE & TECHNICAL SPECIFICATIONS

### COVERAGE / TREATMENT YIELD\*

300-400 ft.2 per gallon depending on porosity of the substrate and the finish.

### DRYING TIME

1-2 hours

## PHYSICAL PROPERTIES

Form	Colored aqueous solution
Total Solids	23%
Active Ingredients:	100% of total solids
Specific Gravity:	1.09
PH	11.5
Film	yes
Flash Point:	None
V.O.C. Content	Less than 50 gms/L
Freeze point	32°F(0°)
Abrasion Resistance	excellent
Depth of Surface Penetration	1-2mm
Shelf Life	6 months in factory sealed container

## STAIN RESISTANCE

Smooth-troweled concrete treated with Pentra Protective Coating was tested for stain resistance from various substances. These compounds were checked at regular intervals up to 24 hours to determine the amount of penetration/staining after cleaning with a non-abrasive, neutral pH cleaner. After cleaning, the stain was evaluated according to the following scale with 0 indicating no change in the appearance of the stain and 10 indicating the stain was completely removed.

0 = No change in stain, very visible

5 = Stain lighter, but still very visible

10 = Stain completely removed, no visible signs remaining

	30 min	1 Hr	1.5 Hrs	24 Hrs
<b>Balsamic Vinegar</b>	10	10	8	8
<b>Red Wine</b>	10	10	9	9
<b>Motor Oil</b>	10	10	10	10
<b>Transmission Fluid</b>	10	10	10	10
<b>Skydrol</b>	10	10	10	6

## CHEMICAL RESISTANCE

Pentra Protective Coating provides enhanced chemical resistance on the following, but not limited to:

## LIMITATIONS

**Table I** ACI Standard 302.1R-89 Chemical hardeners can be used to increase concrete resistance to chemicals including, but not limited to the following:

Aluminum sulfate	Lead refining solutions, 10%	Potassium dichromate
Ammonium chloride	Lignite oils	Potassium persulfate
Barium hydroxide	Machine oils	Potassium sulfate
Beef fat	Magnesium chloride	Rapeseed oil
Calcium hydroxide	Magnesium sulfate	Sea water
Calcium nitrate	Manganese sulfate	Silage
Carbon dioxide	Manure	Sodium bromide
Carbonic acid	Mash, fermenting	Sodium carbonate
Castor oil	Mercuric chloride	Sodium chloride
Coal-tar oils	Mercurous chloride	Sodium dichromate
Cottonseed oil	Mine water, waste	Sodium nitrite
Creosote	Mineral oil	Sodium sulfate, 10%
Cresol	Molasses	Sodium sulfite, 10%
Distillers slop	Mustard oil	Sodium thiosulfate
Ethylene glycol	Nickel sulfate	Soybean oil
Ferric chloride	Oleic acid, 100%	Sugar
Ferric sulfate	Olive oil	Sulfite liquor
Ferrous chloride	Paraffin	Tallow and tallow oil
Ferrous sulfate	Phenol, 25%	Tannic acid
Fish oil	Phosphoric acid, 85%	Tanning liquor, 10%
Fruit juices	Pickling brine, 10%	Tobacco
Glucose	Poppy seed oil	Walnut oil
Glycerine	Potassium aluminum sulfate,	Zinc chloride
Hydrogen sulfide	10%	Zinc sulfate
Iodine	Potassium carbonate	Zinc nitrate
Lactic acid, 25%	Potassium chloride	Zinc sulfate

This information contained herein, is to the best of our knowledge and belief, accurate and is to be used as a guide to product selection. However, since the conditions of handling, installation and use are beyond our control, we make no guarantee of results. When in doubt, please test first.

- Above grade use only.
- Horizontal Masonry and Concrete substrates only
- Protect from freezing.
- Agitate/Mix well before use.
- Keep dry for at least 24 hours after installation
- Do not allow standing water to dwell on surface for 7 days.
- Do not allow traffic until Pentra Protective Coating is allowed to completely dry. Generally 30-60 minutes under typical interior conditions.
- Pentra Protective Coating will not bridge or fill cracks and will not salvage honeycombed or structurally unsound surfaces.

**CUSTOMER SERVICE:**

(1-866-375-2280) to verify the most current versions or visit our website:  
[www.convergent](http://www.convergent.com)  
[www.convergentconcrete.com/product/products.html](http://www.convergentconcrete.com/product/products.html)

- Do Not allow Pentra Protective Coating to come in contact with any glass, fabric, metal, or painted surfaces. Immediately wipe contaminated surfaces with a clean, water-saturated cloth, then wipe dry with a second clean cloth. Important: Pentra Protective Coating's fast drying and extremely durable bonding characteristics will permanently bond to a variety of surfaces and is extremely difficult to remove once cured.) We highly recommend masking off and protecting areas that could be affected by splatters, splashes or over spray.
- For subsequent coatings, consult the coating manufacturer for more instructions.

**APPLICATION PROCEDURES & INSTRUCTIONS****Notice Very Important\*****Step 1.****Substrate Preparation: Concrete/Concrete Block**

For long-term placement create a rough surface profile using diamond grind to a 120 grit resin finish. Clean and neutralize.

The surface must be dry, free of surface contaminants, and in sound condition. Grease, and oil should be removed by ASTM D4258-83 and release agents should be removed by ASTM D4259 – 88 Refer to SSPC-SP13/NACE No 6 mechanical or chemical surface preparation methods for preparing concrete to suitable cleanliness for intended service. Surface preparation methods should impart sufficient surface profile for mechanical adhesion to occur. Ensure surface is thoroughly rinsed and dry prior to coating application. Allow a minimum 7 - 14 days cure time for new concrete prior to preparation and application.

Mask areas that do not receive Pentra's topcoat finish and surface hardener to protect from over spray.

Important: Complete mixing is essential for good product performance. It is necessary to use a paint-mixing tool mounted in a drill motor or machine agitation (Paint shaker) to mix this paint. Mix well and mix immediately before applying.

Spray first coat and work in surface with stiff broom or scrubbing pad on a scrubbing machine.

**ALLOW FIRST COAT TO DRY BEFORE PROCEEDING**

**FLOOD COAT SECOND APPLICATION AND DISTRIBUTE WITH A SOFT BRISTLE BROOM. ALLOW MATERIAL TO FLOW AND LEVEL**

**ALLOW EACH COAT TO DRY BEFORE APPLYING SUBSEQUENT COATS.**

**ALLOW TO DRY FOR APPROXIMATELY ONE HOUR AND THEN APPLY A VERY THIN COAT OF PENTRA-GUARD™, USING A MICRO FIBER APPLICATOR PAD OR SPRAY.**

**FINAL RESULTS:**

Extremely durable semi-gloss / matte finish depending on porosity of substrate.

Light pedestrian use within 30-60 minutes, vehicle traffic in 2 hours.

Maximum performance may take up to 14 days to develop, depending on temperature and humidity. Do not allow standing water or puddles of water to be left on the surface. (Immediately wipe up any spills and or water.

Make certain the most current versions of Pentra Protective Coating Product Data sheet and MSDS are being used; Please read this information prior to use; call Customer Service (1-866-375-2280) to verify the most current versions or visit our [www.convergentconcrete.com/product/productprotect.html](http://www.convergentconcrete.com/product/productprotect.html)

Proper application is the responsibility of the user. Field visits by Convergent Concrete personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

### CLEAN UP

Use water to clean tools and equipment. Pentra (Topcoat Finish & Surface Hardener) is environmentally friendly and require no special or hazardous disposal methods.

### MAINTENANCE

Routine sweeping, mopping, washing and mechanical scrubbing of floors with water and neutral pH cleaners (if necessary) are recommended. Water only is sufficient for most environments.

DO NOT USE cleaners that are acidic or that have citrus (de-limonene) or Butyl compounds. Although Pentra (Topcoat Finish & Surface Hardener) is chemically resistant and helps reduce staining, its application in specific chemical environments and some acidic concentrates, may etch the surface causing a residual stain. If unsure checked with a Convergent Concrete technical representative. Regular maintenance and cleaning will help prolong surface shine. Wipe up any chemical spills as soon as possible. Prior to painting, stripping, or applying resilient tile wait 6-12 hours after application and conduct an adhesion test. Use a stiff broom or power sweeper to remove dirt and dust. Please consult the manufacturer to inquirer about surface preparation and recommendations. Always test adhesion and performance for suitability and desired results before application.

### AVAILABILITY

Treatments must be applied by an "Authorized Applicator" or Licensed Field Service Specialist. Pentra (Topcoat Finish & Surface Hardener) is available from Factory Direct Concrete Floor Care Centers or direct "Authorized Applicators" from our plant and warehouse in Orem, Utah. For the name and telephone number of your nearest Pentra representative, call our customer service department listed on the back page.

### COST

Pentra (Topcoat Finish & Surface Hardener) is competitively priced. Costs will vary from region to region. A Pentra™ representative can provide price information or assist in contacting the nearest Pentra™ stocking Concrete Floor Care Center.

### TECHNICAL SERVICE

#### CUSTOMER CARE:

Toll Free 866-375-2280 or  
801 375 2280

#### EMAIL:

technicalservice@convergent  
concrete.com

#### WEB:

www.convergentconcrete.com

**For medical emergencies only,**  
call Infotrac (800) 535-5053  
Outside USA (352) 323-3500

### TECHNICAL SERVICES

A staff of factory trained service personnel offers design assistance and technical support. For technical assistance, contact our Technical Service Department:

**Technical Service Customer Care:** Toll Free: 866-375-2280 or 801-375-2280

Email: technicalservice@convergentconcrete.com or go to  
www.convergentconcrete.com

### HEALTH AND SAFETY PRECAUTIONS

Pentra (Topcoat Finish & Surface Hardener) is an aqueous Lithium silicate solution that uses proprietary compounds. The treatment is alkaline and may cause eye and skin irritation. KEEP OUT OF THE REACH OF CHILDREN. Do not take internally. Avoid

prolonged contact with skin. Avoid ingestion of material. If swallowed, do not induce vomiting – call physician. Avoid contact with eyes. Protective clothing is recommended. Protective goggles are recommended in case of splashing. If splashed in eyes, wash immediately with clean water and call physician if irritation persists. Contact areas should be thoroughly washed with soap and water. Additional precautions, safety information and first aid treatments are contained in the Material Safety Data Sheet. Pentra (Topcoat Finish & Surface Hardener) will bond to most surfaces- immediately wash off over spray with water and mild detergent. Caution: Surfaces wet with Pentra (Topcoat Finish & Surface Hardener) may be slippery.

### **FOR INDUSTRIAL USE ONLY**

Not for sale to or resale to general public. For professional use only and must be applied by an authorized applicator or licensed field service specialist. For medical emergencies only, Call Infotrac (800) 535-5053 Outside USA (352) 323-3500

### **WARRANTY**

**LIMITED WARRANTY NOTICE** Every reasonable effort is made to apply Convergent Concrete exacting standards both in the manufacture of our products and in the information that we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, Convergent Concrete **MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS,** and Convergent Concrete shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the Convergent Concrete Research Director. This information and all further technical advice are based on Convergent's present knowledge and experience. However, Convergent assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights. In particular, Convergent disclaims all **WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. CONVERGENT CONCRETE SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND.** Convergent Concrete reserves the right to make any changes according to technological progress or further developments. It is the customer's (Authorized Applicator) responsibility and obligation to carefully inspect and test any incoming goods. Performance of the product(s) described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibility of the customer to carry out and arrange for any such testing. Reference to trade names used by other companies is neither a recommendation, nor an endorsement of any product and does not imply that similar products could not be used.

## Other Pentra™ Treatments

### **Pentra-Sil® (NL)**

Concrete Hardener, Sealer, densifier

### **Pentra-Sil® 244+**

Salt Protection & Penetrating Sealer

### **Pentra-Sil® C&N**

Concrete Neutralizer

### **Pentra-Sil® AC**

Alkalinity Control Formula Primer

For additional information on Pentra (Topcoat Finish & Surface Hardener) or any of our other specialty Pentra™B treatments contact your local Specialty Chemical "Concrete Floor Care Center" or local dealer representative for an "Authorized Applicator."

**Unique Strengths, Unmatched Performance.™**

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