



Pentra-Guard™

(HP) High Performance Industrial Flooring Surface Hardener and Protective Clear Coat.

Convergent Concrete Specialty Chemical Concrete Treatments

450 South 1325 West
Orem, Utah 84058
United States of America
Toll-free: 866-375-2280
Office: 801-375-2280
Fax: 801-375-2971
www.convergentconcrete.com



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

©2007 Convergent Concrete
Technologies LLC. All Rights Reserved.

PRODUCT DESCRIPTION

Pentra-Guard™ (HP) High Performance Industrial Flooring Surface Hardener and Protective Clear Coat is a “Micro Film Forming Hybrid Inorganic / Organic Nano Lithium™ Surface Treatment” that hardens and seals concrete floors, producing a very hard, dust repellent, chemical resistant and water tight surface.

For high-demand commercial and industrial settings, Pentra-Guard™ (HP) is the optimum coating system designed for harsh and high abuse conditions. Whether your surface must tolerate significant foot traffic, large equipment, abrasion, or chemicals, our advanced, versatile, low VOC treatment offers; high durability and bond strength; and ability to withstand UV, abrasion, chemical spills and heavy traffic.

The “Industrial Grade” treatment provides rapid curing, attractive clear glossy finish and easy application for facilities that require maximum protection and little-to-no- downtime. The unique treatment is extremely low in VOC’s (less than 50 grams per liter), environmentally friendly (Green Leaf) and has a very low polymer/ ammonia odor.

Perfect for protecting light to heavy manufacturing, parking decks, food service operations and warehouses. Pentra-Guard (HP) leaves concrete hard, stain resistant, easy to maintain, and light reflective (on smooth finishes). Pentra-Guard (HP) does not significantly decrease the friction coefficient of surfaces.

KEY BENEFITS

- Combines the durable protection of a penetrating densifier with the attractive finish of a high performance glossy clear coating.
- Creates a stronger, more impenetrable, and better-looking finish (satin-glossy) that is dust-proof, resistant to staining (oils and many acids) and deterioration.
- High Performance treatment produces a tough coating 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.
- Tenaciously bonds and reacts with concrete forming a durable insoluble bond with the concrete.
- Forms a protective “micro surface layer” that is breathable, dense and abrasion resistant that will not peel or flake.
- Reduces maintenance, cleaning costs and costly repairs. Simply damp mop or machine scrub

UNIQUE CHEMISTRY

Pentra-Guard (HP)'s unique reactive Nano Lithium chemistry forms an insoluble permanent bond with concrete surfaces rapidly curing (dry to the touch (30 – 60 minutes) into micro (2-3 mil) protective surface film. Pentra-Guard (HP)'s adhesion properties will not flake or peel and is moisture after installation. The Advanced Nano Lithium (NL) technology will not absorb water or affect alkalinity once cured, and is suitable for interior applications only.

With lower viscosity than conventional treatments, Pentra-Guard (HP) provides superior penetration within the capillary channels providing a more consistent and uniform cure.

Once it has penetrated into porous concrete surfaces, Pentra-Guard (HP) undergoes a series of chemical reactions resulting in total cross-linking, reinforcing and sealing the concrete surface by forming a durable chemical bond with the surface and therefore provides a long-term protection (many times longer than conventional concrete sealers).

This microfilm-forming treatment offers greater stain and abrasion resistance, and greater strength and durability than traditional coatings, sealers and densifiers. In a class of its own, Pentra-Guard (HP) provides long-term protection and guards surfaces against severe and aggressive industrial environments. With good maintenance, treated surfaces maintain sheen even against heavy pedestrian and traffic wear. Floors last longer and cost less to maintain.

ADVANTAGES

- Extremely durable stain resistant microfilm forming surface treatment that will not peel or flake and both chemically and mechanically reacts with the substrate.
- Easy maintenance, easy re-coating. Won't build up or yellow.
- Resists strong cleaning compounds, alkalis solvents, oils and many acids.
- Tile-like finish does not support mildew or fungi growth.
- Forms protective shield for color retention that is glossy and resistant to ultra-violet radiation.
- Easy one-coat application. High coverage (1,500 – 3,000 square feet per gallon).
- Can be applied using simple methods, such as spray, roller, or brush.
- Permanent and durable surface resists marks, improves traction, and helps prevent waterborne containments for staining.
- Treated surfaces require no waxing and provide an immediate glossy sheen. Can be buffed to restore original sheen.

Primary Industrial Markets Served

Industrial & Manufacturing

- Manufacturing plants
- Warehouse storage facilities
- Distribution centers
- Food processing plants
- Textile mills
- Wastewater treatment plants
- Pharmaceutical
- Electronic
- Cold Storage / Freezers
- Beverage processing
- Chemical processing
- Electronics

Transportation

- Parking garages
- Aircraft hangars
- Automotive dealerships
- Parking decks
- Transportation terminals
- Vehicle maintenance areas

Commercial & Institutional

- Retail space and Show rooms
- Shopping centers
- Business office buildings
- Cafeterias/restaurants
- Correctional institutions
- Retail & shopping centers
- Schools/education facilities
- Sports & entertainment venues
- Stadiums

Health Care

- Hospitals
- Animal holding facilities
- Health care facilities
- Veterinary clinics

Common Areas

- Aisle ways/corridors
- Chemical areas
- Clean rooms
- Cold storage
- Kitchens
- Laboratories
- Loading docks
- Lobby areas
- Mechanical rooms
- Mezzanines
- Restrooms & shower areas

- Makes concrete easier to clean, creating an environment that is less susceptible to the proliferation of harmful bacteria.
- USDA/FDA approved for incidental food contact.
- Extends the life expectancy, and integrity of concrete and masonry.

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

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.

USE & TECHNICAL SPECIFICATIONS

COVERAGE / TREATMENT YIELD*

1,500- 3,000 ft.2 per gallon on smooth surfaces

*Coverage rate will vary with concrete quality and finish

DRYING TIME

1-2 hours

PHYSICAL PRPERTIES

Form	milky white, 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	2-8mm
Shelf Life	6 months in factory sealed container

STAIN RESISTANCE

Smooth-troweled concrete treated with Pentra-Guard (HP) 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
Balsamic Vinegar	10	10	8	8
Red Wine	10	10	9	9
Motor Oil	10	10	10	10
Transmission Fluid	10	10	10	10
Skydrol	10	10	10	6

CHEMICAL RESISTANCE

Pentra-Guard (HP) treatment provides enhanced chemical resistance on the following, but not limited to: (see Table 1)

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, 10%	Zinc chloride
Hydrogen sulfide	Potassium carbonate	Zinc sulfate
Iodine	Potassium chloride	Zinc nitrate
Lactic acid, 25%		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.

- Use on interior surfaces only.
- Protect from freezing.
- Agitate 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-Guard (HP) is allowed to completely dry. Generally 30-60 minutes under typical interior conditions.
- Pentra-Guard™ Will not bridge or fill cracks and will not salvage honeycombed or structurally unsound surfaces.
- Do Not allow Pentra-Guard™ (HP) 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-Guard (HP)'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.

CUSTOMER SERVICE:

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

APPLICATION PROCEDURES & INSTRUCTIONS**NOTICE VERY IMPORTANT***

*1 (Application by "micro fiber applicator" and "micro fiber pad" when applying to new or old concrete.)

*2 (Always test each concrete surface for suitability and desired results. Let surface dry before inspection and approval of desired application.)

APPLICATION PROCEDURES:**Step 1.**

Cleaning: Pentra-Guard (HP) may be applied to existing, cured concrete of any age. Thoroughly clean all surfaces. Mechanically remove any surface laitance and patch or fix cracks and damaged areas. Remove all membrane forming curing compounds, sealers, oil, grease, dirt, dust, drywall residue and other containments. We recommend thoroughly cleaning the surface with black scrubbing pad (light abrasion) and a neutral pH detergent. We do not recommend etching the surface with an acidic solution because it requires thorough rinsing using a neutral pH cleaner to effectively neutralize the surface (if not properly neutralized the pH may cause whitening.) For best results, clean the surface by sanding the floor with a 60-100 grit sanding screen or diamond abrasive pad. Remove, dust and residue with riding or walk-by "scrubber" using water or broom then water rinse and squeegee surface dry. Avoid using cleaners with citrus (de-limonene) or Butyl compounds.

Step 2.

IMPORTANT! (Allow the surface to dry before proceeding.)

Step 3.

Mix, Shake or Stir thoroughly before applying.

Apply Pentra-Guard (HP) using a micro fiber pad or similar, spreading material thinly and evenly so as to completely cover the substrate. Spread at a rate of 1,500-3,000 square feet per gallon depending on porosity of the surface. Repeat this step as needed until the desired results are obtained. This step is to build a stain resistant

micro-film over the substrate. Allow each application to dry at least 30-60 minutes (very important!) before reapplying next coat. Do not over apply. It is critical to apply very thin multiple coats. If applied too thick it will cure improperly and discolor or whiten! Buffing between applications with a hogs hair pad and a high speed burnisher will improve sheen and curing speed.

Make certain the most current versions of Pentra-Guard (HP) 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 website: www.convergentconcrete.com/product/productHP.html

TYPICAL COVERAGE RATES:

Steel Trowelled	1,500-3,000 ft ² per gallon
Re-coat applications	3000-4000 ft ² per gallon

FINAL RESULTS

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. It is Highly recommended not to clean or scrub the surface for a 7 day period to prevent the possibility of "whitening" or discoloration.

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.

Floor is ready for traffic and use when dry. Typical drying time is 1-2 hours.

For optimal hardening and performance results we recommend that you do not sand or polish the surface. Treated surfaces will exhibit a slight satin sheen and reduced water absorption. Maximum strength and stain resistance will develop over 7 days. Sand or polishing will only wear down the protective surface and is not recommended for industrial applications. If an immediate, glossy finish (polished look) is desired for light industrial applications or commercial retail, we recommend the following procedure to achieve an enhanced brilliant sheen.

CLEAN UP

Use water to clean tools and equipment. Pentra-Sil treatments are 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) is 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-Guard (HP) 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 inquire 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-Guard (HP) concrete treatments are 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-Sil representative, call our customer service department listed on the back page.

COST

Pentra-Guard™ (HP) treatment 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 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

TECHNICAL SERVICE

CUSTOMER CARE:
Toll Free 866-375-2280 or
801 375 2280

EMAIL:
technicalservice@convergentconcrete.com

WEB:
www.convergentconcrete.com

FILING SYSTEMS

Architects' First Choice®

MANU-SPEC®

Sweet's®

Arcat®

HEALTH AND SAFETY PRECAUTIONS

Pentra-Guard (HP) 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-Guard (HP) will bond to most surfaces - immediately wash off over spray with water and mild detergent. Caution: Surfaces wet with Pentra-Guard (HP) may be slippery.

FOR MEDICAL EMERGENCIES ONLY,
Call Infotrac (800) 535-5053 Outside
USA (352) 323-3500

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.

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 Chemical Hardener, Sealer, and Densifier

Pentra-Sil® (244+)

Salt Protection and Dust Proofer -Hardener, Sealer, Densifier

Pentra-Sil® (C&N)

Concrete Cleaner and Neutralizer

Pentra-Sil® (AC)

Alkalinity Control Formula and Primer

Pentra-Guard™ (EXT)

Exterior Surface Hardening and Protective Clear Coat.

Pentra™ Protective Coating

Industrial Topcoat Finish and Surface Hardener.

Pentra™ (MMC) Penetrating Sealer

Exterior Mold and Mildew Control

TRANSIL™

Traffic Marking and Safety Paint

For additional information on Pentra-Guard™ (HP) High Performance Industrial Flooring Surface Hardener or any of our other specialty Pentra™ treatments contact your local Specialty Chemical **"Concrete Floor Care Center"** or local dealer representative for an **"Authorized Applicator."**

Unique Strengths, Unmatched Performance.™

Convergent Concrete Specialty Chemical Concrete Treatments

450 South 1325 West
Orem, Utah 84058
United States of America
Office: 801-375-2280
Fax: 801-375-2971
www.convergentconcrete.com

FORM NO. HP-03360.111006-01/07

©2007 Convergent Concrete

Printed in U.S.A.

Printed on recycled paper including 10% post consumer fiber.

