



CONVERGENT GROUP S.A.

The Concrete Technologies

Pentra-Guard™

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

Convergent Group S.A.

Specialty Chemical Concrete
Treatments Commercial

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nanoLithium

Patented Technologies by Advan

Nano-Lithium® (NL)
Concrete Treatment
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Convergent "Flooring Division's products
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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

CUSTOMER SERVICE:

(+32 60 390 752) to verify the most current versions, visit our website: www.convergent-group.com or scan the code.

**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 ultraviolet radiation.
- Easy one-coat application. High coverage: 37-74m²/L.
- 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.
- 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.

USE & TECHNICAL SPECIFICATIONS**COVERAGE / TREATMENT YIELD***

37-74m²/L on smooth surfaces

*Coverage rate will vary with concrete quality and finish

DRYING TIME

1-2 hours

APPLICATION

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 37-74m²/L 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 to 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 (+32 60 390 752) to verify the most current versions or visit our website: www.convergent-group.com

TYPICAL COVERAGE RATES:

Steel Trowelled: 37-74m²/L

Re-coat applications: 74-98m²/L

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)

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 Group 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.

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 Group 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.

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 all and mild detergent. **Caution:** Surfaces wet with **Pentra-Guard® (HP)** may be slippery.

PHYSICAL PROPERTIES

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	0°C
Abrasion Resistance	excellent
Depth of Surface Penetration	2-8mm
Shelf Life	6 months in factory sealed container

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.

- 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, watersaturated 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.

TECHNICAL SERVICE

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WARRANTY

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Refer to www.convergent-group.com for latest Technical Data Sheet and MSDS.

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UNIQUE STRENGTHS, UNMATCHED PERFORMANCE.™

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