

Pentra-Guard™

(EXT) Exterior Surface Hardening and Protective Clear Coat

Convergent Group S.A. Chemical Concrete Treatments

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

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PRODUCT DESCRIPTION

Pentra-Guard™ (EXT) Exterior Surface Hardening and Protective Clear Coat is specifically designed for protecting and preserving decorative and integrally colored concrete and masonry surfaces. Pentra-Guard (EXT) is a clear "Micro Film Forming Hybrid Inorganic / Organic Nano Lithium™" that hardens, seals and protects against moisture damage and enhances the natural color of exposed aggregate, brick, slate, stone and stamped concrete.

The unique treatment is extremely low in VOC's (less than 50 grams per liter), environmentally friendly and has a very low polymer/ammonia odor.

Whether your surface must tolerate significant foot traffic, abrasion, or chemicals, our advanced, versatile, exterior treatment offers high durability and bond strength; resists staining and dusting and withstands - UV, abrasion, chemical spills and heavy traffic.

Pentra-Guard (EXT) dries to a very hard, glossy "wet-look." This rapid curing, non-yellowing treatment provides long-lasting surface protection, beauty and easy maintenance for a wide range of masonry and concrete surfaces with little-to-no- downtime. Perfect for protecting exposed aggregate, concrete, brick and stone pavers.

KEY BENEFITS

- Enhances the color of slate, stamped concrete, stone, and brick.
- Provides premium "wet look" finish to a variety of decorative masonry surfaces.
- 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 a 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 (EXT)'s unique reactive 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 (EXP)'s adhesion properties will not flake or peel and is moisture resistant after installation. The Advanced Nano Lithium (NL) chemistry will not absorb water or affect alkalinity once cured, and is suitable for interior and exterior applications.

With lower viscosity than conventional treatments, Pentra-Guard (EXT) provides superior penetration within the capillary channels providing a more consistent and uniform cure. Once it has penetrated into porous concrete surfaces, Pentra-Guard (EXT) 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 (EXT) provides long-term protection and guards surfaces against severe and aggressive outdoor environments. With good maintenance, treated surfaces maintain sheen even against heavy pedestrian and traffic wear. Surfaces 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 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. coverage (15 to 40 SqM_ per liter).
- Can be applied using simple methods, such as spray, roller, or brush.
- Durable surface resists mark and helps prevent waterborne contaminants 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
- Extends the life expectancy, and integrity of concrete and masonry.

PRIMARY MARKETS SERVED

SUBSTRATES

Adobe
 Granite
 Natural Stone
 Sandstone
 Clay
 Mortars
 Limestone
 Terracotta
 Architectural concrete
 Cast-in-place concrete
 Concrete Masonry units
 Exposed aggregate substrates
 Portland cement stuccos
 Precast prestressed concrete products
 Stamped/Colored Concrete
 Acid Stained Concrete

USES

Parking garages
 Stadiums
 Buildings
 Loading Docks
 Precast
 Brick
 Stone veneers
 Cast-in-place concrete
 Overpass tunnels
 Foyers
 Pedestrian walkways
 Pavement
 Decks
 Driveways
 Pavement
 Pavers
 Monuments

PACKAGING

15 L Plastic Basket	16 Kg
25 L Plastic Pail	26 Kg
220 L Drum	235 Kg
1000 L Tote (IBC)	1131 Kg

USE & TECHNICAL SPECIFICATIONS

COVERAGE / TREATMENT YIELD*

15 to 40 SqM_ per Liter on smooth surface

Exposed aggregate

Stucco

Porous concrete

Smooth concrete, precast

Smooth concrete, steel trowel finish

Exterior brick

Concrete block

Rough stone, sandstone

Smooth stone, polished granite

*Coverage rate will vary with concrete finish and environment

DRYING TIME

1-2 hours

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	32 C (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 (EXT) 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 (EXT) treatment provides enhanced chemical resistance on the following, but not limited to: see Table1

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.

LIMITATIONS

- Above grade use only - not for non-porous surfaces.
- Protect from freezing.
- Agitate before use.
- In cool, humid conditions, curing will take longer. Protect from standing water until cured.
- Do not allow traffic until Pentra-Guard is allowed to completely dry. Generally 30-60 minutes under typical conditions.
- Pentra-Guard (EXT) Will not bridge or fill cracks and will not salvage honeycombed or structurally unsound surfaces.
- Do Not allow Pentra-Guard(EXT) 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 (EXT)'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.

- Subsequent coating with paint or other material will not adhere well and is not recommended.

CUSTOMER SERVICE:

(+32 60 390 752) to verify the most current versions or visit our website:

www.convergent-group.com

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 (EXT) 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 whiting.) 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.

- Mix, Shake or Stir thoroughly before applying.
- Apply Pentra-Guard (EXT) using suitable sprayer. Immediately distribute any pools using a soft broom. Two applications may be necessary to achieve the desired results. Allow 60 minutes before reapplying next coat.
- Typical Coverage Rates: 15 to 30 SqM_ per liter.

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. In cool or humid conditions, do not allow standing water to dwell on the surface until it is completely cured.
- Make certain the most current versions of Pentra-Guard (EXT) 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
- 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 glossy sheen and reduced water absorption. Maximum strength and stain resistance will develop over 7 days. Sanding or polishing will only wear down the protective surface and is not recommended for Pentra-Guard (EXT).

CLEAN UP

Use water to clean tools and equipment. Pentra-Guard (EXT) 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 (EXT) 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 & COST

AVAILABILITY

Treatments must be applied by an "Authorized Applicator" or Licensed Field Service Specialist. Pentra-Guard (EXT) concrete treatments are available from Factory Direct Concrete Floor Care Centers or direct "Authorized Applicators" from our plant and warehouse in Mariembourg, Belgium. 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 (EXT) treatment is competitively priced. Costs will vary from region to region. A Pentra™ representative can provide price information or assist in contacting the nearest PentraÆ 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 +32 60 390 752 • Email: technical@convergent-group.com or WEBSITE: www.convergent-group.com

TECHNICAL SERVICE

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FOR MEDICAL EMERGENCY ONLY:

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HEALTH AND SAFETY PRECAUTIONS

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

TECHNICAL SUPPORT

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 Group 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 Group SA MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and Convergent 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 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 Group 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 Group 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/Æ (NL)

Concrete Chemical Hardener, Sealer, and Densifier

Pentra-Sil/Æ (244+)

Salt Protection and Dust Proofer -Hardener, Sealer, Densifier

Pentra-Guard™ (HP)

High Performance Surface Hardener and Protective Clear Coat.

Pentra-Sil/Æ (C&N)

Concrete Cleaner and Neutralizer

Pentra-Sil/Æ (AC)

Alkalinity Control Formula and Primer

Pentra™ Protective Coating

Industrial Topcoat Finish and Surface Hardener.

Pentra™ Stain

Transparent Color Hardener

Pentra™Protect

Oil & Water repellent

Pentra™ (MMC) Penetrating Sealer

Exterior Mold and Mildew Control

TRANSIL™

Traffic Marking and Safety Paint

For additional information on Pentra-Guard™ (EXT) Exterior Surface Hardening and Protective Clear Coat 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.”**

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Unique Strengths, Unmatched Performance.™

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