



Convergent Group SA
Chemical Concrete Treatments

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A Company Certified

ISO 9001 & ISO 14001 / EMAS



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

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IMPORTANT NOTICE:

This product is formulated to be used as a simple Densifier & Hardener or in conjunction with PENTRA Finish High Performance Gloss, Stain and Wear Protection Finish or with PENTRA-SIL® 244+.
See system specifications or visit www.convergent-group.com.

PRODUCT DESCRIPTION

It's easy to harden with Pentra-Sil® (DH) Nano Lithium Hardener / Densifier. The patented technology of Pentra-Sil® (DH) forms a tough, impenetrable, abrasion resistant intermediate finish with a simple, one-coat application—no rinsing required. This penetrating (DH) Nano-lithium hardener is non-soluble and will react with the concrete to produce insoluble calcium silicate hydrate (CSH) creating a non-porous, more dense and harder surface. Eliminates dusting and reduces maintenance costs and surface prep. Unlike conventional sodium or potassium salts, this product requires no scrubbing or flushing and is not a caustic wastewater.

Pentra-Sil (DH) can be applied on fresh, newly-troweled concrete and tilt-up construction slabs; Apply curing compounds directly on top of treated surfaces to hydrate without discoloration. The coating is dense yet breathable, forming an extremely hard and densified surface to receive treatment of either Pentra-Sil® (CG) 244+ Color Guard Penetrating Protective Surface Treatment or the PENTRA-Finish® (Li) High Performance GLOSS, STAIN AND WEAR PROTECTION FINISH.

KEY BENEFITS:

- Specially formulated to optimize performance and reduce surface preparation costs associated with topical finishes and honing.
- Cost effective alternative for large retail floor applications.
- Leaves no film
- Reduces application time and cost.
- Allows curing compounds to be easily removed with simple scrubbing.
- Ensures uniformly hardened and densified concrete with no residual milky whitening from excess material.

BENEFITS:

- Will not contribute to surface crazing or surface ASR.
- Compatible with integrally colored concrete, stains and dyes.
- Lithium will not absorb water or contribute to surface floor sweating.
- Resistance to moisture, dirt or grime build-up
- Reduces alkalinity and efflorescence
- Provides good abrasion resistance and hardness.
- VOC compliant. Non-flammable. Non-toxic; Low odor.
- Tested and conforms to California Collaborative for High Performance School Indoor Air Quality standards. Use can contribute to LEED® points (EQ Credit 4).

USE & TECHNICAL SPECIFICATIONS

PHYSICAL PROPERTIES

Pentra-Sil®(DH)'s unique reactive chemistry forms an insoluble bond with the free lime forming an extremely strong Tri-calcium silicate compound that binds together micro particles (lime and fine aggregate) forming a non-expansive gel that rapidly cures into inorganic cement that is stronger and more durable than the cement itself. Pentra-Sil® (DH)'s unique atomic structure (Particle Size) and lower viscosity compared to conventional treatments provides superior penetration within the capillary channels providing a more consistent and uniform cure.

Form	Clear Liquid
Specific Gravity	1.05
pH	11.
Wt/GAL	8.79 Lbs
Active Content	22%
Total Solids	9*
VOC Content	<50g/L
Flash Point	NA
Freeze Point	32°F (0%)
Shelf Life	1 Year in unopened factory sealed container *(+ - 2%)

COVERAGE / TREATMENT YIELD*

New Construction Steel Troweled 1 liter per 9.8 to 13.5m²

*Coverage rate will vary with each concrete quality



PACKAGING

Plastic Pail	25 L
Plastic Mini Drum	50L
Plastic Drum	200L
Plastic tote (IBC)	1000L

LIMITATIONS

- Pentra-Sil® (DH) is not suitable for asphaltic or non cementitious surfaces or painted surfaces
- Pentra-Sil® (DH) will not bridge or fill cracks and will not salvage honeycombed or structurally unsound surfaces.
- Pentra-Sil® (DH) is not recommended for plastic concrete or mortar or resin-based terrazzo mixes.
- Do not allow Pentra-Sil® (DH) 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.
- For subsequent coatings applications, perform proper surface preparation and consult the coating manufacturer for more instructions.

IMPORTANT NOTICE:

For mechanically polishing/honing floors, we recommend Pentra-Sil® (IH) Impregnating Hardener / Densifier.

For higher performance requirements, we recommend using Pentra-Sil® (NL) Hardener, Sealer, Densifier that will seal the surface as well as provide enhanced chemical and abrasion resistance.

For integrally colored, stained or dyed concrete that doesn't incorporate PENTRA-GUARD® (HP) High Performance Gloss, Stain and Wear Protection Finish we recommend PENTRA-SIL (CG) 244+ Color Guard Penetrating Protective Surface Treatment.

This information is accurate to the best of our knowledge 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.

Primary Industrial Markets Served

Commercial & Institutional
Business office buildings
Cafeterias/restaurants
Correctional institutions
Retail & shopping centers
Schools/education facilities
Sports & entertainment venues

APPLICATION PROCEDURES & INSTRUCTIONS AS A SYSTEM COMPONENT

NEW CONSTRUCTION CONCRETE FLOORS ONLY

TIMING: Joint cutting is more important for the performance of the slab than treating the slab immediately with PENTRA-SIL (NL/H) HARDENER / DENSIFIER (Time - of - Placement). PENTRA-SIL (NL/H) may be applied before or after the joints are cut.

APPLICATION TREATMENT OF DENSIFIER

1. Consult with concrete placement Superintendent and Saw Cutting crew about the timing of the PENTRA-SIL (NL/H) HARDENER / DENSIFIER application.
2. Determination: If applying PENTRA-SIL (NL/H) HARDENER / DENSIFIER prior to joint cutting proceed to Application Instruction below. If applying PENTRA-SIL (DH) DENSIFIER/HARDENER post cutting of joints begin with Application Instruction (B.) below.

APPLICATION INSTRUCTION STEPS

A. Application Instructions Before Joints are cut:

Using a high volume, low pressure sprayer; apply PENTRA-SIL (DH) HARDENER / DENSIFIER to the surface evenly at the rate of approximately 400 square ft. per gallon. (DO NOT OVER APPLY) Keep the surface wet with PENTRA-SIL (DH) HARDENER / DENSIFIER for at least 20 minutes. DO NOT LET ANY AREA DRY OUT--spray more PENTRA-SIL (DH) HARDENER / DENSIFIER if required. Lightly broom out any puddles right after the material has been sprayed so the surface is uniformly wet for a minimum of 20 minutes.

B. Application Instructions After Joints are cut:

Clean up saw cut residue from the surface using vacuums, sweepers, blowers, or brooms. Use appropriate scrubber equipment with Red or Blue pad, (Blue pads are more aggressive and should only be used if you have determined they will not damage the surface) clean the joints to remove any residue that sweeping or blowing did not remove. Damp mop the joints and around columns to get the surface thoroughly clean. Then using a high volume, low pressure sprayer; apply PENTRA-SIL (DH) HARDENER / DENSIFIER to the surface evenly at the rate of approximately 12/15 SqM²/L. (DO NOT OVER APPLY) Keep the surface wet with PENTRA-SIL (NL/H) HARDENER / DENSIFIER for at least 20 minutes. DO NOT LET ANY AREA DRY OUT--spray more PENTRA-SIL (DH) HARDENER / DENSIFIER if required. Lightly broom out any puddles right after the material has been sprayed so the surface is uniformly wet for a minimum of 20 minutes.

APPLICATION OF HARDENER / DENSIFIER SYSTEM COMPONENT FOR NEW CONSTRUCTION INTEGRALLY COLORED CONCRETE FLOORS

TIMING: Joint cutting is more important for the performance of the slab than treating the slab immediately with PENTRA-SIL (DH) HARDENER / DENSIFIER. PENTRA-SIL (NL/H) may be applied before or after the joints are cut.

APPLICATION TREATMENT OF DENSIFIER

1. Consult with concrete placement Superintendent and Saw Cutting crew about the timing of the PENTRA-SIL (DH) HARDENER / DENSIFIER application.
2. Determination: If applying PENTRA-SIL (DH) HARDENER / DENSIFIER prior to joint cutting proceed to Application Instruction 1) below. If applying PENTRASIL (DH) HARDENER / DENSIFIER post cutting of joints begins with Application Instruction 2.) Below.

A. APPLICATION INSTRUCTION STEPS

1. Application Instructions Before Joints are cut:

a. Step 1. Using a high volume, low pressure sprayer; apply PENTRA-SIL (NL/H) HARDENER / DENSIFIER to the surface evenly at the rate of approximately 12/15 SqM²/L. (DO NOT OVER APPLY) Keep the surface wet with PENTRA-SIL (NL/H) HARDENER / DENSIFIER for at least 20 minutes. DO NOT LET ANY AREA DRY OUT--spray more PENTRA-SIL (NL/H) HARDENER / DENSIFIER if required. Lightly broom out any puddles right after the material has been sprayed so the surface is uniformly wet for a minimum of 20 minutes. IMPORTANT-never let surface dry until steps 2 & 3 are completed

b. Step 2. After 20 minutes, spray water on the surface (saturating the entire surface—it is critical not to let any section of the surface dry prior to completing (step 3). This will allow a more consistent uniform finish

c. Step 3. Clean and remove excess residue with either a scrubber or manually.

i. SCRUBBER INSTRUCTIONS: We strongly recommend that you use a scrubber, equipped with a Red or Blue pad (Blue pads are more aggressive and should only be used if you have determined they will not damage the surface) or brushes. With the squeegee down, the vacuum on, and light head pressure, add water, scrub, and clean the surface to remove all excess residue. Dispose of in accordance with local regulations.

ii. MANUAL INSTRUCTIONS: If no scrubber is available, while surface is wet with water, agitate with a broom to loosen any excess material that remains. Add more water if necessary. Squeegee the wastewater from the surface and dispose of in accordance with local regulations. Then repeat cleaning procedure with a second pass to insure all residue has been completely removed, i.e. salt deposits, saw-cut powder, dust, excess PENTRA-SIL (NL/H) HARDENER / DENSIFIER or any other surface contaminates.

2. Application Instructions After Joints are cut:

a. Step 1. Clean up saw cut residue from the surface using Vacuums, sweepers, blowers, or brooms. Use appropriate scrubber equipped with green or red pads, (Red pads are more aggressive and should only be used if you have determined they will not damage the surface) clean the joints to remove any residue that sweeping or blowing did not remove. Damp mop the joints and around columns to get the surface thoroughly clean. Then using a high volume, low pressure sprayer; apply PENTRA-SIL (NL/H) HARDENER / DENSIFIER to the surface evenly at the rate of approximately 12/15SqM²/L. (DO NOT OVER APPLY) Keep the surface wet with PENTRA-SIL (NL/H) HARDENER / DENSIFIER for at least 20 minutes. DO NOT LET ANY AREA DRY OUT--spray more PENTRA-SIL (NL/H) HARDENER / DENSIFIER if required. Lightly broom out any puddles right after the material has been sprayed so the surface is uniformly wet for a minimum of 20 minutes. IMPORTANT-never let surface dry until steps 2 & 3 are completed.

b. Step 2. After 20 minutes, spray water on the surface (saturating the entire surface—it is critical not to let any section of the surface dry prior to completing (step 3). This will allow a more consistent uniform finish

c. Step 3. While surface is wet with water, agitate with a broom to loosen any excess material that remains. Add more water if necessary. Squeegee the wastewater from the surface and dispose of in accordance with local regulations. Then repeat cleaning procedure a second pass to insure all residue has been completely removed, i.e. salt deposits, saw-cut powder, dust, excess PENTRA-SIL (NL/H) HARDENER / DENSIFIER or any other surface contaminates.

TOP COAT REQUIREMENT

Use either PENTRA-GUARD® (HP) High Performance Gloss, Stain and Wear Protection Finish or with PENTRA-SIL® (CG) 244+ Color Guard Penetrating Protective Surface Treatment. See system specifications and individual Product Data Sheets or visit www.convergent-group.com .

CUSTOMER SERVICE:

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

CLEAN UP

Use water soap and water to clean tools and equipment. Pentra-Sil® (NLH) treatments are environmentally friendly and require no special or hazardous disposal methods.

MAINTENANCE

- Routine sweeping, mopping, washing and mechanical scrubbing of floors with neutral pH
- Cleaners or plain water is recommended.
- DO NOT USE acidic cleaners to maintain the floor. Although Pentra-Sil® (NL/H) 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, check with a Convergent Group technical representative. Regular maintenance will improve 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, “power sweeper” to remove dirt and dust off the surface. Please consult the “manufacturer” to inquire about surface preparation and recommendations. Always test adhesion and performance for suitability and desired results before overall application.

AVAILABILITY

Treatments must be applied by an “Authorized Applicator” or “Licensed Field Service Specialist.” Pentra-Sil® (NL/H) concrete treatments are available from Factory Direct Concrete Floor Care Centers or through direct “Authorized Applicators” from our plant and warehouse in Viroinval, Belgium. For the name and telephone number of your nearest Pentra-Sil® (NL/H) representative, call our customer service department listed on the back page.

COST

Pentra-Sil® (NL/H) treatments are competitively priced. Costs will vary from region to region. A Pentra-Sil® (NL/H) representative can provide price information or assist in contacting the nearest Pentra-Sil® (NL/H) 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 +32 60 391 722 or +32 60 391 723. Email: technical@convergent-group.com or go to: www.convergent-group.com

FILING SYSTEMS

Architects' First Choice®
MANU-SPEC®
Sweet's®
Arcat®

HEALTH AND SAFETY PRECAUTIONS

Pentra-Sil® (NL) is an aqueous Nano-Lithium polysilicate 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. 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- Sil® (NL/H) will etch glass and painted surfaces. Immediately wash off all overspray from glass and painted surfaces. Caution: Surfaces wet with Pentra- Sil® (NL/H) may result in a slippery surface

FOR INDUSTRIAL/COMMERCIAL USE ONLY. PENTRA-SIL (NL/H) MUST BE USED IN CONJUNCTION WITH A TOPICAL SURFACE PROTECTIVE TREATMENT--NOT AS A STAND ALONE PRODUCT.

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.

TECHNICAL SERVICE

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For medical emergencies only, call Infotrac (352) 323-3500

CUSTOMER SERVICE:

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

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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 MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and Convergent Group 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 Group 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 GROUP 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.

IMPORTANT NOTICE:

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