Technical Data Sheet
Anti-bacterial coating -Anti-VRL

Product Information

NanoEnzo Anti-VRL Antimicrobial/Antiviral Coating prevents the growth of a wide array of viruses and bacteria. Unlike disinfectants that are effective at killing harmful organisms only once at the time of application, NanoEnzo Anti-VRL works by continually destroying bacteria and viruses that are deposited onto the surface. The nano coating has a "kill rate" of 99.9% making it one of the most effective protection coatings available.

The silane base at one end of the antimicrobial/antiviral molecule creates a strong bond with the surface of the substrate, both porous and non-porous, forming a highly durable protective coating.

Application Surfaces

- All types of surfaces

Benefits & Key Features

- Breathable
- Fluor free
- Antiviral/Antibacterial
- Suitable for indoor and outdoor use
- Preserves the natural look and texture
- Eliminates the need of continual disinfection of surfaces

Specifications

Packaging	1-5-30 L
Appearance	Yellowish Liquid
Consumption	Absorbent: 60-90 mL/m^2
	Non-absorbent: 6-10 mL/m^2 (Manual Application)
Density @23°C	0,81 g/cm^3
pH Value	4.7-5.0
Application Temperature	+5°C to +45°C (≤50% RH)
REACH Compliance	Yes

Durability

Up to 1 Year

Effectiveness

Organism type	**Effectiveness %**
E. Coli	99,99
Algae	99,99
Influenza A (H1N1)	99,9
Coronavirus (Covid-19)	90 (After 30 days)

Instructions

Surfaces should be dry and free of any dust, oil, grease and other contamination.

Application should be made in a shaded and well-ventilated area.

Manual Application

*It is recommended to try on a small area before covering the entire surface.

- For hard/smooth/non-absorbent surfaces;
  Spray the product onto a 0.5 m^2 area in the essential amount with a trigger bottle.
  The surface should be buffed immediately with NanoEnzo microfiber cloth in circular motions.
- For absorbent surfaces;
  Spray the product onto the surface in the essential amount with a trigger bottle.

Pressurized Spraying

* It is recommended to apply it to the final product after the trials are made and the optimum parameters are found.

- For hard/smooth/non-absorbent surfaces;
  HVLP spray guns with 0.8 mm nozzle diameter should be preferred.
  The distance between the surface and nozzle can be chosen between 15-30 cm depending on the other parameters.
  Spraying pressure can be chosen between 4.5-5.5 bar depending on the other parameters.
  The product should be sprayed onto the surface in the essential amount with a fine atomization.
- For absorbent surfaces;
  Any type of spraying systems capable of applying homogeneously can be preferred.
  A nozzle diameter of 1-2 mm is suitable.
  The distance between the surface and nozzle can be chosen between 10-20 cm depending on the other parameters.
  Spraying pressure can be chosen between 1-1.5 bar depending on the other parameters.
  The product should be sprayed onto the surface in the essential amount with a fine atomization.

Curing

Room Temperature Curing

Dry to touch: 6 h at 23°C - 50% RH

Fully curing: 24 h at 23°C - 50% RH

Accelerated Curing

It is possible to accelerate the curing process by applying heat by choosing the appropriate time and temperature according to the surface type.

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Application Tips

Ensure that the temperature and relative humidity (RH) of the application space are as close as possible to the given values to achieve the highest product performance.

If the ambient temperature or relative humidity value is higher than the suggested intervals/values, the product may cure faster than expected.

Avoid direct sunlight during the application and only work on cool surfaces.

If necessary, prepare the surface by applying NanoEnzo Clean to remove any dust or contamination and dry with a clean, lint-free microfiber cloth prior to use of the product.

Shake the product gently before use.

Always test the product on a smaller area out of sight before working on larger areas to observe further effects and compatibility with material(s).

If product contacts with incompatible materials, wipe it off immediately with a dry and clean microfiber cloth.

Be careful of over spraying while working on sensitive textiles and woven to prevent sagging/deformation.

Ventilate the space/interior well for following hours of application.

Product is also suitable for fabric and textile material that is already coated with a water repellent product.

Manual Application

For non-absorbent, hard and smooth surfaces;

Do not work on areas larger than 0.5 m^2 per session. Coincidence of coating areas during the application does not constitute any problem.

Before using the product, wear protective nitrile gloves.

Do not forget to keep the lid closed during the application.

To make the most of microfiber cloths, fold each one four times before application, and do not re-use the side of the cloth you used.

If the coating dries by itself on the surface until you buff or if you don't buff the surface sufficiently and because of that a hazy look occurs, immediately apply a little bit more product onto that spot and buff it again to solve the visual problem.

High Pressure Spraying

For non-absorbent, hard and smooth surfaces;

The product should be sprayed with a fine atomization.

The surface should look homogeneous after the application. There shouldn't be any haze/marks on the surface.

If you had a wet looking surface after the application and because of that saw dots/marks on the surface, you can;

- Decrease the flow rate
- Increase the spraying distance
- Increase the spraying pressure
- Expand the pattern
- Increase the line speed

If you couldn't apply enough amount and couldn't obtain a good repellency, you can;

- Increase the flow rate
- Decrease the spraying distance
- Decrease the spraying pressure
- Narrow down the pattern
- Decrease the line speed

Curing

When the coated surface is dry to touch, it can be handled/packed. Fully curing process will continue.

Even if you apply a heat treatment to accelerate the curing process, keep the coated surface away from water/contamination for 24 hours and don't perform harsh tests on it.

Care and Maintenance

Do not wash coated surface with harsh detergents. To maintain maximum performance we recommend reapplication every 3 to 4 months or as required in harsh conditions.

Storage

To achieve high quality of coating, keep the containers tightly closed in a dry, well-ventilated space away from heat and ignition sources, stored at -3°C to +30°C. Shelf life of product is 12 months from date of production when stored in unopened container under suggested storage conditions. After opening the container, it is recommended to consume the product within 1 week.

Removal

Once the product is cured, it is very difficult to remove it from the surface. In such a case, for hard and smooth surfaces, product removal can only be achieved by polishing with a special cutting compound. To avoid any harmful consequences generated due to the surface correction process, read the instructions carefully and watch application videos on NanoEnzo web site.

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Disclaimer

The technical information described in this document is based on tests and other practical experiences that NanoEnzo believes are reliable. NanoEnzo can not guarantee anything but the ready-to-use quality of the product at the time of shipment, and disclaims any liability for product performance and incidental or consequential damages, according to self-implementation within the user's knowledge, beyond the manufacturer's control. Please refer to the Safety Data Sheet (SDS) before the use of the product.

Users should consult NanoEnzo for guidance on the suitability of specific applications. NanoEnzo reserves the right to change the given data without further notice.according to self-implementation within the user's knowledge, beyond the manufacturer's control. Please refer to the Safety Data Sheet (SDS) before use of product.