TECNAN

TECNOLOGÍA NAVARRA DE NANOPRODUCTOS, S.L.

ADVANCED NANOTECHNOLOGICAL PROTECTION SOLUTIONS

Think Big, Act Nano

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I. Introduction

TECNAN main building in Los Arcos (Navarra)

I.I. Who we are

TECNOLOGÍA NAVARRA DE NANOPRODUCTOS, S. L. (TECNAN), was founded in December 2007, solidly supported by the innovative technologies developed at the **Lurederra Technology Centre,** a private research centre applied to industry and with proven national and international experience in the industrial application of nanotechnology, which also participates in the company's capital.

In recent years they have jointly developed totally innovative production lines, obtaining production systems of their own design, unique in the world. This fact has allowed TECNAN to **develop and manufacture exclusive products for large-scale consumption,** which have a successful impact due to the advantages and benefits they offer.

I.II. Our goal

TECNAN was created with the aim of **converting the raw materials produced, nanoparticles, into mass consumption products, both for professionals and end consumers.** Providing added value to the services and products offered by companies in the market, as well as facilitating the day-to-day life of end consumers.

I.III. What makes us different

1. **OWN DESIGN PRODUCTION TECHNOLOGY:** The production methods developed by TECNAN are singular in the market and are based on own tools and designs. These processes are unique in the world, both for the production of highly sophisticated nanoparticles (with a production capacity of 10 Tn/year) and for the manufacture of consumer products based on nanotechnology and advanced chemistry.

2. **HIGH QUALITY COMPLEX NANO OXIDES:** Available for very specific applications.

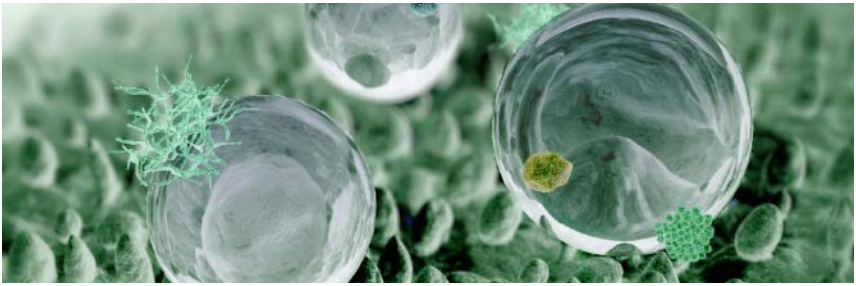
3. **INTENSIVE R&D COMPANY:** Constant development of new products and applications, involvement in international research projects and technical support from a R&D department of over 35 technicians.

4. **GREAT VERSATILITY & FLEXIBILITY:** Customised products for specific uses (adjustment of tone, colour, additional properties, etc.).

I.IV. Our technology

The use of own nanoparticles is what creates the main difference and competitive advantage of TECNAN products.

- The nanoparticle is the active compound that enhances the surface effects: hydrophobicity, stain repellency, easy cleaning, etc.
- The intrinsic properties of these raw materials, their small size and large contact surface area, make the products more effective, thus breaking with the traditional use of chemical compounds.
- Their size is so small that in porous materials, in no case can they obstruct, close or modify the microporosity of the substrates.
- Technological revolution, based on advanced nanotechnology, which creates a non-filmogenic 3D protection, which does not seal, does not react chemically and does not modify the colour of the substrate.



I.V. Our business

TECNAN produces and commercialises new raw materials, **high performance nanoparticles,** for several industrial applications, as well as **ready-to-use products, based on nanotechnology and advanced chemistry,** for different markets, both nationally and internationally.

Firearms

Industrial

Textile and Footwear Solar Energy

Automotive

Rehabilitation, Conservation and Construction

Practicality, innovation and high technology have enabled TECNAN to manufacture and commercialise unique products that have become market leaders in their respective fields of application.

II. Gun Protection with bluing effect

II.I. Tecnan Blue Range

Nano ceramic protectors for guns with bluing effect (no heat required)

TECNAN BLUE is a **nano ceramic protector for guns with bluing effect (no heat required)** that creates a hard and resistant ceramic coating. It has been designed to repair and protect the metal parts of any type of guns.

- **Based on a dispersion of** high hardness **ceramic nanoparticles,** providing maximum hardness and anti-corrosion properties.
- **Room temperature curing,** no heat is required. However, complete curing can be accelerated at temperatures of 140-150°C for 1 hour.
- **Protection from external agents** such as weathering or other corrosive agents.

It can be directly applied over metal parts of guns: barrel, slide, body, cylinder, etc. It is **compatible with steel, aluminium, stainless steel and alloys.**

MAIN FEATURES

- ✓ Great **adhesion**.
- ✓ **Years of durability** and excellent coverage.
- ✓ **Maximum hardness.**
- ✓ **High resistance** to scratches, oils and solvents.
- ✓ **Anticorrosion**: Excellent protection against corrosion and weathering.
- ✓ Available in **different colours and packaging.**
- ✓ **Easy application** by spraying.
- ✓ Final coating thickness of **10-20 µm (microns)**, approximately.
- ✓ **It is possible to re-apply the product and repair** damaged areas, without having to remove previous coating remains.

AVAILABLE COLOURS

Available formats

200ml

250ml

1L

5L

- **AEROSOL**: 200ml for domestic or amateur use. Approximate yield between 1 and 2 standard size shotgun barrels.

- **BULK**: 250ml, 1L or 5L for professional use. Spray gun/airbrush is required for application. Approximate yield between 10-20m²/l.

Technical data

PARAMETERS	VALUES
Solids	20-40 %
Viscosity	20-40 Cps
Density of the product	0,85-1 g/l
Health and safety	PFAS-free and Carcinogenic free
Recommended coating thickness	10-20 µm
Adhesion	0 (ISO 2409) / 5B (ASTM D3359)
Hardness	9H (ISO 15184)
Corrosion Resistance (Thickness 20µm - Metallic Grey)	>2.000 Hours (ISO 9227)
Abrasion Resistance	20.000-30.000 cycles (ISO 11998)
Chemical Resistance	Excellent
Coating Stability Max. Temp.	250°C

**TECNAN BLUE is not affected by Regulation (EC) 1005/2009 on substances that deplete the ozone layer.*

CHEMICAL RESISTANCE
THERMAL STABILITY
IMPACT

HARDNESS
CORROSION
UV STABILITY

How to use it

1. **Disassemble** the firearm.
2. **Remove any trace of dirt, oxidation or corrosion:**
   - For surfaces with minor oxidation or corrosion, use a brass brush, brass steel or steel wool (medium or fine).
   - For surfaces with more severe oxidation or corrosion, more abrasive mechanical means can be used, such as light sandblasting with aluminum oxide (100-120 grit) and a working pressure of 5.5 to 7 bars or suitable polishing brushes.
3. Perfectly **clean and degrease** metal surfaces.
4. **Application:** Apply evenly over the surface, avoiding overspray as far as possible.
   - Aerosol: Spray over the surface at a distance of 25-35cm, keeping the container in a vertical or slightly inclined position.
   - Spray gun/airbrush: Spray evenly over the surface.
5. **Curing:**
   - At room temperature: Let it dry for a minimum of 4 hours. Full curing will be achieved in 2-3 weeks.
   - Oven: At 140-150°C for 1 hour.

Example of restoration with TECNAN BLUE (Matt Black). The photo above, before the process, and the photo below shows the final result.

III. Metals protection

III.I. Tecnadis Multicoat Anticorrosion

Nano ceramic protector with anti-corrosion properties for metals.

TECNADIS MULTICOAT ANTICORROSION is a nanoceramic protector of high hardness and high corrosion protection for metals (C5 High). It is based on a dispersion of ceramic and metallic nanoparticles in a complex matrix composition designed to achieve maximum mechanical resistance, chemical protection and scratch resistance, as well as unbeatable cathodic protection, combined with high durability both in stock and once applied.

MAIN FEATURES

- **High corrosion protection, C5 High** (meets the criteria of tests carried out on carbon steel based on the UNE EN ISO 12944-6:2018 standard).
- **Single-component product**, no mixing required.
- **Adjustable thickness d**epending on the desired corrosion protection, varying from approximately **15-25 microns.**
- **High adhesion** (0 (ISO 2409) / 5B (ASTM D3359)).
- Provides **maximum hardness** (9H - ISO 15184).
- **Easy application** by compressed air gun or airless type.
- **Excellent resistance** to solvents and cleaning products.
- **Resistant** to temperatures of **140-150°C.**

Available formats

All products are available in 400ml aerosol and in bulk, in 1L bottles or 5L jerry cans.

RECOMMENDED SYSTEM

- **SINGLE SYSTEM**: Tecnadis MULTICOAT ANTICORROSION PRIMER or FINISH as a single coat.
  - Category C4 High: dry thickness 15 microns.
  - Category C5 High: dry thickness 25 microns.

These categories correspond to the criteria of tests carried out on the basis of UNE EN ISO 12944-6:2018.

- **DUPLEX SYSTEM**: Tecnadis MULTICOAT ANTICORROSION PRIMER used as a primer and combined with other coatings. For duplex system and C5 High protection, the following is recommended:
  - Primer: Tecnadis MULTICOAT ANTICORROSION PRIMER: 15 microns.
  - Finish: 2-component polyurethane enamel: 50 microns.

How to use it

1. **Remove any trace of dirt, oxidation or corrosion.**
2. **Clean and degrease:** The surface to be protected must be completely clean and dry before application.
3. **Application:** Spray evenly over the surface until the desired finish is achieved. It is recommended to apply the product by using a compressed air or electric gun, airless type, or automated systems.
4. **Dry-to-touch:** 4 hours. Good performance after 24 hours.
5. **Full curing:** 1-2 weeks. It is also possible to cure it completely in **oven**: 120-130°C for 1 hour.

APPLICATIONS

It can be used in a wide variety of applications where high protection against corrosion is required, for example:

- INDUSTRIAL MAINTENANCE: paint booths, painting tools, metal structures, tanks, tools, etc
- AGRICULTURAL MACHINERY: components of mistblowers, pneumatic sprayers, dusters, boom sprayers, etc.
- OFFSHORE metal structures and wind turbine components
- VEHICLE COMPONENTS: rims, chassis, bodywork components, etc.
- URBAN MAINTENANCE AND INFRASTRUCTURE: benches, litter bins, lampposts, children's playgrounds, public toilets, sculptures, MUPIS, etc.

RANGE OF TECNADIS MULTICOAT ANTIOCORROSION

- Tecnadis Multicoat Anticorrosion **(Primer)**: It is used as an **anticorrosive** primer in a solution made up of several layers of coatings.
- Tecnadis Multicoat Anticorrosion **(Finish):** It is used as a last coat, without the need to use a primer. In addition to protecting against **corrosion**, it provides **non-stick properties.**

PRODUCT	COLOUR	NON-STICK	ANTICORROSION	THICK-NESS (µm)	YIELD (m^2/l)
PRIMER	Metallic grey	✗	✓✓ C4-C5 (High)	15 - C4A 25 - C5A	4-8
FINISH	Metallic grey	✓	✓✓ C4-C5 (High)	15 - C4A 25 - C5A	4-8

Example of two metal parts exposed to corrosion in a saline chamber, the one on the left without protection and the one on the right with Tecnadis Multicoat Anticorrosion

Example of application of Tecnadis Multicoat Anticorrosion (Primer) on a slightly oxidised surface

IV. Fabrics protection

IV.I. Coatex Range

Hydrophobic and anti-stain nano protection for fabrics and leathers

The products in the Coatex range are **hydrophobic and anti-stain nano protectors, eco-sustainable,** for fabrics and leathers, **highly repellent to water and other liquids. They significantly reduce water ingress and facilitate the cleaning of stains**, creating an invisible protective film that repels liquids and prevents them from penetrating into fabrics.

The Coatex Range is made up of two products with similar features, but with different functionalities:

COATEX: Hydrophobic and anti-stain nano protector for all types of fabrics.

COATEX CALZADO: Hydrophobic and anti-stain nano protector for footwear.

Available in formats of 125ml, 500ml, 1L, 5L and 25L.

Example of water repellent effect in shoes treated with COATEX CALZADO.

Example of water repellent effect in fabrics treated with COATEX:

Water repellent effect

Stain repellent effect

MAIN BENEFITS

- **Eco-sustainable,** available in both water and solvent based.
- **Hydrophobic,** repelling the entry of liquids.
- **Anti-stain,** facilitating cleaning of stains and stickers.
- **Breathable**, non-filmogenic, compatible with GORE-TEX® membranes.
- **Colourless,** the finish and texture of the fabrics are not affected nor become compacted.
- **Nanotechnology-based** products free of PFOA and PFOS.
- **Improved fabric maintenance,** both in the final product and in the manufacturing process.
- **Easy application,** by spraying.
- Fully **re-applicable.**

How to use it

More Info

1.

PREPARATION: Before applying any product from the Coatex Range, it is recommended that the fabric to be protected is clean.

2.

SHAKE AND SPRAY: Shake the container and spray evenly over the entire fabric. The average product yield is 6-8 m^2/l.

3.

LET IT DRY: It is recommended to let it dry before handling. The optimal drying time is 12 hours, although it can be accelerated using a dryer, a heat source or direct exposure to the sun.

V. Glass protection

V.I. Tecnadis GWR

Rain repellent for vehicle windscreens

Tecnadis GWR is an **innovative rain repellent treatment for vehicle windscreens**: car, lorry, bus, train...

Thanks to its **hydrophobic** effect (water repellency), raindrops barely touch the surface of the glass, and when driving at a speed of more than 60 km/h, they disappear quickly, without the need to use windscreen wipers. The result is **better visibility behind the wheel in heavy rain.**

Additionally, it also protects surfaces from the accumulation of dirt, insects, dust and other incrustations, such as ice, preventing its adhesion down to -5°C.

MAIN FEATURES

- ✓ **It repels rainwater,** increasing **visibility** and, consequently, **safety** behind the wheel.
  - *It decreases reaction time by more than 1 second thanks to better visibility (equivalent to 27 meters of displacement at a speed of 100 km/h). Therefore, safety increases at high speeds, when more accidents occur.*
  - *It improves day and night visibility in situations of heavy rainfall, approximately 34% in terms of minimum visual angle. It increases visibility even when the vehicle remains stationary.*
- ✓ **Anti-icing:** It protects from ice, avoiding its adhesion to the glass and eliminating the need to scrape (down to -5°C).
- ✓ **High durability**: Up to 12 months / 20,000km*. The product remains active for approximately 10-12 months, depending on driving conditions, clearly surpassing other products on the market.
- ✓ **It facilitates cleaning**: Insects, dust and other incrustations.
- ✓ **Easy and fast application**: Less than 5 minutes.
- ✓ **Invisible**: It does not form a film, nor does it leave residues on the glass.
- ✓ **Anti-UV**: It is not affected by exposure to UV rays.
- ✓ **It does not release hydrochloric acid**: It can be applied in any environment.
- ✓ **100% compatible with the materials adjacent** to the vehicle windscreen.
- ✓ **PFOA** and **PFOS** free.

**A more economical version with less durability is available: TECNADIS GWR ECONOMY.*

Example of the hydrophobic effect of TECNADIS GWR on a car windscreen.

Treated windscreen - Better visibility *Untreated windscreen - Poor visibility*

Available formats

Single use wipe

50ml

500ml

1L

5L

More Info

How to use it

1.

CLEANING: Before applying TECNADIS GWR it is important that the surface to be protected is completely clean, free of dirt and dry.

2.

SHAKING AND SPRAYING: Shake the container and spray it evenly over the entire surface. The product average yield is 10-15ml per windscreen.

3.

SPREADING AND POLISHING: Immediately afterwards, spread it evenly with a microfibre cloth or paper until it is completely transparent.

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