VETRO POWER | NANO EVERO Advanced Nanocoating | PFAS FREE

Technical Datasheet

Vetro Power NANO-EVERO Weapon Nanocleaner

Advanced Water-Based Deep Cleaner for Firearms
Basis: Water-based inorganic-organic formulation

1. General Description

Vetro Power NANO-EVERO WEAPON NANOCLEANER is a highly effective, water-based nanocleaner designed for deep cleaning of firearms and sensitive weapon components. Its formulation delivers strong penetration into carbon, oil, and combustion residues, breaking them down at the molecular level for easy removal. In addition to cleaning, the product offers light corrosion protection for treated surfaces.

2. Material Information

Basis	Combination of water based inorganic-organic cleaning agents
Look	Greenish/translucent liquid
pH-Value	4.0
Active Agent	70% by weight
Viscosity (DIN 53211)	n.d.
Thinning	Ready to use formula
Application	10-100 ml/m2 (depending on surface/application)
Handling	See MSDS
Shelf Life	Min. 12 Months
Storage temp.	+5°C - +25°C (Store dark and frost resistant. Highly flammable f+)

3. Application Instructions:

Internal Barrel Cleaning:

- Begin by thoroughly cleaning the weapon with a recommended firearm cleaner. Ensure the barrel interior is clean and free of combustion residues.
- Apply a small amount of Vetro Power NANO-EVERO Weapon Nanocleaner directly into the barrel via spray or dropper.
- Use a barrel brush to distribute the cleaner evenly along the inner surface. Only a light coating is required. Avoid overuse.
- Let the product sit for a few minutes to react with the embedded residues.
- Re-brush the barrel to dislodge loosened particles.
- Follow up by pushing a clean tissue soaked with a small amount of the nanocleaner through the barrel to clear remaining deposits.

External Surface Cleaning:

- Apply a small amount of Vetro Power NANO-EVERO Weapon Nanocleaner to a fresh tissue.
- Wipe down the exterior of the barrel and grip surfaces.
- A light wet film will effectively lift and remove fingerprints, oils, and other contaminants.

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | ✉ customercare@vetropower.com | www.vetropoweramc.com

Vetro Power NANO-EVERO Dry Plate UV PCB Protection

Corrosion & Humidity Shield with Dry Film Finish
Basis: modified polymers, complex building agents, anti-corrosion additives and auxiliaries.

they contain neither free or volatile isocyanate nor free isocyanate groups.

The wetting of critical points such as sharp-edged component pins is also achieved without the addition of a wetting agent, since the solvents used have a lower surface tension.

3.1 Special viscosity settings

The protective coatings are adjusted to different viscosities, which are particularly suitable for selective coating systems and for dip coating. Coordination with the individual system technology is recommended. Appropriate preliminary tests must nevertheless be carried out.

4. Safety Instructions

Read our safety data sheets according to EWG 91/155. There you will find detailed information and key figures on occupational safety and environmental protection as well as on transport, storage, handling and disposal. Observe the generally accepted precautionary measures when handling chemicals. Also observe the operating instructions and the technical rules for flammable liquids (TRbF) and their successor regulations.

5. Properties

The finishing varnishes of the Vetro Power NANO-EVERO Dry Plate UV PCB Protection series are particularly characterized by the following properties:

- Good adhesion to all substrates without pre-treatment.
- Moisture resistance and insulation resistance
- Resistance to oil /cleaning agents/ most solvents
- Non-combustibility (in the evaporated/cured state)
- Easy and safe processing

6. General characteristics

- Free from aromatic solvents (e.g. benzene, toluene and xylene)

- Meet the requirements of the "lead-free directive" (EU - end-of-life vehicle directive 2000/53/EG): free of lead, cadmium, chromium (VI) and mercury compounds

- Do not contain any of the substances specified in the RoHS Directive 2002/95/EC*

- Due to the special composition of the solvent, there is almost no risk of components and identification colors being dissolved

- After the application of the paint, there is a very good flow and after hardening an even, non-porous film
Safe covering, e.g

- High surface hardness of the cured paint film;
This significantly reduces the risk of mechanical damage during further processing

- Very good aging resistance

- Excellent corrosion protection due to the very good resistance to moisture, especially to condensation water with excellent dewatering properties as well as antioxidants and metal deactivators

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | ✉ customercare@vetropower.com | www.vetropoweramc.com

Vetro Power NANO-EVERO Dry Plate UV PCB Protection

Corrosion & Humidity Shield with Dry Film Finish
Basis: modified polymers, complex building agents, anti-corrosion additives and auxiliaries.

• Free from halogenated flame retardants

• Can be soldered out or through for repair purposes at soldering iron temperature

Vetro Power NANO-EVERO Dry Plate UV PCB Protection types can be removed for repair purposes and also be recoated.
*Lead, mercury, cadmium, chromium (VI), polybrominated biphenyl (PBB) or polybrominated diphenyl ether (PBDE); RoHS Directive 2002/95/EG on the restriction of the use of certain hazardous substances in electrical and electronic equipment (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)

7. Processing

The top coats of the **Vetro Power NANO-EVERO Dry Plate UV PCB Protection** series can be applied by dipping, brushing, spraying or with the help of automatic, selective coating systems. Make sure the surface to be painted is clean, grease free and dry.

Note that any kind of ionic contamination has a negative effect on the electrical properties, especially under severe climatic conditions. Therefore, clean the assembly of flux and other contaminants or ensure by appropriate testing that you achieve the properties you want.

In principle, when processing top coats, the goal should be an even coat of paint that is not too thick (see also point 7.5 "Double paintwork"). The dry layer thickness on surfaces should be between 1,000 - 20,000 nm and on component pins (conical base points) no greater than max. 30,000 nm. These values can be achieved with professional processing and drying/curing.

• Therefore, please note the following information under Points 7.1 to 7.5.

• After coating and drying/curing, it is essential that you test your assembly group manufactured under series conditions under your operating conditions.

• During processing, it is essential to observe the safety instructions in the accident prevention regulation "Processing of coating materials" (VGB 23, in future BGV D 25) and in the explosion protection rules (BGR 104).

7.1 Viscosity adjustment

Each application method requires a special processing viscosity in order to achieve an optimal coating result. The processing viscosity is adjusted by adding the appropriate thinner. Processing in the delivery condition is generally possible.

• Adjust the processing viscosity for the respective application method and keep to the recommended processing temperature.
Processing temperature range: 15 – 25°C

In case a protective coating is processed below the specified temperatures, the drying time may be longer and the viscosity increases significantly, making the coating very difficult to process. When a thinning agent is added, the drying time is further reduced and the solids content decreases, so that the paint layer becomes thinner.
Temperatures above the specified temperature range cause the viscosity to drop sharply and the paint takes too long to dry. This means that the film starts to form too quickly and the paint no longer runs optimally.

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | customercare@vetropower.com | www.vetropoweramc.com

Vetro Power NANO-EVERO Dry Plate UV PCB Protection

Corrosion & Humidity Shield with Dry Film Finish
Basis: modified polymers, complex building agents, anti-corrosion additives and auxiliaries.

7.2 Cleaning of Equipment

For cleaning the workplace and equipment, we recommend the use of aromatic free special petrol.

Do not use the detergent to clean your hands. Solvents remove the natural fat from the skin.

7.3 Manual Application

The top coats of the **Vetro Power NANO-EVERO Dry Plate UV PCB Protection** series can be applied with a brush/tissue. This process is particularly suitable for repair work and small series, as the paint can be applied selectively. However, uneven layer thicknesses can result here.

7.4 Automatic/Machine Application

7.4.1 Spraying using compressed air spraying

Recommended processing parameters:

Air pressure	Spray nozzle diameter
2.5 - 4 bar	0.8 - 1.5 mm

When working with the compressed air spray method, you must observe the safety instructions in the accident prevention regulation "Processing of coating materials" (VGB 23, in future BGV D 25), especially Section IV Operation (§§ 17 - 22) and in the explosion protection rules (BGR 104).

When processing by spraying or splashing, you must take protective measures to prevent the formation of explosive solvent-vapour mixtures. During the drying/curing of hardening paint systems, reaction heat is generated which can ignite filter mats soaked with paint and solvent residues in paint booths. Use water-sprinkled spray booths to avoid the risk of self-ignition in the filter mats. Also observe the condition and maintenance instructions of the spray booth and filter mat manufacturers.

7.4.2 Dip coating

The prerequisite for dip painting is that the object to be painted can be fully or partially immersed. The layer thickness achieved depends on the flow behavior and the viscosity of the paint, but also on the geometry of the components and the exchange speed. The immersion speed and the dwell time in the dip tank depend on the assembly geometry: Reduce the immersion speed or set a dwell time in the dip tank if air bubbles can form between the circuit board and the components.

• The risk of air bubbles forming is increased by high paint viscosity. You should therefore always adjust the top coat to the immersion viscosity. If necessary, reduce the exchange speed, so that less paint is used.

• If necessary, reduce the dip speed so that less paint drips off and the thickness of the paint layer is more even.

• After the dip, allow excess paint to drip off by rotating and tilting the PCBs 30° if possible.

• In this way, a drip tip is created so that drip residues remain only there. Make sure the plunge pool is protected from contamination: Only use clean auxiliary equipment.

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | customercare@vetropower.com | www.vetropoweramc.com

Vetro Power NANO-EVERO Dry Plate UV PCB Protection

Corrosion & Humidity Shield with Dry Film Finish
Basis: modified polymers, complex building agents, anti-corrosion additives and auxiliaries.

• Cap or seal the plunge pool when not in use.

• Clean the dip tank regularly, as e.g. flux also accumulates in the dip tank.

• Replace the paint with fresh paint if you have to add increasing amounts of thinner in order to adjust the processing viscosity (e.g. after longer periods of non-use).

7.4.3 Automatic selective coating

By using automatic selective coating systems, it is possible to cover defined areas of the printed circuit board with an even film of paint. We would be happy to give you the names of efficient manufacturers of such systems and job coaters.

7.5 Double Coating

In general, you will achieve optimal layer thicknesses if you process the coating according to the conditions given above. Thick layers, such as those that occur when processing the undiluted medium, should be avoided for the following reasons: Thick layers dry very slowly. In addition, inclusions of solvents can occur, which can have a negative effect on the final properties, such as adhesion and electrical insulation. Also, when the temperature changes, cracks can form in the paint layer, which significantly impairs the function of the flat assemblies, particularly under the influence of moisture. There is a particular risk of too thick paint layer when using brushing and spraying or when processing in the delivery viscosity.

When processing in the as-delivered condition, make sure in any case by carrying out preliminary tests that you achieve the desired paint properties.

However, if high layers of paint are required, a double coating is possible. The second coating is possible at the following times:

• after a short drying of the first layers of paint,
• after 30 min. drying at 20 – 30°C,
• after at least 24 hours drying at room temperature

Please keep in mind that very thick layers of paint, e.g. on drip edges, can lead to wrinkling. Complete curing (6 hours at room temperature) is necessary before the second coat can be applied in order to avoid wrinkling in these areas with a thick coat of paint.

7.6 Protective coating and increased exposure to moisture

Depending on the type of pre-treatment/cleaning before painting, residues may remain on the assembly. In case of increased moisture is to be expected, osmosis phenomena can occur. In the worst case, this can lead to loss of adhesion and/or blistering.

• Carry out preliminary tests if you expect increased exposure to moisture.

7.7 Verifying the coating process

To verify a homogenous application of the coating, use UV light.(395 nm - 280 nm)

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | customercare@vetropower.com | www.vetropoweramc.com

Vetro Power NANO-EVERO Dry Plate UV PCB Protection

Corrosion & Humidity Shield with Dry Film Finish
Basis: modified polymers, complex building agents, anti-corrosion additives and auxiliaries.

8. Drying/Curing

Drying/hardening takes place at room temperature or in warm air drying systems and takes place in two steps. The first step is physical drying (evaporation of the solvents) and the second step is oxidative hardening ("oxidative drying", absorption of atmospheric oxygen).

• Physical drying

The following values apply to a wet film thickness of max. 50 µm (corresponds to a dry film thickness of around 25 - 30 µm).

At room temperature (approx. +23°C)	in circulating air drying systems with circulating air (25°C)
approx. 2-4 hours	1 hour - 2 hours

Due to the necessary absorption of oxygen, curing at room temperature is completed at the earliest 4-6 hours after the material has become non-tacky.

Once tack-free, wait at least 12 hours to cure at room temperature before testing electrical properties or hermetically encapsulating the components.

• Temperature Curing

Hardening can be accelerated in circulating air at a maximum of 40 °C. Higher temperatures can cause hairline cracks in the coating.

• Curing time (at 40°C) 15 min - 45 min

Please also check the temperature resistance of the printed circuit board and the assembly.

Check electrical properties to ensure curing is complete. The time required for curing in the convection oven depends, among other things, on the component geometry, layer thickness, oven load, etc.

9. Standard Packing

The Vetro Power NANO-EVERO Dry Plate UV PCB Protection series finishing varnishes are supplied in the following packaging:

- 10 liters PE canister
- 30 liters PE canister
- 200 liters tin barrel
- 500/1000 L IBC container

On special request, it is also possible to provide a concentrate.

10. Shelf Life

Cool and dry storage is recommended. Shelf life in unopened original containers is at least 12 months. Storage temperatures below +5 °C or above +25 °C impair storage stability.

11. Miscellaneous

Due to its 100% biodegradable features (in cured state) , foodstuff / foodsafe/ drinkwater certification is generally possible

Warning Advice: We recommend wearing suitable protective clothing. In case of contact with skin, immediately rinse off with water. Do not swallow. Avoid contact with eyes. In case of contact with the eye or mucosa, immediately rinse off with water. In the event of symptoms occurring, seek medical treatment. Keep out of reach of children!

General advice: Do not inhale atomised spray and the liquid product.

Zyax Chem PVT LTD is not liable for damages to the product, as a result of dirt entering the bottles and canisters, e.g. after opening the containers. Zyax Chem PVT LTD is also not liable for improper application of the product if the surfaces have been recoated for any reasons, without Zyax Chem PVT LTD's prior written agreement, nor for any damage to or deterioration of the coating system arising from causes beyond the control of Zyax Chem PVT LTD, including but not limited to impact, abrasion, mechanical damage, neglect, malicious damage, fire damage, pollution and abnormal weather conditions, neither for failure associated with exposure of the coatings to abrasive, chemical substances, abrasive scouring, hydrofluoric acid and highly alkaline chemicals such as bleach, potassium hydroxide and sodium hydroxide and/or if the coated surfaces have not been maintained in accordance with the supplier's recommended maintenance procedures. All information is based on today's state-of-the-art technology. As to the above-mentioned information, we do not lay a claim to completeness, these are only to be understood as possible examples for application areas. Due to a large number of surfaces and object conditions, the buyer/user is not relieved of the duty to professionally verify, in his own responsibility, that our materials are suitable for the intended purpose according to the respective object conditions. In all other respects, our general conditions of sale apply. If the new product information is issued the validity of the old version expires.

VETRO POWER INDIA
ZYAX CHEM PVT LTD
Third Floor, Kamer Building, 38, Cawasji Patel Street, Fort, Mumbai, Maharashtra, 400001, India.
☎ +91-887-900-9911 | ✉ customercare@vetropower.com | www.vetropoweramc.com