

NanoProtech Electric

Nano protective coating against moisture corrosion & short-circuiting.

NANO PROTECH **GLOBAL**
Innovative protection from moisture and corrosion



OVERVIEW



NanoProtech Electric protects electronic devices and installations from humidity and wet conditions of all kinds. It guarantees the electric conductivity of connection assemblies and contacts even under water, without leading to the otherwise inevitable short circuit. Corrosion is prevented to a very high degree and is even suitable for flexible devices due to its oily consistency.

Based on a new kind of nano-zeolithe-technology with a slightly oily consistency, the coating crawls under rust and oxidations (binds them) and humidity, forming a three dimensional multifunctional protective barrier network at the interface.

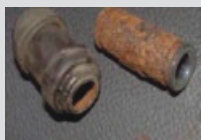
Treated with NanoProtech Electric, this wind-up extension lead withstands high pressured water spray while supplying the compressor device with electricity, all without short circuiting.



Intelligent and dynamic, the coating ensures a water repellent barrier at all time. When components are attached, the coating 'opens up' and allows electronic exchange. Detaching components then actions the coating into 'closing up' over the newly exposed metal surfaces to prevent short-circuiting.

DURABILITY

Corrosion protection:	Salt spray test according to DIN 50021 (5 cycles @ 24 hours): no traces of corrosion.
Disruptive Strength:	256 kV/cm
Temperature resistance:	Fully functional between -20 and +130°C.
Long lasting:	Minimum 1 year (Depending on mechanical strain)



Treated vs untreated sample tested over 3 months in an aggressively corrosive environment.

BENEFITS

- Long term prevention of leakage currents and short circuits
- Safety against electrocution hazard, especially for children
- Safety against electrocution for workers using electric tools in wet/humid conditions.
- Dynamic & adaptable contact agent
- Preventative solution against Corrosion Under Insulation (CUI), as the coating builds a barrier against moisture build up beneath the traditional insulation over time.
- Reduces maintenance, equipment replacement and labour costs.
- Clear finish of coating allows visual inspection of device.
- Allows for post-treatment soldering
- Fast setting time (10 mins) speeds up maintenance & installations
- Free from polycyclic hydrocarbons, fluorinated or chlorinated hydrocarbons, resins, silicones, Teflon and aromatic compounds.

TREATMENT METHODS

Applied by dipping, spraying and brushing onto devices, Can be applied almost anywhere: at manufacturing stage or on site. It can be applied to new devices or to existing corroded surfaces. The effect occurs 5 – 10 minutes after application.

Video Instructions: [youtube.com/nanoprotech](https://www.youtube.com/nanoprotech)

APPLICATIONS

Generally used anywhere where moisture and humidity causes failures, application examples include but are not limited to:

- Electrical cables, contacts, fuses which have to be protected or isolated against humidity
- Electrical equipment and facilities of all kinds
- Corrosion prone metal surfaces of all kinds such as brass, aluminium, stainless steel, raw iron, zinc, brazing solder, etc.
- Electrical plug points, adapters, connectors
- Cellphones, laptops, TV monitors, speakers
- Outdoor lighting devices, sound equipment, cameras
- Measuring devices, sensors, telecommunication aerials
- Automotive, Marine, Aeronautical electrics
- Extreme sports & outdoor research equipment

UNSUITABLE APPLICATIONS

- Sensitive aquatic life environments
- Conditions where exposed wiring will touch other conductive surfaces, eg. conventional 3-wire electrical cables require individual separation using PVC coating or insulation tape.

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NANOPROTECH OÜ,
Address: Uus-Sadama 21,
Tallinn 10120, Estonia

Phone: +372 668 32 42

[nanoprotech.com](https://www.nanoprotech.com)

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TECHNICAL SPECIFICATIONS

SUITABLE SUBSTRATES: Brass, aluminium, stainless steel, raw iron, zinc, brazing solder, etc. (Does not react with plastics, rubber, glass, varnishes, ceramics and fabrics).

PREPARATION: Preparation of highly refined mineral oils, complexing agents, inhibitors and additives, corrosion protection additives, anti-oxidants, metal deactivators as well as paraffinic and naphthalene hydrocarbons. Free from polycyclic hydrocarbons, fluorinated or chlorinated hydrocarbons, resins, silicones, Teflon and aromatic compounds.

FORM: liquid

COLOUR: green

IGNITION POINT: > 250°C

EXPLOSION LIMITS: lower: 0.6 Vol.-% upper: ~10.9 Vol.-%

SOLUBILITY IN WATER: Not soluble, not emulsifying.

DENSITY: 0.6 g/ml at 20°C (extremely high penetrability).

APPLICATION: Shake can well prior to use and spray onto device. The oil should form a closed film, excess material will drip off. If necessary, smear with piece of fabric. The effect occurs after 5 – 10 minutes.

DURABILITY: Depending on mechanical strain up to 1 year.

CLEANING/REMOVAL: Nanoland Liquid Electro Insulation is unaffected by surfactants. For removal use blank cleaner, brake cleaner or grain ethanol.

TEMPERATURE RESISTANCE: Fully functional between -20 and +130°C.

DISRUPTIVE STRENGTH:

Directly after application	After 1 h	After 100 h	Values for comparison			
			Air	Insulating oil	Glass	China
163 kV/cm	208 kV/cm	256 kV/cm	33 kV/cm	120 kV/cm	140 kV/cm	200 kV/cm

SURFACE RESISTANCE: 28.46 TΩ (1 TΩ = 10¹² Ohm) according to ISO93

CREEP RESISTANCE: Very high creep resistance due to extremely high surface resistance.

WATER DISPLACEMENT: 100% in 10 seconds.

CORROSION PROTECTION: Salt spray test according to DIN 50021 (5 cycles @ 24 hours): no traces of corrosion.

SAFETY MEASURES: When processing, the instructions and safety precautions on the container label as well as the respective safety regulations to comply with the relevant employers' mutual insurance association have to be regarded. For more information see material safety data sheet.

STORAGE: In closed original containers the product may be stored at +5 to +25°C for 12 months.

DISPOSAL: Completely emptied containers may be disposed as domestic waste. Not completely emptied containers have to be disposed according to local regulations. For further information refer to material safety data sheet.

IMPORTANT NOTE: This technical information has been compiled based on the latest state of technology and our experience. Due to the diversity of individual substrates and project conditions, however, the user is not relieved of its obligation to test our materials in a professional manner to their own responsibility for their suitability for the intended purpose under the prevailing conditions. Since application and handling are beyond our control, no liability of the manufacturer can be derived from the content of this technical information sheet. In all cases our terms and conditions are valid. In the case of a new issue this document will be invalid.

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APPLICATIONS

Nanoprotech Electric Insulation can be used wherever:

- Moisture, damp, humidity, condensation and water can cause or has already caused malfunctions and/or damage.
- Electric contacts, motherboards, fuses and switches need to be protected against water, humidity, damp, moisture, corrosion.
- Electrical and electronic components and systems have to be protected from humidity and the damage it causes.
- Screws have to be loosened and/or lubricated or metal parts have to be protected against rust or corrosion.

Adjustable valves	Door wiper contacts	Outside sensors	Signal systems
Advertising lights	Drills	Lamps	Ski lifts
Alarm systems	Dynamos	LED and OLED lamps	Sockets
Aquariums Avionics	Electric motors	Lifters	Spark plugs
Buzzers	Electrical devices	Light chains	Stage lighting
Battery contacts	Electrical door and window openers	Lights systems	Street lamps
Battery-powered drills	Electronic modules	LNB's	Swimming
Battery screwdrivers	Electrical systems in general	Locking systems	Pool controllers
Battery-powered tools	Emergency lamps	Locks (door locks)	Switches (optical & mechanical)
Bells / buzzers	Emergency power stations	Loudspeaker connectors	Telecommunications
Bicycles / Bike lights	Escalators	Low-voltage applications	Terminal systems
Boilers (electrical)	Event Management devices	Marine motors	Thermostats
Breweries	Fans	Metal cables	Timers
Building and path lighting	Fuel systems	Model building in general	Toys
Building site lamps	Flashlights	Motor saws contacts	Tractors
Busses	Floodlights	Motor scooters	Traffic lights
Butchering machinery	Fogging machines	Motorcycle electronics	Trailer couplings
Camping	Fuse-boxes	Motorcycles in general	Transformers
Car Washings Caravans	Fuses	Off-Road vehicles	Underwater lighting
Cars	Foodstuff machinery industry	Oldtimers	Valve drives
CEE sockets	Garage door openers (electric)	Open-air festivals	Video Systems
Chip card readers	Garages	Optical / acoustic switches	Wall lamps
Christmas lighting	Garden lamps	Party Illuminations	Warning lights
Circular saws	Garden power sockets	PIN code systems	Washing machines Weapons
Code locks in outside areas	Garden pumps	Plug strips	Weather sensors Winches
Coils	Glow lamps	Pool pumps	Wind sensors Wiper contacts
Coin counters	Grinding machines	Power supplies	Weighing systems
Commercial vehicles	Hammer drills	Power transformers	Yacht electronics
Computer keyboards	Hand lamps	Pumps	
Computers	Heatings	Racing bikes	
Connection terminals	High-pressure cleaners	Racing cars	
Construction machinery	Hydraulic presses	Rain sensors	
Control cabinets	Hydraulic pumps	Rainwater pumps	
Control engineering	Ignition systems	Receivers	
Deep fat fryer	Illumination lamps	Relay contacts	
Detonators	Industrial lamps	Roof ventilators	
Dish Washers	Installation relays	Sat systems	
Distribution boxes	Intercom systems	Saws (all kinds)	
Door Bells	Outside lamps	Shredding systems	
Door Locks			
Door operators			

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