



**Anti moisture for the protection  
of metallic, electrical  
and electronical parts,  
devices, tooling and  
machinery.**



## Protection from humidity, corrosion and dissipation

About 80% of equipment and electronic system failures result from the negative effect of humidity. Humid environment generates corrosion of metal components. Poor insulation along with soiling of current conductors of power network facilities result in dissipation. Every year power producers have to spend millions on repairing these damages.

Efficient protection of equipment and conductors helps to reduce production costs for considerable period of time:

- ✓ Lost profit due to down time;
- ✓ Excess facility costs;
- ✓ Repair costs;
- ✓ Replacement costs.



Extended period of equipment operation significantly reduces capital asset expenditure.



## NANO PROTECH

Production of metal components and current conductors of electronic equipment from humidity effect

Pioneer in protection from humidity and corrosion

Globally unique 100% humidity reduction

Developed by the leading European laboratories on the basis of state-of-the-art nano technologies.

NANO PROTECH has proven its unique advantage to protect electronic mechanisms and equipment from all forms of humidity: moist, vapor, air humidity, condensed moisture, splashes, fog, acid rain, chlorinate and salt water.



NANO PROTECH can be applied even in cases when electronic elements, circuits and equipment were damaged by humidity.



NANO PROTECH provides the best protection from humidity and corrosion. NANO PROTECH not only protects but also restores efficiency and conductivity of electric equipment, components and devices damaged by negative effect of humidity. Thus, NANO PROTECH is undisputed leader in anti moisture protection.

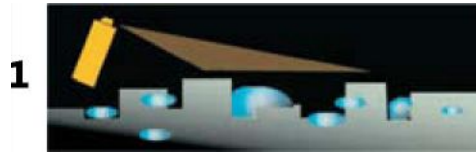
#### Advantages:

- ✓ 100% humidity reduction
- ✓ Convenient in industrial use
- ✓ Protects and restores efficiency and conductivity of electric equipment, components and devices damaged by negative effect of humidity
- ✓ Prevents deactivation of metal and steel based components and systems
- ✓ Considerably extends operation life of electric appliances
- ✓ Protects electronic equipment from all forms of humidity: moist, vapor, air humidity, condensed moisture, splashes, fog, acid rain, chlorinate and salt water.
- ✓ Can be applied on surfaces without pre-treatment



## Action

Fills micro cavitations (in circuit boards, micro circuitry, electric coils etc.). Powerful capillary effect allows the product to penetrate inside the blocks without dismantling.



Excellent water repellent properties and low surface stress allow to form thin protective coating penetrating under the water layer



After spraying a protective coating forms on the surface. NANO PROTECH provides 100% water extrusion rate within 10 seconds.



Due to high adhesion and low internal friction NANO PROTECH consistently forms protective water repellent coating under water. Thus, NANO PROTECH excels any other product in any tests on protection from humidity and corrosion.

**Protection will work even if the untreated components are already wet**

## Function

- ✓ Forms waterproof and water repelling coating
  - ✓ Penetrates under rust, facilitates rust removal, forms protective coating
  - ✓ Prevents corrosion
  - ✓ Retains conductivity of elements
  - ✓ Retains conductivity of elements in water
  - ✓ Provides high electric precision of conductors
  - ✓ Prevents dissipation
  - ✓ Prevents indirect contact
  - ✓ Retains elasticity, ideal protection for moving parts of mechanisms
- Restores operation of systems and facilities damaged due to exposure to humidity



## Properties:

- ✓ Does not break down in water
- ✓ Does not form emulsion
- ✓ Great dielectric effect
- ✓ Does not contain rubber, silicone, acryle, teflon and aromatic components
- ✓ Can be easily removed with a cleanser for printed-circuit boards, cleanser of brakes or spirit
- ✓ Does not harm plastics, rubber, glass, varnish, insulating varnish, ceramics, copper, brass, still, aluminium (normal, untreated and polished), extrafine steel, untreated ferrum, zinc, metal (normal and galvanized), tin solder, textile products and winding
- ✓ Weather and temperature resistant
- ✓ Non-toxic and environmentally friendly



## NANO PROTECH ANTICORROSION



- ✓ Protects metal components and systems from all forms of humidity (vapor, humidity, condensed moisture, splashes, fog, acid rain, chlorinate water)
- ✓ Restores operation of systems and facilities damaged due to exposure to humidity
- ✓ Prevents deactivation of metal and steel based components and systems
- ✓ Considerably extends the life of systems and equipment
- ✓ Produces excellent anti-corrosion effect on movable components

Protection from corrosion should be included in all steps of equipment production and operation. Corrosion losses account for 12% of annual metal production. Metal corrosion leads to permanent losses along with premature failure of costly components and systems, breakdown in processes and equipment downtime.

Direct contact between wet metal and oxygen leads to rust. Rust film forms within seconds and annually leads to multi-million losses.



### NANO PROTECH ANTICORROSION PROPERTIES

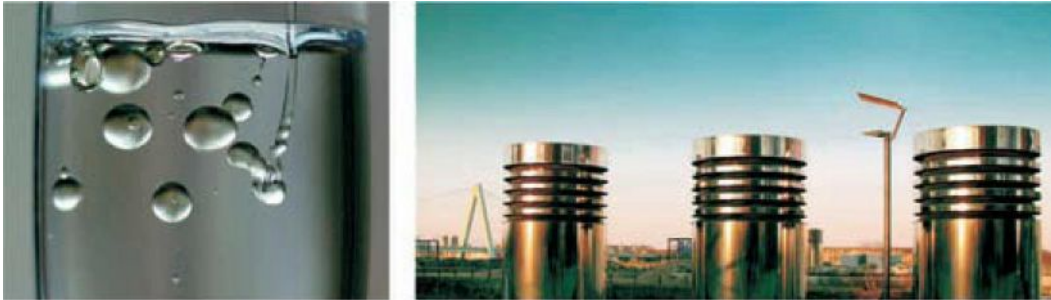
- ✓ Prevents corrosion
- ✓ Can be applied on wet surfaces, does not require pre-treatment
- ✓ Fills micro cavitations
- ✓ Forms waterproof and water repelling coating
- ✓ Penetrates under rust, facilitates rust removal, forms protective coating
- ✓ Retains elasticity, efficiently eliminates squeaks and mechanic friction
- ✓ Considerably extends operation life of treated surfaces
- ✓ Does not provide harmful effect, does not damage metals, plastic, rubber, glass, varnish, paint, ceramics and electric motors



## COMPOSITION

The product contains:

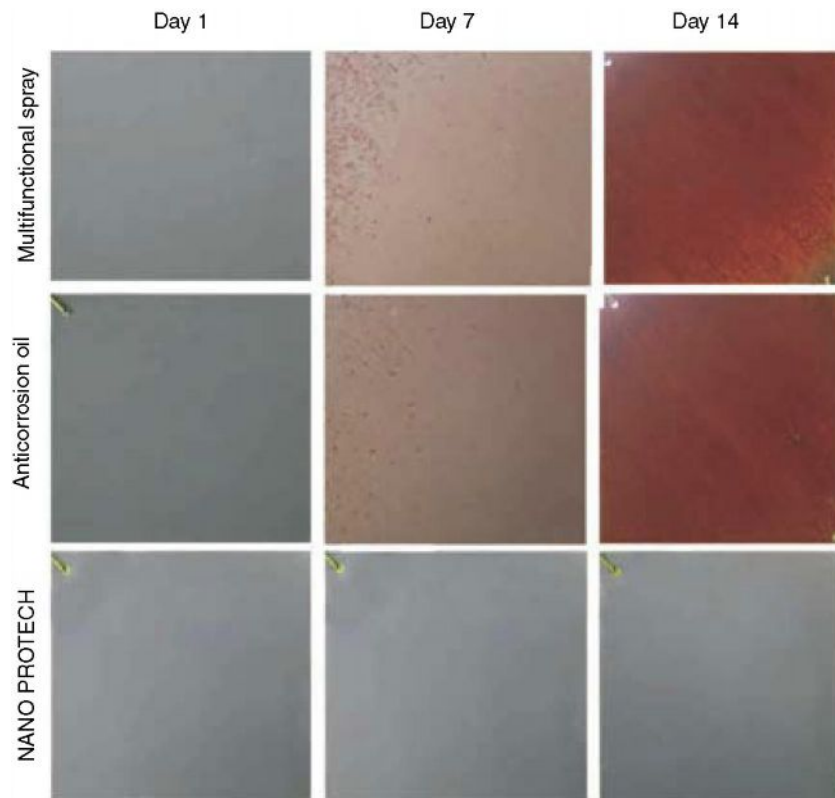
High purity mineral oil, fortified anticorrosion additives, deodorized paraffin and naphthene carbohydrates.



## NANO PROTECH ANTICORROSION TESTS

Tests have proved NANO PROTECTION ANTICORROSION excellence in comparison to multi-purpose oils, lubricants, waxes, contact sprays.

Metal sheets were polished, cleaned, degreased and treated with various anti rust products. For 14 days the sheets were evenly bathed in salt water twice a day. Corrosion development demonstrates the protective properties of various products.



## CHEMICAL TESTS OF THREADED COMPONENTS WORKING IN PRESSURE ENVIRONMENT

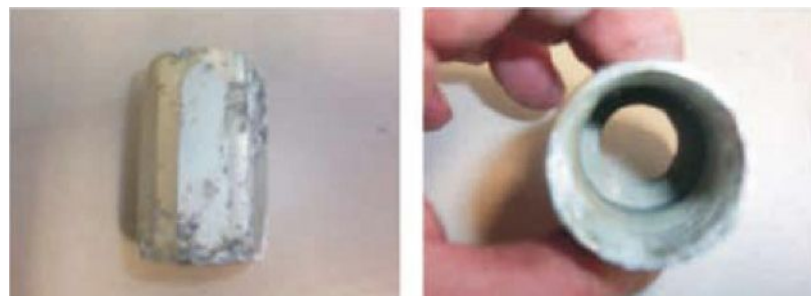
Threaded components working in pressure environment were treated with various chemical products five times a day for three weeks.

**Result:**

Untreated components working in pressure environment demonstrated signs of corrosion. The components protected with NANO PROTECH ANTICORROSION had no signs of corrosion after treatment with chemical products.



Untreated components. Signs of extensive corrosion. Required efficiency cannot be guaranteed.



Components treated with NANO PROTECH ANTICORROSION. No signs of corrosion after difficult test.





## NANO PROTECH ELECTRIC



- ✓ Protects electric equipment, motors, transformers, power units and mechanisms from all forms of humidity: moist, vapor, air humidity, water condensate, splashes, fog, rain, acid rain, chlorate and salt water
- ✓ Restores efficiency and electrical conductivity of components and devices affected by humidity
- ✓ Prevents dissipation
- ✓ Prevents indirect contact
- ✓ Improves conductivity
- ✓ Prevents short circuits, breakdowns and failure of electrical appliances
- ✓ Cleans and protects electrical equipment from dust and soil
- ✓ Good adherence (even in temperature variations)
- ✓ Considerably increases the operation life of electrical appliances and equipment



Developed for care and technical maintenance of all electrical contacts: plug-in and clamp connections, lamps and protectors, switches, terminals, batteries, generators, starters etc.

### NANO PROTECH ELECTRIC PROPERTIES

- ✓ Forms waterproof and water repelling coating
- ✓ Can be applied on wet surfaces
- ✓ Fill micro cavitations
- ✓ Retains conductivity of components in water
- ✓ Provides high electric precision of conductors
- ✓ Forms insulation coating, prevents surface current leaks
- ✓ Retains elasticity
- ✓ Does not provide harmful effect, does not destroy metals, plastic, rubber, glass, varnish, paint, ceramics and electric motors

### Dielectrical strength of NANO PROTECH ELECTRIC

- ✓ Immediately after application 163 KV/cm -1 hour after application 208 KV/cm
- ✓ 24 hours after application 256 KVcm
- ✓ For comparison:
- ✓ Air: 33 KV/cm
- ✓ Insulation oil: 120 KV/cm
- ✓ Glass: 140 KV/cm
- ✓ Porcelain: 200 KV/cm

Dielectrical strength is the capacity of material insulation to prevent voltage jumps and indirect contact. After NANO PROTECH application increases due to evaporation of volatile particles. NANO PROTECH volatile content is about 37%.



## NANO PROTECH ELECTRIC TESTS

### Electric drill test

For the first test the case of the drill was removed. The electric drill was treated with NANO PROTECH ELECTRIC protection, including all electrical and metal parts, motor, winding and connectors. The electric drill was immersed in water for 10 minutes. Then the drill was removed from water and connected to the mains. Result: Electric drill works.



For the second test the electric drill was fully immersed in water prior to treatment with NANO PROTECH ELECTRIC protection. 10 minutes later the electric drill was connected to the mains and turned on. Result: Electric drill works.

NANO PROTECH extrudes water: the treated bulb installed outside has been working for over 1 year without short circuit despite the fact that the electric contacts are immersed in water.



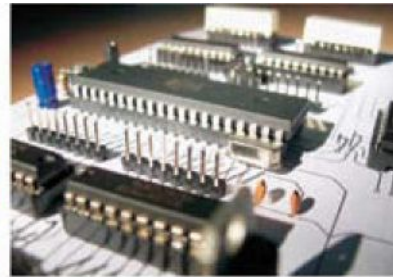
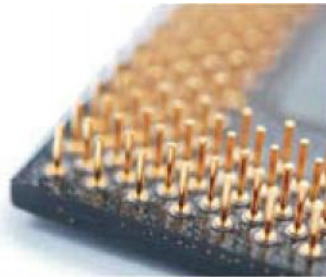
## NANO PROTECH ELECTRONIC



- ✓ Protects electronic devices, microcircuitry, circuit boards from all forms of humidity: moist, vapor, air humidity, water condensate, splashes, fog, rain, acid rain, chlorate and salt water
- ✓ Restores efficiency and conductivity of electronic components, microcircuitry and equipment damaged by humidity
- ✓ Prevents short circuits, breakdowns and failures of sensitive electronics
- ✓ Has high dielectrical properties for protection of circuit boards, motor windings, transformers from corrosion processes and weather impact

transformers from corrosion processes and weather impact

- ✓ Good compatibility with various materials: copper, PVC, jointing, electrical and electronic components
- ✓ Increases the operation life of electronic devices, microcircuitry and equipment
- ✓ Does not provide harmful effect, does not damage metals, plastic, rubber, glass, varnish, paint, ceramics and electronic components.



### NANO PROTECH ELECTRONIC PROPERTIES

- ✓ Forms water proof and water repelling coating
- ✓ Can be applied on wet surfaces
- ✓ Protects from static electricity, dust and dirt
- ✓ Fill micro cavitations
- ✓ Retains conductivity of elements in water
- ✓ Provides high electrical strength of conductors
- ✓ Forms insulation coating, prevents surface current leaks
- ✓ Retains elasticity
- ✓ Does not provide harmful effect, does not damage metals, plastic, rubber, glass, varnish, paint, ceramics and electronic components

### NANO PROTECH ELECTRONIC TESTS TEST No.1

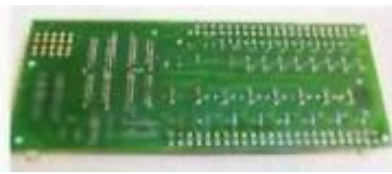
Five circuit boards out of 10 were treated with NANO PROTECH ELECTRONIC protection. The boards were sprayed with salt water twice a day for ten days. After this the efficiency of the circuit boards was tested.

Result: Untreated circuit boards were defective.

The boards treated with NANO PROTECH ELECTRONIC retained efficiency.



Untreated circuit board.  
Sprayed with salt water for ten days,  
significant oxidation noted.



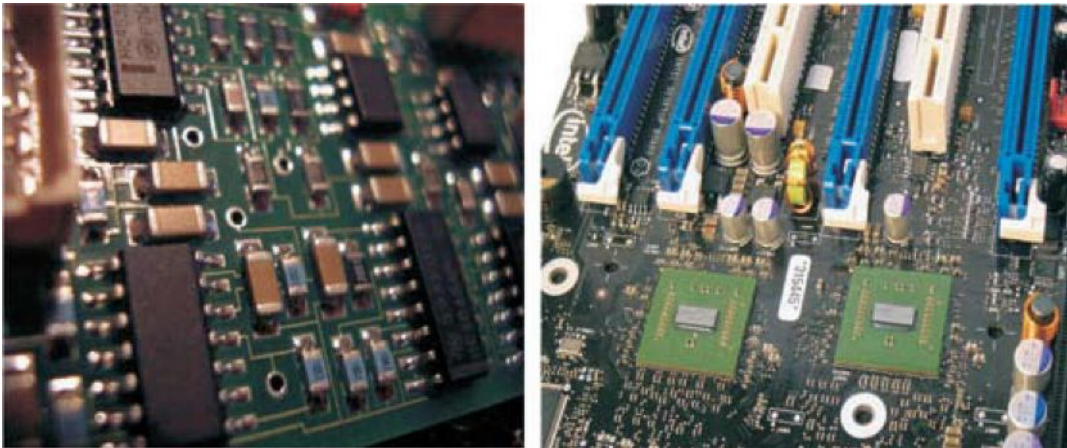
Treated with NANO PROTECH  
Joint areas are not corroded.  
Efficiency retained.

## TEST No.2

### Test No1

Circuit boards were immersed in water. Then they were suspended for 2 minutes to let the water drip off. Efficiency test result: 80% of circuit boards lost efficiency. After this the defective circuit boards were treated with NANO PROTECH ELECTRONIC protection.

Result: 60% of the defective circuit boards restored their efficiency



## Test No.2

New circuit boards were treated with NANO PROTECH ELECTRONIC protection prior to immersion in water. After immersion they were suspended for 2 minutes to let the water drip off, then their efficiency was tested. Result: Circuit boards retained 100% efficiency.





## NANO PROTECH UNIVERSAL



- ✓ Protects metal, devices, tooling and machinery from all forms of humidity (vapor, humidity, condensed moisture, splashes, fog, acid rain, chlorinate water)
- ✓ Restores efficiency and electrical conductivity of components and devices affected by humidity
- ✓ Prevents short circuits, deactivation of metal and steel based components and systems
- ✓ Considerably extends the life of electric, metal devices, tools and equipment
- ✓ Protects movable components
- ✓ Considerably increases the operation life of electrical appliances and equipment

**Specially designed for domestic application.**



### NANO PROTECH UNIVERSAL PROPERTIES

- ✓ Forms water proof and water repelling coating
- ✓ Can be applied on wet surfaces
- ✓ Fill micro cavitations
- ✓ Penetrates under rust, facilitates rust removal
- ✓ Prevents corrosion
- ✓ Retains conductivity of components in water
- ✓ Provides electric precision of conductors
- ✓ Retains elasticity, efficiently eliminates squeaks and mechanic friction
- ✓ Does not provide harmful effect, does not damage metals, plastic, rubber, glass, varnish, paint, ceramics and electric motors

#### Technical data

Preparation made of highly refined mineral oil, anticorrosive additives, dearomatized par-affinic and naphthenic hydrocarbons.

#### Handling and storage:

Keep away from heat, direct sun rays. Use only in well ventilated areas. Keep away from open flames and ignition sources. No smoke! Protect against electrostatic charges. Observe official regulations on storing packagings with pressurized containers.

#### Toxicological information

No irritant effect to skin. Solvent splash may have reversible irritant effect. No allergic reaction was found.

#### How to use



Properly shake before using. When spraying, hold the can upright 20-30 cm from the surface. After spraying wait ca 10 min before turn on the electrical appliance.



### PHYSICAL AND CHEMICAL PROPERTIES

Form: spray.

Colour: light brown.

Burning point: >250 C

Internal can pressure: (at 20 C) - 3,5 bar. (at 50 C) - 6,5 bar.

The product is not self-ignitable.

The product is not dangerously explosive, formation of explosive vapor/air mixes is possible.

Density at 20C < 1 g/cm<sup>3</sup>

Water solubility: not soluble in water, does not mix with water

According to LGA conclusion,  
does not contain polynuclear carbohydrates,  
fluoric chloric carbohydrates.

NANO PROTECH dielectric strength:

✓ Immediately after application 163 KV/cm -1 hour after application  
208 KV/cm

✓ 24 hours after application 256 KVcm For comparison:

✓ Air: 33 KV/cm

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✓ Dielectrical strength is the capacity of material insulation to prevent voltage jumps and indirect contact.

✓ After NANO PROTECH application increases due to evaporation of volatile particles. NANO PROTECH volatile content is about 37%.



### Product information

Packaging: spray can Volume 210 ml Consumption: 20-35 ml/m<sup>2</sup> Shelf life: 5 years Developed in Germany.

**Protection period from 1 to 3 years**

# Overview of NANO PROTECH appliance

## Aerials

Pools  
Boilers  
Wagon repair  
Shipyards  
Forklift loaders  
Rotational systems  
Generators  
Hydraulic pumps and presses  
Mountain-skiing complexes  
Trucks  
Transducers  
Engines  
Railway transportation  
Tools  
Power supplies  
Lighting and equipment cables  
Cable drums  
Boats  
Ignition coils  
Switching equipment  
Forestry

## Elevators

Mechanical engineering  
Metal working  
Pressure monitors  
Motorcycles  
Navigation buoys  
Outdoor advertising (light, screens)  
External lighting  
Pumps  
Windings  
Ski-Lifts  
Safety locks and converters of low frequency  
Presses of all types  
Under water illumination devices  
Gate gears, rolling barriers, etc.  
Projectors  
Manufacturing facilities  
Industrial lamps  
Radio equipment  
Splitter boxes  
Circuit modules  
Power stations  
Demountable systems

## Traffic lights

Ignition plugs  
Low-voltage systems  
Alarm system  
Uninterruptible power systems  
Starters  
Construction machines  
Construction sites  
Ship repair  
Ship-building  
Time meters  
Telecommunications  
Control engineering  
Vehicles  
Transformers  
Reading devices of printed-circuit boards  
Electric and energy supply, installation  
Electric motors  
Electromechanical drives  
Electronic equipment and devices  
Escalators  
Yachts