



# Aculon® NanoProof® 3 Series Electronic Coating

Aculon® NanoProof® 3 series offers anti-wetting, anti-stiction, chemical protection, corrosion protection and moisture protection of printed circuit boards and electronic components. The NanoProof® 3 has similar performance and chemical properties as 3M™ Novec™ products providing a readily available and accessible drop-in alternative to the 3M™ Novec™ product series. Aculon® NanoProof® surface coating is capable of imparting hydrophobicity and oleophobicity to a wide variety of surfaces in a simple, one-step process. It is designed for multi-surface treatment on metals, semiconductors, and polymers.

Solids	Solvent	Color
NanoProof 3-002 (0.2%)	Fluorosolvent	Light green
NanoProof 3-02 (2%)	Fluorosolvent	Light green
NanoProof 3-04 (4%)	Fluorosolvent	Light green
NanoProof 3-08 (8%)	Fluorosolvent	Light green
NanoProof 3-10 (10%)	Fluorosolvent	Light green
Physical Properties of Formulation (all values @ 25°C)		
Viscosity*	< 20 cP	
Boiling Point of Solvent	56.2°C (133°F)	
Flash Point	Not applicable	
Non-flammability	Meets UL 94 V-0	
Environmental	Low in toxicity, non-ozone depleting, low in GWP, RoHS compliant and VOC exempt (per U.S.-EPA), contains no chlorine or bromine	
Shelf Life	2 Years (Unopened container)	
Specific Gravity	1.49 g/ml	
*Determined by Zahn Cup #1 testing		
Physical Properties of Post Treatment Coating		
Tg (glass transition)	-95°C from peak on DSC	
Thermal Stability of Dry Film	Can withstand 175°C for 24hrs and maintain repellency	
Thermal Conductivity	In Process	
Coefficient of Thermal Expansion	In Process	
Water Contact Angle	120°	
Oil Contact Angle	80°	
Refractive Index	1.376 @632.8nm	
Solder Through Repairability	Yes	
Electrical Properties		
Dielectric Breakdown Strength (@35% RH)	3600 V/mil	
Moisture and Insulation Resistance	2.54E+12 Ω	
Volume Resistivity	6.33E+13 Ω·cm (@30 VDC)	
Dielectric Constant	In Process	
Dissipation Factor	In Process	

## Features

- Creates moisture barriers on coated parts
- Repels water, oil, and other liquid organic materials
- Adheres to a variety of surfaces ensuring protection of PCBs.
- Push-through conductivity within 2 hours
- Easy to apply and dries quickly without the need for curing
- Thermally and electrically stable

## Application Ideas

- Moisture, chemical, corrosion protection for printed circuit boards and electrical components
- Anti-wetting and anti-stiction in many diverse applications

## Chemical Compatibility

### Recommendation for tubing and plastics via application equipment

- Compatible with: PEEK, Polyethylene terephthalate (PET), Polyphenylene sulfide (PPS), Polystyrene, EPDM, ABS, Aluminum, Stainless Steel, Glass
- Avoid: Viton, HDPE, LDPE, CPVC, PVC, PTFE, PVDF, silicone, neoprene, Polypropylene, PMMA

## Application Techniques

### Surface Preparation/ Cleaning:

Ensure that the surface is free of any grease, fingerprints, adhesive residues or dirt. This can be accomplished by first degreasing the surface with solvents or by rinsing with soap and water or by rinsing with IPA. Depending on the sensitivity of your part to liquids Kyzen cleaners like Ionox I3416 or Cybersolv 141-R may be most appropriate for removing surface contamination.

Contact Aculon if you are unsure what cleaner to use and we will recommend one best suited for your application. Substrates should be coated after cleaning as soon as possible to minimize the potential for recontamination.

<b>Application Options</b>	Flow coat, selective dispense, dip, spray or brush apply. If dipping, Aculon recommends an extraction rate of 100 mm/min or less.
<b>Dilution</b>	Can be diluted with FS-350 fluorosolvent
<b>Drying/Curing</b>	Dries at room temperature in under 5 minutes.
<b>Removability</b>	FS-350 fluorosolvent

### Testing For Hydrophobicity:

Allow droplets of water to fall onto the surface, they should bead up to a contact angle  $>90^\circ$ . If the surface is not hydrophobic clean the surface again and reapply.

### Safety, Handling, Storage, Shelf Life:

Store in a cool ( $\sim 25^\circ\text{C}$ ) and dry area, and keep away from direct sun light. See this product's SDS for proper handling. When stored properly, product has a 2 year shelf life.

### For Additional Information:

To request additional product information or sales assistance, contact Aculon's Technical Team, at 858-350-9474. For information on other Aculon products, please visit our website at [www.aculon.com](http://www.aculon.com).

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