



Aculon® NanoProof™ 5.1

Hydrophobic/Oleophobic coating

Aculon® NanoProof™ 5.1 is a surface treatment 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 most metals, semiconductors, and polymers. Aculon® NanoProof™ 5.1 is typically applied by dipping or flow coating and results in a hydro/oleophobic film that is resistant to chemical degradation.

Solids	Solvent	Color
<20% Proprietary Ingredient	Fluorosolvent	Yellow-blue, clear

Physical Properties of Formulation (all values @ 25°C)	
Viscosity*	< 5 cP
Boiling Point of Solvent	76°C
Flash Point	Not applicable
Environmental	Non toxic, non-ozone depleting
Shelf Life	2 Years (Unopened container)
Specific Gravity	1.6 – 1.7

*Determined by Zahn Cup #1 testing

Physical Properties of Post Treatment Coating	
Coating Thickness (spray coated)	6 – 9 µM
Visible Light Transmission	90%
Water Contact Angle	118°
Oil Contact Angle	75°

Features

- Creates moisture barriers on coated parts
- Repels water, oil, and other liquid organic materials
- Can be applied to many different materials: metals, polymers, paper, etc.
- Push-through connectivity can be achieved if connections are made in under 10 minutes
- Easy to apply
- Adhesion to a broad range of substrates
- RoHS compliant
- Contains no REACH SVHC compounds

Application Ideas

- Coat PCB's for water proofing
- Impart repellency to consumer electronics
- Non-fouling (ink-repellent) surface for printer nozzles

Chemical Compatibility

Recommendation for tubing and plastics via application equipment

- Compatible with: Polyethylene terephthalate (PET), Polytetrafluoroethylene (PTFE), Polypropylene, Viton
- Avoid (Not Tested for Compatibility): HDPE, LDPE, Polyurethane, PVC, Tygon, Noryl, ABS, PP, Polyphenol ethylene ether, silicone, neoprene, EPM, and natural rubber

Application Techniques

Surface Preparation/ Cleaning:

Ensure that the surface is free of any grease, fingerprints, adhesive residues or dirt (*i.e.*, water break free). This can be accomplished by first degreasing the surface with solvents or by rinsing with IPA.

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.

Treatment Application:

Flow: Dispense product over the surface. Apply enough material to coat the surface. Allow excess material to drain.

Spray: Spray the solution on the substrate, air dry. If the coating is too thick, reduce the amount applied by changing the settings on the spray gun or request a sample of diluent from Aculon. We recommend spray equipment that is similar to the valve design of PVA FCS-300.

Dip: Immerse the substrate in the treatment for 20 seconds, remove at a rate to produce the desired thickness. If excess treatment remains on the surface it can be removed with Aculon fluorosolvent (contact an Aculon representative for samples).

Drying/ Curing: Cure at room temperature for 2 hours. If additional/faster curing is desired, the substrate can be heated to 60°C.

Masking: Expect all masks to be compatible. For example: Techspray WonderMASK PX Peelable Solder Mask (2222-8SQ), Kapton Conformal Coating Tapes, Mylar tape, Polyimide

Testing For Hydrophobicity:

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

Safety, Handling, Storage, Shelf Life:

Store in a cool (~25°C) and dry area, and keep away from direct sun light. See this product's MSDS for proper handling. This product does not contain any RoHS or REACH SVCH 168 compounds. 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.

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