



Aculon® NanoProof™ 4.0

Hydrophobic coating

Aculon® NanoProof™ 4.0 repellency product is a surface treatment capable of imparting hydrophobicity to printed circuit boards and electronic components in a simple, one-step process. Aculon® NanoProof™ 4.0 is typically applied by dipping, flow coating or spraying and result in hydrophobic films that allow post application, push-through electrical connection.

Solids	Solvent	Color
<25% Proprietary Ingredient	Hydrocarbon Solvent	Clear liquid

Physical Properties of Formulation (all values @ 25°C)	
Viscosity*	< 25 cP
Boiling Point of Solvent	93.3-104.4°C
Flash Point	-11°C
Environmental	Nontoxic, non-ozone depleting, flammable
Shelf Life	2 Years (Unopened container)
Specific Gravity	0.78

*Determined by Zahn Cup #1 testing

Physical Properties of Post Treatment Coating	
Coating Thickness (spray coating)	5 - 8 μM
Visible Light Transmission	90%
Water Contact Angle	> 100°
Oil Contact Angle	< 20°

Features

- IPX-7 protection of electronic circuits
- Provides a hydrophobic film
- Films allow push-through electrical connection
- Easy to apply
- Adhesion to a broad range of substrates
- Coatings allow rework of PCB's
- Coating is non-conductive
- Contains a UV tracer
- No cure required
- RoHS compliant
- Contains no REACH SVHC compounds

Application Ideas

- Water proofing of PCB's
- Protecting electronic devices from exposure to common liquids

Chemical Compatibility

Recommendation for tubing and plastics via application equipment

- Compatible with: Polyethylene terephthalate (PET), Polytetrafluoroethylene (PTFE), Viton
- Confirmed incompatible with: 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. This can be accomplished by first degreasing the surface with solvents 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.

Treatment Application:

Dispense: 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. Spray Equipment Suggestions; PVA FCS300 Front Closing Spray Valve, typically used settings are 40 psi main pressure, 8 psi coating pressure, 12 psi atomization pressure, micrometer = 10, 6" distance to part being coated, and one double pass with the sprayer.

Dip: Immerse the substrate in the solution for 20 seconds, air dry till solvent evaporated. Recommended dip containers are stainless steel, glass or aluminum. Plastic containers are likely to contaminate the coating solution reducing performance.

Drying: Allow the film to set at room temperature until the solvent has evaporated. Once dried the gel-like film remains physically deformable, thus care should be taken when handling the part so as to not disturb the coating in sensitive areas. In some cases additional thermal treatment (e.g. 100°C for 5 minutes) will speed solvent evaporation.

Masking: Expect no mask to be compatible.

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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