

Advanced nanoGUARD

Non-toxic, environmentally friendly, fluorine-free replacement for fluorinated polymer electronic coatings

REQUIREMENTS		Fluoro-Polymers	Traditional Conformal Coating	Vapor Deposition
FULL PROTECTION	✓ Passes OEM req.: undercoats	⚠ Masking; limited undercoat	✗ Not 100%; no undercoat; masking	⚠ No UV dye; QC challenge
CONDENSATION /IMMERSION	✓ Up to IPX8	✓ Comparable to actnano	✗ Not 100%	✗ Not 100%
TOTAL COST	✓ Lowest overall cost	✗ PCBA cleaning required; masking	✗ Masking; cure and difficult to rework	✗ Expensive equipment; batch; mask; can't rework
SUSTAINABILITY/HUMAN HEALTH	✓ Non-toxic; fluorine-free; no forever chemicals	✗ Contains PFAS; hazardous forever chemicals	✗ Toxic chemicals	✗ Harsh chemicals
OPERATING TEMP	✓ -40 to 200 °C	⚠ Typical max +175 °C	✗ Cracking and bubbling	✓ Comparable to actnano
CURING	✓ No curing required	✓ No curing required	✗ Thermal or UV cure process	⚠ No curing, Long process
THERMAL NEUTRALITY	✓ Similar to non-coated	✓ Comparable to actnano	✗ Major heat entrapment; CTE concerns	✗ Non-thermal neutral
MASKING	✓ None; entire board 3D coverage	⚠ Limited	✗ Masking required	✗ Masking required
DESIGN CONSTRAINTS	✓ No impact on design	✓ Comparable to actnano	✗ Not flexible; cracks	✓ Comparable to actnano
CONNECT THROUGH	✓ Gel-state connect through	⚠ Limited	✗ Not feasible	✗ Not feasible

