

Your Coating Reacts to Corrosion. Armis Stops It Getting In.

Armis is a graphene solution for paint and coating systems — creating a physical nanoscale barrier against oxygen, moisture, and corrosive species. Compatible with water-based and solvent-based systems. No reformulation required.



- ✓ 2 Indian Patents
- ✓ Aqueous & Solvent Grades
- ✓ Batch-Characterised
- ✓ Epoxy / PU / Alkyd
- ✓ Make in India

The Key Distinction — Active vs Passive

<div style="border: 1px solid #ccc; border-radius: 10px; padding: 5px; margin-bottom: 5px;">✓</div> <p>CONVENTIONAL • ZnO</p> <p>Conventional inhibitors (ZnO) react with corrosion products. They deplete over time and leach zinc into the environment.</p>	<div style="border: 1px solid #ccc; border-radius: 10px; padding: 5px; margin-bottom: 5px;">✓</div> <p>ARMIS • rGO</p> <p>Armis creates a permanent physical barrier — rGO platelets form a tortuous path that oxygen, water, and chloride ions must navigate. It does not deplete. It does not leach.</p>
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Property	rGO (Armis)
Mechanism	Passive barrier — physical, not chemical
Depletion	None — permanent within the coating film
Environmental	Non-toxic. No ion leaching. Biodegradable.
Loading level	Very low vs zinc-based alternatives
Barrier effect	Very High (vs Moderate for ZnO)
Mechanical reinforcement	Very High (vs Low-Moderate for ZnO)

Characterisation Data — Proof of Material Quality

Parameter	Result
Zeta potential (aqueous)	-44 mV — excellent long-term colloidal stability
Zeta potential (solvent)	-13 mV — stable in xylene dispersion
Flake size (DLS)	~3–5 µm in both grades
Raman ID/IG	0.82–0.83 — controlled edge defects, graphitic structure preserved
Redispersibility	Redisperses in ~20 seconds — no hard cakes at 3,000 rpm
BET Surface Area	>280 m ² /g



Physical Barrier Formation

rGO platelets align parallel to the substrate, creating a tortuous diffusion path. Corrosive species must navigate around overlapping nanosheets to reach the metal.



Mechanical Reinforcement

rGO reduces micro-cracking in the binder under thermal cycling and UV stress — keeping the barrier intact over the coating's service life.



Surface Anchoring

Oxygen-containing functional groups (C:86%, O:14%) bond with the polymeric matrix — improving dispersion stability and coating adhesion.

Two Grades — One for Every System



Aqueous Grade

Water-based epoxy, PU, acrylic, and hybrid coating systems. Zeta potential: -44 mV.



Solvent Grade (Xylene)

Solvent-based epoxy, alkyd, and high-solid systems. Zeta potential: -13 mV.

Dosage: 0.1–0.5% rGO by weight of total formulation | Addition: pigment grind or let-down stage | No specialist equipment

Parameter	Detail
Base	rGO — grade NG-C1
Grades	Aqueous Solvent (Xylene)
Carbon / Oxygen	86% C 14% O
Particle size	D90 <5 µm Flake ~3–5 µm (DLS)
Recommended loading	0.1–0.5% by weight of formulation
Shelf life	12 months sealed
Hazard classification	Not classified as hazardous (EC 1272/2008)
Transport	Non-dangerous — ADR / IMDG / IATA

Ready to Use Armis in Your Formulation?

Aqueous and solvent-grade samples available.
 Technical support included for dispersion protocol.

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