



# Elevate your primer coatings

with award-winning  
anti-corrosion technology





# Corrosion Inhibitors

Intelli-ion® is an award-winning, patented technology that is designed to completely replace heavy metal and chromate inhibitors or co-blend with phosphate inhibitors. It provides the coatings market with cost-effect, high performance, sustainable anti-corrosive additives.



We are a proud member of 'Made in Britain' - a collection of trusted British manufacturers. Our raw materials are of the highest quality and all product is tested in a UKAS accredited Quality Control Laboratory before shipment.



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The smart technology fights corrosion when used in primers with full system barrier topcoats and is compatible with a broad spectrum of resin types, coating types and coatings manufacturing routes.

“ Award-winning,  
patented technology...”





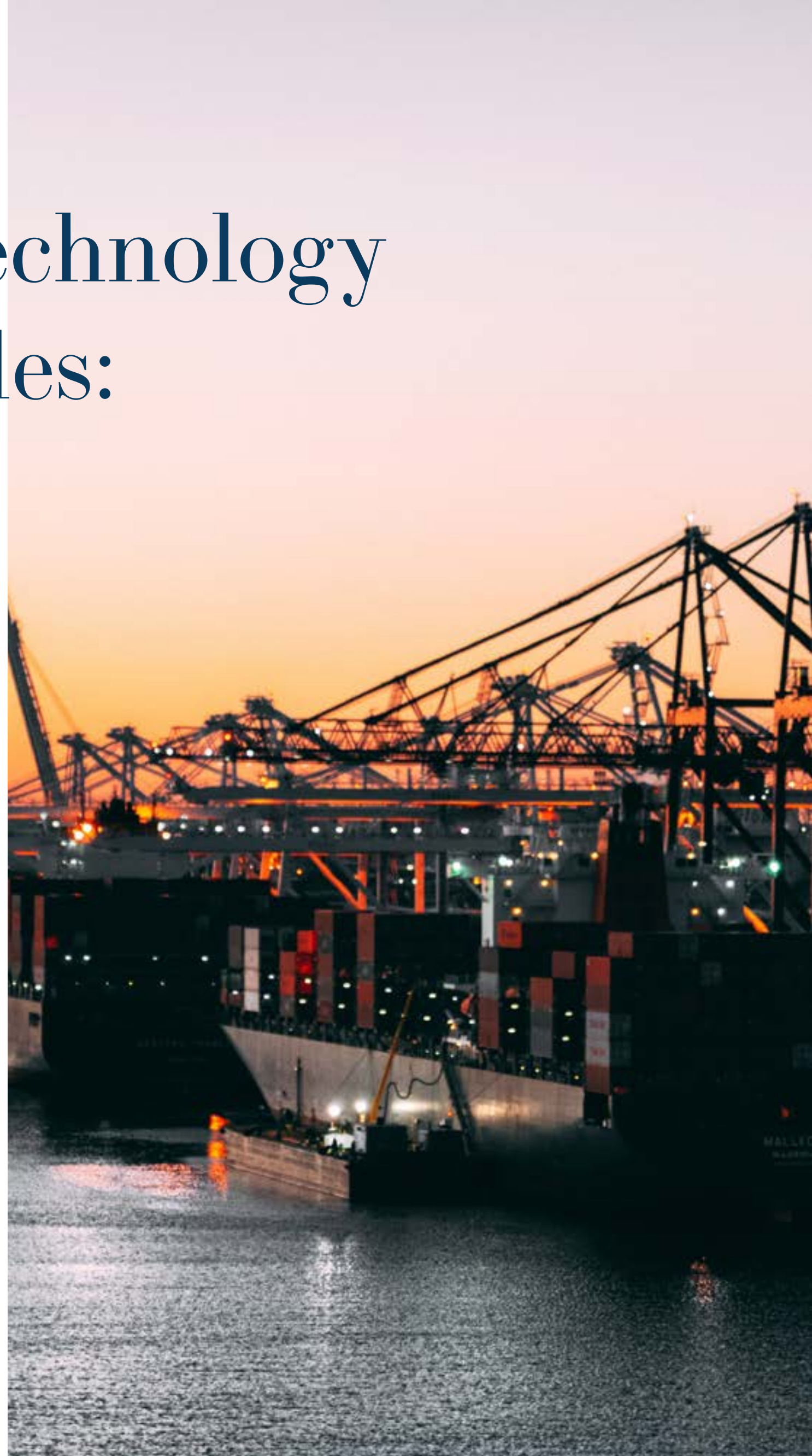
# Our technology provides:

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## Smart Technology

The award-winning, patented Intelli-ion® technology offers a fast, smart and effective corrosion response. Active ingredients stay dormant in the micro-reservoir system until they sense corrosion activity and release the inhibitor ‘on demand.’



## Cost Savings

Intelli-ion® AX1 offers a lower specific gravity and superior performance to phosphate systems, so the loading of inhibitor is greatly reduced. This can deliver anticorrosive cost savings of up to 30% per litre of paint.



## High Performance

Independent testing by leading coatings manufacturers shows that complete replacement offers superior corrosion protection vs current market-leading alternatives. Co-blending with phosphate inhibitors offers cost and environmental benefits with no compromise on performance. [Read more on our website](#)



## Sustainable Benefits

Formulating with Intelli-ion® can allow you to remove environmental hazard labelling from packaging and create a safer manufacturing environment for your staff by reducing volumes of chemicals on site. [Read more on our website](#)



# Versatile applications

Intelli-ion®’s performance has been independently validated in solventborne, powder and waterborne coatings via industry standard testing (ASTM B117).

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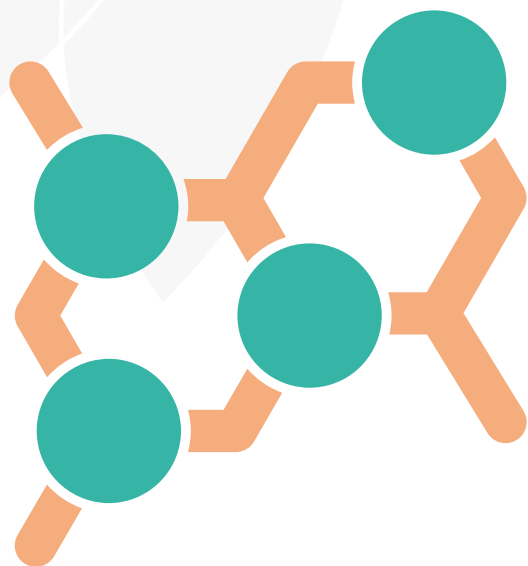
Hexigone offers bespoke loadings and formulations advice to optimise the testing and incorporation process with all customers. Please refer to the documents below or [get in touch](#) with our technical sales team.



Solvent-based Coatings	Short and medium oil alkyds	● ●
	Long oil alkyds	● ●
	High solids alkyds	● ●
	Epoxies	● ● ●
	Epoxyesters	● ●
	High solids epoxies	● ● ●
	Polyurethanes	● ● ●
	High solids polyurethanes	● ● ●
	Moisture cured polyurethanes	●
	Silicone resins	●
Water-based Coatings	Alkyd emulsions	●
	Epoxy dispersions	●
	1-part polyurethanes	●
	2-part polyurethanes	●
	Silicone resins	●
	Acrylics and modified acrylics	●
Specialty Coatings	Butadienes (*only with a non-ionic surfactant)	●
	Coil coatings	● ● ●
	Aircraft primers	● ● ●
	Wash and shop primers	●
	Direct to metal one coat	●
	UV cured systems	●
	Powder coatings	● ● ●

● Subject to customer expertise  
● ● Good  
● ● ● Excellent

# Co-blend or completely replace existing inhibitors?



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Intelli-ion® can be used to completely replace existing inhibitors or co-blend with existing phosphate-based systems. Whether you are looking to reduce inhibitor costs, boost performance or improve your sustainability credentials - Intelli-ion® can provide the solution.

	Co-blend	Complete replacement
Cost	Significant cost savings of up to 30% vs. phosphates alone*	Comparable cost to zinc phosphates
Performance	Comparable or better performance Better adhesion	Significant performance increase Better adhesion
Technology	Blend of known plus patented, smart technology	Award-winning, patented smart technology (allowing product differentiation)
Environment	No environmental warning labels when zinc phosphate inhibitors < 2.5%	No environmental label on product packaging at all concentrations. Zero heavy metal content

[\*based on ZnP loadings of 8-15% being purchased between \$2.20-5.50]



# High performance

## Co-blend formulations

Co-blend formulations can retain low concentrations of current anti-corrosives blended with Intelli-ion® technology for smooth step-change market introductions, providing cost and environmental benefits.

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5% zinc phosphate



1.5% Intelli-ion® co-blended  
with 1% zinc phosphate

Solventborne epoxy primer + topcoat  
[Post 1440 Hours Testing ASTM B117 Salt Spray]

### Comments

Reducing the loadings of zinc phosphate from 5% to 1% and adding 1.5% of Intelli-ion® provides the customer with up to 40% cost savings (depending on region). Additionally, no environmental warning labels are required and performance is maintained.



Top coated



Stripped with a solvent

Formulated with 2% AX1 % 2% ATP co-blend.

Waterborne Epoxy primer with PU topcoat  
[Post 1440 Hours Testing ASTM B117 Salt Spray]

### Comments

The panels used for testing were shot-blasted to Sa2.5 as per C5 specification. The primer layer had a dry film thickness (DFT) of 120 µm and the topcoat was applied at approx. 60 µm. After 1440 hours of salt spray testing (SST) to ASTM B117, our WB Epoxy system with AX1 displayed zero blistering. Half of the system was removed to reveal minimal corrosion at the scribe, demonstrating Intelli-ion's excellent performance.



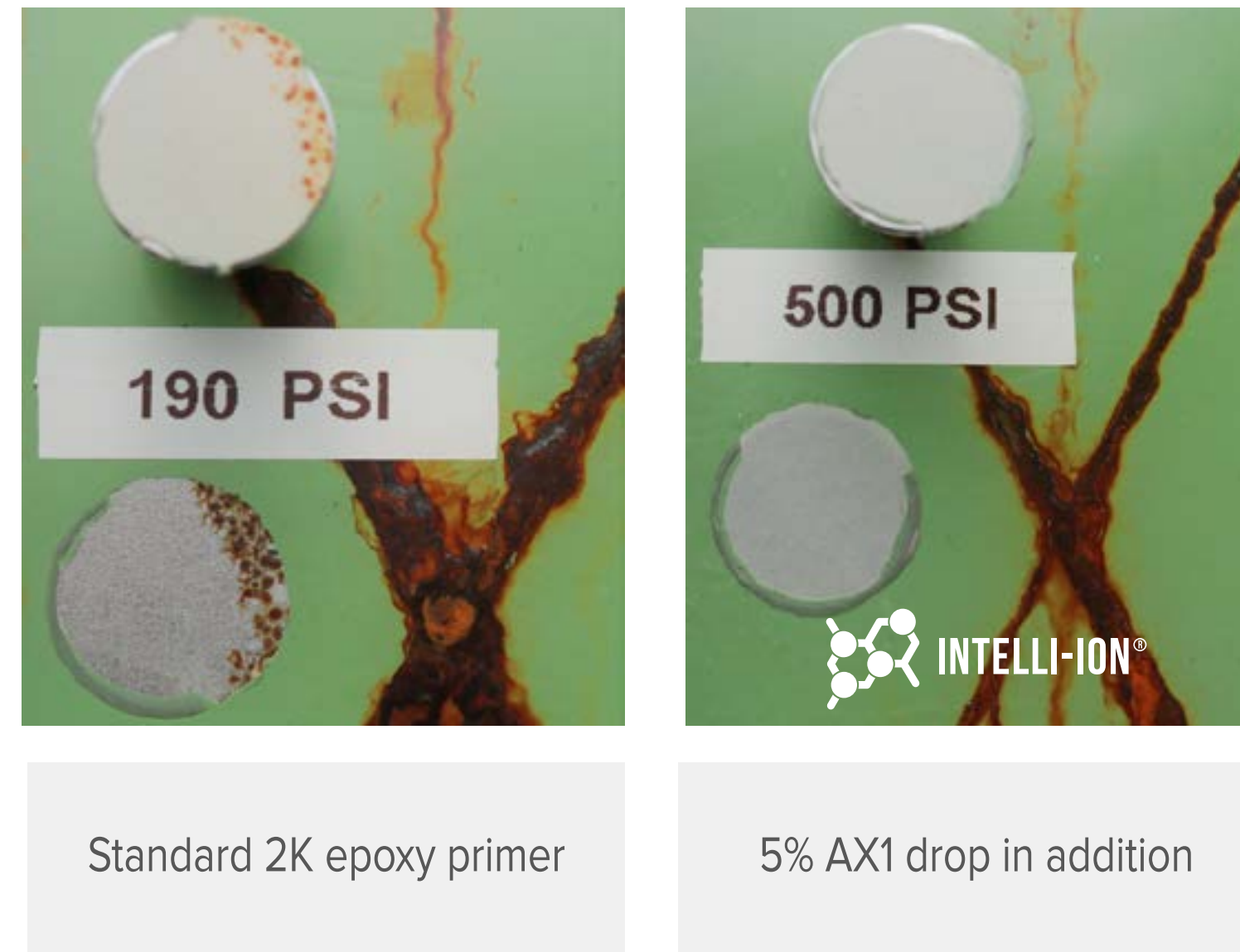
# High performance

## Adhesion promotion

The addition of AX1 has been proven to improve intercoat adhesion - offering additional benefits to corrosion control in your coatings system.

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[Post 1000 Hours Testing ASTM B117 Salt Spray]

Film thickness - 110µm

## Comments

Intelli-ion® AX1 not only offers a better performance against corrosion but also improves adhesion performance and protects metal assets for longer.

### Standard 2k epoxy primer (left):

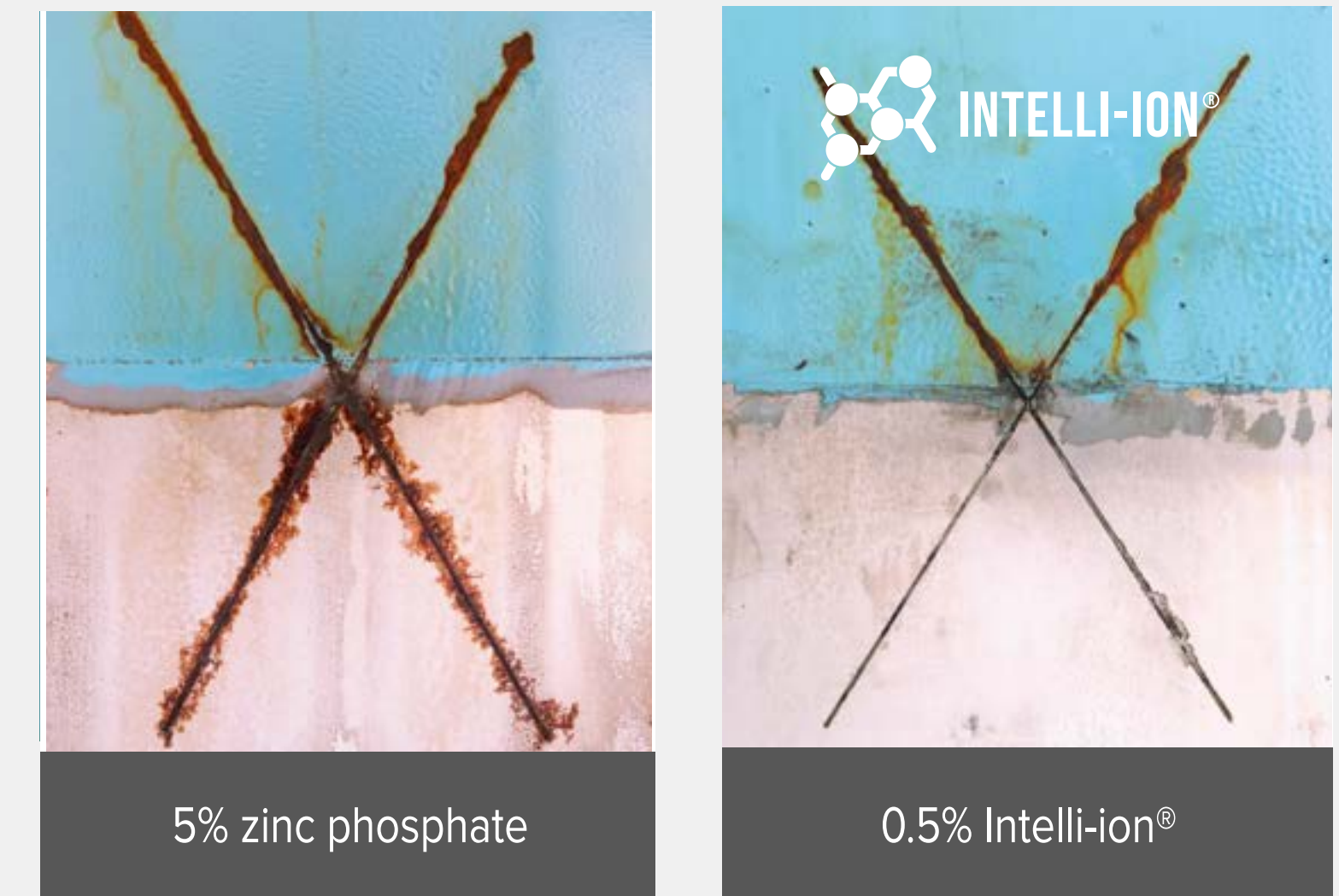
100% adhesion failure between the primer and metal (AB)

### 5% drop in of AX1 (right):

10% glue failure  
90% cohesive (C) failure within the topcoat

## Complete replacement

Complete replacement of your current inhibitor with Intelli-ion® offers a significant increase in corrosion protection and product differentiation.



Solventborne alkyd primer + topcoat

[Post 1000 Hours Testing ASTM B117 Salt Spray]

## Comments

In solventborne systems, AX1 can easily replace chromate and phosphate-based inhibitors at low loadings – with no changes to the manufacturing process. Testing by industry partners consistently demonstrates higher corrosion protection as well as improved adhesion. Additionally, complete replacement allows customers to remove environmental warning labels from the primer tin whatever the loading of AX1.



# Patented, award winning protection mechanism:

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## How the patented technology works:

The technology protects in a 'smart' way via three modes of electrochemical protection. The active ingredient lies dormant in a micro-reservoir and is triggered 'on demand' when corrosion is sensed at the coating surface - via ions or pH changes.

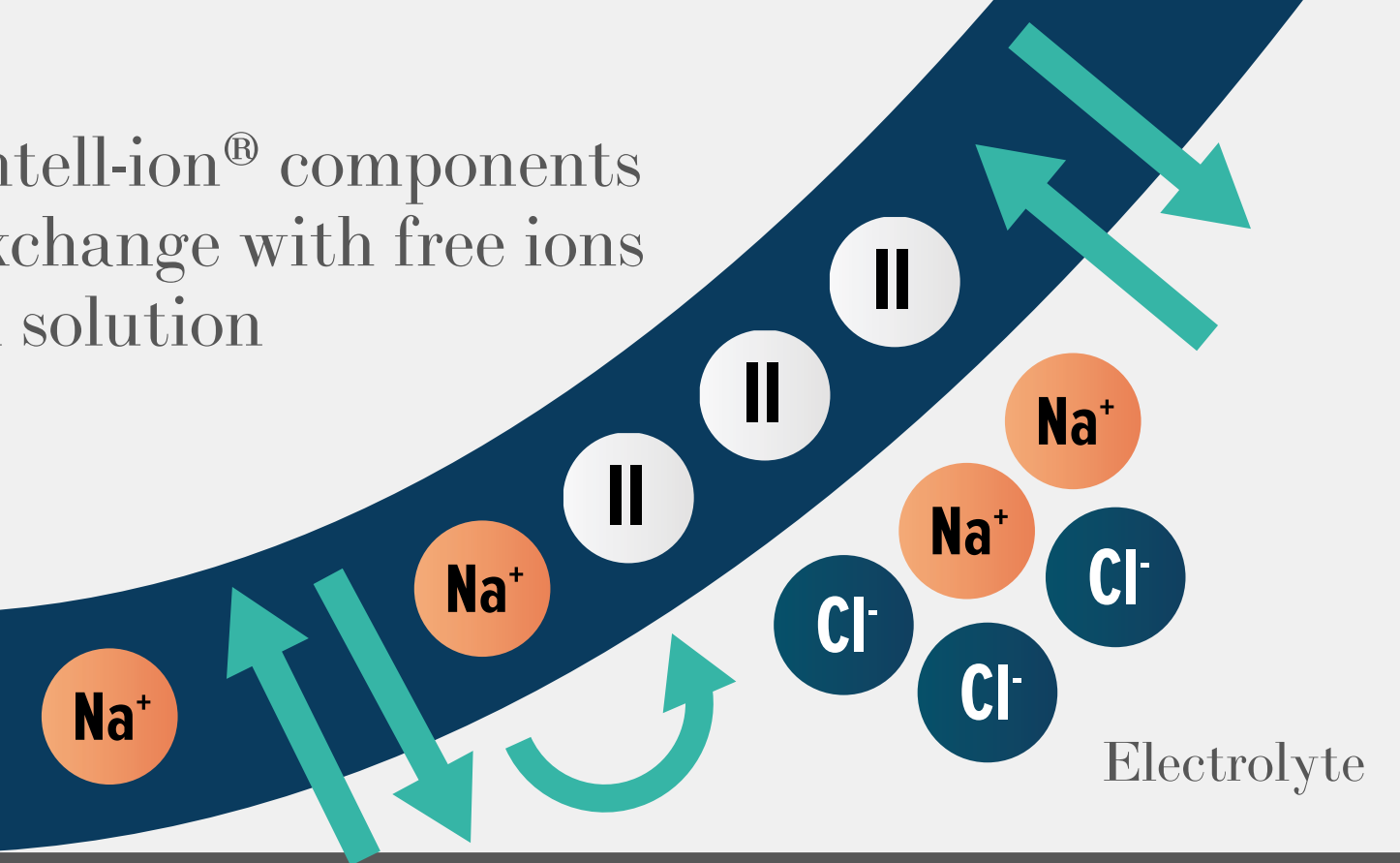
Ions that pass through the coating are sequestered - rendering them neutral and also triggering the release of the inhibitor to migrate to the metal surface.

A defect in the coating or at a cut-edge once under corrosive attack would have the same response from the reservoir system. The inhibitor forms a protective nano layer over the bare metal surface at the anode and cathode, and forms insoluble salts with any dissolved metal ions preventing mass transport of corrosive ions, as well as moderating under-film pH.

Intell-ion<sup>®</sup> components exchange with free ions in solution

Primer Coating

Metal Substrate





# Patented, award winning protection mechanism:

## Co-blended with phosphate systems:

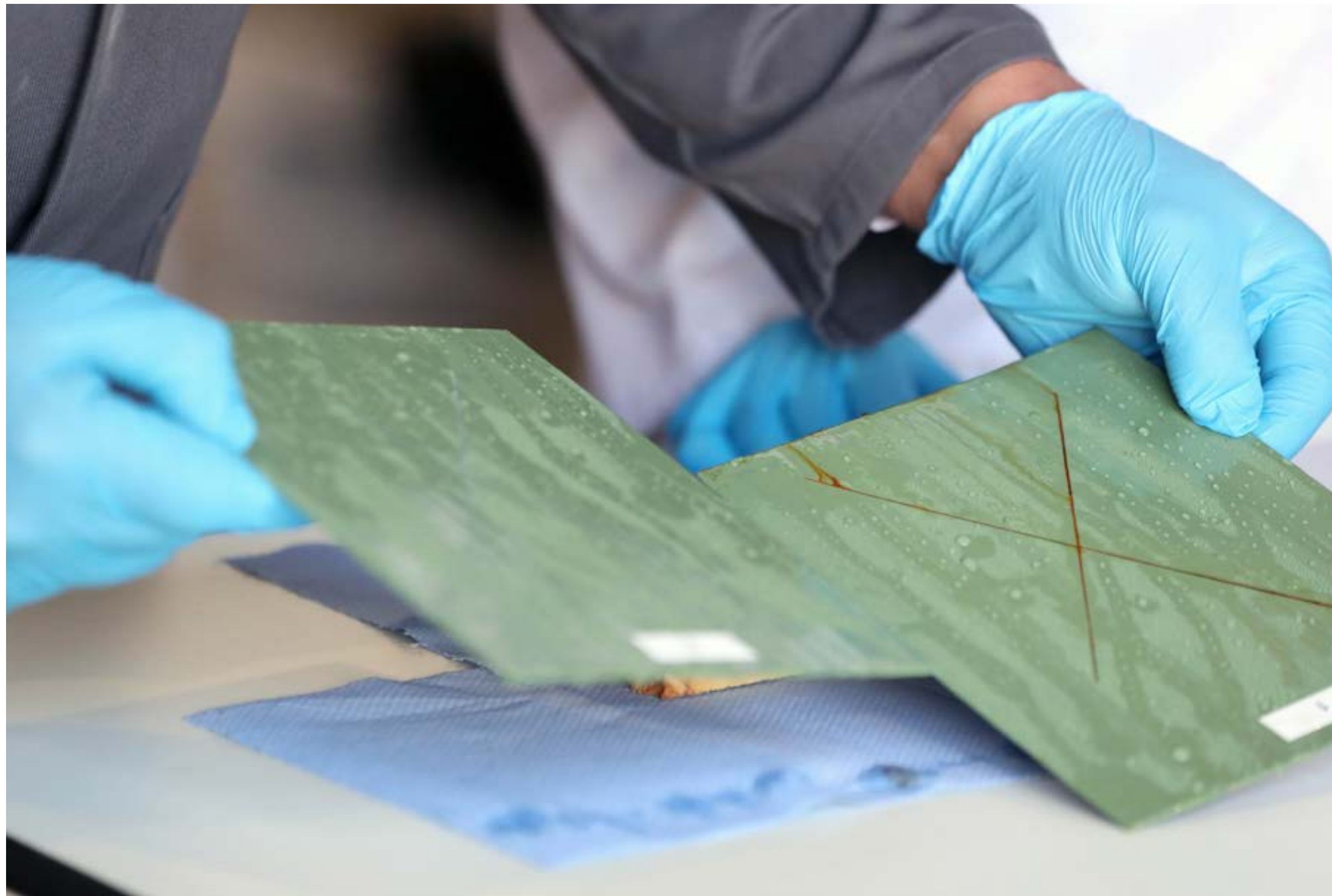
Zinc phosphate salts on their own are not initially very effective due mainly to their low solubility. As a result, in a corrosive environment, significant amounts of time must pass before there are sufficient concentrations of phosphate anions to react with the metal cations to form an anti-corrosive precipitative layer.

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This leads to a time delay where corrosion can proceed unimpeded. Intelli-ion® - because of its very fast formation of an inhibitive layer - acts in synergy with zinc phosphate by reducing corrosion occurring due to this time delay. AX1 provides the initial protection backed up by the zinc phosphate precipitate layer to provide a synergistic anti corrosion solution.

[View more information](#)





# Sustainability – it's our mission.

## Remove Environmental Warning Labels:

Our Intelli-ion® additives replace heavy metals, phosphates and toxic chromates with highly effective, environmentally favourable additives. By co-blending phosphate-based inhibitors with Intelli-ion®, customers can remove environmental warning labels and provide end-users with coatings that are easier to transport, store and dispose of.

## EcoVadis Gold & REACH Compliant:

Hexigone has been awarded a Gold rating by EcoVadis®, one of the world's most recognised providers of business sustainability ratings. Additionally, our product is EU REACH compliant - ensuring a high level of protection to human health and the environment.

To find out more about Hexigone's safe materials, CO<sub>2</sub> emissions, circular economy and energy efficiency, then head to our [sustainability page](#).

“ Sustainability is at the core of Hexigone's business...”

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# Find your local distributor

Hexigone has a large network of leading distributors of speciality chemicals - offering local service and expertise in your area. Our in-house staff and distributor network thrive on collaborative working and excellent customer service to ensure the transition to Intelli-ion® is quick and efficient.

If you would like to discuss Intelli-ion® or order a sample, please get in touch and we'll direct you to your local agent.

Speak to the Hexigone Team >>

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## North America

**Canada:** Azelis  
**Mexico:** First Quality Chemicals  
**Central America:** Barentz  
**All other:** Hexigone

## South America

**Brazil:** MCassab  
**Chile:** Adizol  
**Venezuela:** Liquidsol  
**All other:** Hexigone

## Europe

**United Kindgom:** Hexigone  
**Italy:** Azelis Europe  
**Nordics:** Azelis Europe  
**All other:** Hexigone

## Australia

**Australia:** Oxerra  
**New Zealand:** Oxerra

## Africa

**South Africa:** Oxerra  
**All other:** Hexigone

## Asia

**India:** Ankush Enterprise  
**Indonesia:** Caldic  
**Malaysia:** Ingredients Plus  
**Gulf Cooperation Council:** Alfaa Chem  
**Philippines:** Redachem  
**Taiwan:** Eumate  
**Thailand:** Thai Speciality Chemicals  
**Turkey:** Azelis  
**All other:** Hexigone





# Vision

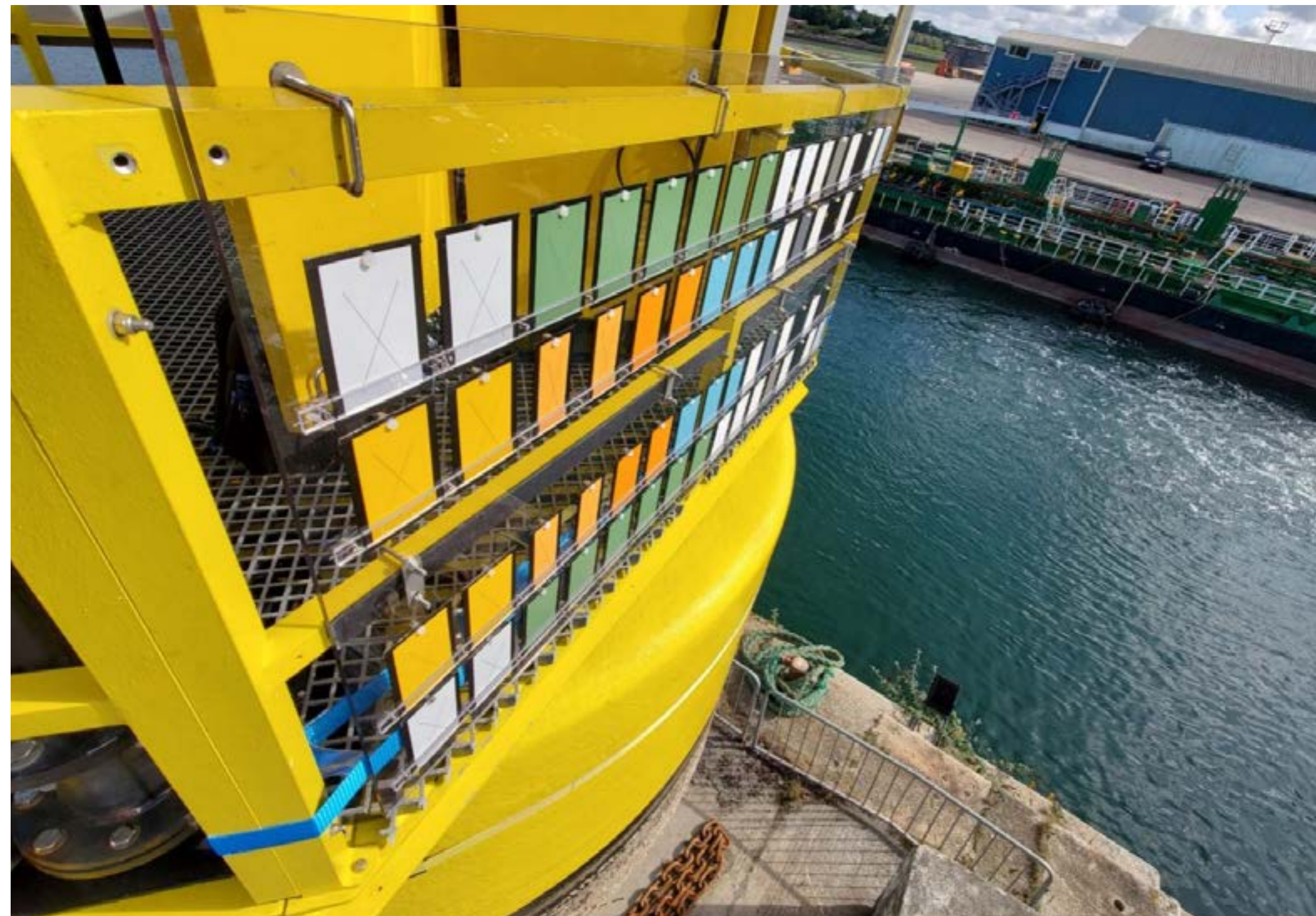
To provide resource conscious,  
disruptive solutions for a more  
sustainable tomorrow

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# Values

1. Build relationships grounded in honesty, respect, and kindness
2. Pursue excellence to deliver the highest quality
3. Champion sustainable decision-making
4. Be bold and dynamic to challenge the norm and achieve success
5. Work collaboratively to harness collective brilliance
6. Embrace the adventure!

